



An overhead view of the Cowichan River – BC Parks

10-YEAR MONITORING REPORT – 2014 TO 2023

Quw'utsun Sta'lo'
The Cowichan
A Canadian Heritage River

MARCH 28, 2024

Submitted to
The Canadian Heritage Rivers Board

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

Contents

1. Executive Summary	3
2. Introduction	5
3. Background	7
4. Methodology	9
5. Chronology of Events – Table 1	10
6. Natural Heritage Values	22
6.1 Background	22
6.2 Condition of Values Since Nomination – Table 2	23
7. Cultural Heritage Values	41
7.1 Background	41
7.2 Condition of Values Since Nomination – Table 3	42
8. Recreational Values	56
8.1 Background	56
8.2 Condition of Values Since Nomination – Table 4	56
9. Integrity Guidelines – Table 5	67
10. Review of Management Plan – Table 6	71
11. Condition of Plaque	73
12. Benefits	74
13. Summary and Conclusions	75

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Thank you to the many photographers who contributed their beautiful images of the Cowichan River and region to this project. They are: Tristan O'Brian, Todd Carnahan, Barry Hetschko, Parker Jefferson, Cim MacDonald, Tracy Price, Genevieve Singleton.



Cowichan
Canadian Heritage River

Rivière du patrimoine canadien
Cowichan



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Ministry of
Environment and
Climate Change Strategy

1. Executive Summary

The Cowichan River lies in the embrace of the Cowichan Valley, itself held within the fissured and forested framework of the southern Vancouver Island range. Fed by countless streams that begin as rain and snow, the waters filter through the dense rainforest to gather in the 30-kilometer-long Cowichan Lake before pouring forth as the Cowichan River, a tumbling, twisting crystalline green channel that eventually eases into its prolific estuary, and finally the Salish Sea.

The Quw'utsun Mustimuhw, or Cowichan people, share a name with the river and the valley and have for thousands of years. The Sta'lo' – or river – is a spirit, an ancestor, a cousin, a provider, and it is also home. For the Quw'utsun, the Quw'utsun Sta'lo' is truly a heritage river.

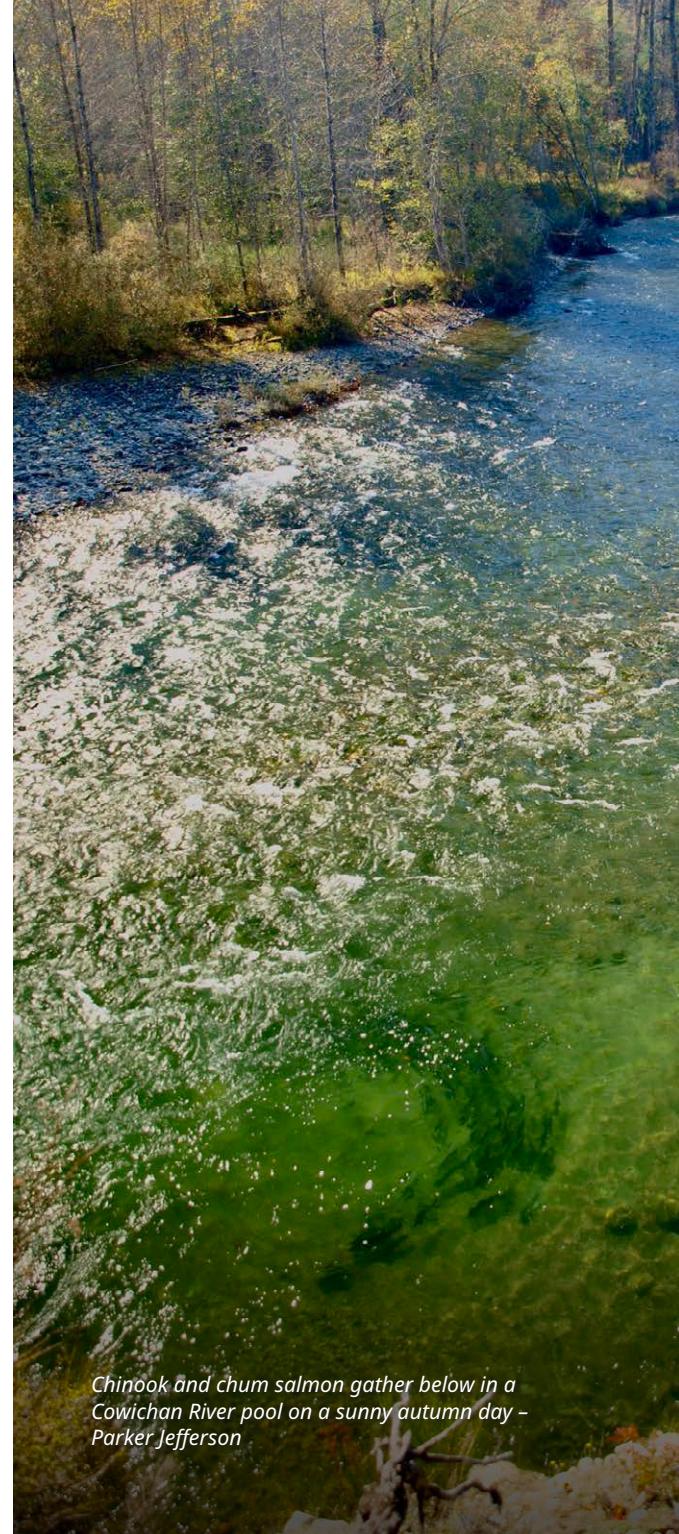
When Europeans first encountered the Cowichan River and valley, they were astonished at its seemingly endless bounty of forest and marine harvests, and quickly began to capitalize on the abundance.

Designated in 1996 as one of the first British Columbia Heritage Rivers, the Cowichan River was later designated by the Canadian Heritage Rivers System (CHRS) as a Canadian Heritage River in 2003 for its exceptional natural and cultural heritage, its recreational opportunities, and for its significant role in the region as a highly productive river.

The CHRS board asks heritage river proponents to provide a monitoring report to every 10 years to confirm the river continues to express its original natural, cultural and recreational heritage values. The first Cowichan River decadal report completed in 2013 affirmed its status as a heritage river. This report also finds the heritage values of the Cowichan River are solidly intact and enduring.

The following decadal report chronicles the community's stewardship and conservation events from 2014 to 2023. The heritage values tables relate the threats as well as the protections for the Cowichan River's diverse ecosystem, and the integrity guidelines and management goals review further confirm its heritage values.

This lively river greatly influences not only its local ecology, but also the people who live in its influence. This report illustrates the commitment, even passion, the river's many stewards and admirers have to conserve, protect, and celebrate the Cowichan River's ecological gifts.



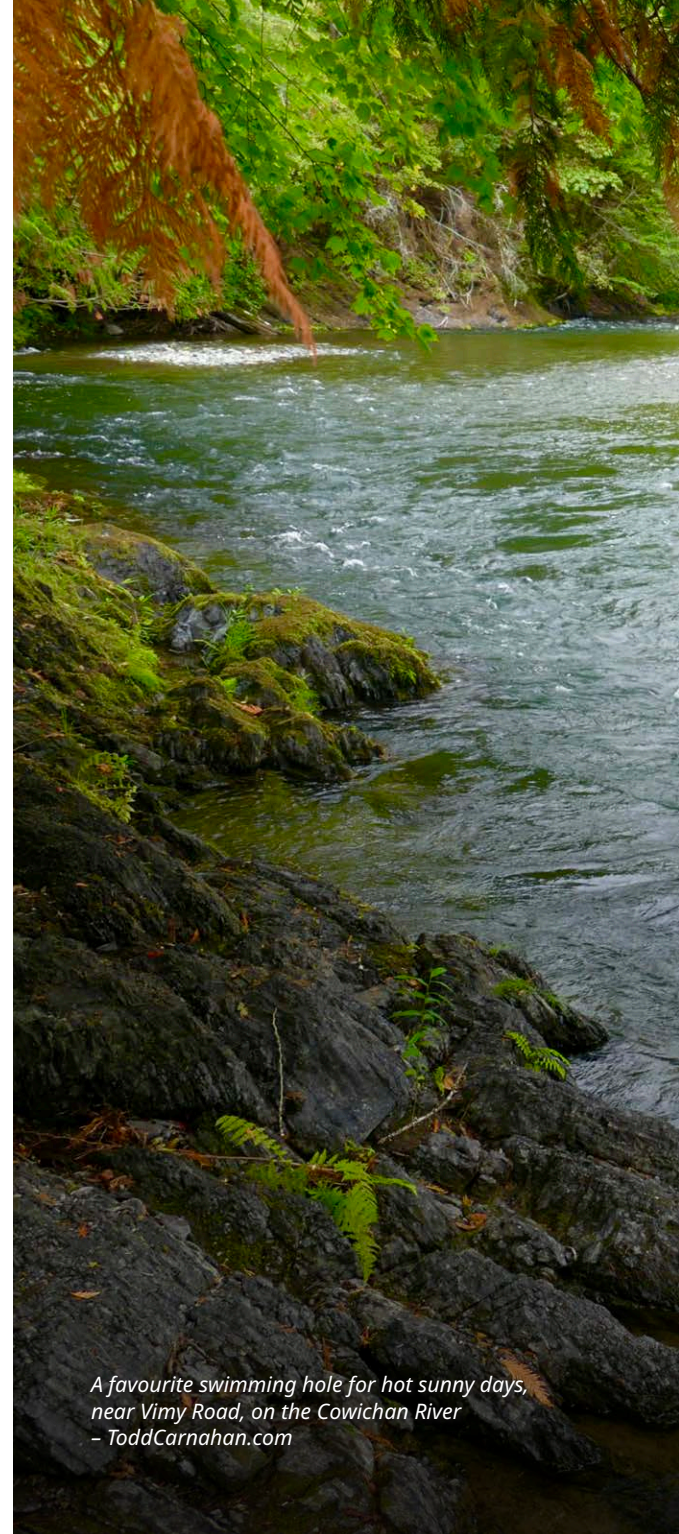
Chinook and chum salmon gather below in a Cowichan River pool on a sunny autumn day – Parker Jefferson

Threats to the Cowichan ecosystem come from human activities: climate change, habitat loss, sedimentation, fragmentation, water degradation, pollution, instream and marine mortalities, and invasive species.

The once legendary runs of Chinook and reliable steelhead are vulnerable to climate changes and human impacts – Indigenous and non-Indigenous partners share information and strive to improve the odds for the revered fish, and myriad other species that occupy the river and estuary.

In fact, the Cowichan community presents an extraordinary example of collaboration in its protection and stewardship of the river, a characteristic highlighted in the Cowichan River nomination papers, in the previous decadal report, and highlighted as a case study in the CHRS 2020-2030 strategy plan.

Informed by dozens of reports and studies, works planned and underway, this report concludes the natural, cultural and recreational values of the Cowichan River continue to support its designation as a nationally significant heritage river.



*A favourite swimming hole for hot sunny days,
near Vimy Road, on the Cowichan River
– ToddCarnahan.com*

2. Introduction

The Cowichan River was nominated as a Canadian Heritage River in 1998 and designated in 2003 for its outstanding natural and cultural heritage values and recreational values. From that time, the Cowichan River managers, Cowichan Tribes, governments and conservation agencies have been leaders in respectful collaborative stewardship, and their example is held up as a model for river stewardship provincially and nationally.



The Canadian Heritage Rivers System (CHRS) noted this cooperative environment by highlighting the Cowichan River community as a case study in the CHRS 2020-2030 Strategic Plan. Previously, the CHRS National River Conservation Award of Merit was awarded to the Cowichan River's Stoltz Bluff remediation project team in 2009 in recognition of their remarkable multi-agency undertaking.

The national Canadian Heritage Rivers System was established in 1984 to recognize, celebrate and conserve those exceptional rivers across Canada, and their particular natural, cultural and recreational heritage values.

As part of its stated river stewardship goal, the aim of CHRS is to inform, inspire, and serve as a catalyst for Canadians to connect with their magnificent river heritage and to share in its safe keeping. River managers are encouraged to apply education, awareness and cooperative action to enable successful river stewardship and wise

management. The CHRS vision is to provide a system of national heritage rivers that serves as a model of stewardship – one that engages Canadian society in valuing our heritage of all rivers and river communities as essential to identity, health and quality of life.

The CHRS respectfully acknowledges that Canadian Heritage Rivers flow through the traditional territories of First Nation, Inuit, and Métis peoples from coast to coast to coast. In cooperation with federal, provincial and territorial governments, the CHRS is committed to the ongoing management, conservation and recognition of Canada's river heritage.

To support their role as stewardship partners with CHRS, provinces and territories are asked to report on river events and conditions through annual reports, and to provide comprehensive decadal reviews to the CHRS board to ascertain the heritage values the river had at designation are intact and maintained.

The first 10-year monitoring report for the Cowichan River covered the years 2003 to 2013. This second decadal report looks at the years 2014 to 2023.

The objectives of this Cowichan River decadal report are to:

- Identify significant impacts and events since 2014 relevant to Cowichan River stewardship;
- Assess the vigor of Cowichan River's heritage values, and identify any threats, and responses;
- Review CHRS integrity guidelines to see if they are integrated into long-term management plans for the river;
- Determine what actions outlined in Managing the Cowichan River as a Canadian Heritage River 2003 are being achieved;
- Update natural and cultural values to reflect the 2020-2030 CHRS strategy plan.



Biologists gather data at the salmon counting gate near Siem Lelum on the Cowichan River – ToddCarnahan.com

3. Background

Born from headwaters at Hooper Mountain near the western edge of Cowichan Lake, the Cowichan River or the Quw'utsun Sta'lo', runs about 46 kilometers from the lake's eastern shore to the estuary at Cowichan Bay.

The river spills through a varied topography that reflects a history of glacial and post-glacial processes that are visible in steep terraces of glacial sediments and bedrock canyons. The Cowichan watershed drains an area of approximately 939 km² within its Coastal Western Hemlock bio-geoclimatic zone. Land cover here is still predominantly coniferous forest. Along its route, several tributaries join the river.

The warm, temperate climate of southeastern Vancouver Island lends itself to tremendously rich ecosystems with greater diversity of species than other parts of the province, and such is the case with the Cowichan region.

Historically, the Cowichan River and estuary were home to vast numbers of salmon – Chinook, coho, chum, and pink – along with trout, steelhead and anadromous cutthroat trout. The forests were towering Douglas-fir, Western hemlock, cedar, and in the drier regions were stands of Garry oaks and arbutus, often accompanied by open fields of understory berries and other edible flowering species. The watershed and floodplains held an equally diverse population of land mammals, from elk to cougar to beaver, and to lesser sighted species like ermine. The Cowichan estuary teemed with returning salmon, with shellfish species, and millions of birds that stopped along the Pacific Flyway: today it still hosts about 230 bird species and is an internationally recognized Important Bird Area (IBA) for its high value as waterfowl habitat. The ecosystem flourished.

There to enjoy the bounty were the Cowichan People, the Quw'utsun Mustimuhw, who were nourished by the Quw'utsun Sta'lo' and estuary, the forest and the ocean, for at least 4,500 years according to archaeological findings, but much longer than that, as far back as the oral histories go.

When Europeans arrived, they too saw in the forests, lowlands, rivers and oceans perpetual bounty, and capitalized on the abundance.

Water is the most life-sustaining gift on Mother Earth and is the interconnection among all living beings. Water sustains us, flows between us, within us, and replenishes us. Water is the blood of Mother Earth and, as such, cleanses not only herself, but all living things. Water comes in many forms, and all are needed for the health of Mother Earth and for our health.

– Assembly of First Nations

From the mid-1800s, early timber companies made large scale channel modifications on the Cowichan River to drive massive logs downriver, by blasting out 29 waterfalls, leaving one, the Skutz Falls, and reducing the river's approximate 130 rapids to five.

Half of the 400-hectare estuary wetlands were lost over the decades, as channels were covered or redirected and marshlands drained to accommodate forestry, industry, shipping, and agriculture, all of which had enormous impacts on the estuary water circulation and ecosystem. Many threats to the robust Cowichan ecosystem exist, from climate uncertainty, human activities, habitat loss and fragmentation, water degradation, pollution, and invasive species, along with natural sedimentation and channel redirection.

In recent decades however, significant rehabilitation efforts have taken place. Much of the estuary is now conservation land and more is being restored.

One notable project underway is the Cowichan Estuary restoration project. Part of a larger initiative by the Nature Trust of BC to restore five regional estuaries, the Enhancing Estuary Resilience is endorsed



by United Nations Educational Scientific and Cultural Organization (UNESCO) as an official contribution to the UN Decade of Ocean Science for Sustainable Development. The endorsement shows the region is succeeding in rebuilding healthy ecosystems and fish stocks, while also strengthening its climate resilience.

Climate change is altering weather patterns rapidly, bringing temperature extremes, frequent drought, unpredictable precipitation, and eventually higher sea levels that will adversely affect estuarine areas. The Cowichan basin has experienced 14 droughts since 1998. This past summer, water managers had to pump water from Cowichan Lake into the river for 38 days to maintain environmentally necessary flows to sustain fish.

Climate change is requiring urgent and innovative protections as it is rapidly pushing ecosystems – including humans – toward a new reality.

To do this the community takes its role as stewards seriously, with leadership from the Cowichan Tribes, the original river stewards, working alongside local and senior governments, conservation societies and Nature. The partnerships blend traditional knowledge with science in their conservation efforts for the good of the Cowichan River – this report notes those myriad projects that these extraordinary collaborations have made or are making into reality.

The Cowichan community presents extraordinary example of partnership in its protection and stewardship of the river, a characteristic that was highlighted in the Cowichan nomination papers and in the previous decadal report. The CHRS noted this cooperative environment in its case study of the Cowichan River in its 2020-2030 Strategic Plan.

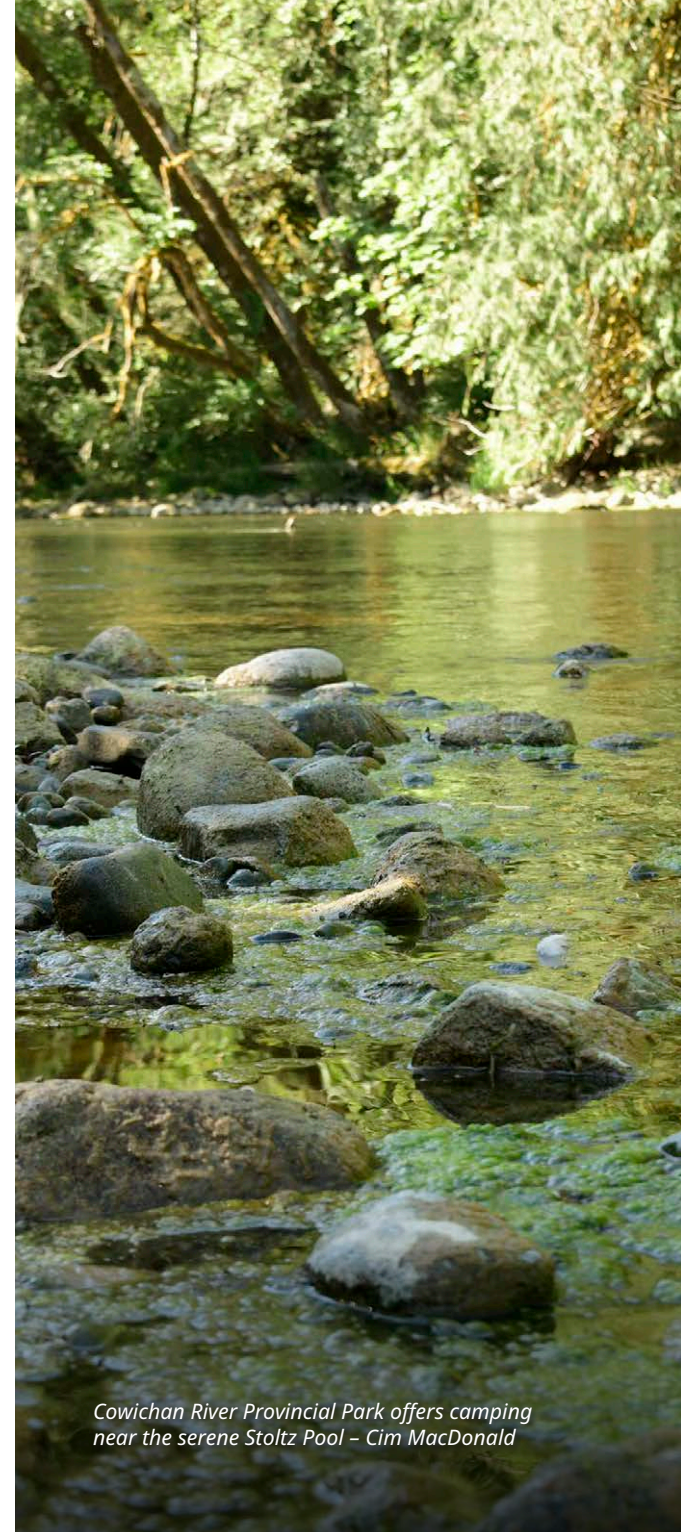
The Cowichan River thrives in part due to the resilience of nature, and also because of the tremendous stewardship efforts of the Cowichan community of river stewards. While many issues exist that pose threats, the Cowichan River's remarkable natural and cultural heritage and recreational values for which it was designated remain intact.

4. Methodology

Information for the Cowichan River heritage values 2014-2023 review was predominantly sourced from readily available materials and interviews, including:

- Annual Cowichan River monitoring reports from 2014 to 2023;
- Review of relevant periodicals, media sources, public documents and websites;
- Reports from academic studies, government ministries, First Nation, private sector associations and non-profit organizations;
- Discussions with professionals, experts and stewards familiar with Cowichan River and area issues and events;
- Cowichan River Management Plan, 2003;
- Cowichan CHRS nomination and designation documents;
- Canadian Heritage Rivers System 2020-2030 Strategic Plan;
- CHRS natural and cultural heritage values frameworks;
- CHRS Principles, Procedures and Operational Guidelines, 2023.

Sources of materials used are referenced in the body of the text.



Cowichan River Provincial Park offers camping near the serene Stoltz Pool – Cim MacDonald

5. Chronology – Cowichan

Table 1 lists specific events, actions, research and studies that occurred on the Cowichan River from 2014 to 2023 that are relevant to the CHRS heritage values. Some observations and undated events are also included.

TABLE 1: CHRONOLOGY OF EVENTS, ACTIONS AND REPORTS FOR THE COWICHAN RIVER 2013 – 2023

YEAR	EVENTS, ACTIONS, REPORTS
2014	EVENTS • August – Low water on the Cowichan River causes challenges for fisheries, recreation and Catalyst Paper, which draws water from the river for its mill processing. This the second in three years in which low water levels impact river users and returning salmon. • August – Island Health issues a public health warning of high levels of fecal coliform bacteria on the lower Cowichan River. Rainfall after an extended drought likely washed high concentrations of contaminants from surface runoff and storm sewers into the river. • August 16-17 – The Cowichan River Cleanup held during the health advisory went ahead without water contact in the lower reaches. REPORTS AND STUDIES • The first of a series of reports inspired by Cowichan Watershed Board and residents' actions on watershed governance and sustainability: https://poliswaterproject.org/polis-research-publication/cowichan-watershed-board-evolution-collaborative-watershed-governance/
2015	EVENTS • Water Challenge – Residents and water suppliers reduced water consumption by 16-25% compared to last year; water restrictions and other actions were taken to ameliorate low water flows in the Cowichan River, during one of the driest summers on record in the region. • Funded by Cowichan Valley Regional District (CVRD), Cowichan Area Planning Committee held a shoreline stewardship workshop. • August 15 – the seventh annual Cowichan River Cleanup was successful. ACTIONS • Water managers add a second snow pillow gauge to monitor water volume stored in the snowpack above Lake Cowichan. The devices are at Heather Mountain and at Cottonwood Creek headwaters. • Habitat Conservation Trust Foundation (HCTF) funds British Columbia Conservation Foundation (BCCF) to pilot aquatic and riparian restoration projects as part of the Cowichan Lake Shoreline Stewardship initiative. • BCCF begins Broadway Run Slope Stability Remediation to reduce slope failures at the upper Cowichan River above Skutz Falls, with funds from HCTF, DFO, CVRD, Living Rivers-Georgia Basin/Vancouver Island and Pacific Salmon Foundation. • BCCF completes post-construction monitoring on the Cowichan River Stoltz Bluff Remediation/Stabilization project.

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YEAR	EVENTS, ACTIONS, REPORTS
2015	REPORTS AND STUDIES • Lower Cowichan River – Scoping of Riparian Habitat Protection and Rehabilitation, funded by HCTF. • Cowichan Lake Lamprey Data Research and Gap Analysis, funded by HCTF and the Province of BC. • Cowichan River Low Flow Mitigation Strategy, funded by Catalyst Paper Corporation. • Cowichan River Southside Spur Dike Floodplain Reconnection – Post-construction monitoring, funded by Cowichan Valley Partners. • Cowichan River Juvenile Chinook Habitat Use Assessment for lower river and estuary rehabilitation, funded by Pacific Salmon Commission. • Cowichan Chinook – Identification of fry vs. fingerling contributions to adult returns, funded by DFO. • Cowichan River Temperature Monitoring, 2014/15 Summary Report, funded by Cowichan Tribes, CVRD and DFO. • Cowichan River – Fall Steelhead Fry Standing Stock Assessments, funded by the Province of BC.
2016	EVENTS • July 20 – Cowichan Stewardship Roundtable (CSRT) members attend Stoltz Bank remediation tours, a fry rescue demonstration, Cowichan elders knowledge sharing and stories of the river as part of their annual field trip. • October 25 – 23 students and two teachers from Cowichan Secondary School outdoor education classes remove Scotch broom from Stoltz Pool in Cowichan River Provincial Park. • Late November – Nature Kids and four school classes attend salmon spawning walks and activities along the river and channels by the Freshwater Fisheries Hatchery, with DFO and nature interpreters. ACTIONS • April 2016 to March 2017 – Cowichan Shoreline Stewardship Project restored critical shoreline and wetland habitat along 30 km of the upper Cowichan River, including nine lots and 209 linear meters of shoreline with native riparian species; 1,100 plants and live stakes were planted in March at three other shoreline lots. Since 2014, 26 lake/river shoreline properties were restored under CSSP, totaling 7,239 m² and 971.5 linear meters of riparian improvements. The work shows the benefits of restoring natural shorelines for ecological productivity while appreciating property value. Volunteers made visits to educate homeowners about natural riparian habitats. • Southside Spur Dike Floodplain Reconnection Project: Salmonids are monitored; new and improved habitat rearing areas were created as compensation for lower river flood protection works. • Riparian Fish Habitat Rehabilitation: Year 1 of 3 of inventory and riparian vegetation and restoration in the lower river impacted by development, agriculture, flood protection works, vegetation clearing, food fishing and other activities. REPORTS AND STUDIES • Chinook PIT Tag project: In the third year of a 3-year study, 5,711 wild and 5,093 hatchery juvenile Chinook were PIT tagged (Passive Integrated Transponder) to collect data on in-river, estuarine and marine environment survival rates over the next several years. Tagged fish are detected with arrays, with hand scanners, and on small vessels and large seiners in the near-shore environment.

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YEAR	EVENTS, ACTIONS, REPORTS
2017	EVENTS • August 19 and 27 – CLRSS, CWB and Cowichan Tribes drew 100 and 80 volunteers, respectively, for annual river cleanups to retrieve waste, including car parts, household items and litter. • Vancouver Island Whitewater Paddling Society and Canoe Kayak BC hold paddling and kayaking events from April to October. • Rivers Day, September 30: the Quw'utsun or Cowichan Heritage River Celebration is funded by a 150 grant from Heritage Rivers Society, and hosted by the CSRT and Cowichan Tribes, drew 500 participants in a spirit of reconciliation to celebrate and share knowledge about the river. • Cowichan Estuary Nature Centre (CENC) at the Cowichan Estuary provides year-round education for 5,000 students and visitors annually. • Interpretive nature walks – Genevieve Singleton and Christy Wilson, DFO, led four salmon interpretative walks in November for 150 people in Fish Gut Alley and McAdam Park on the Cowichan River. ACTIONS • Cowichan Shoreline Stewardship – BCCF restored 3,409 m2 on 8 public and private shoreline properties on Cowichan Lake and River. The multi-year project is expanded through the new Coastal Restoration Fund. • BCCF, Cowichan Tribes, DFO and FLNRORD work on prototype Chinook and steelhead PIT-tagging projects to understand the early life, migratory behaviour and survival of Cowichan wild and hatchery stocks. A full-span PIT tag detection antenna is installed at Duncan to remotely record tagged fish leaving or returning to the river over the next several years, the only project on Vancouver Island using this comparatively new technology. • CVRD and CWB develop a Cowichan River water use plan for future ecological, industrial and domestic water needs, including water storage in Cowichan Lake to sustain flow targets in the Cowichan River. Climate change projections to 2035 and beyond are used to calibrate watershed hydrology modeling.
2018	EVENTS • July 19 – Annual CSRT field day Stoltz Bluffs remediation tours, speakers and historical perspectives from Cowichan Tribes elders. • 2018 BC Summer Games – Canoe/Kayak Slalom Competition (July 19-22) drew about 90 racers, 20 coaches, 30 officials and 20+ volunteers to participate in canoe and kayak sprints along the river. • August 18 and 26, annual Cowichan River Cleanups – CLRSS and CWB crews clean up the Cowichan River; 216 volunteers include paddlers, divers and troops remove two tons of trash from both locations. • Speaker events – Cowichan River conservation groups host speakers through the year to educate residents and visitors on topics that include shoreline restoration, species at risk (e.g. salmon, western bluebirds) and traditional ecological knowledge. • Paddling events – Several clubs and schools and other users (whitewater, stand-up paddle boards, tubers) hold certified training courses, races and festivals through the year. Paddlers monitor the river for erosion, downed trees, illegal activities, and pick up trash.

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YEAR	EVENTS, ACTIONS, REPORTS
2018	ACTIONS • Cowichan Lake weir proposal – CWB, Cowichan Tribes, local government and industry partners met with regulators and the public to propose a new, higher Cowichan Lake weir. Federal and provincial ministries have expressed willingness to fund it, and to help with obtaining the conservation storage licence. • Sediment management – Cowichan Tribes removed 18,000 m² of sediment from the lower Cowichan River to improve surface water flows to aid salmon survival and migration during low river levels. The work also reduces flooding risk for ClemClem village in the winter. • Salmon fry rescue – Cowichan Lake Salmonid Enhancement Society, CLRSS, Cowichan Tribes and the Lake Cowichan Band rescue an estimated 36,000 coho, Chinook and trout stranded in back channels, to move them to areas with free-flowing water. • Riparian restoration – BCCF and Cowichan Tribes partnered on a 5-year initiative to rehabilitate riparian habitat in the Cowichan watershed. DFO's Coastal Restoration Fund funds 3500 m² of riparian improvement on the Cowichan and Koksilah Rivers. The HCTF and DFO's Recreational Fisheries Conservation Partnership Program contribute funds for 1400 m² of riparian restoration on the lower Cowichan River. The work provided jobs for Cowichan Tribes members, Lake Cowichan Secondary students, and gave 40 Ecological Restoration students volunteer hands-on experience with riparian restoration methods. • Spawning bed protection – Quick action by CLRSS volunteers protected Chinook spawning beds in the upper river from sediment when two large trees and the riverbank eroded during high rains. They secured trees to protect the bank, and spawning beds downstream. • Stoltz Bluff restoration – Extensive restoration on Stoltz Bluff includes drainage paths and sediment ponds that capture sediment before it settles in the river. Erosion in early 2018 filled the sediment ponds and caused a breach in berms protecting the river. Cowichan Tribes and BCCF work on the berms, sediment ponds, gully stabilization, riparian planting and native plants to increase bank stability. • Paddling map app – In 2018, paddling enthusiasts map runs on six sections of the Cowichan River to highlight public access points, river features and trip durations. A valuable resource, the app is available at https://paddlingmaps.com REPORTS AND STUDIES • May 2018, CVRD released Cowichan 2050, a significant regional integrated planning strategy that involves new levels of consultation and collaboration between local governments, First Nations and communities, with an eye to address social, environmental, and economic forces shaping the region: see www.ecdevcowichan.com • Passive Integrated Transponder (PIT) Tag studies by BCCF, Cowichan Tribes, DFO, and FLNRORD: A full-span PIT tag detection antenna at Duncan remotely records tagged Chinook, coho and steelhead leaving or returning to the river over the next several years. This is the only project on Vancouver Island using this technology. • Water Quality Monitoring – CWB, CLRSS, Cowichan Community Land Trust, Somenos Marsh Wildlife Society, and BC Ministry of Environment conduct 5-in-30 day water quality tests at more than 50 sites on the Cowichan River, its upper watershed and tributaries. The 2017 samples found significant reductions in E. coli from 2012, indicating interventions to reduce human and bovine E. coli sources are effective. Early results from 2018 are similar, while phosphorus and turbidity exceeds standards at some sample sites. • Higher Cowichan Lake weir proposal – Minimal snowpacks, unreliable spring and summer rains lead to summer droughts and low river water levels, leaving poor conditions for spawning salmon in the Cowichan River. As the Cowichan Lake weir can no longer store enough water for dry periods, CWB and partners recommend the 97-centimetre weir replaced by one 70cm higher to hold enough water. Proponents need to raise \$15M for construction, find a conservation water licence holder, and address public concerns. Source: cowichanlakeweir.ca • Riverbank erosion and debris entering into the Cowichan River impact salmonid egg incubation or redds habitat. High inputs of fine sediments infiltrate the interstices of the riverbed spawning gravel and reduce egg-to-fry survivals.

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YEAR	EVENTS, ACTIONS, REPORTS
2019	EVENTS • January 21, knotweed workshop – With funding from BC Parks, CSRT holds a workshop to address an estimated 100 sites of knotweed along the Cowichan River that threatens native plants, riparian areas, salmon habitat and riverbank integrity. • May 2019 – Town of Lake Cowichan adopts its new Official Community Plan, Creating Our Future, which aims to protect ecological preserves and greenways, identify ecological sensitive areas with LiDAR, and protect, enhance and expand areas with natural, scenic, cultural and recreational values; and reduce impacts on the natural world, including removing invasive plants. • On August 29, Catalyst Paper uses electric pumps to move water from Cowichan Lake into the river to maintain minimum river water levels, prompting media headlines like Cowichan River put on life support. Pumps maintained a 4.5m³/second flow until rainfall on September 18 as an emergency measure, but they don't meet minimum licensed flows of 7m³/second. Weir expansion proponents work on plans to increase storage capacity in Lake Cowichan to address future low river levels. • Monthly CSRT meetings – CSRT holds monthly meetings with industry, First Nations, government and stewardship groups to address river and watershed issues such as Chinook research, estuary/river interface restoration, hybrid salmon, and Indigenous perspectives. • September 28, Quw'utsun Cowichan/ Heritage River Celebration – Cowichan Tribes and CSRT mark BC Rivers Day with traditional arts, crafts, fishing, storytelling, Tzinquaw Dancers, a salmon bake and booths. Funded by BC Parks and other donors, with help from community volunteers. • August 18 and 25, Cowichan River cleanups – CLRSS and CWB bring 272 volunteers including paddlers, divers and troops on foot to remove 675kg of trash from the upper river, and eight pickup loads from the lower river. • Paddling events 2019 – A Vancouver Island hot spot for whitewater paddling from its headwaters to tidewater, enthusiasts hold training courses, clinics and races in addition to ongoing paddle recreation. Paddlers along with BC Parks, Search and Rescue and watershed groups promote water safety, mitigate emerging river hazards, and promote cleanup campaigns. ACTIONS • Cowichan Lake weir initiative – CWB and CLRSS build awareness and support for the proposed weir replacement, along with public engagement, materials, and a site at cowichanwatershedboard.ca/weir-ready • Nicola Nations peer learning exchanges – CWB provides support for two-day workshops elected chiefs, government and academic advisors to share approaches to Indigenous watershed governance, in both Nicola Nations and Cowichan Tribes territories. • Riparian Restoration – BCCF and Cowichan Tribes continue a 5-year project to rehabilitate the Cowichan watershed. • Stoltz Bluff restoration – BCCF does an extensive clearing of sediment ponds and riparian planting to increase bank stability. • My Climate Story – Cowichan River – Young Cowichan stewards contribute stories to the My Climate Story project, an online GIS story map led by a Fraser Basin Council youth program to enable youth to share their climate change perspectives. • Salmon fry rescue – Cowichan Lake Salmonid Enhancement Society, CLRSS, Cowichan Tribes and Lake Cowichan Band rescue salmon, Chinook and trout juveniles stranded in back channels and move them to areas of flowing water.

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YEAR	EVENTS, ACTIONS, REPORTS
2019	REPORTS AND STUDIES • January 2019 – Polis publishes Pathways and Partnerships: A Framework for Collaboration and Reconciliation in the Cowichan Watershed, a guide to build partnerships and reconciliation for long-term health of the Cowichan watershed and its communities. • Weir studies – CVRD, Cowichan Tribes, Catalyst Paper and CWB secure funding from federal and provincial governments to begin engineering plans and impact studies on replacing the weir at Cowichan Lake. • Steelhead juvenile density survey – FLNRO and BCCF held juvenile steelhead density surveys, which show lower numbers than previous years but still above FLNRORD desired threshold levels. • Passive Integrated Transponder (PIT) studies – BCCF, Cowichan Tribes, DFO and FLNRORD track the early life, migratory behaviour and survival of Cowichan wild and hatchery stock, coho and steelhead, with PIT tags, with funds from DFO, HCTF and Pacific Salmon Commission. A PIT tag detection antenna in the lower river at Duncan remotely records tagged fish in the river. • Cowichan River Park Management Planning – BC Parks and Cowichan Tribes develop a management plan for Cowichan River Provincial Park that respects Indigenous needs and interests. In 2020, BC Parks will consult with other groups for their input for the new plan. • Sunscreen in Cowichan – BCCF submits a proposal to HCTF to conduct a study design to assess the effects of sunscreen compounds, linked to diminished amphibian larvae survival, genetic changes to aquatic invertebrates and embryonic deformities in fish. See vancouversun.com/news/local-news/sunscreen-contamination-on-the-cowichan-river-a-real-concern



The Cowichan beckons a fisherman on cool and misty morning – Tristan O'Brian, BC on the Fly

TABLE 1: CHRONOLOGY OF EVENTS, ACTIONS AND REPORTS FOR THE COWICHAN RIVER 2013 – 2023

YEAR	EVENTS, ACTIONS, REPORTS
2020	EVENTS • January 30, Cowichan Estuary Nature Centre – The public launch of the CENC Environment and Climate Change Canada Eco-Action Project, Conserving & Protecting Cowichan Fresh Water for a Climate Resilient Future, focuses on working with youth on restoration and water conservation in the Cowichan and Koksilah Watersheds. • COVID 19 restrictions in place during 2020 resulted in many cancelled community events, gatherings and meetings. • Water Quality – CLRSS and BCCF test water samples in June and August to for sunscreen compounds in the river. • Heavy Spring Rains – Record setting rainfall causes damage to Stoltz Bluffs sediment ponds, and carved a new channel in the Cowichan around an existing oxbow between Stoltz and Sandy Pools, creating concerns this could compromise salmon spawning beds in the oxbow. Paddlers name the new channel 'The Rinse Cycle.' • CSRT knotweed removal – Work begins to remove invasive Japanese knotweed patches along the river. • Cowichan Stewardship Roundtable – As with many groups around the nation, CSRT adopts virtual meetings as of March 2020 due to pandemic restrictions. Virtual guest speaker Thea Rogers presents findings on sunscreen compounds in the Cowichan River. • Cowichan River cleanups – While large-scale river cleanups are cancelled, the Tube Shack organized small group events on September 13. Recovered waste included homemade concrete anchors, wire rope, drink cans, bottles and sunglasses. • Paddling events – Although COVID-19 hindered some paddling events, a Remembrance Day paddle drew 30-plus paddlers in canoes and kayaks; a Canoe Kayak Canada Leader 2/ Instructor 2 course is held in fall for 20 people; summer river tubing continue despite concerns about close proximities on the water – one guide company adapts operations to meet provincial health requirements. • June 6, International Low Tide Day – CENC hosts the 21st International Low Tide Day in Cowichan Bay and Estuary with social distancing, and an August outdoor workshop on Whole Watershed Thinking: A Cowichan Watershed Case Study. • COVID-safe Science and Nature Summer Day Camps, July to August – 7 weeks of outdoor camps were held for 7- to 11-year-olds in the estuary's intertidal shores with hands-on learning about the diverse ecosystem of the Cowichan watershed. • Eelgrass plantings, August 24 to 29 – SeaChange Marine Conservation Society and Cowichan Tribes plant eelgrass in the Cowichan Estuary to improve salmon habitat. • October 29, Cowichan Estuary riparian work – A team of 12 youth remove Himalayan blackberries, assess spring 2019 native plantings, and replant 50 indigenous plants, including hardhack, snowberry and twinberry. • Live-staking workshop and restoration – A November 6-7 workshop for 15 young people at Stoltz Pool features world renown restoration specialist David Polster and Cowichan Tribes elder Philomena Williams, with wattle fencing and 120 live willow stakes in a 100m2 area at Stoltz Bluff.

TABLE 1: CHRONOLOGY OF EVENTS, ACTIONS AND REPORTS FOR THE COWICHAN RIVER 2013 – 2023

YEAR	EVENTS, ACTIONS, REPORTS
2020	ACTIONS • Stoltz Bluff restoration – Work in 2019 to clear sediment ponds, install drainage paths and riparian plantings at Stoltz Bluff was damaged by heavy rain in December 2020. FLNRORD plans are underway to locate the water source that may have led to the erosion, assess surface water conditions and groundwater flow, and collect orthophotos (aerial). • Riparian restoration – BCCF and Cowichan Tribes continue a five-year project to restore riparian habitat in the Cowichan watershed. • Cowichan Lake weir progress – April 2020: Led by the CVRD, with Cowichan Tribes, Catalyst Paper and CWB, the group collaborates to engineer a new Cowichan River weir. November 2020: the federal government awards Cowichan Tribes \$24 million to replace the weir, restore riparian areas and mitigate floods, in partnership with CVRD. CVRD will develop an engineering feasibility study, construction ready designs, and a draft budget by April 2021. The plan includes upstream and downstream passage of all salmonid life stages, a cold-water delivery system to transfer lake water into the river during low water periods, and a shoreline impacts component. • Cowichan Watershed Board and working groups – By 2021, the CWB and working groups will review progress and relevance of targets, which include Cowichan and Koksilah Rivers flow levels; fish population and aquatic habitat protection; water quality, pollution and testing methods; estuary health, riparian health; and watershed connections. • Green Point – Stewardship Centre of BC completes its Green Shores 335-meter foreshore rehabilitation adjacent to the Cowichan Bay estuary, a habitat for migratory birds, salmon and small amphibians, and rewilding of an upland area with a sensitive Garry oak ecosystem in the Coastal Douglas-fir biogeoclimatic ecosystem classification zone. Extensive Indigenous use of this site was noted through archaeological surveys. The 2.5-hectare has Green Shores for Homes Orca Certification; Living Building Challenge Petal Certification; and Passive House Certification from the Passive House Institute. The team collaborated with Cowichan Tribes, CERCA, CERCA), and national and international organizations/educational institutions such as UBC, BCIT, VIU, and Cornell University. Source: https://stewardshipcentrebc.ca/ REPORTS AND STUDIES • Cowichan River – River Bottom Road Area, Flood & Erosion Mapping, September 3 – CVRD retained Northwest Hydraulic Consultants in July 2019 to update flooding maps for the lower Cowichan-Koksilah Rivers, and for 11 km along Cowichan along Riverbottom Road. The report notes a ‘major avulsion in 2020 that significantly altered river hydraulics’ and potential erosion paths that could further impact hydraulic and flood levels along the river. See the report at https://www.cvrld.ca/DocumentCenter/View/100027/Cowichan-River---Riverbottom-Road-Area-Flood-and-Erosion-Hazard-Mapping-September-2020?bidId= • Sunscreen in Cowichan – During summer 2020, BCCF and partners review samples of water, benthic macro-invertebrates, fish and freshwater mussels from the Cowichan watershed to gauge levels of oxybenzene in Cowichan waters. Key findings are: • Oxybenzone was found to range between 0 – 211 ng/L at all lake and river sites sampled in 2020: this is about half the maximum result measured on the August long weekend in 2019 (570 ng/L) • Differences in river flow, precipitation, tourism and river-based recreation between years affect variability. Sites with high recreational use had greater median concentrations of oxybenzone than sites where wastewater inputs were present, suggesting recreation is the greater source of UVF contamination in the Cowichan watershed. • Cowichan River Park Management Planning – As part of a management plan for Cowichan River Provincial Park, BC Parks works with Cowichan Tribes to collect information on cultural values and traditional uses in the park. Stakeholder input will occur in 2021.

TABLE 1: CHRONOLOGY OF EVENTS, ACTIONS AND REPORTS FOR THE COWICHAN RIVER 2013 – 2023

YEAR	EVENTS, ACTIONS, REPORTS
2021	EVENTS • March 22, Dr. Shannon Waters on cultural values interview – Watershed Watch Salmon Society posts a podcast with host Danielle Paydli and guest Dr. Shannon Waters, a Cowichan Valley region medical health officer, a Stz'uminus First Nation member, and a Cowichan Watershed Board member. In the episode The Freshwater Stream, Dr. Waters discusses the Cowichan River many values and meaning. https://watershedwatch.ca/stories/the-freshwater-stream-interviews-dr-shannon-waters/ • Cowichan Watershed arts engagement – Cowichan Arts Council host webinars to inform local artists about CWB initiatives. • Cowichan Chinook mascot – Cowichan Watershed Board introduces a new Coast Salish-designed Chinook mascot – the 'Big Dancing Fish' engages watershed friends, and shares stories on social media. • September 25, Quw'utsun Sta'lo' Skweyul, Rivers Day – BC Parks, CVRD, Mosaic Forest Management and others fund BC Rivers Day events hosted by Cowichan Tribes and CSRT that feature a Quw'utsun opening, Tzinquaw Dancers, traditional knowledge and storytelling, fish printing, medicine and nature walks, displays and booths. See www.youtube.com/watch?v=Od1piYO-W6g ACTIONS • Cowichan River Park Management Planning – BC Parks continues to develop its management plan for Cowichan River Provincial Park, which incorporates a 28-km stretch of the 47-km Cowichan River within its border. The report was due in 2022. REPORTS AND STUDIES • Cowichan Lake Weir – CVRD completes engineering feasibility and design work for the new weir in Cowichan Lake, which will have fish byway routes, a system to transfer cold lake water to the river, and a shoreline impacts study. • Passive Integrated Transponder Tags – BCCF, DFO and Cowichan Tribes PIT tagged ~14,000 juvenile Chinook, 45 adult Chinook, ~5,500 juvenile coho, ~500 steelhead smolts, 52 steelhead adults, and 500 rainbow fry and parr in the Cowichan River and bay. Tagged fish were recorded for stock assessment for each species to determine things such as: overall abundance, ocean survival estimates, run timing curves, seal predation rates, among other factors. Funded by PSC's Southern Endowment fund, BC Salmon Restoration and Innovation Fund, DFO and Habitat Conservation Trust Foundation. • Passive Satellite Archival Tagging – Spring 2021, 20 adult steelhead kelts were captured in the Cowichan River and 10 were tagged with pop-up satellite archival tags (PSATs). Fish were held at the Duncan Freshwater Fish FSBC hatchery for 25 days before release into Satellite Channel. Tags record temperature, depth, time, location and acceleration. The data is archived on the tag until either the tag hasn't changed depth for 3 days, or after a specified time period (e.g. 120 days). Tags then pop up to the water surface and send the data to satellites, from where it can be accessed and studied to help fisheries managers understand the fate of adult steelhead, by determining locations and means of mortality.

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YEAR	EVENTS, ACTIONS, REPORTS
2022	EVENTS • COVID-19 recovery grant – The Ministry of Environment and Climate Change Strategy provides the Cowichan Community Land Trust Society with a \$5,000 COVID Recovery grant to support Cowichan River events, research and stewardship. • September 25, Quw'utsun Sta'lo' Skweyul/Cowichan River Day – Supported by a \$35K grant from Commemoration Reopening fund, Cowichan Tribes and CSRT host events in five locations to raise awareness about Cowichan River with stories, carving demonstrations, paddling lessons, performances and more: CowichanEstuary.ca • Water sampling for tire-derived chemical 6PPD-Q, 2022 – BCCF and the CLRSS collect Cowichan River water samples to test for 6PPD-Q, a compound used to stabilize rubber that causes acute mortality in coho salmon when it enters streams via urban road runoff. • Witnessing the Water book – CLRSS members are drafting a coffee table book about Cowichan River, to be released July 2023. • Paddling events – As one of Vancouver Island's favourite rivers for white water recreation, paddle races and events continue through the year on the Cowichan River, from its headwaters in Lake Cowichan to the estuary at tidewater. ACTIONS • Stoltz Bluff restoration and stabilization – Work on rehabilitation continues with plantings of willow, cottonwood and red-osier dogwood stakes; a geotechnical/hydro-technical assessment is complete. • Coastal Restoration Fund riparian planting – Cowichan Tribes and Coastal Restoration Fund planted live stakes and plants to increase and improve riparian cover, bank stability and fish habitat. REPORTS AND STUDIES • Monitoring steelhead kelt fate and migration – In spring Land, Water, and Resource Stewardship (LWRS), with the Salmon Restoration and Innovation Fund, tagged steelhead kelts (adults that spawned and are returning to the sea) with popup satellite archival tags (PSATs) to track their ocean migration. • Cowichan Coho population dynamics – DFO, BCCF, Cowichan Tribes and PSC tag coho smolts with passive integrated transponders (PIT) tags; they also monitor adult coho spawners to gauge numbers returning to the upper Cowichan. • Pacific Salmon Commission Chinook enumeration – Cowichan Tribes, BCCF, and DFO PIT tag juvenile Chinook to track their returns in the next three years to gauge populations. • Log boom impacts on Chinook – PSC, Cowichan Tribes, DFO, and University of Victoria tag adult Chinook to determine if log booms affect late marine survival rates. • Sunscreen impacts in Cowichan – Habitat Acquisition Trust Foundation, RBC Foundation and CLRSS partner to monitor the presence of oxybenzone (sunscreen) in the Cowichan watershed. While there is a relationship between oxybenzone concentrations in the water and the number of recreational users, no oxybenzone is yet detected in sediment samples. Testing for oxybenzone in tissues continues. • October 11 – 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 its Policy for Conservation of Wild Pacific Salmon – also known as the Wild Salmon Policy. See https://www.pac.dfo-mpo.gc.ca/fm-gp/salmon-saumon/wsp-pss/annual-annuel/2019-2020-eng.html



Casting a fly in the summer near the Stoltz Pool Campground in Cowichan River Provincial Park – Paige Owen

TABLE 1: CHRONOLOGY OF EVENTS, ACTIONS AND REPORTS FOR THE COWICHAN RIVER 2013 – 2023

YEAR	EVENTS, ACTIONS, REPORTS
2023	EVENTS • March, Water Sustainability Plan – The provincial government and Cowichan Tribes reach an agreement to develop BC’s first Water Sustainability Plan for the Koksilah Watershed, a tributary to Cowichan River, to address water use and minimum flows for fish species. • July 2023 – Thousands of juvenile salmon and trout are found dead in the Cowichan River by swimmers and divers. https://www.cowichanvalleycitizen.com/news/officials-probing-mass-fish-deaths-on-the-cowichan-river-1286486 https://www.seattletimes.com/nation-world/in-a-storied-river-fish-are-dying-in-droves-as-climate-change-scorches-canada/ ACTIONS • August, DFO suspends angling on Cowichan – To protect various fish stocks, and in response to low river water levels from drought conditions, high water temperatures, and an algae bloom that led to a fish kill earlier in the year, DFO suspends angling in the upper Cowichan River from the Cowichan Lake weir to the 66 Mile Trestle from September 1 to November 15. A further fishing ban from the CNR Trestle at mile 70.2 to Skutz Falls is ordered from December 1 to April 30, 2024. The province restricted water usage from August 24 for forage crops and industry in the Koksilah River to maintain water flow to protect steelhead trout populations.

TABLE 1: CHRONOLOGY OF EVENTS, ACTIONS AND REPORTS FOR THE COWICHAN RIVER 2013 – 2023

YEAR	EVENTS, ACTIONS, REPORTS
2023	REPORTS • March 2023 – CWB works to enhance watershed co-governance and increased local decision-making power in B.C. • Watershed Security – A B.C. government initiative is underway to create a Watershed Security Strategy and Fund in 2023. • June 2023 – Cowichan Estuary Restoration: The largest wetland rehabilitation project on Vancouver Island will receive \$3M from federal and provincial governments and others to restore 70+ hectares of Cowichan River estuary wetlands. The work will remove two kilometers of dikes at Dinsdale Farm and Koksilah Marsh, create intertidal channels and salt marsh habitat, restore marine riparian and flood-fringe forests, and reconnect areas to tidal influence. The project will enhance the estuary's resilience against rising sea levels. https://www.vancouverislandfreedaily.com/news/restoration-project-at-cowichan-river-estuary-announced-7246989 • Witnessing the Water book – CLRSS members release a coffee table book about experiencing the Cowichan River, July 2023. • September report on fish kill – Cowichan River fish deaths in July occurred due to environmental stress, DFO reports. Thousands of steelhead, trout and other fish that died bore lesions, indicative of stress from high water temperatures, and elevated pH levels in the water. https://cowichanwatershedboard.ca/content/the-skeena-massive-fish-die-off-mystery-on-vancouver-island-explained/ • October – Town of Lake Cowichan receives a \$10M grant for its sewage treatment facility to address lagoon aeration, phosphorus removal and disinfection to meet provincial water quality standards and to meet provincial and federal water quality objectives for the Cowichan River – https://www.canada.ca/en/office-infrastructure/news/2023/10/the-governments-of-canada-and-british-columbia-invest-in-the-final-phase-of-wastewater-infrastructure-upgrades.html • August 27 – Cowichan River Cleanup – Event draws scores of volunteers to remove truckloads of waste from a 15-km stretch of river. • Cowichan estuary captures carbon – Temperate river estuaries are more effective at storing greenhouse gases than young coastal forests, a UVIC study finds, but human activity could reduce its efficiency: https://www.cowichanvalleycitizen.com/news/uvic-study-shows-great-potential-in-cowichan--and-others-to-capture-carbon-833317 • Cowichan Trail study – A Vancouver Island University tourism researcher and professor, Aggie Weighill, will review social and economic impacts of trail systems in the Cowichan Valley, which holds the Cowichan River and watershed. https://news.viu.ca/viu-researcher-studying-social-and-economic-impacts-trail-systems-cowichan-valley# • Upper Cowichan River Assessment Preliminary Projects Development Report – In 2023, CVRD retained Northwest Hydraulic Consultants Ltd. to prepare an assessment on the upper Cowichan River, focusing on opportunities to restore system function, addressing issues on sediment, erosion, and channel stabilization and management, floodplain reconnection and flood relief, while providing benefits to the fisheries where feasible. NHC outlined 24 possible projects, ranging in costs. Objectives in part are to identify historic and current river changes, identify ways to restore system function, sediment stabilization and management, floodplain reconnection, erosion and channel stabilization, augmenting fish habitat. • DFO reports that after a low return of 540 Chinook spawners in 2009, adult returns in 2022 exceeded target escapement numbers for seven consecutive years. Early 2022 escapement numbers of 17.7K suggest the strong rebuilding trend in 2023 with strong returns. Source: Pacific Region, Integrated Fisheries Management Plan, Salmon Southern BC, 2023, DFO. Cowichan River Chinook salmon escapements are an indicator cohort for the Lower Georgia Strait area and have been recorded at a counting fence since 1988. • Cowichan Lake weir update – In its 2024 budget, the provincial government announces \$14M for the weir replacement: https://www.cvrld.ca/DocumentCenter/View/109099/News-Release---Cowichan-Weir-Funding-2024

6. Natural Heritage Values

6.1 Background

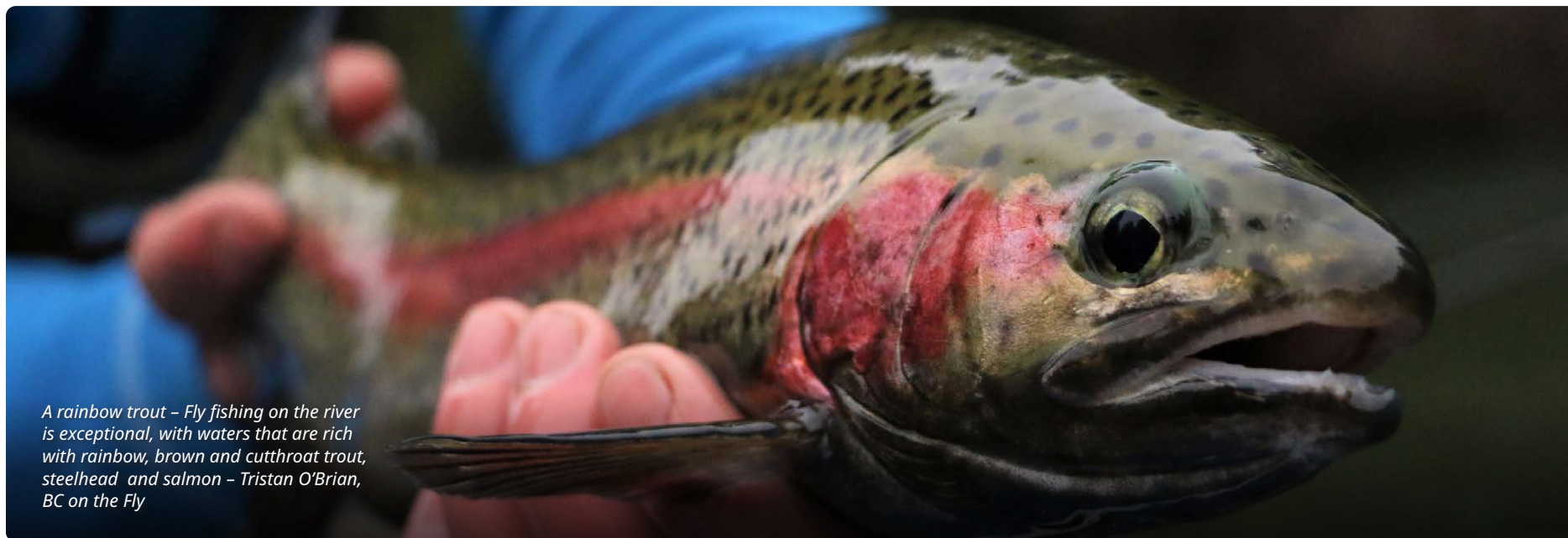
The Cowichan River was designated as a Canadian Heritage River based on the following natural heritage values:

Hydrology: The Cowichan is typical of most Vancouver Island rivers, exhibiting a pattern of peak winter flows during the months of November to February and low summer to early fall flows from July through October.

Physiography: The landscape contains evidence of geologic events including glaciation and past tectonic and biological activities.

River morphology: The Cowichan River's three distinct gradient sections are excellent examples of high-energy erosional environments through to low energy depositional landforms in the lower river including estuary evolution and the river's intertidal zone. The Cowichan is a dynamic river with varied topography that naturally changes over time. The river has a meandering pattern, and exhibits erosional and depositional landforms, undercuts, braiding and oxbows, and its delta features.

Biotic environments: Aquatic ecosystems include freshwater, estuary and intertidal zones. Terrestrial ecosystems include representation of Pacific maritime terrestrial ecosystems. The upper reaches of the Cowichan River pass through excellent examples of the Coastal Western Hemlock biogeoclimatic zone that occurs widely throughout Vancouver Island. The lower reaches have excellent examples of the Coastal Douglas-fir biogeoclimatic zone, which is exclusive to the southeastern coast of Vancouver Island and the Sunshine Coast, and is among the rarest and most fragmented biogeoclimatic zones in the province. This temperate subzone produces the widest diversity of plant and animal species in the province.



A rainbow trout – Fly fishing on the river is exceptional, with waters that are rich with rainbow, brown and cutthroat trout, steelhead and salmon – Tristan O'Brian, BC on the Fly



The Cowichan is legendary in BC, due to its abundance and variety of trout species, including this brown trout, a fish that was introduced in the 1930s – Tristan O'Brian, BC on the Fly

- **Flora:** The last decadal report noted the Cowichan River is an excellent example of the Pacific salmon forest, illustrating the close ecological interrelationship of salmon, bears and coastal rain forests. The Cowichan region also contains pockets of vibrant Garry oak ecosystems, of which less than five per cent remain in near natural condition on BC's temperate south coast.
- **Fauna:** The Cowichan River system is considered one of the most valuable and productive salmon and trout streams on Vancouver Island, supporting a broad community of species including coho, Chinook, pink and chum salmon, steelhead, rainbow and brown trout, resident and anadromous cutthroat trout and Dolly Varden char. The ecosystems provide habitat for wildlife typical to southern Vancouver Island. The Cowichan estuary and lowland are on the Pacific flyway and is recognized as an Important Bird Area (IBA) that provides critical winter habitat and resting stops for tens of thousands of migratory birds and waterfowl.

6.2 Condition of Values Since Nomination

Hydrology: The pattern of peak winter flows followed by low summer and early fall flows from July through October become more exaggerated with the increasing impacts of climate change. Drought conditions in the summer conditions are becoming more common, and while precipitation in winter is expected to increase, warmer temperature in the already temperature climate zone may not result

in adequate snowpacks to recharge lakes and aquifers for summer. To that end, the Cowichan Valley Regional District and several partners, including Cowichan Tribes and the Cowichan Watershed Board, successfully advocated senior governments to fund a new, higher weir that will enable more water storage in Cowichan Lake to feed into Cowichan River during drought and low-water periods.

River morphology: Repairs and monitoring of Stoltz Bluff and lesser avulsion sites continues. A heavy spring rain in 2020 damaged sediment ponds and carved a new channel in the Cowichan around an existing oxbow between Stoltz and Sandy Pools, raising concerns about salmon spawning beds in the oxbow. The provincial government assessed surface water conditions, groundwater flow and collected aerial photos, in order to determine where the water was infiltrating bluffs. The Cowichan Valley Regional District retained Northwest Hydraulic Consultants to update flooding maps for the lower Cowichan and Koksilah Rivers. The report noted a 'major avulsion in 2020 that significantly altered river hydraulics' and potential erosion paths that could further impact hydraulic and flood levels along the river (CVRD, Cowichan River – Riverbottom Road Area Flood and Erosion Hazard Mapping). Deposits of silt and gravel that build up on shallow aspects and pools of the river were removed to improve spawning areas and habitat.

Biotic environments: The eastern Vancouver Island ecoregion supports more biological diversity than anywhere else in the province and



contains many of BC's most ecologically significant estuaries, including the Cowichan estuary. While estuaries are naturally rare, taking up only about 2.3 % of the province's rugged coastline, their dense, layered and highly complex physiology hosts up to an estimated 80% of all waterbirds and other coastal wildlife in BC.

Estuaries are the heart of coastal ecosystems, where the mix of rivers, ocean and upland habitats fosters a delicate, productive and incredibly diverse ecosystems for terrestrial and aquatic plants and animals. Estuaries are especially critical for the health of wild Pacific salmon, as they act as nurseries for juvenile salmon, providing a place for them to rest and adjust to saltwater before they swim out to sea. Increasing the resilience of these coastal ecosystems is critical for the long-term survival of these species.

These areas are also highly vulnerable: their locations, temperate climates and immense productivity have also been favoured by intense human settlement, industry and land conversion, in particular in the last 150 years on the West Coast. This has resulted in about half of the Cowichan River estuary being significantly changed. In recent decades, however, much of the wetland and intertidal zone have been reclaimed

for natural habitat, thanks to the remarkable efforts made by Cowichan Tribes, government agencies and a multitude of ecological stewardship groups and foundations.

The Cowichan River, too, hosts a rich diversity of species, including legendary runs of steelhead and Chinook. Its steelhead productivity is exceptional: the Cowichan has the highest capacity of any known steelhead stream on Vancouver Island. Cowichan Chinook numbers are recovering well from a crash in numbers in 2009, and the Cowichan system is among the three main contributors to overall population abundance in the eastern Vancouver Island region. Even so, DFO is considering Chinook in this region as a candidate for inclusion in the federal Species at Risk registry.

Salmon, trout, steelhead, other fish and aquatic species are sensitive and highly responsive to water quality, in the Cowichan main stem and in the lake, side channels and floodplain areas where many of these species spend the first part of their lives. At various times, water quality is impacted by naturally occurring and human induced fine and coarse sediments, woody debris, loss of habitats, and increased nutrients in the water from agricultural run-off or septic seepage. A significant fish mortality of 85,000 juvenile rainbow/steelhead in June 2023 reminded river and natural resources stewards about the complex and devastating impacts of climate change. Climate change has an impact on many species, including shorebirds, whose numbers are decreasing as they are in other places.

Collaboration: Cowichan River runs through several jurisdictions including: BC Parks, Cowichan Tribes, Cowichan Valley Regional District, Town of Lake Cowichan, District of North Cowichan and City of Duncan. Federal and provincial government agencies manage various natural values. The Cowichan River Stewardship Roundtable and the Cowichan Watershed Board provide leadership, guidance and expertise on ecosystem and water management issues. Several stewardship groups address aspects of natural values and watershed issues. These entities collaborate on joint projects, from water management planning to water quality monitoring, to major restoration projects like the Cowichan Estuary Restoration Project that is set to start this year, to restore a priceless ecosystem, and mitigate inundation from rising sea levels. Due in part to their ongoing united efforts, and to Nature's own resilience, the heritage natural values of Quw'utsun Sta'lo' thrive.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES**THEME 1: HYDROLOGY****SUB-THEME 1.1 DRAINAGE BASINS**

Description of value Pacific Ocean Basin: stream number 1 – Cowichan River flows directly into the ocean (Salish Sea) through the Cowichan Bay estuary. The river flows out of Cowichan Lake at its northwest headwaters 47 kilometers to the southeast to its estuary; the main stream bifurcates at river kilometer 4 into a north and south arm before to drain into the bay.

The Cowichan River and its 100 or so tributaries drain approximately 90,000 hectares, or about 940 km², making it the fourth largest river on Vancouver Island. The adjacent Koksilah River is a significant contributing tributary, which joins the Cowichan south arm just as the two rivers flow into the Cowichan estuary.

Reason For Change None.

Actions taken None.

SUB-THEME 1.2 SEASONAL VARIATION

Description of value Historically the period of highest flow is November to February: ~ 90m³/sec; period of lowest flow is July to September ~ 8 m³/s. These values may change with climate impacts.

Reason For Change Climate impacts include drier summers, less storage from winter snowpack, and an increase in warmer average temperatures. Cowichan River has a historically late summer low flow that has been regulated by a weir at Cowichan Lake. Established in 1957 under a provincial water license for industrial use for forestry and a paper mill: the weir retained enough water in the lake to maintain adequate flows during dry spells for Catalyst pulp mill operations, and for riverine fish habitat and survival.

- The Cowichan Lake weir can hold back close to one metre in depth of water. For the first 40 years, that was adequate to maintain sustainable environmental flows in the summer. However, as of 2023, that weir has failed to store enough water in 15 of the last 20 summers. Minimal snow packs and unreliable spring and summer rains are creating summer droughts and low river conditions more frequently – the Cowichan basin has experienced 14 droughts since 1998. Due to a low snowpack, 2024 is expected to be a drought year.
- Pacific Climate Impacts Consortium (PCIP) forecasts drier summers and wetter winters – see sub-theme 2.4, Topography.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 1: HYDROLOGY

Actions taken

- In 2018, Cowichan Lake Salmonid Enhancement Society, CLRSS, Cowichan Tribes and the Lake Cowichan Band netted an estimated 36,000 coho, Chinook and trout stranded in back channels, to move them to the free flowing river channel.
- In **2019 Catalyst Paper** used electric pumps to move water from Cowichan Lake into the river to have adequate water for operations. As an emergency measure the pumps maintained a 4.5m³/second flow until rainfall on September 18, but this did not meet minimum licensed flows of 7m³/second.
- **2018 Cowichan Lake weir proposal** – Cowichan Watershed Board (CWB) Cowichan Tribes, local government and industry partners began to advocate for a **new Cowichan Lake weir**, 70cm higher than its current 97cm, to hold a greater volume of water.
- April 2020, the group collaborates to design a weir replacement. November 2020: the federal government awards Cowichan Tribes \$24 million to replace the weir, restore riparian areas and mitigate floods, with CVRD. CVRD completes engineering and construction designs and a draft budget by April 2021. The plan includes fish-friendly passages, a cold-water system to transfer lake water into the river, and a shoreline impacts report. February 2024, the provincial government announces \$14M for the weir replacement: See cowichanwatershedboard.ca/weir-ready

SUB-THEME 1.3 WATER CONTENT

Description of value

Physical Property – Insignificant sediment load (0-50mg/l). Chemical Property: Low (0 – 50 mg/l) total dissolved solids.

Reason For Change

- With increased population, agricultural, industrial and forestry activity in parts of the Cowichan watershed, and increased sediment from erosion events on the Cowichan River, have led to abnormal turbidity and fecal coliforms detected in its waters.
- Water quality monitoring in the Cowichan River has been done over many decades to assess changes affecting human health and fish habitat. Most concerns are around increasing levels of E. coli and phosphorus, as well as increasing water temperatures from climate change. While water quality is typically safe for recreational activities, E. coli levels almost always exceed levels where treatment could make water safe for drinking.
 - In addition, phosphorus levels are often high over the length of the river, indicating an excessive amount of nutrient entering the water, which can come from many sources, including failing septic fields, fertilizer use, or sewage outfalls.
 - Also, increasing water temperatures are more often reaching levels that threaten fish survival except where fish have access to cold water refugia (areas with inflowing cold groundwater). Source: Preikshot, D. 2019. Cowichan/Bings Watersheds Water Quality Sampling: Summer and Fall 2018 (unpublished report). Prepared by Somenos Marsh Wildlife Society for Cowichan Watershed Board.
- June-July 2023 – up to an estimated 85,000 rainbow/steelhead fry die due to poor water quality. Please see sub-themes 4.1 Aquatic Systems and 6.1 Significant Animal Populations

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 1: HYDROLOGY

Actions taken	• Cowichan River – River Bottom Road Area, Flood & Erosion Mapping report – CVRD retained Northwest Hydraulic Consultants in July 2019 to update flooding maps for the lower Cowichan-Koksilah Rivers and Riverbottom Road. The report notes a ‘major avulsion in 2020 that significantly altered river hydraulics’ and potential erosion paths that could further impact hydraulic and flood levels along the river: https://www.cvrld.ca/DocumentCenter/View/100027/Cowichan-River---Riverbottom-Road-Area-Flood-and-Erosion-Hazard-Mapping-September-2020?bidId= • Water Quality Monitoring – Water managers take water samples in 2017 at more than 50 sites on the Cowichan River, its upper watershed and tributaries, which show reductions in E. coli from 2012, indicating interventions to reduce contaminants from sources are effective; 2018 results show phosphorus and turbidity exceeds standards at some sample sites. See Chronology, 2018. • Most E. coli is suspected to come from failing septic fields and properties that have farm animals. MOE often takes river water samples during summer low flows when dilution rates are lowest, and during the first fall rains when water is flushing various compounds from the land into the water. The Town of Lake Cowichan may be a significant contributor of phosphorus into the river system. • The Cowichan Watershed Board will closely monitor water quality in response to the 2023 fish kill, including sampling invertebrates for nutrient exposure. The Watershed Board has secured funding to organize planning and workshop sessions with partners to monitor water quality conditions in the river and respond effectively in 2024. They are developing an early warning system and a list of possible responses to proactively prevent another fish kill event. The results of the process should also help other communities in the province facing similar challenges. • Sunscreen in Cowichan – From 2020-2023, BCCF and partners test water samples for sunscreen UV filters like oxybenzone, and monitor if there are any effects on benthic macro-invertebrates, fish and freshwater mussels in the Cowichan watershed. Findings to date show no UV filters in sediments. Also: • Oxybenzone was found to range between 0 – 211 ng/L at all lake and river sites sampled in 2020: this is about half the maximum result measured on the August long weekend in 2019 (570 ng/L) • Differences in river flow, precipitation, tourism and river-based recreation between years may affect variability. Sites with high recreational use had greater concentrations of oxybenzone than sites of wastewater inputs.
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SUB-THEME 1.4 RIVER SIZE

Description of value	Mean annual discharge 55 m ³ /s4 -- small river of < 85 m ³ /sec. Length is 47 kilometers.
Reason For Change	Higher temperatures and changing precipitation may affect the average annual flow: Sources, CVRD; Pacific Climate Impacts Consortium (PCIP). The forecast for Cowichan River is similar to models for Vancouver Island and southwest B.C.
Actions taken	In 2020, the CVRD commissioned the Cowichan River – Riverbottom Road Area Flood Hazard and Erosion Mapping report, to develop strategies and policies to address climate change impacts of flooding and drier summers.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 2: PHYSIOGRAPHY

SUB-THEME 2.1 PHYSIOGRAPHIC REGIONS

Description of value West Coast Ranges 5

Reason For Change None.

Actions taken None.

SUB-THEME 2.2 GEOLOGICAL PROCESSES

Description of value Bedrock formation: sedimentation. Surficial Material Formation: Glacial Transport and Inundation.

Reason For Change None.

Actions taken None.

SUB-THEME 2.3 HYDROGEOLOGY

Description of value Pervious bedrock, with surficial unconsolidated materials of medium porosity.

Reason For Change The Cowichan watershed landscape holds about 58 aquifers, of both sand/gravel and bedrock composition. Many along the Cowichan River provide freshwater for local communities. While climate changes bring drier summers, warm winters with less snowpack, and less predictable precipitation to recharge groundwater, there is more demand from forestry, mining, agriculture and urban growth, which compete with and put stress on terrestrial and aquatic ecosystems: CVRD Watershed Strategy 2020.

Actions taken

- In 2015, water managers install **snow pillow gauges to monitor water volume** stored in the snowpack above Lake Cowichan. Residents and water suppliers reduce water consumption by 16-25% compared to 2014; water restrictions and other actions continue during low water flows in the Cowichan River and drought conditions.
- Cowichan Valley Regional District Drinking Water and Watershed Protection Strategy (2020 to 2030), looks at current and future aquifer and freshwater conditions, proactive ways to protect aquatic ecosystems, and ways to manage ground water in face of increased demand and climate changes.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 2: PHYSIOGRAPHY

SUB-THEME 2.4 TOPOGRAPHY

Description of value

Shallow gradient <1km/km. Height above sea level ranges to its mouth is 400m – 0 m.

The Cowichan Watershed drains an area of approximately 939 km², flowing southeasterly from its headwaters at Cowichan Lake, among the peaks of the southern Vancouver Island ranges, through forests and fields to the estuary at Cowichan Bay – BC Parks.

The upper river is characterized by a low gradient near 1:500. The central portion of the river, between Skutz Falls and Holt Creek, reaches a gradient of approximately 1:200. The river flattens out below Holt Creek, and does so further beyond Somenos Creek confluence, which also marks the relative end of upstream tidal influence.

Reason For Change

The Cowichan Lake weir was installed in 1957 to store water to transfer into the river during dry summers. As with many rivers, the Cowichan has had seasonally low water periods, particularly through summer. The Cowichan basin has experienced 14 droughts since 1998, and due to low snowpack, 2024 may also be a drought year. The PCIC models for the next 20 years show a winter rainfall increase of 2.8%, and a summer rainfall decrease of 13% (snowpacks may go as low as 87% from current range). See <https://services.pacificclimate.org/plan2adapt/app/>

Actions taken

To address an increasingly warmer climate, a plan to increase the height of the Cowichan Lake weir to enable water storage to feed the Cowichan River during low water periods was funded in early 2024. See <https://cowichanwatershedboard.ca/weir-ready/>



Anglers from around the globe visit the Cowichan River, including Philip, a 17-year-old exchange student from Italy whose parents bought him a fishing trip for his birthday – Tristan O'Brian, BC on the Fly

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 3: RIVER MORPHOLOGY

SUB-THEMES 3.1 – 3.3

Description of value	Sub-theme 3.1: Valley Types – Concave-walled, narrow floodplain. Sub-theme 3.2: Channel Types – Meandering with Estuarine in the lower river. Sub-theme 3.3: Channel Profile – Swift Water, regular shallow gradient with notable surges.
Reason For Change	• In the late 1800s, early timber companies made large scale channel modifications to the Cowichan River to create wider passage for the massive fir, hemlock and cedar logs they floated downriver, by blasting out 29 waterfalls, leaving one major falls (Skutz or Squitz), and reducing 130 rapids to about five. (Pike et al, 2015, Cowichan River: a Summary of Historical Disturbances, Water Use Pressure and Stream flow Trends.) • Starting early in the 19th century, channels were dredged in the estuary and marshlands to accommodate log booms and shipping vessels, while the sediments were used to create dikes, which also cut channels off from saltwater estuary, all of which had impacts on the local ecosystems and water circulation in the estuary.
Actions taken	• River managers including CVRD, Cowichan Tribes and non-profits rehabilitated areas in estuary marshlands altered by human activity in past decades. The estuary provides habitat, and wetlands restoration will also serve to mitigate impacts of rising sea levels and flooding in low-lying areas. Examples: • Sediment management – In 2018, Cowichan Tribes removed 18,000 m² of sediment from the lower Cowichan River to improve surface water flows to aid salmon survival and migration during low river levels, and reduce winter flooding risk for ClemClem village in the winter. See also sub-theme 3.4 below. • Funded \$3M in 2023, the Cowichan Estuary Restoration project will restore 70+ hectares of Cowichan River estuary wetlands, remove two kilometers of dikes at Dinsdale Farm and Koksilah Marsh, create intertidal channels and salt marsh habitat, and reconnect areas to tidal influence. The project will enhance the estuary’s resilience against rising sea levels. https://www.vancouverislandfreedaily.com/news/restoration-project-at-cowichan-river-estuary-announced-7246989

SUB-THEME 3.4 FLUVIAL LANDFORMS

Description of value	Depositional landforms: deltas (lower river), braiding, and oxbows; Erosional landforms: undercuts. The Cowichan is a dynamic river with varied topography that naturally changes over time. Natural historic sediment deposits from avulsions led to channel realignment on the natural floodplain, and ongoing sediment deposition in the main stem below the Allenby Road Bridge to the estuary, which holds marsh, mudflats, gravel bars and intertidal channels. Historical and contemporary forestry activities may also impact sediment and debris volume in the river. At present, the river has an irregular meandering pattern with frequent irregular bars and wooded islands. This channel pattern of ‘wandering’ indicates the river is subject to intermittent rapid channel migrations and avulsions: Upper Cowichan River Assessment Preliminary Projects Development Report, Northwest Hydraulic Consultants, December 2023.
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TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 3: RIVER MORPHOLOGY

Reason For Change	In 2020, record setting rainfall caused damage to Stoltz Bluffs sediment ponds, and carved a new channel in the Cowichan around an existing oxbow between Stoltz and Sandy Pools, raising concerns about salmon spawning beds in the oxbow.
Actions taken	• After the 2020 Stoltz Bluff avulsion, FLNRORD assessed surface water conditions, groundwater flow and collected orthophotos (aerial). The 2006 Stoltz Bluff Restoration project (it won National River Conservation Award of Merit in 2009 for the outstanding collaboration among the parties involved) greatly reduced the river’s annual sediment load, improved the ecological integrity of the river, improved spawning ground conditions, evidenced by a greater survival rate of fry, and enhanced recreational use. • Stabilizing at Stoltz Bluff and lesser avulsion sites, sediment clearing in the channel and estuary, and monitoring continues. • September 2020 – CVRD retained Northwest Hydraulic Consultants in July 2019 to update flooding maps for the lower Cowichan-Koksilah Rivers, and for 11 km along Riverbottom Road. The report notes a ‘major avulsion in 2020 that significantly altered river hydraulics’ and potential erosion paths that could further impact hydraulic and flood levels along the river (CVRD, Cowichan River – Riverbottom Road Area Flood and Erosion Hazard Mapping). • Upper Cowichan River Assessment Preliminary Projects Development Report, 2023: NHC assessment report for CVRD on the upper Cowichan River, focuses on ways to mitigate flood hazards while providing benefits to fisheries where feasible. NHC came up with 24 potential projects, ranging in cost from \$38,000 to \$3.2M.



Young fishers are among the new generation of environmental stewards of the Cowichan – Tristan O'Brian, BC on the Fly

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 4: BIOTIC ENVIRONMENTS

SUB-THEMES 4.1 AQUATIC SYSTEMS

Description of value	Riverine systems. Contains elements of middle order zone (region of sediment transport, variable discharge) and lowland zone (region of sediment deposition; fine sediment substrate; stable discharges; and high species diversity). Estuarine systems: Subtidal zone (substrate is continually submerged); Wetland system (saltwater marshes). Importation of hundreds of tonnes of marine nutrients annually to terrestrial ecosystem via return migrating chum, Chinook, steelhead and coho salmon. These systems historically hold a richness and diversity of species, both upstream and especially in the 400-hectare estuarine areas, such as salt marsh, mudflats, gravel bars and intertidal channels, which create a critical rearing grounds for juvenile salmon species and habitat for numerous other terrestrial and aquatic species. The Cowichan Estuary, where the Cowichan and Koksilah rivers join, is identified as one of the top 10 important estuaries in BC. This complex of tidal flats, shallow marshes, and marine zone provides habitat for at least 229 bird species, and is a critical Pacific Flyway. Eelgrass habitats and other areas provide rearing habitat for salmonids; the intertidal area is used for at least 31 species of fish, including juvenile herring. For millennia, Indigenous people harvested the abundant river, estuary and lands for a host of foods, plant and animal. Cowichan Tribes are active stewards in restoring the ecological integrity of the highly productive wetlands and estuary.
Reason For Change	Since the early 19th century, historic changes to the estuary and saltmarshes included deepening some channels and isolating others to accommodate log booms, industry, farming, pollution, infrastructure and shipping vessels. About 50% of the estuary area was lost; human-caused changes are being reversed through land acquisition, updated policies (reducing log storage area), restoring and converting lands back to wetlands, promoting joint stewardship. Source: CVRD, 2010 State of the Environment Report. Water quality in the Cowichan River and area can be impacted by several factors. • Erosion events can release coarse and fine sediments that cause high turbidity in aquatic habitat, and damage or cover up spawning beds. • Forestry, development, roads and agriculture introduce sediments and woody debris into the system, which damage gravel spawning beds and critical piscine habitats. Agricultural runoff and septic leaching increases phosphorus and nitrogen levels in the water, which degrade aquatic ecosystems for fish. Land disturbances lead to the loss of plants and riparian and wetlands habitats that filter the water, along the Cowichan River and in the watershed, side channels and smaller tributaries. • Climate change continues to increase water temperatures and frequency of drought conditions. • Erosion below Stultz Falls in spring 2020 damaged mitigation work that was done in response to a significant 2006 erosion event in the same area; lesser erosions events occur from time to time due to natural changes in the river. • Around July 2023, an estimated 84,000 rainbow/steelhead fry, and possibly hundreds of adult rainbow and brown trout, and an unknown number of other fish species died over the course of a month. Causes are due in part to low water flows, in combination with other factors including high nutrient levels, algal bloom and die-off, elevated pH levels, and warm water temperatures in upper portions of the Cowichan River. The investigation continues. Source: BC Fisheries, West Coast Region, WLRS, December 2023.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 4: BIOTIC ENVIRONMENTS

Actions taken

In the past decade, governments at all levels, Cowichan Tribes, other First Nations, and steward groups collaborated on a range of works to protect and restore the riverine and estuarine ecosystems impacted historically or currently by natural or human-caused impairments. A few examples are:

- September 2018, the Nature Conservancy of Canada reclaimed 2.5 hectares (6 acres) of wetlands in the **Chase Woods Nature Preserve** lowlands, adjacent to the Cowichan estuary and once a rearing area for salmon and for wintering waterfowl that was drained for hay fields. About 60% of coastal wetlands along the Salish Sea have been lost: restoration includes removing debris and invasive species such as canary reed grass, replanting with endemic species, creating six ponds and restoring a creek that once drained the marsh. See Nature Conservancy, British Columbia: Reclaiming a Wetland.
- **June 2023 – Cowichan Estuary Restoration:** The largest wetland rehabilitation project on Vancouver Island to date received \$3M from federal and provincial governments and others to restore 70+ hectares of Cowichan River estuary wetlands. The work will remove two kilometers of dikes at Dinsdale Farm and Koksilah Marsh, create intertidal channels and salt marsh habitat, restore marine riparian and flood-fringe forests, and reconnect areas to tidal influence. The project will also enhance the estuary's resilience against rising sea levels. See <https://www.estuaryresilience.ca/>
- **Cowichan Estuary riparian work:** River manager groups remove invasive species including canary reed, knotweed, yellow flag iris and blackberry, replacing them with native species.
- **Logging impacts on Cowichan Estuary:** river stewards, scientists, First Nations and industry (forestry) collaborate to clear away wood debris, reduce impacts of log storage, restore former wetlands, plant eelgrass beds.
- **Marshlands can be significant carbon stores:** In 2022, a study reported in the Frontiers in Marine Science journal, found the Cowichan-Koksilah Estuary seizes and stores double the carbon dioxide of a 20-year-old Pacific Northwest forest of the same size. <https://www.timescolonist.com/islander/salt-marsh-superpower-blue-marshlands-store-as-much-carbon-as-green-forests-5369814>
- In response to the **significant juvenile rainbow trout/steelhead deaths in July 2023**, DFO suspended all angling in the upper Cowichan River from the Cowichan Lake weir to the 66 Mile Trestle to November 15, then extended the ban to April 30, 2024, from the CNR Trestle at Mile 70.2 to Skutz Falls. The significant fish loss has implications for continued recreation angling in the short term and long term if marine survival remains low. Low water flows, an algal bloom, high temperatures were among the factors leading to mortalities.
- Due to **low river levels in summer 2023**, high water temperatures and drought conditions, the Province restricted water extraction from August 24 until fall rains began, for forage crops and industry in the Koksilah River to maintain water flow to protect steelhead/ trout populations.
- **Upper Cowichan River Assessment Preliminary Projects Development Report, 2023:** NHC assessment report for CVRD on the upper Cowichan River, focuses on ways to improve river function to reduce sediment and erosion and flood risks, while providing benefits to fisheries where feasible. NHC notes in the report that stable, overwintering off-channel habitats such as beaver ponds, floodplain and side channels, and good quality water throughout the year is critical for salmon species (Chinook, chum, coho, pink) that inhabit the river throughout the year at all stages, including fry and juvenile years. Their report identifies off-channel habitats critical for juvenile Chinook, chum and coho, and as the primary habitat restoration opportunity for CVRD to support fish species.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 4: BIOTIC ENVIRONMENTS

SUB-THEME 4.2 TERRESTRIAL ECOSYSTEMS

Description of value	Ecozone: Pacific Maritime. Ecoregion: Eastern Vancouver Island. The Eastern Vancouver Island ecoregion stretches along the eastern slopes of the Vancouver Island Ranges to the Pacific Ocean, and is part of BC's Coastal Douglas-Fir Biogeoclimatic Zone. Forests are dominated by Douglas-fir, western hemlock and grand fir, and within it are smaller zones with mixed forest, Garry oak and associated ecosystems, meadows, riparian areas, and wetlands. The region supports more biological diversity than anywhere else in the province and contains many of BC's most ecologically significant estuaries, including the Cowichan estuary.
Reason For Change	Fifty-nine species at risk that have been documented in the ecoregion and 38 species that are of global conservation concern. Despite human habitation, more than 93% of this ecoregion remains in natural cover and 13.8% is within conserved/protected areas. More areas are added parks and conserve to recreate wildlife and genetics corridors. Threats to the ecological integrity include loss of habitat from increased population and land use changes, isolation of species, plants in particular, that deter diversity and genetic renewal and adaptation; invasive species; climate change: Nature Conservancy Canada, Eastern Vancouver Island.
Actions taken	• Biosphere Recognition – Tourism Cowichan has received a Biosphere Committed Destination status with the goal of achieving full certification by fall 2024. The Biosphere Certification Program is a globally recognized sustainability and certification system that aligns with the United Nations' 17 Sustainable Development Goals (SDGs) and the 2030 Agenda for Sustainable Development. By becoming Biosphere Committed, Tourism Cowichan commits to advancing the UN 17 SDGs: BiosphereTourism.com • The CVRD is developing an Environmentally Sensitive Areas (ESA) Strategy including the Cowichan River corridor, to address population growth, land development, and climate change. As of 2018, there has been an inventory and mapping of ESAs, often productive habitats important to biological diversity that are at risk of disappearing, such as old forests, estuaries, ecosystems at-risk, or ecologically fragile: CVRD, Ecosystems. This builds on its State of the Environment reports, 2010 – 2015, which provide a comprehensive review of its biosphere inventory. • CVRD plans to update its State of the Environment Report in 2025. • Chase Woods Nature Preserve – This 40-hectare site was named a Nature Destination in 2019 (naturedestinations.ca) as an intact example of the old-growth coastal Douglas-fir forests, adjacent to the Mount Tzuhalem Ecological Reserve, an 18-hectare BC Park established to preserve outstanding Garry oak and wildflower stands (also near the Cowichan Garry Oak Preserve). Chase Woods and area holds significant cultural value to the Cowichan people, who continue to use the site. • Land Acquisition: BC Parks and the Land Conservancy of BC will acquire lands totaling 115 hectares, as they come available, along the Cowichan River to create a permanently protected, ecologically diverse corridor, and to ensure the river remains in its natural state for conservation, recreation and as a green refuge. BC Parks Foundation acquired an additional 46 acres along Cowichan River in 2020. Cowichan River Provincial Park has within its 1,414 hectares a Garry oak meadow refuge. The Land Conservancy of BC co-holds a 4.8-acre site on the north side of the river, which has a rustic cabin, and old maple grove and unique plants. Source: conservancy.bc.ca ; See also Ecoreserves.bc.ca/garryoak • In 2014 Pacific Salmon Commission awarded Cowichan Estuary Restoration and Conservation (CERCA) a grant to breach the WestCan causeway to reconnect the river's south arm to the estuary. Source: https://www.psc.org/fund-project/westcan-causeway-in-cowichan-bay/

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 5: VEGETATION

SUB-THEMES 5.1 SIGNIFICANT PLANT COMMUNITIES

Description of value	Forests in the Cowichan River corridor are characterized by Douglas-fir, western hemlock and grand fir. See Sub-theme 4.2 Terrestrial Ecosystems The region supports high biological diversity, including the ecologically significant Cowichan estuary. The forest understory includes dogwood, salal, Oregon grape, ferns, and mosses. Less common are Garry oak, arbutus, Pacific dogwood, found in the drier portions of the ecoregion. The 2003 management strategy for the Cowichan River noted the presence of cup clover (<i>Trifolium cyathiferum</i>), blue-eyed Mary (<i>Collinsia graniflora</i>) and white fawn lily (<i>Erythronium oregonum</i>). Open Garry oak meadows harbour a range of wild flowers, and historically were maintained by Indigenous Peoples through managed fires. Source: Nature Conservancy Canada (Eastern Vancouver Island #196)
Reason For Change	• While still a robust ecosystem, Cowichan estuary has seen some significant development and disturbances to its wetlands and waterways since colonization. See also Cultural Values, Shoreline Resource Harvesting, Sub-theme 1.2 Shoreline Resource Harvesting • See also Sub-theme 4.1 Aquatic Systems • Collaborative watershed management, increased awareness and interest, ongoing studies and actions make positive impacts on the river and estuary. • Invasive plants compete with and displace endemic species in forest, riparian and estuarine zone.
Actions taken	• Cowichan Tribes, with SeaChange Marine Conservation Society, conduct eelgrass plantings in the estuary. • Cowichan Community Land Trust (CCLT) launches Seeing Cowichan Forests Beyond Trees (2020) to evaluate forest conservation strategies in the region and build awareness about forest conservation and reforestation on private land in the Cowichan Valley. • Cultural heritage and conservation sites are repositories of old mature species. The Land Conservancy of BC 4.7-acre site on the Cowichan River has a maple forest and unique wetland species, including trillium, hellebore, tiger lily and fawn lilies that bloom among sword ferns. • The Shearing Tree is a natural heritage reminder of the significant removal of the Pacific rainforest from the region, from the mid-1800s onward. Named after a pioneer family that settled at the site in 1827, the Shearing Tree is a solitary 70-foot tall old-growth Douglas fir protected under a Conservation Covenant. • CVRD Invasive Plants Work Plan, 2022, notes that 84 invasive species to that had been reported, an increase of 22 plant species since 2012, with an increase of invasive plant coverage of 25% and increased sites by 29%. • Dating back to 1907, the South Cowichan Lawn Tennis Club site has mature herbaceous gardens and mature maple trees. • Cowichan Watershed Board has updated targets for watershed ecosystem vibrancy. Source: Targets for Watershed Health, 2018. • Cowichan Estuary Restoration: The work will restore 70+ hectares of Cowichan River estuary wetlands. The project will also enhance the estuary's resilience against rising sea levels. See https://www.estuaryresilience.ca/ • Chase Woods Nature Preserve: see Sub-theme 4.1 Aquatic Systems

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 5: VEGETATION

SUB-THEME 5.2 RARE PLANT SPECIES

Description of value The Cowichan Valley holds a number of Garry oak stands, in both protected and unprotected sites. Once common in the temperate, drier regions of the southern BC Coast, now an estimated five per cent of these stands remain, along with their associated diverse ecosystems. Indigenous people used controlled burns to manage undergrowth and to stimulate growth of a host of plants for food and medicine. Source: [NatureConservancy.ca](https://natureconservancy.ca), see Garry Oaks.

Reason For Change

- See Sub-theme 5.1 Significant Plant Communities
- Loss of habitat, invasive species, illegal harvest of wildflowers, isolation of ‘islands’ of rare species, can all be threats to naturally rare or at-risk plant species. Some pockets are now in reserves, other sites remain isolated and endangered.

Actions taken

- CVRD **Environmentally Sensitive Areas (ESA) Strategy**: See also Sub-theme 4.2 Terrestrial Ecosystems.
- **Cowichan Estuary Restoration**: The restoration of 70+ hectares in Cowichan River estuary wetlands will further enhance the re-establishment of environmental conditions to support rare or at-risk flora. See <https://www.estuaryresilience.ca/>
- **The Garry Oak meadow in Cowichan River Provincial Park**, near the river above 66 Mile Trestle, is a good example of the open-branched oaks that were much more predominant in the region. The site is distinguished by the annual show of wildflowers under their branches and in open fields. Collectively, Garry oak and associated ecosystems are among the most endangered in Canada. Once common in coastal areas of southwest British Columbia, less than 5% of these ecosystems remain in near-natural condition. Most of the trees are in isolated, fragmented remnants that have no access to other Garry oak communities, thereby reducing migration of populations or mixing of genetic material of species. More than 100 species associated with Garry oak habitats are listed as threatened, endangered, extirpated or extinct. Most of the species are plants, with some butterflies as well. For example, the larvae of the threatened *propertius* duskywing butterfly feed exclusively on Garry oak leaves. Some are: yellow prairie violet, Howell’s triteleia, deltoid balsamroot, Taylor’s checkerspot. Source: Garry Oak Ecosystems Recovery Team, <https://goert.ca/>



Striking autumnal Garry oak leaves seem ablaze at the edge of the Redcedar forest. Just five per cent of natural Garry oak stands remain in the southern coast of BC – ToddCarnahan.com

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 6: FAUNA

SUB-THEME 6.1 SIGNIFICANT ANIMAL POPULATIONS

Description of value **Fish:** The Cowichan River is known for its century-long angling history for steelhead, freshwater rainbow, brown trout, anadromous cutthroat trout, along with Chinook, coho, chum and pink salmon, and also Dolly Varden, char – and in Cowichan Lake – resident Kokanee salmon. The river is regarded as one of the finest trout rivers on Vancouver Island. Brown trout introduced into the river in the 1930s have thrived. Smaller native fish include minnows, chub, sculpins and lamprey, important parts of the ecosystem. Also introduced, mostly in the early 1900s, were Kamloops trout, speckled char, lake trout, catfish, including repeated attempts with Atlantic salmon but these did not thrive. Source: E-Fauna BC; BC Parks; CVRD SOER reports.

Animals: The Cowichan River and estuary host a wide diversity of animal and bird species native to Vancouver Island. Large animals include black-tailed deer, black bear, cougar, wolf, and its growing population of Roosevelt elk; small mammals include otters, shrews, beaver, ermine, marten, mink, weasel, raccoon, red squirrel, bats, shrews, voles. Sources: BC Parks; Cowichan Watershed Health and Chinook Initiative.

Birds, invertebrates: The teeming Cowichan estuary lies in the Pacific Flyway. There are two designated **Important Bird Areas (IBA)** in the region: Somenos Lake and Cowichan Estuary, which have international significance for their high value as waterfowl habitat: Source, Cowichan Land Trust. About 229 species of birds reside along the Cowichan River corridor. Insects and aquatic insects and invertebrates are also key species.

- Reason For Change**
- Risks to fish in the freshwater ecosystem stem from climate change impacts – low water flow, excessive phosphorus and nitrogen input, high water temperature, sediment loads from bank erosion. Historic and ongoing loss of rearing habitats in some tributaries, in channels and the estuary has been significant: CVRD, State of Environment Report. Extensive fishing in the river and ocean, and climate impacts on marine conditions, also impact fish species.
 - DFO notes the biggest threats to Chinook in the Cowichan region are ecosystem modifications and water management. 2024, Chinook Salmon: Designatable Unit 21, request for comment, re: Species at Risk designation.
 - Terrestrial species face similar habitat loss with continued human development in the region.



Monkeyflower and blue-eyed Mary decorate Garry oak meadows in spring and summer – ToddCarnahan.com

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 6: FAUNA

Actions taken

STEELHEAD

- In response to the **significant juvenile rainbow trout/steelhead deaths in July 2023**, DFO suspended all angling in the upper Cowichan River in the impacted areas, from September 1 to April 30, 2024. The significant fish loss has implications for continued recreation angling in the short term and long term if marine survival remains low.
- From a presentation on **the rainbow trout/steelhead mortality in July 2023** of an estimated 84,000 juveniles and other species to the Cowichan Watershed Board in December 2023:
 - The fish deaths likely occurred over the course of a month. The deaths occurred from below the permitted Town of Cowichan sewage effluent discharge outlets over approximately a 10-kilometer length of the river downstream;
 - Extremely low water flows of 4.7cms in combination with other factors quickly led to degraded water quality, including high nutrient (phosphorus, nitrogen) levels, algal bloom and die-off, oxygen spikes and associated elevated pH levels, and warm water temperatures contributed to the fish die-off. Green algae was seen 10 meters from the discharge outlet and brown algal blooms 1 km downstream. More reports and meetings are pending as reviews continue;
 - Due to recurring drought brought on by climate change, unless mitigated, it is likely more fry habitat will be impacted by diminished water flow rates in the future;
 - It is estimated that approximately 30% of Cowichan main stem dwelling salmonid juveniles were lost in the event; therefore, a temporary decline is expected in two years, with about 30% fewer steelhead (anadromous rainbow trout) returning to spawn, although depending on marine survival that could be higher or lower;
 - Based on historic data taken annually over 25 years, steelhead densities will not exceed the limit of the aquatic environments' carrying capacity. The productivity of the Cowichan River is exceptional: This biomass level is rarely observed elsewhere as Cowichan has the highest capacity of any known steelhead stream on Vancouver Island, at about 1000g/100 m² per age or size class; higher values are observed in only a few Coastal Cutthroat Trout (CCT) streams.
 - A general description of steelhead stocks status currently is moderate abundance, with an increasing trend.
- WLRS recommends expanding data collection on salmonids to inform future decisions to include:
 - Intensive water quality monitoring, reporting and monitoring sites in the river;
 - Annual steelhead juvenile density surveys throughout Cowichan River, and annual Steelhead harvest and catch surveys;
 - Annual summer snorkel observations over decades counting trout and Chinook, by life stages;
 - BC Regional Fisheries has adopted management action to allow a reasonable opportunity to angle for unimpacted steelhead adults in the majority of the Cowichan River; to maximize steelhead distribution and facilitate protection of steelhead in the most impacted zone of the Upper Cowichan; to protect stream resident trout in areas most severely impacted by the summer 2023 fish kill; and to allow for some catch and release of trout at some times and places, as conditions dictate.
- To avoid future fish kills, WLRS recommends local governments to:
 - Promote sewage treatment facility upgrades and adopt short and long-term ways to reduce nutrient concentrations in effluent (phosphorus and nitrogen). (Currently the Town of Cowichan is upgrading its effluent treatment to reduce some phosphorus.)
 - Support a flow management process that will enable base river flow conditions to dilute effluent and maximize instream productivity (i.e. 7 cubic meters/second (cms) for the longest possible duration through the summer months);
 - Plans for a new **Cowichan Lake weir** to be 70cm higher than its current 97cm will bring base water flows back to levels seen 20 years ago to 7 cms, with some degree of certainty;
 - However, based on climate uncertainty and projections that show snowpacks will decrease by 85% by 2030, it may be difficult to reasonably meet flow target conditions for all species and life-history stages, so part of active flow management will be to triage needs based on known and likely harms to fish. This may mean early decline from spring target conditions that are generally thought to facilitate fish and ecosystem benefits. Source: Mike McCulloch, BC Fisheries, Anadromous Fisheries Specialist, West Coast Region, WLRS.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 6: FAUNA

CHINOOK

- 2024 – DFO is considering adding **Chinook salmon** in Designated Unit (DU) 21 (East Coast Vancouver Island, Ocean, Fall population, to the federal **list of Species at Risk as Special Concern**. The designation could lead to a management plan for DU-21 and related conservation measures. The report notes that marine survival for Chinook is estimated to have declined by 90% overall from 1973-2010. The Cowichan and two other river systems are the largest contributors to overall population abundance.
- Cowichan River Chinook escapements are an indicator cohort for the Lower Georgia Strait area and have been recorded at a counting fence on the river since 1988. After a crash in population in 2009, Chinook numbers have steadily increased.
- DFO and Cowichan Tribes have operated the Cowichan River Hatchery since 1978 to enhance Chinook stocks. In May 2023, more than 600,000 Chinook fry were released into the river.
- Chinook numbers dropped to a low point of 540 spawners in 2009, but have been regaining numbers since. The four-year average return is now at 23,140 individuals, and the 12-year average return is 13,780 fish. Remediation of silt erosion at Stolz Bluff, improved access to side channel rearing habitat and reduction in marine harvest from 70% to 60% may be contributing factors for the rebound in numbers. In 2022, adult returns exceeded target escapement numbers for seven consecutive years. However, the large-scale fish mortality on the upper Cowichan River in June-July 2023 may have some effect on future returns.
- **Important Bird Areas (IBA)** Canada includes the Cowichan Estuary IBA, designated for globally significant concentrations of Trumpeter Swan (overwintering), Mew gull, Iceland gull, Sandhill Crane, several songbirds and waterbirds. The IBA listing also notes Great Blue Heron and Peregrine falcon (COSEWIC, Special Concern) marbled murrelet (endangered); purple martin numbers are increasing. Northern Pintail, Barrow's Goldeneye, and Greater Scaup and numbers of shorebirds have decreased, while Anna's Hummingbird and osprey have increased. American White Pelicans have stopped on spring migration recently.
- Ongoing **bird counts** and reporting to online sites such as iNaturalist take place. Many local birding sites have information on good bird viewing along the Cowichan trails and canoe birding in the estuary.
- CVRD produced a comprehensive **State of the Environment Report** in 2010 to assess a variety of environmental indicators and issues that signal the health of the environment in the regional district, with segment updates in 2015. **An updated SOER is expected in 2025.** See <https://www.cvr.ca/2102/Our-Natural-Environment>
- See also sub-themes 4.1 and 4.2 above.

SUB-THEME 6.2 RARE ANIMAL SPECIES

Description of value The Eastern Vancouver Island ecoregion and the mild coastal climate support more biological diversity than anywhere else in the province. The area holds rare or species unique to the region, and species at risk at various designations of vulnerability.

TABLE 2: COWICHAN NATURAL HERITAGE VALUES

THEME 6: FAUNA

Reason For Change

- Currently, 59 species at risk that have been documented in the region, and 38 species that are of global conservation concern. Threats to the ecological integrity include climate change and loss of habitat from increased population and land use changes; encroachment of invasive plants that replace their foods, and invasive animals that predate on indigenous species or compete for resources: Nature Conservancy Canada, Eastern Vancouver Island.
- The native Vancouver Island ermine, a blue-listed species, has been found in the Cowichan River Provincial Park. Source: BC Parks.
- The Cowichan Lake lamprey, found only in Mesachie, Bear, and Cowichan lakes, is a freshwater parasitic species that dates back at least 350 million years, and is listed under Canada's Species at Risk Act and COSEWIC as Threatened. Major threats to Cowichan Lake lamprey are water use, land use, water quality, recreation, diminished prey base, climate change.

Actions taken

- **The CVRD State of the Environment Report (update 2015)** has a list of rare and at-risk species and ecological communities to better understand their conditions and locations in the region, although it doesn't state exactly where the species are found. A comprehensive new SOER is planned for 2025.
- The Garry Oak Ecosystem Recovery Team (GOERT), based in Victoria, embarked on a project in 2012 to reintroduce the **locally extirpated Western bluebird**, transferring adults and nestlings from Washington State to the Cowichan Garry Oak Preserve in Duncan. From 2017 to 2019 the Cowichan Valley Naturalists' Society took over from GOERT to maintain the nest box trails. Since 2019 the BC Conservation Foundation maintained 268 nest boxes installed on about 51 private properties to provide nesting sites for western bluebirds and other native cavity nesters. Source: Cowichan Bring Back the Bluebird Project staff.



A marmalade-hued, rough-skinned newt is at home in the moist riparian banks of the Cowichan River – ToddCarnahan.com



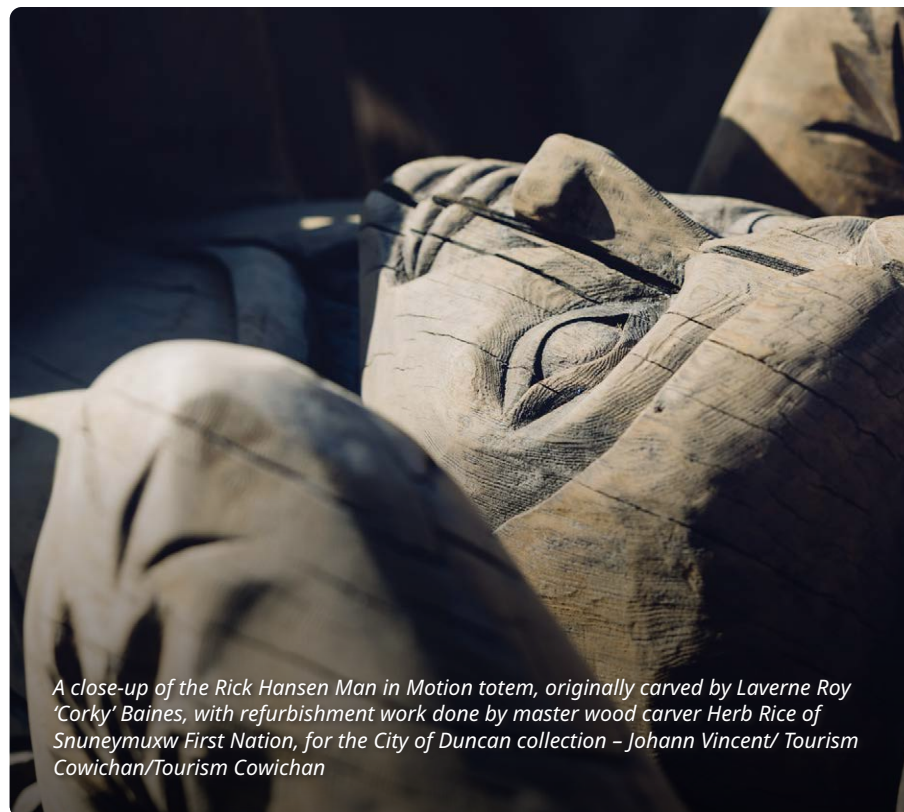
Qw'u'tsun people cultivated Speehw, or camas (Camassia quamash) for its edible bulbs, using controlled burns to encourage their growth – Genevieve Singleton

7. Cultural Heritage Values

7.1 Background

The Quw'utsun Sta'lo' / Cowichan River was designated as a Canadian Heritage River based on following cultural values:

- **Resource Harvesting:** The Quw'utsun Mustimuhw or Cowichan People have an enduring cultural and spiritual relationship with the Quw'utsun Sta'lo'. Their history is inextricably woven into the land with that of the Sta'lo'. For millennia the lively waters sustained the people with salmon, other aquatic and land resources from the river and the productive estuary, from camas to coho to cedar. They harvested foods and goods using time-tested skills, such as managing weirs along the river, or controlled burns in Garry oak stands to encourage regrowth of edible root crops. Cowichan Tribes continue their role as stewards of the river and lands, and share their traditional knowledge collaboratively with other ecosystem managers. Settlers also harvested fish and resources, for food, recreation and commerce when they arrived, from the watershed, river, aquifers, estuary and forests. The Cowichan River today remains internationally renowned for trout, salmon and steelhead fishing, and kayaking.
- **Water Transport:** The Cowichan River and estuary channels were first used as a transportation channel by the Cowichan, and subsequently by settlers. From the late 1800s, foresters moved timber of legendary size down the river to Cowichan Bay to be stored, milled and shipped. Forestry, log transport and booms took their toll on the river, from soil and riverbank erosion, removing Quw'utsun fishing weirs, clearing logjams, rapids and fall with explosives, and degradation of the estuary to accommodate industry and agriculture. Today, people are focused on repairing the damage and restoring the ecosystems.
- **Riparian Settlement:** Oral histories say the influential Cowichan Tribes thrived along the river for thousands of years, much longer than the 4,500 years supported by archaeological evidence. Harvest, cultural and spiritual activities took place there. Thousands resided in



A close-up of the Rick Hansen Man in Motion totem, originally carved by Laverne Roy 'Corky' Baines, with refurbishment work done by master wood carver Herb Rice of Snuneymuxw First Nation, for the City of Duncan collection – Johann Vincent/ Tourism Cowichan/Tourism Cowichan

busy longhouse villages on the lower river, continuously inhabiting the area to the present, and led a regional economy that reached across the Salish Sea to the Fraser delta. The Cowichan landscape is alive with places of cultural significance that reflect a deep and abiding connection of the Indigenous people to the land. The land contains the history, and the stewardship knowledge, of the Quw'utsun Mustimuhw. When settlers arrived 150 or so years ago, they too left their mark on the land, as they cleared space for farms and villages in the forests, floodplain and estuary to benefit from the rich natural resources, and to build industry. Their roads and railways crossed the forests and waters to carry raw materials to markets afar. Imprints of both cultures continue to this day.

7.2 Condition of Cultural Values since Designation

The cultural heritage values of the Cowichan River, or the Quw'utsun Sta'lo', described at the time of nomination, including resource harvest, water transport, riparian settlement and cultural experience, remain intact.

Resource harvests are impacted by habitat loss brought about by urban, agricultural and industrial development, especially on the salmon rearing grounds in the estuary, the sedimentation issues in the river, along with changing conditions in the ocean and with the climate. More than a century of draining wetlands for farms, and storing and transporting logs in the estuary left tons of woody debris and industrial runoff in the delta with significant losses of eel grass beds and other aquatic habitats used by fish, birds, crabs and invertebrates. Historic and contemporary logging in the surrounding productive coniferous forests continues to leave impacts on the watershed, the hydrology of the rivers, and on the wilderness ecosystems.

With decreasing returns of steelhead, Chinook and other salmon, commercial fisheries have had to scale down, while recreational fishers sometimes have to curtail their angling activities. Pollution from industry stopped the ancient shellfish harvest in the estuary in the 1970s. Hunting too, is scaled back, in particular with bans around urban areas, provincial and regional parks, and the estuary, although some limited hunting takes place in some areas.

Quw'utsun members proactively oversee remediation of ecosystems to support salmon, other species and plants; their young people are the new stewards, combining science and traditional knowledge as they work to restore the impacted lowlands, especially in the estuary. There



A sketching group takes in the scenery near Marie Canyon – Cim MacDonald

is wider awareness and understanding of ecological values among non-Indigenous residents, who advocate for Cowichan River ecosystem health through stewardship and other interest groups.

There is increasing and remarkable collaboration between governments, Cowichan Tribes, and conservation agencies to rehabilitate and conserve marshlands and the river for fish stocks and ecosystems, to protect water resources, and to mitigate for the changing weather and rising sea level impacts. Their partnerships are noted as exemplary examples of how collaboration, infused with the spirit of reconciliation, should work.

Last year, the \$3M, two-year Cowichan Estuary restoration project was announced. It will be the largest estuary restoration project to take place on Vancouver Island. It will restore more than 70 hectares of altered land to salt marsh, remove two kilometers of dikes, and reconnect freshwater channels to the ocean. Set on Quw'utsun traditional lands, the estuary has critical habitats for salmon, 230 species of migratory, wintering and breeding birds, and several species at risk. Rehabilitation will include native plants to provide traditional harvests and medicines for Cowichan Tribes, and aid their overall food security. Groups like the Nature Trust BC, Ducks Unlimited and Pacific Estuary Conservation Program acquire sites along the Cowichan River and estuary for conservation.

Another collaborative work is the new Cowichan Lake weir, proposed by Cowichan Valley Regional District, Cowichan Watershed Board, Cowichan Tribes and others to increase water storage capacity in the lake to relieve low summer water levels in the river. Funding has come in from federal and provincial authorities for the project.

River transportation has evolved from being mostly utilitarian to mostly leisure – the Cowichan River is a kayaking destination for many paddlers from Vancouver Island and beyond. During the 2018 BC Summer Games, the canoe/kayak slalom competitions were held on the Cowichan. River tubing is very popular, as is fish rafting for the sport anglers. Trails along the river, filled with happy hikers, mountainbikers, horseback riders and nature lovers, are integrated into the nation-wide Trans Canada Trail and boast stunning vistas of the river, the forests, and historic trestle bridges.

Archaeological and other cultural sites have seen negative impacts from development, increased sedimentation and remediation measures. In order to provide evidentiary support for their treaty claims, Quw'utsun

Mustimuhw locate and identify many of their traditional places. Once one of the most influential and populous Indigenous tribes on the south coast of BC, today Cowichan Tribes is the largest band in the province with about 5,000 members, many of whom reside on several ancient habitation sites on the lower Quw’utsun Sta’lo’. It is now a matter of course to respect their cultural values and involve Cowichan advisors on how to proceed whenever land or water is being disturbed.

There is no doubt the cultural values the people of the past and today are inextricably linked to the Cowichan River. While forestry and transportation have evolved from their early pioneer roots, their histories are showcased in museums or historic sites in the area, including Cowichan Valley Museum, BC Forest Discovery Centre, Royal BC Museum and others.

The cultural and historical values of the region are strengthened as peoples’ passion and commitment to the place grows. Tourism Cowichan for instance, which supports the growing interest in Indigenous tourism and culture, is aiming to achieve full certification as a Biosphere Committed Destination by fall 2024.

The current narrative shows that the Cowichan River continues to robustly exhibit its heritage cultural values. How these cultures values are affected and maintained is detailed in the following Table 3.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES	
THEME 1: RESOURCE HARVESTING	
SUB-THEME 1.1 FISHING	
Description of change in value	• The Quw’utsun Peoples have harvested salmon and other foods from the Cowichan River and estuary for millennia for food, cultural and spiritual needs. As the single largest First Nation band in BC, they continue to do so today. The interaction with the Quw’utsun Sta’lo’ (river) is ancient and profound – the harvest is recognized in the Indigenous right to fish for food, social and ceremonial (FSC) purposes. They were notable for having traditional weir sites along the river (The Ethnogeography of the Cowichan River, 1977). From the river’s bountiful populations, the Cowichan harvested Chinook, coho, chum, trout, steelhead, and from the estuary clams, geoducks, crab, waterfowl, cod and herring roe, urchins and more. The abundance of natural resources in the river and estuary enabled continued use by Cowichan First Nation to today. Traditional methods such spearing or fish weirs are still practiced. Source: www.cowichantribes.com; Sta’lo’ Mustimuhw: A story of the river people, Jared Qwustenuxun Williams, in The Discourse, Nov.17, 2022. • Settlers arrived in the 19th century, to farm in the lowlands, to extract timber and ores further up the watershed, and to exploit the natural bounty for commercial and recreational fisheries, which remains a significant economic driver, attracting thousands to the river annually. Once Europeans moved to the area, the Cowichan River became internationally renowned for sport fishing and canoeing. Cowichan Tribes still uses the river as a food fishery, and the sport fishery remains very active. • Cowichan Valley Regional District notes the Cowichan is designated as a federal (2003) and provincial Heritage River (1996), a world-renown watershed, vital to the culture and economy of the region, home to five species of wild salmon and four species of trout, with its aquifer boasting some of the best drinking water in Canada. • However, as with other rivers in B.C., cumulative impacts have impacted some populations of fish, including prized Cowichan coho, Chinook, steelhead and trout species. While Pacific salmon species and run sizes vary from year to year, numbers continue to decline in the lower South Georgia Strait, including coho and Chinook salmon in the Cowichan. Impacts are from degraded and low water levels due to climate change, fishery management practices, overfishing at open sea, reduced spawning and juvenile habitats, sediment build-up and shifting channels, industry, agriculture, pollution, and urban growth. • A die-off of thousands of juvenile salmon and trout species in July 2023 elicited media attention, including a story in the New York Times, and significant community concerns.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 1: RESOURCE HARVESTING

Reason For Change	Climate change impacts that have led to erosion sedimentation from Stoltz Bluff and other sites on redds beds; channels redirecting due to heavy rains; low levels and degraded conditions of water in the river and side channels during droughts; juvenile habitat degradation and loss in the estuary; other impacts from ocean overfishing, marine environment changes, hatchery fish competition are all stressors on wild populations and their natural ecosystems.
Actions taken	• During extremely low river levels in the past decade, Cowichan Lake Salmonid Enhancement Society, CLRSS, Cowichan Tribes, Lake Cowichan Band and others have caught juvenile trout, coho, and Chinook stranded in back channels, to move them to areas with free-flowing water. • In response to declining numbers in wild fish populations and habitat loss, First Nations, governments, stewardship groups and industry collaborate on dozens of projects to monitor fish, improve habitats, water flows, or are in stages of developing them. • In August 2023, under the Water Sustainability Act, the province temporarily restricted water use for industry and forage crops in the Koksilah River watershed, while DFO ordered a ban on all angling on the Cowichan River – both orders were made to protect fish stocks during persistent low stream flows that threaten the survival of salmon, trout/steelhead populations. • Since 2018, regional groups push for a new weir to increase water storage capacity in Cowichan Lake, in order to maintain healthy water levels in the river below. In 2020, Cowichan Tribes receives a \$24M federal grant to put toward the weir and other works, CVRD completes engineering and budgeting plans; in its February 2024 budget, the provincial government announces \$14M that will allow for the weir replacement to go ahead: cowichanlakeweir.ca • In June 2023, a substantial 70+-hectare, multi-year, \$3M Cowichan Estuary Restoration project will rehabilitate saltmarshes critical for juvenile fish and bird species. Sources: • www.estuaryresilience.ca • thediscourse.ca/cowichan-valley/cowichan-estuary-restoration-will-combat-impacts-of-sea-level-rise • https://www.timescolonist.com/local-news/project-seeks-to-restore-70-hectares-of-cowichan-marshlands-7135106

SUB-THEME 1.2 SHORELINE RESOURCE HARVESTING

Description of value	Traditionally, the Quw'utsun harvested plants along the river, including Black cottonwood, horsetail, western red cedar, western yew, skunk cabbage, tule, reed, cattail, camas, broad leafed maple, devil's club, red alder, black twinberry, red and blue elderberry, wild crabapple, Nootka rose, salmonberry, willow, stinging nettle, cinquefoil, and wetlands plants including moss, and Labrador tea. Some species are still harvested, processed, and used for numerous purposes. The combination of forestry-related impacts, agriculture and sewage discharge from urban development led to the ban of shellfish harvest in the estuary in the 1970s, which remains effect until today.
Reason For Change	Impacts from forestry, development, population increase, diking, dredging, hunting, habitat loss and climate change affect species populations. There is now a greater understanding and interest in the importance of restoring whole ecosystems to benefit ecology and diversity of species. New and traditional knowledge are combined in many initiatives.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 1: RESOURCE HARVESTING

Actions taken	• May 2018, CVRD released Cowichan 2050, a significant regional integrated planning strategy that aims to collaboratively address social, economic and environmental forces shaping the region: see www.ecdevcowichan.com • June 2023: The \$3M Cowichan Estuary restoration project led by the Nature Trust of B.C., Cowichan Tribes, Ducks Unlimited Canada, WLRS, DFO, Environment and Climate Change Canada, Habitat Conservation Trust Foundation, is the largest estuary restoration project to take place on Vancouver Island. It will restore 70 hectares of farmland to salt marsh in the Cowichan River estuary, remove 2 km of dikes, and reconnect freshwater channels to the marshes. Set on Quw'utsun traditional lands, the estuary contains critical habitats for wild Pacific salmon, 230 species of migratory, wintering and breeding birds, and species at risk. The work will include culturally important Indigenous plants and systems to provide foods and medicine to Cowichan Tribes, while contributing overall food security; www.estuaryresilience.ca • Starting in 1985, NTBC, DUC and the Pacific Estuary Conservation Program began to set aside land to restore the estuary, working with Cowichan Tribes and others. Since 2018, they have assessed the Cowichan/Koksilah estuary response to sea level rise, with modeling and reviews of historic dikes and redirected channels.
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SUB-THEME 1.2.2 COLLECTION OF AQUATIC PLANTS

Description of value	While not described as a value at point of designation, it is historic and documented fact that the Cowichan Tribes harvested a wide variety of aquatic plants that were for food, medicines and spiritual practice in their traditional past and currently.
Reason For Change	Please see 1.2 Shoreline Resource Harvesting above.
Actions taken	Please see 1.2 Shoreline Resource Harvesting above.

SUB-THEME 1.2.3 HUNTING OF BIRDS AND LAND ANIMALS

Description of value	The previous decadal report notes the Cowichan First Nations traditionally hunted deer, bear, elk, waterfowl, small mammals such as mink, otter, beaver, and sea mammals. Early on in colonial settlement, the region was a favourite game hunting area. Hunts for waterfowl, grouse, black-tail deer, and elk continue on a small scale in the region. Hunting is prohibited in the parks and estuary.
Reason For Change	Please see 1.2 Shoreline Resource Harvesting above.
Actions taken	Please see 1.2 Shoreline Resource Harvesting above.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 1: RESOURCE HARVESTING

SUB-THEME 1.3 EXTRACTION OF WATER

Description of value	• Cowichan watershed communities, agriculture and industry extract freshwater from surface water lakes and rivers (Shawnigan Lake/Creek, Koksilah River, Cowichan Lake/River, Chemainus River, and Stocking Lake/Creek). In June 2022, CVRD reported water from these sources are considered ‘fully allocated,’ which may hinder water allotment for future developments. • Critically low water periods and slower recharge affect fish species; at time stewards transfer fish stranded in backwaters to lower, flowing reaches of the Cowichan. July 2023 saw significant fish deaths of various species, in part due to low water in the river. Angling for salmon stocks are suspended in 2023 due to poor water habitat conditions. • Catalyst Paper/Crofton pulp mill is the single largest user of water from the Cowichan River. Its water permit allows it to divert up to 2.832 cubic metres per second (m3/s) – 89.3 million m3 per year, from a site near Duncan. When flows in the river are very low, as in 2014, 2019 and 2023 the mill operates at low capacity, or uses electric pumps to transfer water from the lake over the weir to maintain minimum river flows. In 2014, only 4.5 m3/s was entering the river at the weir on Cowichan Lake, and the mill reduced its intake to 1.6 m3/s. Source: cowichanwatershedboard.ca *Catalyst owner Paper Excellence will indefinitely halt paper-producing operations at the Catalyst Crofton facility on Vancouver Island: January 2024, CBC News https://www.cbc.ca/news/canada/british-columbia/vancouver-island-paper-mill-1.7095393#:~:text=Pulp%20and%20paper%20giant%20Paper,Crofton%20facility%20on%20Vancouver%20Island
Reason For Change	Increased water demand, varied land use, and shifting hydrological cycles from climate change increase pressure on water resources and their long-term, sustainable security in the Cowichan Watershed to meet current and future water use needs of residents, businesses and the environment. Changes in precipitation and temperatures cycles, patterns, snowpack retention, and extraction of fresh water for a range of uses, results in lower water flows on the Cowichan River.
Actions taken	• In a 2015 Water Challenge, residents and water suppliers reduce water consumption by 16-25% compared to 2014; water restrictions are taken due to low water in the Cowichan River during one of the driest summers on record in the region. • In 2017/18, CVRD and CWB update the Cowichan River water use plan for future ecological, industrial and domestic water needs, including a proposal for stable water storage in Cowichan Lake to sustain flow targets in the Cowichan River. Climate change projections to 2035 and beyond are used to calibrate watershed hydrology modeling. • In 2019, CVRD launches online information site, cowichanwatershedboard.ca/weir-ready • Cowichan Lake weir replacement – April 2020: CVRD, Cowichan Tribes, Catalyst Paper and CWB work to engineer a new Cowichan River weir. November 2020: the federal government awards Cowichan Tribes \$24 million to replace the weir, restore riparian areas and mitigate floods, in partnership with CVRD. CVRD develops an engineering feasibility study, construction ready designs, and a draft budget by April 2021. Designs include upstream and downstream passage of all salmonid life stages, a cold-water delivery system to transfer lake water into the river during low water periods, and a shoreline impacts component. In its 2024 budget, the provincial government announces \$14M to enable the weir replacement: www.cvrld.ca/DocumentCenter/View/109099/News-Release---Cowichan-Weir-Funding-2024 • August 2023, the province restricted water use from August 24 for forage crops and industry in the Cowichan/Koksilah Rivers to maintain stream flows to protect steelhead trout populations; restrictions remain until fall rains. • October 2023, Town of Lake Cowichan receives a \$10M grant to improve lagoon aeration, phosphorus removal and disinfection for its sewage treatment facility, to meet provincial and federal water quality objectives for the Cowichan River.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 2: WATER TRANSPORT

SUB-THEME 2.1 COMMERCIAL TRANSPORT

Description of value	- Historically the Quw'utsun Peoples used the Cowichan River, tributaries and estuary as a transportation link between Cowichan Lake, inland sites and the coast for millennia. The highly productive wetlands and bay also provided the Cowichan people a rich, diverse, sustainable harvest for sustenance and trade. - Colonial and settler activities from 1870s altered the river and estuary use and landscape, including its historic transportation role, with log running until 1908, when several falls and rapids were blasted out of the river. This was followed by agriculture, industry, diking and flood controls, 1920s railway construction through tidal flats to connect a new port to inland logging and shipping, and the opening of Cowichan Bay sawmill in the 1970s.
Reason For Change	- Development impacts continue: More than a century of sorting, storing, grounding and transporting logs in the estuary left tons of woody debris and industrial runoff with significant impacts on eel grass beds and other aquatic habitats used by fish, birds, crabs and invertebrates: The Story of Eelgrass in the Cowichan Estuary, Cowichanestuary.com; - Annual channel dredging to link the Western Forest Products sawmill to Cowichan estuary deep water has had ecological impacts, including habitat deterioration, noise, contaminants disturbance, and elevated suspended sediment. Other land-based industrial activities and urban runoff impact species and their vital ecosystems. - Pollutants from forestry, farming and urban sewage discharge that led to the ban of shellfish harvesting since the 1970s also threatens the ecological balance in the estuary. - Since the 1990s changing summer flows and non-point source pollution from winter runoff became more noticeable. - Climate change and urban developments increase flood risks in the Cowichan delta and saltmarshes: by 2050, sea levels are expected to rise 50 cm (1.5 feet): Cowichan 2050, CVRD.
Actions taken	- Cowichan Estuary Restoration and Conservation Association and others advocates for deep water storage of logs to alleviate habitat damage, for other more sustainable industry practices; it also collaborates with local partners on a range of programs to revitalize the ecological integrity of the Cowichan Estuary. Shipping lumber from Cowichan Bay and the abandonment of timber storage on the Westcan Terminal in the 2000s has eased pressure on the estuary, but it is estimated that 50% of the estuary's integrity has been lost over the years. – Cowichanestuary.com See sub-theme 1.2 Shoreline Resource Harvesting, above. - May 2018, CVRD released Cowichan 2050, a significant regional integrated planning strategy that involves new levels of consultation and collaboration between local governments, First Nations and communities, to address social, environmental, and economic forces in the region: see www.ecdevcowichan.com - With the continued purchase and rehabilitation of the Cowichan wetlands, it is expected there will be less emphasis of industrial and commercial transport activities in the estuary. Much of the lost habitat in the estuary is being protected and restored.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 2: WATER TRANSPORT

SUB-THEME 2.2 TRANSPORTATION SERVICES

Description of value See sub-them 2.1 above please.

Reason For Change

Actions taken

SUB-THEME 2.3 EXPLORATION AND SURVEYING

Description of value While not a described value at the time of heritage designation, the previous decadal report notes that Robert Brown wrote about exploring of the Cowichan in his book, "Vancouver Island. Exploration. 1864," which can be found online. Today, locals and tourists alike are learning about and exploring the Cowichan's current and past Indigenous culture and natural history.

Reason For Change Today, people visit the Cowichan River and region for its beauty, for health, recreation, and interaction with the natural world.

Actions taken

- Anglers, kayakers, hikers, bikers and nature enthusiasts explore the Cowichan River, watershed and estuary for their own reasons, and in doing so, become invested in the healthy ecological future of Cowichan's natural values.
- Throughout this past decade, the Quw'utsun Sta'lo', Cowichan River Day Celebration has taken place, hosted by Cowichan Tribes, CSRT and many others to mark BC Rivers Day every other September with traditional skills and arts, crafts, fishing, storytelling, Tzinquaw Dancers, salmon meals and booths. BC Parks, governments and various donors, with help from community volunteers, fund and support these events and others through the year.
- In 2023, the Cowichan Regional Visitor Centre in Duncan reports 25,000 visitors annually, almost back to pre-COVID figures.
- Tourism Cowichan highlights and promotes myriad ways to explore and engage in Indigenous Cowichan history, traditions, learning and understanding, and ways to explore and enjoy nature and the region; see [Toursimcowichan.com](https://www.tourismcowichan.com)
- Local stewards and Indigenous knowledge keepers lead cultural and nature interpretation walks regularly that highlight traditional, historic signs of ancient habitation in the landscape and the diversity of plants, many with traditional uses.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 3: RIPARIAN SETTLEMENT

SUB-THEME 3.1 SITING OF DWELLINGS

Description of value At pre-European contact, the **Quw'utsun Mustimuhw** had an estimated 15,000 members in their territory, which included today's southern Gulf Islands and the lower Fraser, and were the most influential tribe on the south coast at that time. Up to 8,000 of the Hul'q'umi'num-speaking group resided communally in iconic cedar plank longhouses in villages above the tidewater of the vastly abundant Cowichan river and estuary. The story of the Mustimuhw is shared here: <https://indiginews.com/first-person/stalo-mustimuhw-a-story-of-the-river-people>

Archaeological evidence dates habitation at Cowichan for at least 4,500 years, while oral histories put the Quw'utsun there thousands of years further back. Though many ancient sites have washed away with time, current descendants live at traditional village sites of Kwa'mutsun, Qwum'yiqu'n', Xwulqw'selu, S'amunu Lhumlhumuluts', Xinupsum, Tl'ulpalus. See more on this interactive language and village map at <https://maps.fpcc.ca/content/cowichan-tribes>

Reason For Change

- Due to foreign illness that came with Europeans, the Quw'utsun population plummeted to an estimated 1,000 after early contact. Today at more than 5,300 members, the Cowichan Tribes is the largest single First Nation Band in B.C., with half of those living on the Cowichan Tribes reserves. Colonial settlements and the Indian Reserve system, Indian residential and day schools, potlatch bans, and other government policies impacted the society integrity and subsequently life in the villages.
- Ancient tribal sites, pioneer farms and other historic human settlement evidence may be lost due to ongoing agriculture, industrial and infrastructure development (log booming, dredging and dikes, roads, railways), and river or landscape rehabilitation.
- Extensive changes to the river such as straightening channels, dredging, diking to provide transport had impacts on cultural heritage sites prior to and after designation as a heritage river.

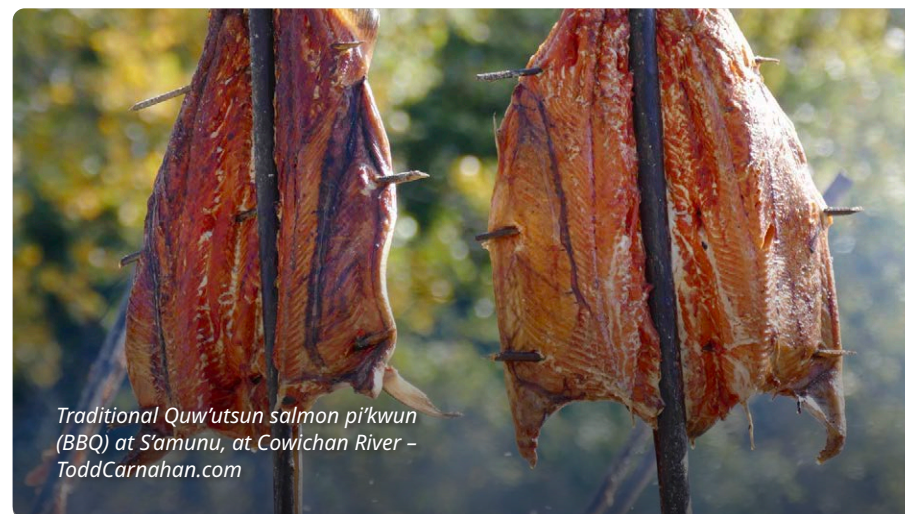


TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 3: RIPARIAN SETTLEMENT

Actions taken	• Cowichan Tribes' participation, reconciliation efforts and incorporating Indigenous traditional knowledge is a key component in many river management programs, with a wide range of government, non-profit and economic partners. Just a few projects are: • The 2023 Cowichan Estuary Restoration project will rehabilitate wetlands that will enable Cowichan members to plant, cultivate and harvest traditional foods and medicinal herbs. • Cowichan Tribes has co-governance on the Cowichan Watershed Board, which monitors and proposes actions on a range of related issues, including flooding on the Lower Cowichan that affects tribal and other residences, ecosystem health, archaeological and cultural sites: www.cowichanwatershedboard.ca • Cowichan Tribes received a \$24M federal grant in 2020 to put toward the new Cowichan Lake Weir and habitat rehabilitation, with CVRD and other partners; the Province committed \$14M for the weir in early 2024. • Water Sustainability Plan – March 2023, the provincial government and Cowichan Tribes reach an agreement to develop BC's first Water Sustainability Plan for the Koksilah Watershed, which flows into the Cowichan estuary, to address water use and minimum flows for fish species. • Cowichan Tribes continue on their path to self-determination as part of contemporary society, from self-governance to social priorities, economic strategy and development, tourism, cultural expression, science and traditional knowledge informed stewardship; and collaborating as partners with governments and regional groups. • The establishment of the CVRD's Cowichan 2050, a regional collaboration framework to plan for the future growth. • Heritage BC does cite the Old Stone Church on the Cowichan Indian Reserve: the church and site were significant in that an early Catholic missionary, Father Rondeault arrived in 1858. The stone church was built in 1870, but it was not sitting on clear title. The building was abandoned then, and while repairs occurred through the years, including as a cultural centre in 1980, after which it again became a derelict remnant on Comiaken Hill. In 2014, the Sisters of the St. Ann did recognize that the religious institutions role in Canadian residential schools and the long-term cultural oppression on generations of Indigenous people. Source: HeritageBC.ca, See Old Stone Church and Cemetery, Cowichan Bay, Duncan. • On the south side of Cowichan Bay is the private James Dougan Memorial Cemetery, named for the family who settled there in 1887. Although further south of the bay, the historic Cobble Hill village retains a number of pre- and early 19th century era landmarks reminders of pioneer settlement and early railway development relevant to the region: see CVRD, Heritage Sites.
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SUB-THEME 3.2 RIVER-BASED COMMUNITIES

Description of value	This section was noted in the previous report but not listed as a heritage value at the point of designation: Today's Cowichan Tribes land base includes 2,389 hectares comprised of nine reserves and seven traditional villages: Kwa'mutsun, Qwum'yiqu'n', Xwulqw'selu, S'amunu Lhumlhumuluts', Xinupsum, Tl'ulpalus. Colonizing brought farmers, loggers and others to the river and estuary.
Reason For Change	The region holds about 80,000 people, with expectation the population will increase by 25,000 or more by 2050; climate change is now impacting, and will continue to impact, the natural environment. Source: Cowichan 2050, CVRD. Please see sub-theme 3.1.
Actions taken	Please see sub-theme 3.1. See also sub-themes 5.2 Boundaries, 5.3 Environmental Regulation, regarding local agencies' response to flood risks, restoration work to protect communities and river integrity.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES**THEME 3: RIPARIAN SETTLEMENT****SUB-THEME 3.3 RIVER-INFLUENCED TRANSPORTATION**

Description of value	Logging began in the late 1800s, when settlers took massive old growth trees from the Cowichan Valley, initially running huge logs down the river to the bay. Early attempts resulted in log jams, heavy timber loss, damaging early road bridges, river shores and fish habitats. Forestry companies imposed large scale channel modifications to the Cowichan River to create wider passage for the timber by blasting out 29 waterfalls, leaving one major falls (Skutz or Squitz), and reduced the number of rapids from 130 to about five. (Pike et al, 2015, Cowichan River: a Summary of Historical Disturbances, Water Use Pressure and Stream flow Trends.) Rail lines were constructed from Cowichan Lake along the river and across the estuary to transport logs to Cowichan Bay mills, to ships and rail heading south or north. The Cowichan River Bridge dates back to 1907 as a timber truss bridge, constructed by the Esquimalt and Nanaimo Railway. In the 1920s the Canadian National Railway constructed several rail bridges, which the CNR operated from 1922-1991, including the 64.4 Mile, the 66 Mile, 70.2 Mile Trestle, Fairservice Creek Trestle, and Holt Creek Trestle bridges. Source: Vancouver Island Railways, HistoricBridges.org Their famous railway bridge cousin is the Kinsol Trestle bridge on the Koksilah River, the Cowichan's main tributary. Its construction was started by Canadian Northern Pacific Railway with local farmers and loggers in 1911, and completed by Canadian National Railway in 1920. At 188 metres long (617') and 44 metres high, it is among the tallest freestanding timber rail trestle structures in the world. It was rehabilitated and reopened in 2011.
Reason For Change	The trains carried freight as well as passengers, but their use dwindled as companies opted to move freight by road. CNR trains last traveled on the bridges in 1979 and the railway was unused for rail from 1980. Sources: HistoricBridges.org, Esquimalt & Nanaimo Division, Canadian Railroad Historical Association.
Actions taken	The CNR railway line was decommissioned and taken into possession by the Province of BC in 1991. The Cowichan Valley Regional District and the provincial government today maintain rail bridges as part of the Cowichan Valley/TransCanada Trail, within CVRD parks or BC Parks. The trestle bridges that remain are noted widely as heritage sites. • April 2020, rail trestle bridges Mile 66 and Mile 64.4 received upgrades, funded by Ministry of Transportation and BC Parks. Hydrometric instruments were installed to gauge water levels to help plan for flooding; data is shared with Cowichan Tribes. • November 2023, the CVRD board agreed to apply for a \$120,000 grant to replace the aging McKee Creek trestle bridge on the Koksilah River, on the Cowichan Valley Trail. Total replacement cost may be \$500,000. Source: CowichanValleyCitizen.com

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 4: CULTURE AND RECREATION

SUB-THEME 4.1 SPIRITUAL ASSOCIATION

Description of value	The Quw'utsun Tribes oral histories tell of spiritual and cultural connections to the Quw'utsun Sta'lo', its estuary and watershed that have endured for millennia. Quw'utsun Sta'lo' brought abundance to thriving communities living by its waters, and it continues to be a sacred spirit, a place for gratitude, special prayers and honouring for the Indigenous people born of this place.
Reason For Change	Colonization, erosion of landmarks and climate change impacts pose threats to traditional sites of spiritual importance. For the Quw'utsun, there remains a profound connection to Quw'utsun Sta'lo', as the Cowichan River is known in the Hul'q'umi'num language.
Actions taken	Sites of spiritual importance to the Quw'utsun are throughout the Cowichan River region. While not obvious to those unaware of them, they sacred places warrant protection. Disruption to sites from erosion, habitat rehabilitation and development are and must be addressed with Cowichan Tribes oversight and direction, and sensitivity to their cultural/ spiritual value.

SUB-THEME 4.2 CULTURAL EXPRESSION

Description of value	Hul'q'umi'num names saturate the Quw'utsun traditional territory, and speak of the historic, cultural and environmental touchpoints in the landscape. The land holds their legends, their history and traditional knowledge. Logging and railways, farming, fishing were important economic and community building aspects of early colonial settlement.
Reason For Change	Cowichan Tribes – Quw'utsun Mustimuhw – and other First Nations are reclaiming their cultural traditions and heritage, and share their knowledge with non-Indigenous communities and allies. With increased efforts of reconciliation, governments and the wider community have greater thirst and respect for Indigenous cultures, past and present. For many Indigenous groups, expressing their culture is an act of reestablishing their fundamental rights, as outlined the UN Declaration of Indigenous Rights (UNDRIP), recognized by the Canadian government, and BC's <i>Declaration On The Rights Of Indigenous Peoples Act (DRIPA)</i> in November 2019. Also critical to informing the path ahead is the Truth & Reconciliation Commission's 94 Calls to Action, <i>Honouring the Truth, Reconciling for the Future</i>, 2015, which is in response to Canada's role in establishing the Indian residential school system: Canadian Encyclopedia. To honour the Quw'utsun heritage, the City of Duncan commissioned Coast Salish artists since 1985 to carve totems and house posts that tell histories of their families or pay tribute to significant leaders. Each work is accompanied by a sign and the bio of the artist. More than 40 works are displayed around Duncan, known as the City of Totems: duncan.ca

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 4: CULTURE AND RECREATION

Actions taken

- While the following are not all heritage building sites, these actions and activities, and many more not listed here, reflect the strength of cultural reclamation, sharing and learning between Quw'utsun' peoples and the non-Indigenous community:
- Quw'utsun Cultural Connections Society, established in 2020 by Quw'utsun Elders, builds relationships between First Nations and non-First Nations communities in the Cowichan Valley; the journey of friendship and understanding began with the North American Indigenous Games hosted by Cowichan Tribes in 2008. Source, journeyoffourgeneration.ca
 - Quw'utsun people are reaching out through varied language apps and websites to share their language and culture: learn some words with knowledge holder Jared Qwustenuxun Williams at https://www.youtube.com/watch?v=1wj0_tGAOVE
 - The Quw'utsun' Sta'lo' Skweyul (Cowichan River Day) highlights Cowichan culture, see September 2021 www.youtube.com/watch?v=Od1piYO-W6g Local stewardship groups have added ancient place names in updated maps that reflect the history of Quw'utsun' peoples in the region.
 - In 2021 Cowichan Watershed Board introduced the **mascot Chinook salmon Stth'agwi'** to create awareness of salmon ecology, to act as a bridge to Quw'utsun' culture; this Big Dancing Salmon has its own Facebook page.
 - Cowichan people are reviving their beliefs, customs, skills and language, Hul'q'umi'num, which they share with the wider community through demonstrations of traditional artistry like carving, canoe building, fishing, singing, dancing, old and new fine arts; elders pass on old teachings through stories; they continue to hunt, fish, forage and harvest in traditional ways for food and ceremonial purposes. New generations of Cowichan Tribes members reside on ancient village sites on the lower Cowichan River.
 - Cultural viewpoints are shared as teaching opportunities, such as Dr. Shannon Waters speaking of the healing values of connecting with the Cowichan River: watershedwatch.ca and www.drshannonwaters.com
 - Along with its Khowhumum Garden Project, Cowichan School District No. 79 has an online Hul'q'umi'num teacher resources package ranging from flashcards to videos, to integrate knowledge about Indigenous culture into the school curriculum at all levels. Hul'q'umi'num words are translated and pronounced by an Quw'utsun elder so students can become familiar with the Quw'utsun culture and language. See <https://ined.sd79.bc.ca/hulquminum-classroom-resources/> and <https://sd79.bc.ca/hulquminum-language/>
 - **Raincoast Conservation Foundation – In October 2018**, the RCF launched its **Salish Sea Emerging Stewards** program, with scientists and Joe Akerman, a **Xwaaqw'um Project** knowledge holder, to share stories and experiences with students to help them understand the land and wildlife from an Indigenous perspective. In 2019, 40 Cowichan School District and Red Fox Healthy Living Society youth took part in on-board stewardship lessons merging science and traditional knowledge.
 - Cowichan region has several **museums** that reflect early European settlement. The Kaatza Station Museum focuses on forestry, mining, railways and pioneer life; Cowichan Bay Maritime Centre celebrates small wooden boats; Cowichan Valley Museum has local history and of the Cowichan People; Hand of Man Museum examines natural history and culture; Tourism Cowichan features Indigenous tourism that offer cultural experiences in the region.
 - **The Shearing Tree** is one of the largest Douglas firs on Vancouver Island, a natural heritage reminder of the significant removal of the old-growth Pacific rainforest from the valley from the mid-1800s onward. Named after a pioneer family that settled at the site in 1872, the Shearing Tree is a solitary storm-worn, 70-foot tall old-growth Douglas fir protected under a Conservation Covenant. Surrounded by farmland, the historic place includes the Douglas fir tree and the land surrounding its base.
 - **South Cowichan Lawn Tennis Club** has the oldest continuously used grass courts in Canada, dating to 1907, although settlers opened the original courts in 1887; Canadian poet Robert Service was an active player, from 1899 to 1903; as were national tennis champion Kay Wilson and nationally-ranked Don Wilner (club member for 57 years). Overlooking the estuary, the club site has mature herbaceous gardens from the period, along with mature maple trees.
 - See also train trestles in Sub-theme 3.3 River-influenced transportation.

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 4: CULTURE AND RECREATION

SUB-THEME 4.3 EARLY RECREATION

Description of value	This category was noted in the last decadal report though not as cultural heritage value in designation document. Swimming, boating, fishing and walking have long been popular activities. The South Cowichan Lawn Tennis Club was established in 1907: CVRD, Heritage Sites.
Reason For Change	Unsafe levels of human and bovine coliforms were found in some river areas in 2012 and persist in following years; while recreation activities like swimming and other water sports, untreated water consumption is not advised. Water testing shows sunscreen UV filters (oxybenzone for example) in the water increases with river tubing water recreation.
Actions taken	• The South Cowichan Lawn Tennis Club has the oldest lawn tennis club courts in Canada, when settlers opened the original courts for the relatively new sport in 1887. The 1907 site, restored and in use, is a living museum. See lawntennis.ca • Water quality tests in 2012 showed unsafe E. coli levels from human and bovine sources, but by 2017 these numbers dropped due to significant interventions. Phosphorus and E.coli levels in the river remain concerning, however. In 2023, the Town of Lake Cowichan received a \$10M grant to upgrade to its sewage treatment facility to meet provincial water quality standards. • A study monitoring for impacts of UV filter compounds (oxybenzone and others) in aquatic invertebrates continues in 2023-2024. Swimmers are encouraged to use non-toxic sunscreens. • Swimming, sailing and small craft boating, lawn tennis, walking and more continue to occur along the river and bay.



A kayaker manoeuvres through rapids in the upper river above Marie Canyon. The Cowichan is a Class III, sometimes IV, whitewater river – Cim MacDonald

TABLE 3: COWICHAN CULTURAL HERITAGE VALUES

THEME 5: JURISDICTIONAL USE

SUB-THEME 5.2 BOUNDARIES

Description of value	The traditional Cowichan Tribes territory included the regions of Cowichan Lake, the Cowichan and Koksilah River drainages, the regions around Cowichan Bay, Maple Bay, Shawnigan Lake, the southern Gulf Islands, as well as the south arm of the Fraser River on the mainland. The Core Traditional Territory is approximately 375,000 hectares (900,000 acres): CowichanTribes.com
Reason For Change	With Canadian government colonization policies and settlement in the Cowichan lowland, the Cowichan Tribes territories were reduced to a total reserve area of 2,400 hectares (5,900 acres), made up of nine reserves, mostly in the Cowichan area.
Actions taken	• In July 2021 when province added 39 hectares to the 750-hectare Cowichan River Park it purchased, the government engaged with First Nations and conducted legal boundary mapping prior to taking over the lands. • Cowichan Tribes, as a First Nation participant in the Hul'q'umi'num Treaty Group, are negotiating a treaty with representatives of the governments of Canada and British Columbia, with the aim of regaining some form of title to their territories. Source: Cowichantribes.com Colonisation. • Several jurisdictional boundaries and responsibilities intersect in the region for the management of water, parks, forests, fisheries, highways and municipalities, involving Cowichan Tribes, all levels of government and other regulatory bodies.

SUB-THEME 5.3 ENVIRONMENTAL REGULATION

Description of value	Value not specified at the time of heritage designation.
Reason For Change	2012 – The first of a series of reports inspired by Cowichan Watershed Board and residents' actions on watershed governance and sustainability begins with the Polis Water Project on collaborative watershed management.
Actions taken	• 2019 – With support from Cowichan Watershed Board, Nicola Nations peer learning exchanges hold two-day workshops with government and academic advisors to share approaches to Indigenous watershed governance, in both Nicola Nations and Cowichan Tribes territories. • 2019 – Polis publishes Pathways and Partnerships: A Framework for Collaboration and Reconciliation in the Cowichan Watershed, a guide to build partnerships and reconciliation for long-term health of the Cowichan watershed and its communities. • 2023 – March 2023: CWB works to enhance watershed co-governance and increased local decision-making power in B.C. • Watershed Security – A BC government initiative is underway to create a Watershed Security Strategy and Fund for 2023. • Water Sustainability Plan – The Province and Cowichan Tribes reach an agreement to develop BC's first Water Sustainability Plan for the Koksilah Watershed, a tributary to Cowichan River, to address water use and minimum flows for fish species. • Upper Cowichan River Assessment Preliminary Projects Development Report, 2023: NHC assessment report for CVRD on the upper Cowichan River, focuses on ways to mitigate flood hazards while providing benefits to fisheries where feasible. NHC came up with 24 potential projects, ranging in cost from \$38,000 to \$3.2M. These projects will necessitate the cooperative of various jurisdictions to be realized.

8. Recreational Values

8.1 Background

The Cowichan River was recognized to have the following recreation values in its nomination as a Canadian Heritage River.

- **Hiking, walking, nature appreciation:** People have long enjoyed walking along the Cowichan River, exploring different areas of the river. In the early 1960s, the Cowichan Fish and Game Association constructed a trail on the ancient trails used by Quw'utsun people for millennia, now known as the Cowichan Valley Footpath, from Cowichan Lake to the club's property. Walking and hiking remain the most frequent and consistent activities along the Cowichan River.
- **Sport Fishing:** The Cowichan River was historically popular with sport fishermen, and remains so today. Salmon, steelhead and trout attract sport fishers from the region and from around the world.
- **Kayaking and Canoeing:** Originally a form of transportation, canoeing became popular among early non-native inhabitants. Whitewater kayaking is a significant activity from October to June when water levels allow.
- **Swimming and tubing:** The Cowichan River has always been a favoured destination for swimmers, and in recent years the number of tubers has increased dramatically. Due to the stunning and varied scenery and multiple access points, tubers frequent the Cowichan when water levels allow.
- **Camping and Picnicking:** Much of the upper Cowichan River runs through or along parkland, which provide opportunities for picnicking and camping. BC Parks, CVRD and the District of North Cowichan have developed day use sites providing excellent access to the river. Cowichan River Provincial Park, with 1,414 hectares along the upper river, provides 43 camping spaces and trails.

8.2 Condition of Values Since Nomination

The Outdoor Recreational Council of BC noted that a poll it commissioned in 2023 found that nearly seven out of ten adult B.C. residents participated in at least one outdoor recreation activity such as hiking, climbing, bird watching, camping, horseback riding, hunting, canoeing, backcountry skiing and snowmobiling in British Columbia the past 12 months.

Most of those activities can definitely be seen in the Cowichan River area, with the exception of snowmobiling. The trails along the Cowichan River offer recreational opportunities for walking, hiking, mountain biking, photography, painting, birding, fishing, amateur naturalists, trestle spotting, horseback riding, places to rest for paddlers, and to just appreciate the stunning beauty, tranquility and diversity of the Cowichan River and its associated parks and special places.



The historic Cowichan River Foot Path trail winds along the river for 20 km from Glenora to Skutz Falls. It is part of the 120-km stretch of the Trans Canada Trail in southern Vancouver Island – Tourism Cowichan

Foot and bike trails run along both sides of the river. Trails can be short loops, or longer ventures through the forest and with breathtaking views of the Cowichan River. BC Parks trails cross some historic sites, for instance, on the loop trail that crosses the Skutz Falls forest service road bridge and the restored 66 Mile Trestle. The historic Cowichan River Footpath winds its way along the Cowichan River for 20 km from Glenora to Skutz Falls. The Trans Canada route includes the Holt Creek Trestle and the rehabilitation of 13 kilometers of abandoned Canadian Pacific Railway grade. The beautiful railway trestles along this route offer spectacular views and a glimpse to the past when log-laden train cars would thunder along the tracks high above the Cowichan River.

Groups such as the Cowichan Trail Stewardship Society help maintain and build mixed-use trails for hikers and mountain bikers, promoting trail etiquette and a 'leave no trace' philosophy. The experience is enhanced with their on-line maps, at Cowichantrails.ca. Other trail apps also provide accurate mapping, information and photos of trails.

Angling and flyfishing are as popular as ever. The travel site Fishing Booker listed the Cowichan River as one of the top 10 fishing destinations in Canada for 2024. Several private lodges and guides offer float rafts and expert guides to show fishers the best spots for trout and salmon. Fishing in the Cowichan is on the bucket for local and international anglers and fly fishers.

As for kayaking and white water, the Cowichan River is regarded as a premier whitewater destination on Vancouver Island for most of the year, particularly from October to June. University and other clubs hold annual races there. BC Whitewater describes the Cowichan River, from the access point below Skutz Falls to Marie Canyon, as a consistently flowing class III canyon, with optional IV level rapids. It was the venue for the 2008 BC Summer Games for kayak and canoe competition. In 2018, paddling

enthusiasts mapped out six sections on the Cowichan River to show public access points, river features and trip durations, and loaded the data to paddlingmaps.com. Other water sports include stand-up board and kayak/canoe exploration in the river's quieter lower reach and estuary.

There are a number of swimming holes, picnic areas and camping spots in the provincial park, and at Sandy Pool Regional Park. River tubing fans enjoy tranquil floats past the Town of Lake Cowichan.

BC Parks has steadily added to its footprint in the area, on both sides of the Cowichan River, and in the region. In July 2021 the Ministry of Environment and Climate Change announced the 750-hectare Cowichan River Provincial Park would be expanded by 39 hectares, purchased from private land for \$570,000, in partnership with BC Parks Foundation. The land is heavily treed, along waterfront and contains parts of the Trans Canada Trail and Cowichan River footpath. In 2019 the ministry created a new park on Cowichan Lake in 2019, setting aside two hectares of land, and in 2020, added another 18 hectares along the Cowichan River.

For those who like to stay a while, Stoltz Pool in Cowichan River Provincial Park has year-round camping, with 39 drive-in and four walk-in sites, while there are 11 tent pads and parking lot camping at the Horseshoe Bend campsite. Many other private sites offer riverside spots for tents and RVs.

There is no shortage of outdoor recreation and ways to enjoy the Cowichan River corridor.

Tennis buffs may want to visit the South Cowichan Lawn Tennis Club, which has been at its site overlooking the Cowichan Estuary since 1907. Established in 1887, it's the oldest lawn tennis club in Canada!

Recreational values for the Cowichan River remain robust, and are in fact enhanced with the expansion of new park land, trails, cultural interpretation programs and active habitat restoration and protection.



Young women compete in the annual Indigenous canoe races at Lhumlumluts', an ancient village site along Cowichan Bay – ToddCarnahan.com

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 1: BOATING

SUB-THEME 1.1 WHITE-WATER CANOE, KAYAK & RAFT

Description of value	The breathtaking Cowichan River is regarded as a premier whitewater destination on Vancouver Island for mainly kayak and some canoe runs through the year, particularly from October to June.
Reason For Change	• Vancouver Island Whitewater Paddling Society, Canoe Kayak BC and university clubs hold whitewater events annually. • The whitewater rapids are mostly between Skutz Falls and Marie Canyon; there is a pullout at Skutz Falls and a boat launch for non-motorized vehicles at Stoltz Pool. • 2018 BC Summer Games, July 19-22 – Canoe/Kayak Slalom races for the 2018 BC Summer Games drew nearly 90 young athletes, 20 coaches, 30 officials and 20+ volunteers to participate in canoe and kayak sprints along the river. • Whitewater paddling can be limited in summer due low water levels in some reaches. • Enthusiasts hold training courses, clinics and races, and along with BC Parks, Search and Rescue and watershed groups, promote water safety and cleanup campaigns, and mitigate emerging river hazards. • Cowichan Bay Marine Gateway Regional Park has a public dock area for launching kayaks for marine paddling.
Actions taken	• Paddling map app – In 2018, paddling enthusiasts mapped runs on six sections of the Cowichan River to show public access points, river features and trip durations. A valuable resource for kayakers, the app is available at https://paddlingmaps.com • Vancouver Island Whitewater Paddling Society, Canoe Kayak BC and university clubs hold whitewater events annually. • BC Whitewater describes the Cowichan River, from the access point below Skutz Falls to Marie Canyon, as a consistently flowing class III canyon, with optional IV level rapids. bcwhitewater.org provides up to date water levels, which go as low as ~7cms in summer, to a low-medium flow of 20-30cms and high up to 100 cms. The site also has some stunning images.

SUB-THEME 1.2 DAY PADDLING & ROWING

Description of value	Paddling and rowing continue to be a favourite activity particularly in the river and estuary.
Reason For Change	With an increase in population and tourism, there is a greater variety of small craft including rafts and drift boats for fishing in the river, kayaks, canoes, sculls, and paddleboards in the estuary particularly. See also tubing, Recreation sub-theme 3.1.
Actions taken	First Nations canoe races are a community and cultural event, taking place mostly in the calm waters of the estuary. As of 2024, the two-year Cowichan Estuary Restoration Project will temporarily close some access points to the estuary, but will ultimately revitalize the health of the estuary and improve the recreational experience of those that enjoy nature.

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 2: ANGLING

SUB-THEMES 2.1 WHITE-WATER CANOE, KAYAK & RAFT, 2.2 WEEKEND ANGLING AND 2.3 FLY FISHING

Description of value	For more than a century the Cowichan River has been a favoured destination for recreational fishing, today attracting thousands of locals and visitors to the river region annually for steelhead, coho, Chinook and trout species. Climate change induced drought and human activities impose challenges to various species.
Reason For Change	• More anglers and other nature enthusiasts explore the Cowichan River, watershed and estuary and in doing so, become invested in the healthy ecological future of Cowichan's natural values, and support its stewardship. • The online travel company Fishing Booker named the Cowichan River in its list of top 10 fishing destinations in Canada for 2024, and noted it was considered the best trout fishery on the island. In 2022, Victoria-based Haig Brown Fly Fishing Association, which supports conservation efforts and education, released a new map that charts the Cowichan River's course from Lake Cowichan to the estuary at Cowichan Bay. • Fishing is highlighted as a recreational activity by local parks and Tourism Cowichan. Guides and lodges in the area promote fishing, fishing lessons and staying in the area, such as BC on the Fly and Cowichan River Lodge. • Climate change induced drought, persistent low water levels, stranded juveniles in back channels, high water temperatures, water degradation; sediment build-up from Stulz Bluff, other avulsion areas, and forestry road run-off; recreational river tubing; and loss of juvenile rearing habitat in the Cowichan estuary all challenge the river's fish populations. • Ongoing rehabilitation work in the Cowichan estuary and river, increasing the water storage capacity in Cowichan Lake, and other fish studies and programs will continue to support the Cowichan's ecosystem resilience.
Actions taken	• During dry summer and low water conditions, Catalyst Paper pumps water from Cowichan Lake over the Cowichan Lake weir to the river to maintain minimum water levels in the river for habitat protection and for mill operation. • Since 2018, CVRD, Cowichan Tribes and others advocated for a higher weir to increase water storage capacity in Cowichan Lake in order to maintain healthy river water levels for fish. In 2020, Cowichan Tribes received a \$24M federal grant to put toward the weir and other works; CVRD completed the engineering and design plans; in its February 2024 budget, the provincial government committed \$14M to allow weir construction to go ahead. • In June 2023, a significant 70+-hectare, two-year, \$3M Cowichan Estuary Restoration project was confirmed, to restore and rehabilitate estuarine marshes critical for juvenile fish and sea-going species. This is in addition to other estuary restoration work since the 1980s that includes invasive species and debris removal, eelgrass and riparian plantings. See www.estuaryresilience.ca • In July 2023, DFO suspended all angling on the Cowichan River to protect fish stocks, after thousands of juvenile steelhead, trout and other fish died due to algal blooms, hypoxic water and high pH levels. The ban was in place in the upper river from September until November 15, then extended until April 30, 2024, with some areas exempted for flyfishing. • Cowichan Tribes, CSRT and others host Quw'utsun Sta'lo'/Cowichan River Celebration with traditional fishing, telling stories of fishing on the river, salmon meals and more to raise public awareness about the river ecosystem. • Guides, parks and others providing outdoor recreation service promote sustainable, responsible and nature-friendly behaviour. • Fishingbooker.com named the Cowichan River as one of the top 10 fishing destinations for 2024, in particular for trout fishing.

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 2: ANGLING

SUB-THEME 2.4 SPECIFIC FISH SPECIES

Description of value The Cowichan River is historically known for its legendary runs of Chinook and steelhead, along with coho, chum, and pink salmon. The river is regarded as one of the finest trout rivers on Vancouver Island, for its overall beauty and for rainbow, cutthroat, Dolly Varden, char – and in Cowichan Lake – resident Kokanee salmon. Brown trout were introduced in the 1930s and thrived. Smaller native fish include minnows, chub, sculpins and lamprey, important parts of the ecosystem. Also introduced, mostly in the early 1900s, were Kamloops trout, speckled char, lake trout, catfish, including repeated attempts with Atlantic salmon but these did not thrive. Source: E-Fauna BC; CVRD SOER reports.

Reason For Change

- CVRD, Cowichan Tribes, BC and federal governments and stewardship groups monitor fish populations and address ways to address climate change impacts on water levels, temperatures and on fish habitats in the river and estuary. They also consider other man-caused factors (siltation, habitat loss); and predation in the wild, marine mortality in order to protect those species and their habitats. Decreased numbers inhibit or prevent recreational fishing of certain species.
- DFO and Cowichan Tribes have together managed the Cowichan River Hatchery since 1978 to enhance Chinook stocks, to study the fishery and build strong relationships. The Cowichan River Chinook salmon escapements are an indicator cohort for the Lower Georgia Strait area and have been recorded at a counting fence on the river since 1988. After a crash in population in 2009, Chinook numbers have steadily increased.
- In July 2023, a large-scale fish mortality occurred on the upper reaches of the Cowichan River, that included an estimated 84,000 steelhead fry, adult trout and other species. Although there is no exact data, steelhead abundance is still considered to be moderate with an increasing trend.

Actions taken

- Cowichan Tribes, government and stewardship groups oversee improvements to rearing grounds in the Cowichan estuary, fish management studies, water quality monitoring and restoration works.
- Improvements have been made or are coming for sewage treatment facilities – Town of Lake Cowichan received a \$10M grant in 2023 to improve its septic water treatment system.
- Plans for expanded water storage capacity of the Cowichan Lake weir to keep the river habitable for fish species during dry summer month received funding from federal and from the Province in early 2024.
- Chinook numbers dropped to a low point of 540 spawners in 2009, but have been regaining numbers since. The four-year average is now at 23,140 individuals, and the 12-year average return is 13,780 fish. In 2022, adult returns exceeded target escapement numbers for seven consecutive years. Even so, in 2024 DFO is considering adding Chinook salmon in Designated Unit (DU) 21 to the federal list of Species at Risk as Special Concern.
- See also Natural heritage values, sub-theme 6.1 Significant Animal Populations

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 3: WATER CONTACT

SUB-THEME 3.1 SWIMMING AND TUBING

Description of value The community and visitors enjoy picturesque swimming holes along the Cowichan River at Sandy Pool Regional Park and Cowichan River Provincial Park, and river tubing below Cowichan Lake in slower stretches of the river.

Reason For Change River tubing – floating downriver in specialized floatation tubes – has become extremely popular during hot summer weeks, almost to the point of over-use. Tubing attracted such large numbers that during the Covid-19 restrictions, officials were concerned people would be in too close proximity to each other even as they floated down the river.

- Cowichan Watershed Board notes that While water quality is typically safe for recreational activities, E. coli levels during low flow periods as in the summer months almost always exceed levels where treatment could make water safe for drinking.

Actions taken

- Tube enthusiasts are cautioned to stay safe and not go through the challenging rapids on the river. An option for casual tubers is to begin at Marie Canyon and pull out at Sandy Pool. There are some strong currents, particularly at the Marie Canyon access place.
- As waste and rowdiness became an issue, tube rental company Tube Shack began to sponsor annual river cleanup events, along with other groups, and conducts its own daily waste collection in peak season, and strongly promotes a ‘leave no trace’ river etiquette and non-toxic sunscreens: www.cowichanriver.com
- The Habitat Acquisition Trust Foundation, RBC Foundation, and Cowichan Lake and River Stewardship Society ran a multi-year study looking at the presence and **impacts of ultraviolet filters (UVF) in sunscreen** on benthic macro-invertebrates, fish and freshwater mussels in the Cowichan waters. Findings to date (2023) suggest the highest levels of UVF in the Cowichan watershed occur when the number of swimmers and tubers increase. No UVF chemicals have been detected in benthic sediments.
- See also Natural Heritage Values, sub-theme 1.3 Water Content

SUB-THEME 3.2 SNORKEL AND SCUBA

Description of value While not noted at the time of designation, the previous report did note that anecdotally there is some limited snorkeling in the Cowichan River swimming pools and areas downstream.

Reason For Change These activities are used in part to monitor and study fish species in the river and estuary.

Actions taken Snorkeling and SCUBA diving in the Cowichan River is noted in the Cowichan River Provincial Park information. Fisheries teams have conducted snorkeling surveys of rainbow and brown trout in the Cowichan River and for salmon in the estuary, to record numbers, size and to gain a better understanding of their life history for improved fisheries management. There is marine SCUBA on the coastline.

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 4: WATER ASSOCIATED ACTIVITIES

SUB-THEME 4.1 TRAIL USE

Description of value Cowichan River trails offer opportunities for walking, hiking, mountain biking, photography, painting, birding, fishing, amateur naturalists, trestle spotting, horseback riding, places to rest for paddlers, and for others who appreciate the stunning beauty, tranquility and diversity of the Cowichan River and its associated parks and special places.

Nature interpretation programs have occurred over the years. In 2022 and 2023, grants from BC Parks and others supported interpretive walks with a career nature interpreter and Quw'utsun knowledge keepers in the provincial park and along the Sta'lo' at various times. The popular sessions were an opportunity to hear from a Quw'utsun knowledge keeper and nature interpreter to learn about the area from an indigenous and natural history perspective.

Reason For Change

- As in other places in B.C. there has been an increase in hikers and mountain bikers in the past decade, especially in mild climate areas such as the Cowichan Valley.
- Several varied stewardship and activity groups take on specific roles and responsibilities that add to the recreation and cultural values of the Cowichan. For example:
 - Cowichan Trail Stewardship Society maintains and builds mixed-use trails for hikers and mountain bikers, promotes trail etiquette and a 'leave no trace' philosophy. They abide by International Mountain Bicycling Association rules of responsible conduct and respect of wildlife. See Cowichantrails.ca for links to trails maps.
 - Cowichan Fish and Game Association, established in 1937, supports conservation of fish and wildlife. Its members developed the Cowichan River Trail, now inside the Cowichan River Provincial Park, and maintain a 5-km stretch of the trail. CVRD has heated public washrooms, playgrounds and a caretaker at a trailhead close to the CFGA clubhouse.

Actions taken

- BC Parks/ Ministry of Environment and Climate Change created a new park on Cowichan Lake in 2019, setting aside two hectares of land, then adding another 18 hectares along the Cowichan River in 2020.
- In July 2021 the ministry announced the 750-hectare Cowichan River Provincial Park would be expanded by 39 hectares, purchased from private land for \$570,000, in partnership with BC Parks Foundation. The land is heavily treed, along waterfront and contains parts of the TransCanada Trail and Cowichan River footpath. The BC government is consulting with First Nations and is conducting legal boundary mapping prior to taking over the lands.

SUB-THEME 4.2 CAMPING

Description of value Cowichan River Provincial Park was created in 1995 with 750 hectares (soon to be expanded to 790 hectares, see 4.1 above) to protect recreational and environmental values along the river. In 2009 it had 43 campsites.

Reason For Change The desire for camping, glamping with recreational vehicles and more walk-in rainforest experiences continues to increase among visitors and residents. In addition to government parks, several private campgrounds and lodges along or near the river accommodate visitors interested in fishing, hiking or biking, or enjoying nature.

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 4: WATER ASSOCIATED ACTIVITIES

Actions taken	Cowichan River Provincial Park, Stoltz Pool, has year-round camping, with 39 drive-in and four walk-in sites, while there are 11 tent pads and parking lot camping at the Horseshoe Bend campsite. TourismCowichan.com provides information on private campgrounds.
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SUB-THEME 4.3 HUNTING

Description of value	At the time of nomination hunting was briefly mentioned as a recreational value. In general, there is no hunting along Cowichan River: Cowichan River No Shooting Area (MU 1-4). “The discharge of firearms is Prohibited within 100 m of the high water mark of the Cowichan River from a point starting on the river immediately north of the Holt Creek Trailhead upstream along the Cowichan River to the Municipality of Lake Cowichan. In Cowichan Bay, there is limited seasonal hunting for waterfowl, and limited shooting of mule deer.” – BC govt. Hunting Trapping Synopsis, Region 1, for 2022-2024.
Reason For Change	Some hunting takes place in the Cowichan watershed on Crown lands. BC govt. Hunting Trapping Synopsis, Region 1 has a full list of species and restricted areas. Poaching for some species has occurred in the past decade, including cougar kittens and elk. Roosevelt elk live in the watershed, and venture to the Cowichan River corridor as part of their range. There are increasing numbers in the Cowichan Lake and River area. Recently, farmers report elk herds are becoming abundant and reliant on anthropogenic habitat – grazing fields. Elk are often seen on forestry roads, streets and in towns as they readily habituate to human development. Once abundant through the Pacific Northwest, but now found mostly on Vancouver Island, the species is blue listed, or deemed to be of Special Concern.
Actions taken	From 2023, in order to monitor their population and extent, a University of Alberta Master’s research student, Kate Rutherford, is leading the Cowichan Valley Elk Project, a collaborative project with King’s University, local landowners and First Nations to gather data via web cam, iNaturalist and other methods. Source: https://wildcams.ca/blog/cowichan-valley-elk-project/ Another study of Roosevelt elk on Vancouver Island from 2018 to 2023, led by the Ministry of Water, Land and Resource Stewardship and ecosystems biologist Carl Morrison with University of BC students, tracked the elks’ habitat use with GPS collars. The data will inform the current strategy for elk management in B.C., which expires in 2025.

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 5: NATURAL HERITAGE APPRECIATION

SUB-THEME 5.1 WILDLIFE

Description of value	One of the main tourism draws to southern Vancouver Island and Cowichan River corridor its abundant variety of wildlife, birds and breathtaking landscapes to observe and capture on camera, much of which are relatively accessible via trails or water. The Cowichan watershed maintains natural heritage value, as it sustains 200 different species of birds, from raptors to hummingbirds to dippers. Park residents may include osprey, hawks, owls, corvids, gulls, many species of songbirds and others. Black bears and bald eagles feed along the river in late fall to forage dying or dead salmon.
Reason For Change	Ecotourism has been a growing aspect of outdoor recreation in British Columbia overall, drawing birders, photographers, amateur naturalists to find wildlife around the Cowichan River and estuary. Important Bird Areas (IBA) Canada includes the Cowichan Estuary IBA, designated for its globally significant concentrations of Trumpeter Swan, Mew gull, Iceland gull, Sandhill Crane and more. Many birding sites have information on bird viewing along the Cowichan trails and canoe birding in the estuary. BC Parks lists a range of mammals in Cowichan River Park, from shrews, voles, bats and Douglas squirrel. Raccoons, mink, martens, and weasels are common, and river otters and beavers inhabit the river. The native Vancouver Island ermine, a blue-listed species, is also in the park. Larger mammals include black bears, cougars, black-tailed deer and Roosevelt elk (for elk, also See sub-theme 4.3 Hunting). Population growth in urbanized areas, invasive species, agricultural and forestry land use in the Cowichan watershed impact the region.
Actions taken	Visitors report their wildlife sightings to iNaturalist and e-Bird, and review their checklists. Efforts are ongoing to expand and protect sensitive environmental areas. See subthemes 2.4, and 4.1.

SUB-THEME 5.2 VEGETATION

Description of value	The Cowichan River corridor and estuary retain a wide diversity of plants, some found only in the milder climate of the south coast. The Cowichan River Provincial Park has representative Douglas-fir, western hemlock and cedar forest communities, while the Garry Oak Meadow Reserve along Cowichan Valley Trail is a healthy stand. Wildflowers such as the endangered cup-clover have been recorded near Skutz Falls and other rare plants include blue-eyed Mary and the Fawn lily. Many native species were and continue to be important food, medicine and herb sources for Cowichan First Nations, such as berries and camas. There are cedars that bear evidence of cultural modification (CMTs) for bark stripping, while massive old stumps may show where loggers had cut in holes for springboards to stand on.
Reason For Change	A May 2023 Ipsos poll found that seven of every 10 adults took part in outdoor recreation in B.C. in the last year, about 2.8 million adults. With so many going outside, there is greater awareness that native vegetation – tree, flowers, shrubs, mushrooms, aquatic plants and more – are all part of a healthy, unique ecosystem. There is also a greater impact on the ecosystems. Several stewardship groups in the Cowichan watershed champion for their protection and work to improve habitat by live staking, restoring riparian areas, and removing invasive species from the forest, the riparian and estuarine zones. Amateur naturalists, photographers, artists and others take part in recording and reporting locations or changes.

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 5: NATURAL HERITAGE APPRECIATION

Actions taken	• The Pacific branch of the Nature Conservancy Canada studies and protects the Cowichan Garry Oak Preserve and its associated wildflower meadows to enable endemic plants to live, including the purple Howell's triteleia. See also Ecoreserves.bc.ca/garryoak • Governments, Cowichan Tribes and stewardship groups collaborate on ongoing projects to replant native flora along the river, and eel grass in the estuary. See also park expansion in sub-theme 4.1. • Starting in 2018, the CVRD ordered an Environmentally Sensitive Areas (ESA) Strategy for the region, including two inventories of ESAs within the region and a strategy to map ESAs, monitor areas, set targets and engage collaborating groups.
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SUB-THEME 5.3 VISTAS, SCENIC QUALITY

Description of value	The beauty of the natural environment continues to present visitors with an array of ways to appreciate the diverse and changing river channel, the surrounding forests, down to the estuary marshes.
Reason For Change	None.
Actions taken	<i>Witnessing the Water</i> – Cowichan Lake River Stewardship Society (CLRSS) members compiled a coffee table book chronicling peoples' experiences and interactions with the Cowichan River, launched June 2023.

SUB-THEME 5.4 GEOLOGICAL FEATURES, WATER FEATURES

Description of value	The diversity of the river channel enables visitors to appreciate a variety of natural features along the length of the river. See Sub-theme 3.3 River-influenced transportation: Foresters blasted out 29 waterfalls, leaving one major falls (Skutz or Squitz), and reduced the number of rapids from 130 to about five. (Pike et al, 2015, Cowichan River: a Summary of Historical Disturbances, Water Use Pressure and Stream flow Trends.)
Reason For Change	In 2020, a record setting spring rainfall damaged the sediment ponds below Stoltz Bluffs, and carved a new channel in the Cowichan around an existing oxbow between Stoltz and Sandy Pools, creating concerns this could compromise salmon spawning beds in the oxbow.
Actions taken	The effects on fish species at the new channel and oxbow sites are monitored. Some remediation of avulsion sites has taken place to improve the stability of the erosion sites, as well as hydrological investigations of the sites.

TABLE 4: COWICHAN RECREATIONAL VALUES

THEME 6: HUMAN HERITAGE APPRECIATION

SUB-THEME 6.1 HISTORIC SITES, 6.2 CULTURAL LANDSCAPES

Description of value	The Cowichan people have a long and rich cultural heritage that comes from their long habitation of the Cowichan watershed. It is of interest to note that the name Cowichan is an anglicized version of Quw'utsun, which is rooted in the Hul'q'umi'num word "shquw'utsun," which itself translates "to warm one's back in the sun." The name describes the temperate climate of the southern Vancouver Island watershed, where the Quw'utsun people have resided for millennia. They harvested and cultivated the natural world, in the woods, river and the estuary, for sustenance, health and spirituality. They see themselves as being from the land: their history literally lies in the land.
Reason For Change	The most visible and publicly accessible historic sites along the Cowichan River are the handful of railway trestle bridges that cross the waterway, as part of the Cowichan River Trail or TransCanada Trail. In 2020, rail trestle bridges Mile 66 and Mile 64.4 received upgrades, funded by Ministry of Transportation and BC Parks. Hydrometric instruments gauge water levels to help plan for flooding; data is shared with Cowichan Tribes.
Actions taken	Please see Cultural Values, Theme 3: Riparian Settlements, Sub-theme 3.1 Siting of Dwellings and Sub-theme 3.2 River-based communities; Sub-theme 3.3 River-influenced transportation.

SUB-THEME 6.3 SPORTING EVENTS AND ACTIVITIES

Description of value	Not noted at the time of designation. It is worthy to note however, that the South Cowichan Lawn Tennis Club has been in existence since 1887, the oldest lawn tennis club in Canada, and at its current site since 1907. https://clubspark.ca/scltc/
Reason For Change	
Actions taken	

SUB-THEME 6.4 CULTURAL EVENTS AND ACTIVITIES

Description of value	Though not described at the time of designation, cultural sharing and activities are part of sharing the story of the Quw'utsun Sta'lo'.
Reason For Change	None.
Actions taken	The Quw'utsun Sta'lo' Skweyul (Cowichan River Day) held in 2017, 2019, 2021 and 2022 to celebrate the Heritage River and the culture of Quw'utsun people, is noted as one of the outstanding cultural events of the year. The day includes traditional opening remarks from a Quw'utsun Elder, the renowned Tzinqwa Dancers at opening and closing, Indigenous knowledge keepers and artists teaching cedar weaving, drum making, bones games, along with sharing stories, music, paddling lessons, and other activities. Local conservation groups, government and businesses provide booths and activities to highlight the importance of protecting the Sta'lo'. Fishers pull a seine net from the river to see what species are present that day.

9. Integrity Guidelines since Designation

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

TABLE 5: COWICHAN RIVER INTEGRITY GUIDELINES	
CHRS PRINCIPLES, PROCEDURES & OPERATIONAL GUIDELINES (2023)	CHANGES OR THREATS TO RIVER INTEGRITY AND ACTIONS TAKEN
1. NATURAL INTEGRITY GUIDELINES	
1.1 The river is of sufficient size to include significant representations of all of the natural processes, features, or other phenomena that give the river its outstanding natural value.	This condition is unchanged since the time of designation.
1.2 The river includes those ecosystem components that contribute significantly to the provision of habitat for species in need of protection.	This condition is strengthened with ongoing land acquisitions that protect habitats. The 750-hectare Cowichan River Provincial Park includes a 28-km stretch of the 47-km Cowichan River within its area. BC Parks added 18 ha along the Cowichan River in 2020. The river is flanked by second growth forest and riparian zones in the park, with a healthy Garry oak woodland area, and continues through a series of regional parks, conservation sites and private forested lands downstream. The river flows into the highly biodiverse, 400-hectare Cowichan Estuary, most of which is now under protection after a series of land acquisitions. In 2023, a two-year 70-hectare marshland restoration project was announced. There are other conservation sites in close proximity to the estuary, such as BC Parks' 18-ha Mount Tzuhalem Ecological Reserve and the 40-ha Chase Woods Nature Preserve, which both feature Garry oak, wildflowers and old growth Douglas-fir and arbutus.
1.3 There are no human-made impoundments within the river.	There are no impoundments on the Cowichan River.
1.4 All key elements and ecosystem components are unaffected by impoundments located outside the river/ nominated section.	The weir at the outlet of Cowichan Lake does not alter the natural flow pattern of the river during winter months, or the river's key elements and ecosystems. Installed in 1957, the weir stores water in Cowichan Lake until it's needed to maintain base water flows in the river during summer low water events, to protect fish habitat and natural heritage values, and for a paper mill's operations. The final new weir will be about 70cm higher than the current 97cm. The final funding for its replacement was announced in early 2024. The pulp mill is now closing.

TABLE 5: COWICHAN RIVER INTEGRITY GUIDELINES

CHRS PRINCIPLES, PROCEDURES & OPERATIONAL GUIDELINES (2023)

CHANGES OR THREATS TO RIVER INTEGRITY AND ACTIONS TAKEN

1.5 The water in the river must be uncontaminated to the extent that its natural aquatic ecosystem is intact.

The natural aquatic ecosystem remains intact.

CHALLENGES

- Sediment from natural erosion can affect water clarity (turbidity), channel depth and velocity, which can at times compromise fish habitat.
- Competition for groundwater from urban demand may impact tributaries, riverine and estuary ecosystems; the regional population of 80,000 is predicted by rise by 25,000 by 2050.
- Cowichan estuary is closed to shellfish harvest due to pollutants in waters.

ACTIONS (A SAMPLING OF SOME OF THE ACTIONS TAKEN OR UNDERWAY)

- Remediation of Stoltz Bluff and other avulsion sites continues.
- **Lower Cowichan-Koksilah Floodplain Risk** Mitigation and Management program, and Sediment Management Plan, CVRD (NHC, 2015)
- Upper Cowichan River Assessment Preliminary Projects Report, CVRD (NHC, 2023)
- A multi-year study (2023) tests for **ultra-violet filters (sunscreens)** in the Cowichan watershed. UVF compounds are not detected in sediment samples or aquatic invertebrates. People are encouraged to use non-toxic sunscreens.
- Water is sampled in Cowichan River for **tire-derived chemical 6PPD-q**, a compound used to stabilize rubber that, when it enters salmon-bearing streams as tire wear dust in the urban run-off, causes acute mortality in coho salmon, and other species. The Raincoast Conservation Fund is now requesting Environment and Climate Change Canada assess 6PPD to determine its toxicity status and take appropriate action.
- B.C. government initiates a **Watershed Security Strategy and Fund** (2023).
- The Province and Cowichan Tribes agree to develop BC's first **Water Sustainability Plan** for the Koksilah watershed, a tributary to Cowichan River, to address water use and minimum flows for fish species, 2023.
- **Town of Lake Cowichan** receives a \$10M grant (2023) to improve sewage treatment to meet provincial water quality standards and provincial and federal water quality objectives for the Cowichan River. Upgrade will include extracting a portion of phosphorus from treated effluent before it is discharged into the Cowichan River.
- Water samples taking in summer months show persistent levels of E. coli and higher than normal levels of nutrients, in particular phosphorus.
- **The Cowichan Watershed Board** will closely monitor water quality in response to the 2023 fish kill, including sampling invertebrates for nutrient exposure. CWB secured funding to organize planning and workshop sessions with partners to monitor water quality conditions in the river and respond effectively in 2024. They are developing an early warning system and a list of possible responses to proactively prevent another fish kill event. The results of the process should help other communities facing similar challenges.
- **Cowichan Tribes** is replanting eelgrass to provide habitat in the estuary ecosystem; they collaborate with other agencies to restore wetlands and estuary, and for water management.

TABLE 5: COWICHAN RIVER INTEGRITY GUIDELINES

CHRS PRINCIPLES, PROCEDURES & OPERATIONAL GUIDELINES (2023)	CHANGES OR THREATS TO RIVER INTEGRITY AND ACTIONS TAKEN
1.6 The natural aesthetic character of the river is free of, or not adversely affected by, human developments.	The aesthetic components of the Cowichan are intact, and legendary. Please see Point 1.2.
2 CULTURAL INTEGRITY GUIDELINES	
2.1 The river is of sufficient size to include significant representations of all of the features, activities or other phenomena that give the river its outstanding cultural value.	This condition is unchanged since the time of designation.
2.2 The visual character of the river/ nominated section enables uninterrupted appreciation of at least one of the periods of the river's historical importance.	This value is unchanged since the time of designation.
2.3 The key artifacts and sites comprising the cultural values for which the river is nominated are unimpaired by impoundments and human land uses.	Historical land uses of the river that continue (forestry, farming, log storage, fishing, marine transport) add to the cultural experience on the river. Several museums and heritage sites convey aspects of those activities. • Quw'utsun Mustimuhw or Cowichan People live on historic village sites from Cowichan Lake shores to the lower reaches of the river. They are guardians of their culturally and spiritually significant places. • Cowichan Peoples advise on ways to proceed when there are archaeological, remedial and development works that may impact their cultural, spiritual or historic significant places. • Quw'utsun knowledge holders and nature interpreters hold cultural and nature education walks to point out traditional habitation sites (indicated by camas, fawn lilies and other species cultivated for food, medicines) or other identifiable artifacts, like weir stones at the river. • Cowichan 2050 is a CVRD Regional Collaboration Framework that commits to sustainable, collaborative planning to protect and enhance the region's culture, history and ecology.
2.4 The water quality of the river/ nominated section does not detract from the visual character or the cultural experience provided by its cultural values.	This value is unchanged since the time of designation. See also Natural Integrity 1.5 above.

TABLE 5: COWICHAN RIVER INTEGRITY GUIDELINES

CHRS PRINCIPLES, PROCEDURES & OPERATIONAL GUIDELINES (2023)

CHANGES OR THREATS TO RIVER INTEGRITY AND ACTIONS TAKEN

3 RECREATIONAL INTEGRITY GUIDELINES

3.1. The river possesses water of a quality suitable for contact recreational activities, including those recreational opportunities for which it is nominated.

This value is unchanged.

The Cowichan River is renowned as a trout, steelhead and salmon angling and flyfishing destination. Fisheries managers work continually to improve fish and ecosystems conservation efforts.

Cowichan River Chinook populations have rebounded in recent years. The four-year average return is now at 23,140 individuals; as of 2022, adult returns exceeded target escapement numbers for seven consecutive years.

The steelhead fishery is moderately abundant and shows an increasing trend.

It is a Class 3 whitewater destination river for kayakers; university teams and enthusiasts train on the river year-round.

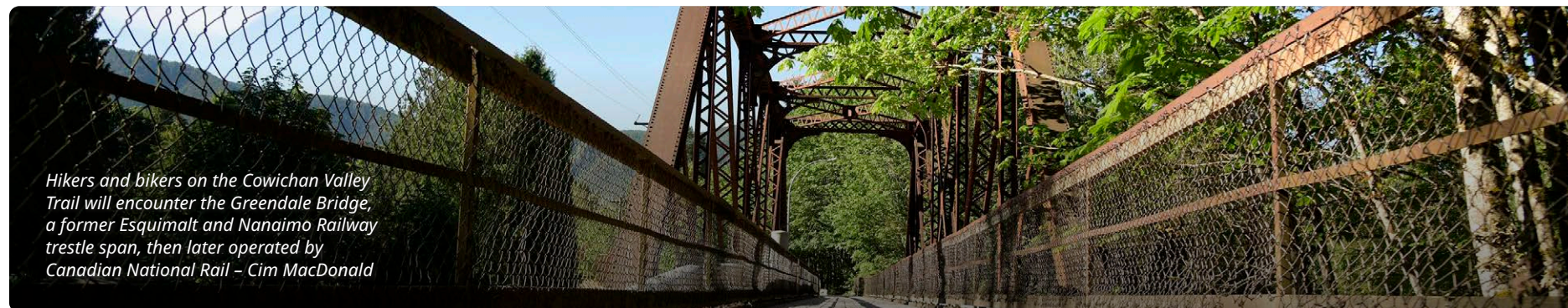
3.2 The river's visual appearance is capable of providing river travelers with a continuous natural experience, or combined natural and cultural experience, without significant interruption by modern human intrusions.

This value remains. Much of the Cowichan River is embraced on both sides by provincial and regional parks, second growth forest, or conserved areas. The 20-km, ancient Cowichan River Footpath connects the river's parks on a scenic hike. The Cowichan Valley Trail is integrated into the Trans Canada Trail route on Southern Vancouver Island. Both trails cross heritage trestle bridges.

3.3 The river is capable of supporting recreational uses without significant loss of or impact on its natural and cultural values or its visual character.

This integrity aspect is intact. Conservation groups and business regularly host waste cleanup events to protect habitats and esthetic values, and to engage citizens in sustainable river activities and stewardship.

Hikers and bikers on the Cowichan Valley Trail will encounter the Greendale Bridge, a former Esquimalt and Nanaimo Railway trestle span, then later operated by Canadian National Rail – Cim MacDonald



10. Review of Management Plan

TABLE 6: COWICHAN RIVER MANAGEMENT PLAN RECOMMENDATIONS AND STATUS

THE COWICHAN CANADIAN HERITAGE RIVER MANAGEMENT PLAN (3.4 ACTIONS) – 2003	DEGREE OF ACHIEVEMENT (INITIATED, ONGOING, ADDRESSED, PARTIAL, COMPLETE)	COMMENTS
ACTION 1 Monitor and protect habitat to sustain healthy fish populations.	Ongoing	This document reports on dozens of monitoring and habitat protection activities that took place in the past decade, some which are ongoing and some that are under way. Just a few of the new ones are: • PIT Tag study by BCCF, Cowichan Tribes, DFO, and FLNRORD to monitor Chinook, coho and steelhead • 2-year, \$3M Cowichan Estuary Restoration • Cowichan Tribes eelgrass estuary plantings • CVRD is developing a list of 24 projects to enhance upper Cowichan River function, habitats and climate resilience • CWB is developing a response strategy in 2024 to respond to low flow situations to support habitat and climate resilience.
ACTION 2 Encourage community and public support of programs promoting river stewardship.	Ongoing	Just a few of the organizations promoting stewardship are: • BC Parks, BC Parks Foundation, Cowichan Land Trust • Cowichan Lake and River Stewardship Society • Cowichan Tribes, Cowichan River Hatchery • Cowichan Valley Naturalists, Cowichan Fly Fishers • Nature Trust of BC, Somenos Marsh Wildlife Society • Cowichan Estuary Nature Centre • Cowichan Watershed Board – unveiled the mascot Chinook salmon Sth’aqwi’ to create awareness of salmon ecology, and Quw’utsun’s ancient connection to the river. • Tourism Cowichan is in process of becoming Biosphere Committed Destination by fall 2024.
ACTION 3 Provide river-based and riverside recreational opportunities.	Ongoing	The Cowichan River presents a range of recreational opportunities year-round: Kayaking, fishing, hiking, biking, horseback riding, camping, picnics, appreciating nature. Also, interpretive walks with Cowichan Tribes knowledge keepers and naturalists, and the biennial Quw’utsun’ Sta’lo’ Skweyul (Cowichan River Day) festival and BC River Day.

TABLE 6: COWICHAN RIVER MANAGEMENT PLAN RECOMMENDATIONS AND STATUS

THE COWICHAN CANADIAN HERITAGE RIVER MANAGEMENT PLAN (3.4 ACTIONS) – 2003	DEGREE OF ACHIEVEMENT (INITIATED, ONGOING, ADDRESSED, PARTIAL, COMPLETE)	COMMENTS
ACTION 4 Recognize and protect important cultural and heritage sites.	Ongoing	Cowichan Tribes locates and records important sites. Any work that may disturb sites such as habitat restoration or development must consult and engage Cowichan Tribes. Museum and heritage sites relate pioneering activities.
ACTION 5 Encourage and strengthen partnerships between local, provincial and federal agencies, Cowichan Tribes, and stakeholders.	Ongoing	There is an established and well recognized culture of partnership and respectful collaboration among Cowichan Tribes, local and senior governments, ENGOs, stewardship groups and industry, that was noted in the last decadal report, and which continues today. This decadal report again reflects some of the outstanding and committed work they do together for the good of the river.
ACTION 6 Provide ongoing opportunities for stakeholder/public involvement in management of the Cowichan as a Canadian Heritage River.	Ongoing	Several initiatives welcome and include community members, including groups such as: • Cowichan River Stewardship Roundtable • Cowichan Watershed Board • Public Advisory Group of the Cowichan • Cowichan Lake & River Stewardship Society • Cowichan Estuary Restoration & Conservation Assoc.
ACTION 7 Celebrate and promote Cowichan's Canadian Heritage River designation.	Ongoing	The community takes great pride in presenting the Cowichan River as a Canadian Heritage River, as well as a British Columbia Heritage River, for its outstanding recreational, cultural and natural/environmental characteristics. Dozens of groups note the Cowichan River's heritage designation in their reports or in their marketing. These include the CVRD, fishing guides and lodges, a tube rental company, municipalities, conservation groups, BC Parks, tourism and many more. The commemorative plaque, installed in 2005 at the Quw'utsun Cultural Centre, recognizes the Cowichan as a Canadian Heritage River in English, French and Hul'q'umi'num'.

11. Condition of Plaque

CONDITION OF COWICHAN RIVER PLAQUE, COMMEMORATED OCTOBER 2003

General condition of plaque, as of 2023 annual report.

Fair (will need repair soon)

Condition of bronze, paint and lacquer, and mount.

Plaque requires cleaning. The wooden posts are old but have no obvious damage. Three of four copper post caps are missing.

Condition of the site.

The site is somewhat isolated from foot traffic, and is now behind fencing.

If needs repair has been checked in section one, describe necessary repairs required.

Maintenance and repairs should be done before any deterioration of the posts sets in. Maintenance should include cleaning of the plaque, and replacement of copper post caps with metal or treated cedar caps.

If needs repair has been checked, indicate a date by which the repairs will be complete.

Date of repair is unknown, dependent on funding.



Cowichan River heritage designation plaque

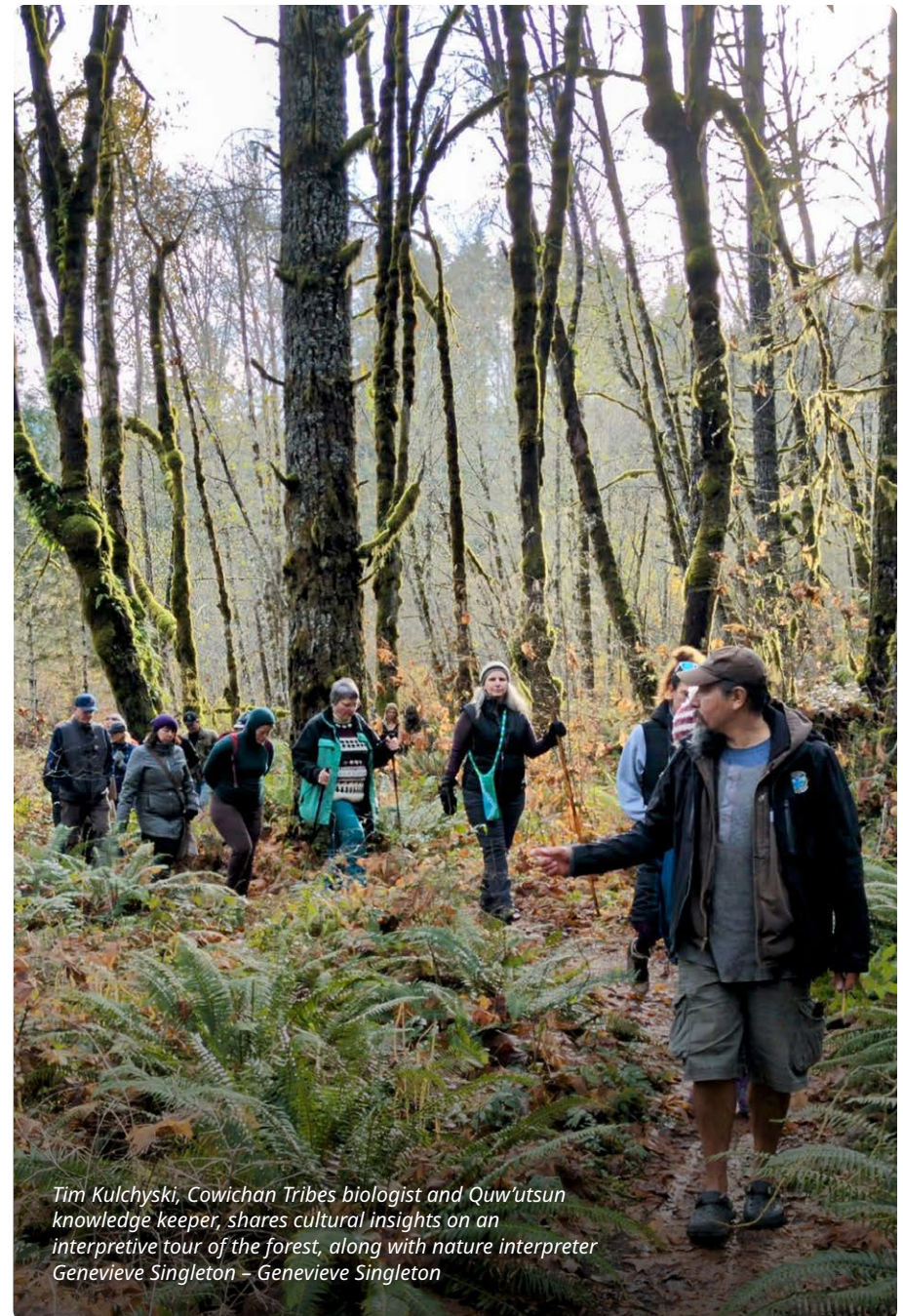


12. Benefits

Benefits of Heritage River Designation

The benefits of Heritage River Designation are powerful and far-reaching, supporting local stewardship, the regional economy, and Canada's river heritage.

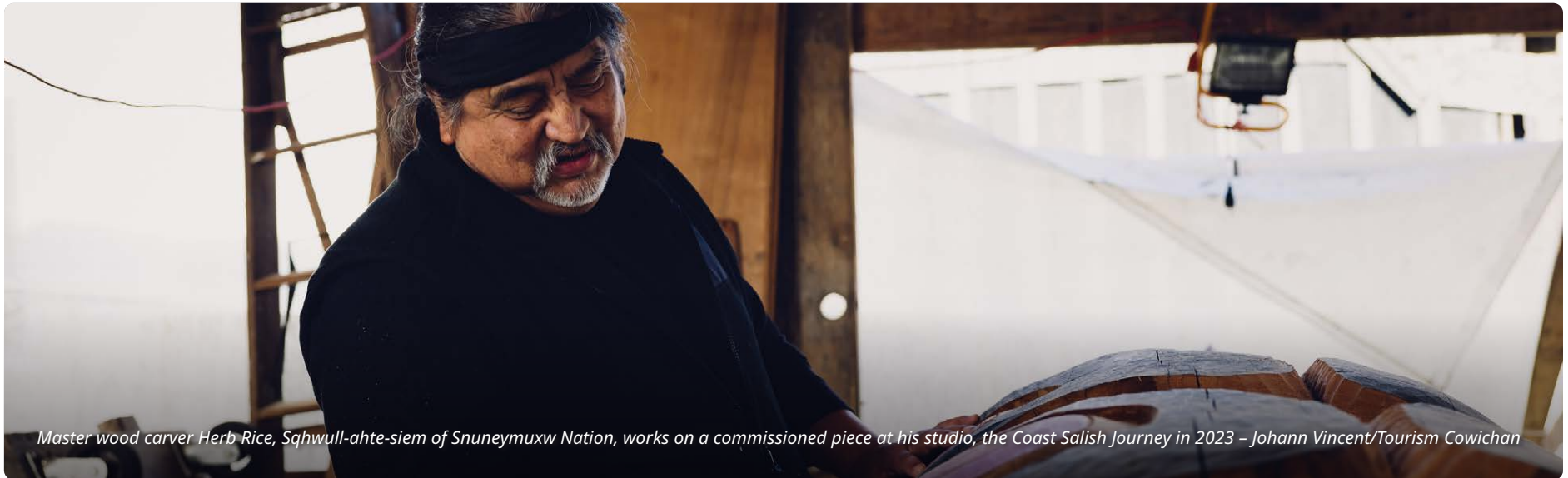
- Most of the local governments, agencies and conservation organizations involved in some aspect of river stewardship highlight the heritage designation;
- For these agencies, heritage designation is a positive factor in securing resources and support from senior levels of governments for projects (i.e. Cowichan Lake weir replacement);
- Designation augments education programs such as those at the Cowichan Estuary Nature Centre and at the Cowichan Valley School District;
- Designation enhances the public's recognition and understanding of the history and rights of Cowichan Tribes in the Cowichan Valley, and the outstanding value of traditional knowledge;
- Fishing guides, eco-tourism and hospitality service providers promote the river's heritage values to attract guests seeking those specific river values;
- Media coverage highlighting the heritage river designation and values promotes tourism and recreation;
- The heritage designation helps non-profit conservation and other groups secure funding and draw attention to their work;
- Tourism Cowichan, which promotes the Cowichan Region, is now a Biosphere Committed Destination with the goal of achieving full certification by fall 2024;
- Heritage River designation arouses public interest to learn about the natural history and character of the Cowichan River, and to take an active role in its stewardship and protection;
- Designation increases an overall understanding of the value of ecosystems, the goods and services they provide to everyone, and of the heritage values of the Cowichan River and watershed specifically.



Tim Kulchyski, Cowichan Tribes biologist and Quw'utsun knowledge keeper, shares cultural insights on an interpretive tour of the forest, along with nature interpreter Genevieve Singleton – Genevieve Singleton

13. Summary and Conclusion

In recognition of its exceptional natural, cultural and recreational values, the main stem of the Cowichan River was designated as a Canadian Heritage River in 2003. This decadal report covering the years 2014-2023 shows the community is making a tremendous effort to maintain the heritage values that led to its designation as heritage river.



Master wood carver Herb Rice, Sqhwull-ahte-siem of Snuneymuxw Nation, works on a commissioned piece at his studio, the Coast Salish Journey in 2023 – Johann Vincent/Tourism Cowichan

The Cowichan River and estuary support a rich diversity of species and ecosystems, yet these are vulnerable to climate change and human activity. Impacts include drought, habitat loss, erosion, sedimentation, low water levels, pollutants, invasive plants and animals. The abundant flocks of shorebirds and once epic runs of steelhead and salmon seem more precarious. Southern Vancouver Island Chinook salmon are being considered for inclusion in the federal Species at Risk registry.

Although the impacts seem daunting, there is much critical stewardship work that has been done or is underway to reverse, mitigate and adapt with resilience to those impacts. Some actions include:

- Cowichan Tribes, governments and conservation groups have restored hundreds of hectares of wetland and intertidal zones. A project led by Nature Trust of BC to restore 70 hectares as part of its Enhancing Estuary Resilience initiative is endorsed by UNESCO as a contribution

to the UN Decade of Ocean Science for Sustainable Development. The work will bolster the estuary health and fish stocks and strengthen its climate resilience.

- Cowichan Valley Regional District, Cowichan Tribes, Cowichan River Stewardship Roundtable, Cowichan Watershed Board and government agencies provide leadership, guidance and expertise on the river's water management. They lead erosion and habitat restoration; a new Cowichan Lake weir will sustain summer water levels in the river; numerous joint projects will reverse decades of human interference and help restore a priceless ecosystem.

Despite cultural and archaeological sites impacted by development, sedimentation, even remediation work, cultural and historical values remain strong as peoples' passion and commitment to the place grows.

- Quw'utsun (Cowichan) Tribes work with and advise governments and others to protect their traditional, culturally important sites; like their ancestors, they remain stewards of the river that sustains them.
- The lives of people of the past and living today are inextricably linked to the Cowichan River. Histories of forestry, fishing and transportation sectors are told in museums and at landmarks, including Cowichan Valley Museum, BC Forest Discovery Centre, the Royal BC Museum and other sites.
- Tourism Cowichan supports the growing interest in Indigenous tourism and culture; it is also aiming to achieve full certification as a Biosphere Committed Destination by fall 2024.
- Recreational values for the Cowichan River continue to be robust, despite fishing restrictions in recent years.
- These values are enhanced with the expansion of parkland, trails, cultural interpretation programs, and active habitat restoration and protection. BC Parks expanded its footprint on both sides of the Cowichan River, and in the region. In 2021 it expanded the 750-hectare Cowichan River Provincial Park by 39 hectares, in partnership with BC Parks Foundation.
- The Cowichan River remains a premier whitewater destination on Vancouver Island, as seasoned and new paddlers explore its challenges throughout most of the year. Summer river tubing is popular, as is horseback riding. Hiking and biking are the most popular activities.
- Angling and flyfishing remain legendary, for locals and global visitors. The travel site Fishing Booker listed the Cowichan River as one of the top 10 fishing destinations in Canada for 2024.

It is clear that the collaborative approach profoundly benefits the Cowichan River and helps to retain its exceptional qualities – its natural beauty, its rich diversity and important place in the regional ecosystem. It is noteworthy that the river's stewards rely on both traditional Indigenous knowledge and science as they move forward to meet the challenges. In its 2020-2030 Strategic Plan, the CHRS recognized the Cowichan River as a model for collaborative stewardship since its designation.

The river's stewards must continue to work cooperatively to build on the heritage values of the river for today and for generations. Indigenous traditional and local knowledge and perspectives are key to better inform strategies and actions. The relentless advance of climate change requires strong leadership, inspired collaboration, and committed long-term policies and investments to help sustain a healthy river and resilient ecosystem.

The Cowichan's stewardship partners will need the support of the community. Continued access to the Cowichan River with boat launches, swimming beaches, trails and conservation sites are ways of engaging community members, to thank locals and visitors alike for their investments of time, ecologically sensitive tourism, and passion. Engaging people in the care of nature will help alleviate some of the climate anxiety we see increasing across all age groups, and especially among youth.

The Cowichan River remains a remarkable model of river stewardship based on respect and collaboration. Due to the community's commitments and to Nature's own resilience, the Quw'utsun Sta'lo' will continue to thrive. This report concludes that the natural, cultural and recreational values of the Cowichan River remain intact, and the river is worthy of continued designation as a nationally significant river within the Canadian Heritage Rivers System.



Spulqwitth'e' (Owl) Spirit, created by Tsawout First Nation carver Ketilwtel (Tom LaFortune), was inspired by the carver's respect for his mother and the family's ancestral beliefs – Henhouse Photo Co./Tourism Cowichan