



Cowichan Estuary Restoration
& Conservation Association

20th of December 2023

Christmas Letter from the Chair with past year's reflections.

Dear CERCA members and friends of the Cowichan Estuary,

It would be too depressing to start this Christmas letter with comments on the global effects and human hardships caused by the continuing wars in the Middle East and Ukraine. I rather would like to draw your attention to at least one piece of positive news which may give us a glimmer of hope to save our precious planet after all. I am referring to the final declaration of the United Nations Climate Change Conference (COP28) which terminated on December 12th 2023 with an Agreement by over 200 countries to phase out the use of fossil fuels in favor of renewable energy. Although it remains to be seen how this translates into urgently needed tangible action by the signatories, it is at least a step in the right direction. We should hold Canada and BC accountable for transitioning away from fossil fuels. Any new pipeline for example should be a thing of the past and so should be “dirty oil”.

The pessimists amongst us may rightly argue that since the first COP held in Berlin in 1996 the targets set by each of the following Conferences (28 in total!) have never been met in full. Greenhouse gases and temperatures continue to increase causing more and more severe weather extremes at enormous economic, ecological, and social costs. Meanwhile, more than 120 Million people have lost their homes and livelihoods either as a result of climate change, wars, or wars caused by climate change.

In the 2022 Christmas letter, I optimistically highlighted the most promising Agreement signed by more than 190 Nations party to the ‘Convention on Biological Diversity’ (CBD) in Montreal in 2022. It was considered a landmark Agreement to halt the destruction of the ‘natural world’, its ecosystems, and biological diversity. However, to date, not much of the ambitious goals have been met. It is obvious that signing an agreement is easy, implementing it a different story!

CERCA 2023



Photo credit B. Anderson

After 2 years of online meetings as a result of the COVID-19 pandemic, CERCA's Board meetings in 2023 resumed to be in-person.

In the following, CERCA's major 2023 activities are described in chronological order. CERCA's lobbying for different causes via correspondence, phone conversations, media interaction, and meetings, as well as website management and general correspondence, continued throughout the year from January to December and will not be specifically mentioned in this report.

WFP saw logs on Mariners Island

In March 2023 we completed a drone survey of Mariners Island to facilitate an assessment of the number of logs washed up since the drone survey at the same time in 2022. The results were submitted to Western Forest Products (WFP, the owner of the saw logs) with a follow-up meeting. But despite ongoing correspondence and meetings with Western Forest Products addressing the log removal no progress has been made. It is expected that by March 2024 more logs will have been washed up during the typically severe late fall and spring storms. In November this issue was brought to the attention of WFP's new PR Manager who promised affirmative action. CERCA has been assured by the WFP Mill Manager that Falt Towing (i.e., WFP's contractor for log boom transport to the mill pond) 'diligently' tries to remove stray logs stranded along the shoreline of Mariners Island before they are washed up onto the marsh. But logs on the marsh are not accessible from the sea, Our dialogue with WFP will continue.

1	13	25	37	49	61	73	85	97	109	121	133	145	157	169	181
2	14	26	38	50	62	74	86	98	110	122	134	146	158	170	182
3	15	27	39	51	63	75	87	99	111	123	135	147	159	171	183
4	16	28	40	52	64	76	88	100	112	124	136	148	160	172	184
5	17	29	41	53	65	77	89	101	113	125	137	149	161	173	185
6	18	30	42	54	66	78	90	102	114	126	138	150	162	174	186
7	19	31	43	55	67	79	91	103	115	127	139	151	163	175	187
8	20	32	44	56	68	80	92	104	116	128	140	152	164	176	188
9	21	33	45	57	69	81	93	105	117	129	141	153	165	177	189
10	22	34	46	58	70	82	94	106	118	130	142	154	166	178	190
11	23	35	47	59	71	83	95	107	119	131	143	155	167	179	191
12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192



Orthophoto of the 2023 drone survey produced by Tristan Douglas. The grid overlay facilitates counting the number of logs.

Technical Advisory Committee of the Cowichan Watershed Board (CETAC) As CERCA's representative on the Technical Advisory Committee of the Cowichan Watershed Board I hosted a meeting in April and participated in follow-up meetings throughout the year. At the meetings, priority projects to reach the overall goal for the Cowichan Estuary “*a healthy estuary with well-functioning ecosystems*” are being discussed. CERCA’s unequivocal position on this issue is the phasing out of incompatible industries, in particular the practice of log transport and storage in the inter-tidal ecosystem, dredging, and metal manufacturing on the Westcan terminal.

Microplastic Project Phase II On request of the Cowichan Watershed Board I gave a well-received PowerPoint presentation in April on the proposed Phase II of CERCA’s Microplastic Project which is implemented in cooperation with CERCA’s sister organization “Project Watershed” from Comox. Phase II compares microplastic contamination of the Cowichan and Comox Estuary. The Cowichan Watershed Board promised continuing support in addition to the Letter of Support provided earlier in context with CERCA’s fund-raising efforts. The PowerPoint has been published on our website.

<https://www.cowichanestuary.com/news/cowichan-koksilah-estuary-microplastic-project-presentation>

Phase II dominated CERCA’s field work in July and August with the participation of numerous CERCA volunteers. All geo-referenced sites sampled during Phase I were re-visited at low tide and several new locations were added to establish solid baseline data for the two estuaries facilitating future monitoring for microplastics. Phase II also includes bio-samples with a focus on Varnish and other clam species and sand-lance feeder fish. The data hopefully will shed light on how microplastics enter the food chain. It will be interesting to compare the 2021 with the 2023 results from the Cowichan Estuary.

All sediment and bio-samples are currently being processed by the PostDoc Zeinab Zoveidadianpour at the laboratory of Dr. Bendell at Simon Fraser University. Zeinab provides monthly progress reports on the status of the sample processing and analysis.

CERCA's \$6K counterpart contribution to Zeinab's *Mitacs* fellowship for Phase II was due by October 2023. It required fund-raising which successfully was accomplished thanks to the cooperation of CVRD Area Service directors Hilary Abbot (\$1.8 K) and Alison Nicholson (\$800). An application for \$2,500 was submitted to the Municipality of North Cowichan. The funding proposal will hopefully be approved by Council within this month.

Glas Fiber Assessment Recent international research findings on the alarming impacts of glass fiber on marine organisms prompted CERCA to initiate a new project to investigate potential glass fiber pollution of the Cowichan Estuary. In focus is the biofilm of the inter-tidal mudflats which has been subject to research on fatty acid content already during Phase I of the Microplastics Project. The fatty acid component was included on request by the Canadian Wildlife Service for dietary studies on shorebirds feeding on algae of the biofilm.

Our working hypothesis for the glass fiber assessment project: *glass fibers which are mixed in the biofilm are ingested by migratory birds and filter feeders*. Although we had hoped to use the biofilm samples collected during the 2023 season for the glass fiber analysis the samples proved to be unsuitable. It was therefore decided to postpone the project to 2024.

Meanwhile, Dr. Mark Drever from the Canadian Wildlife Service has graciously allocated \$8K for this project which will start in April 2024 with the collection of biofilm and bio-samples from the Cowichan Estuary. Locations of special concern are areas surrounding the Westcan Terminal-a suspected main polluter of glass fiber-, and the southern section of the estuary close to Cowichan Village with major glass fiber sources from boats and structures with fiberglass content. The samples will be processed under a separate contract by Post.Doc Tamara Kazmiruk who already processed the microplastic samples from Phase I. Tamara is currently elaborating a protocol for sample collection and processing to be ready for the new season.

Bat Monitoring2023 This project has entered its third year enjoying a steadily expanding scope. Its positive impacts on CERCA's awareness-raising campaign on bats in the Valley are visible, an encouragement for the expansion of the project. Bat monitoring started in May and terminated in late October. As reported in the previous 'Letters from the Chair' this year's monitoring proceeded with a two-pronged approach; the first aiming at awareness raising the other focusing on science. The first covered eight strategic locations with different habitats, the second another seven locations. The data of the first group are currently being processed by Colten Payne, a UVIC student. Colten performs the work free of charge hoping that it will lead to a continuation and expanded bat research to be used for his proposed Master Program. The second data set will be processed by Cliff Stainsby as soon as the software for the more sophisticated equipment used by this group becomes available.

Earlier in 2023 CERCA members Bernhard Juurlink, Bill Heath and Cliff Stainsby attended an International Conference on bat research in Victoria. Their experience was shared with the Board followed by a unanimous decision of Board members for Bernhard to organize and implement a bat Symposium in Duncan with guest speakers and bat specialists from BC. The well-attended Symposium was held on June 5 at the main Lecture Hall at Vancouver Island University. Bernhard was able to attract high-caliber presenters from BC and beyond providing the audience with an excellent overview of bat work in the Province.

<https://www.cowichanestuary.com/news/cerca-bat-symposium-june-2023>

Due to time constraints at the June Symposium, the three scheduled CERCA speakers were unable to present the results of CERCA's bat project. Since the three presentations deal exclusively with CERCA's bat work in the Cowichan Valley and are therefore of great interest to CERCA members, Cowichan Valley residents, and all former and current active participants in the project there appeared to be a need for a second meeting. This also well-attended "Mini-Symposium" was successfully held on July 6 at the Providence Farm. A summary description was provided by Steve Nazar and published on CERCA's Website.

<https://www.cowichanestuary.com/news/cowichan-bats-mini-symposium>

Based on the increasing popularity of the bat project the CERCA Board is seriously considering applying for a larger research grant in 2024 possibly linked to Cowichan Tribes' so-called 'Cedar Project'. This would involve live capture of bats at strategic locations and radiotelemetry to follow radio-chipped bats to their roosts.

CERCA's Citizen Science Participation Dungeness crab larvae and forage fish habitat monitoring are two Citizen Science Projects spearheaded by Bill Heath on behalf of CERCA for the past three years. Both projects were successfully continued during the 2023 season. The crab larvae project in particular proved to be very successful with one of the highest numbers of Megalope counted at our light trap station in Cowichan Bay compared to other stations along the coast. The project terminated by the end of August but will continue in 2024.

Bill recently participated in the final workshop on this year's crab larvae project implemented by the Hakai Institute. He also gave a presentation on the project in November at the Shawnigan Lake College which is published on CERCA's Website.

<https://www.cowichanestuary.com/news/sentinels-of-change-larval-crab-light-trap-monitoring-presentation-by-bill-heath>

Bill continues to lead MABRI's sand lance habitat monitoring on behalf of CERCA. Monitoring is conducted throughout the year along the northern shore of the Westcan Terminal and at Cherry Point Beach, the only two locations of the Cowichan Estuary.

Tree Swallow Monitoring Based on the data recorded for the past seven years it may safely be concluded that CERCA's Tree Swallow habitat enhancement project has been a success. It significantly enhanced the Tree Swallow population of Cowichan Bay. The total number of completed nests reported for the three sites from 2016 to 2023 was 304. Conclusive indicators of successfully hatched clutches were reported for approximately 250 nest boxes. Provided that on average a Tree Swallow pair produces 4 to 5 eggs per nest, the total number of successfully hatched eggs amounts to 1000 to 1250. Since no dead birds or un-hatched eggs were found in the 250 of the 304 boxes it may safely be assumed that most fledglings of the 250 nests survived. Assuming an average juvenile survival rate of approximately 60%, the project added at least 600 mature birds to the Tree Swallow population of Cowichan Bay during the past seven years. Read more on our Website:

<https://www.cowichanestuary.com/news/cercas-tree-swallow-project-a-pleasing-success-story>

CERCA's Annual General Meeting The 2023 AGM took place on August 30 at the Providence Farm. At the meeting, all past Board members were re-elected and their positions re-confirmed except for the Secretary position held by Geoff Strong since 2012. Geoff will continue to serve as a Board Director. Goetz Schuerholz continues as Chair, Bill Heath as Co-Chair, and Margaret Riess as Treasurer. Goetz will assume the interim secretary position until a another volunteer will step up. Julia Bendtsen, John Atkinson, Bernhard Juurlink, and Cliff Stainsby continue to serve as Directors on the Board. The financial report by Margaret was unanimously approved. Margaret has been CERCA's treasurer since 2012. I take this opportunity to sincerely thank Margaret on behalf of CERCA for her immaculate bookkeeping and flawless financial reporting for so many years. The Minutes of the AGM are available on CERCA's Website:

<https://www.cowichanestuary.com/news/cerca-2023-agm-minutes-amp-powerpoint>

The AGM's highlight was a very informative PowerPoint presentation by our new member Jay White dealing with toxic algae growth on lakes and how to deal with it. The information given by Jay is particularly relevant to Quamichan and Somenos Lake. His PowerPoint can also be visited on CERCA's Website:

<https://www.cowichanestuary.com/news/treating-killer-algae-presentation>

CERCA's Outreach Programme Our long-standing cooperation with students from the Cowichan Secondary School continued in 2023 with lectures given by our Board members to their environmental class and through the involvement of students in the sand lance habitat monitoring project under the tutelage of Bill Heath. CERCA also has started cooperation again with the environmental class of Shawnigan Lake College. Lectures at the College were provided by Bernhard Juurlink and Bill Heath in October and November. I am scheduled to provide an overview of CERCA activities in early 2024. Students of the College will be available for fieldwork in 2024.

New Website CERCA's Board member Julia Bendtsen developed CERCA's new Square Space Website. A big 'Thank you' to Julia who earned many Kudos for a job well done. She

produced a site that is modern, lively, easy to navigate, and much easier to maintain than our old site. I also would like to thank her for continuing to publish contributions on the site when asked. One of the features I like best is the search bar added to each page which quickly will take you to any article or subject matter you are interested in.

Contamination from Westcan Terminal In early summer Bernhard Juurlink and I took Dr. Jesse Patterson, the interim Head of the Cowichan Estuary Environmental Management Committee, on a guided tour of the estuary. This was a great opportunity to brief Jesse on CERCA activities and to share CERCA's major concerns about adverse impacts on the estuary. As a follow-up to this meeting and on Jesse's recommendation Bernard filed a RAPP report on non-compliance issues by operators on the Westcan Terminal which has resulted in site inspections by Government agents and much correspondence, so far with little consequences to the Terminal Operators. This issue has also been brought to the attention of our local MLA and MP, again with little success for change.

WFP effluent discharge permit The effluent discharge permit application by WFP submitted to the government in June appears to have not been approved yet. The mill which has been operating since 1975 never had such a permit, allowing effluents to flow into the estuary without control all these years. Bernhard Juurlink has inquired with the Ministry as to the nature/composition of effluent components, the volume, and times of discharge the proponent is asked to provide. Of special concern is the uncontrollable stormwater discharge from the extensive graveled section of the mill yard which enters perimeter ditches draining into the estuary. The graveled part is used mostly for the storage of milled lumber that is treated with antifoulants.

Blackley Farm Dyke Trail CERCA and the Cowichan Valley Naturalist Society submitted a joint letter to North Cowichan requesting support for our joint permit application to the BC Dike Inspector for broom removal along the dyke. North Cowichan provided a support letter which was attached to our permit application which to date has not been responded to. If approved, trail work would start in late March before the bird breeding season.

Donations Larger donations received in 2023 include:
\$ 8.000 from the Canadian Wildlife Service (allocated to glass fiber assessment)
\$ 2.600 from the CVRD (allocated to CERCA contribution to Mitacs fellowship)
\$ 750 from Dentist Dr. Roozendaal (allocated to operations)
\$ 500 from Prof. F. Schulz (allocated to CERCA trail enhancement/maintenance)

Wishing you a Merry Christmas and all the best for 2024,

Goetz

Dr. Goetz Schuerholz,
Chair CERCA