

DATE: January 13, 2026

FILE: 5280-01

TO: Chair and Directors
Regional District Board

Supported by James Warren
Chief Administrative Officer

FROM: James Warren
Chief Administrative Officer

J. Warren

RE: Enhancement and Protection of Biological Carbon Sequestration

Purpose

To provide an overview of results of the recent regional Biological Carbon Sequestration Study (Study) and recommend this report's referral to the member municipalities, Electoral Areas Services Committee and Regional Parks and Trails Committee.

Recommendations from the Chief Administrative Officer:

THAT this staff report and study be referred to the K'ómoks First Nation, Electoral Areas Services Committee and member municipalities for consideration in relevant land use policies and related work;

AND FURTHER THAT this report and study be referred to the Regional Parks and Trails Committee for consideration in their land acquisition process.

Executive Summary

The Comox Valley Regional District (CVRD) Corporate Energy and Emissions Plan (CEEP) requires the CVRD to achieve net zero corporate greenhouse gas (GHG) emissions by 2050, defined as a minimum 90 percent reduction in corporate emissions, with the remaining 10 percent to be offset or neutralized.

- Neutralization can include carbon sequestration and CVRD recently completed a study to identify strategies to improve biological carbon sequestration through the protection, enhancement and restoration of local ecosystems in the Comox Valley.
- The most impactful strategy to improve biological carbon sequestration in the Comox Valley is the protection of older forests from logging and development. Other opportunities include coastal salt marsh restoration and supporting agricultural practices that enhance soil carbon.
- The CVRD should continue to focus on reducing corporate emissions to achieve the 2030 reduction target (50 per cent below 2019). This study can

be used to develop neutralization projects as we near the 2050 net zero commitment.

- The findings of this study may also provide near term opportunities to address community GHG emissions and other community benefits through land use regulation and parkland acquisition. For this reason, staff recommends referring the findings to K'ómoks First Nation, the Electoral Areas Services Committee, member municipalities, and the Regional Parks and Trails Committee.

Prepared by:

M. Barnard

Mike Barnard
Corporate Climate
Response Coordinator

Concurrence:

M. Zbarsky

Mike Zbarsky
Manager of Transit
and Facilities

Concurrence:

A. Mullaly

Alana Mullaly
General Manager of Planning
and Development Services

Government and Community Interests Distribution (Upon Agenda Publication)

Comox Valley Conservation Society	✓
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Background/Current Situation

The CVRD Board of Directors declared a climate crisis in 2019. Addressing the climate crisis requires a multi-faceted approach, focusing on reducing greenhouse gas (GHG) emissions while also removing and sequestering carbon emissions from the atmosphere. Local ecology, such as forests, plays a key role in supporting climate mitigation through the biological sequestration of carbon dioxide (CO₂).

The CVRD Corporate Energy and Emissions Plan (CEEP) establishes a net zero emissions target for CVRD corporate emissions by the year 2050. Net zero is defined in the CEEP as a minimum ninety per cent reduction in corporate GHG emissions from 2019 levels, with the remaining ten per cent offset or neutralized. One promising local neutralization opportunity is through initiatives that increase the carbon sequestration capacity of various Comox Valley land types and ecosystems.

In 2025, the CVRD contracted Pinchin Environmental and Engineering Solutions to complete a [Biological Carbon Sequestration Study](#) (hereafter referred to as “the Study”) to further understand the best opportunities for the CVRD to improve biological carbon sequestration within the Comox Valley. While some of the strategies detailed in the study and highlighted below may present an opportunity to offset CVRD’s corporate emissions, there is also a broader community opportunity that could be considered. In addition to mitigating community GHG emission, carbon sequestration may have other co-benefits, such as improving

drainage and air quality, preserving the rural character of the Comox Valley, and protecting biodiversity, to name just a few.

Biological Carbon Sequestration - Study Findings

The Study analyzes several distinct land types across the Comox Valley to assess their annual rates of carbon sequestration as well as long term carbon storage capabilities. These land types include forests, coastal salt marsh, eel grass, open ocean, freshwater lakes, rivers and ponds, urban landscape, agricultural and alpine meadows. The study further analyzed the impact of various actions to protect, restore or enhance the biological carbon sequestration potential of each.

The findings reveal that the highest impact opportunity for the CVRD to promote biological carbon sequestration is to protect existing forests (Table 1). The older and healthier the forest is, the greater the total amount of stored carbon within the ecosystem and the greater the potential release of stored carbon back to the atmosphere. Forests are under threat from both development and logging, and protection from both activities has the highest impact.

Table 1: Top six action scenarios ordered by annual impact, measured in equivalent tonnes of carbon dioxide per hectare.

Strategy Scenario	Annual Average Impact (t CO ₂ e/ha/yr)
Protection of > 250 yr forest from development	47
Protection of 5-250 yr forest from development	24
Protection of > 250 yr forest from logging	21
Protection of 5-250 yr forest from logging	9.5
Stable 5-250 yrs Forest: Extend rotation, harvest after 80 years instead of 40	7.3
Salt marsh restoration	7.1

In addition to the Study commissioned by the CVRD, the Comox Valley Conservation Partnership (CVCP) worked with the University of British Columbia Sustainability Scholars Program to complete [a regional analysis of stored forest carbon](#) in 2022, which maps the biological carbon sequestration potential of forests across the region (Figure 2). The GIS mapping produced as part of that work has been shared with the CVRD and could be used to help identify tracts of high value forest for protection.

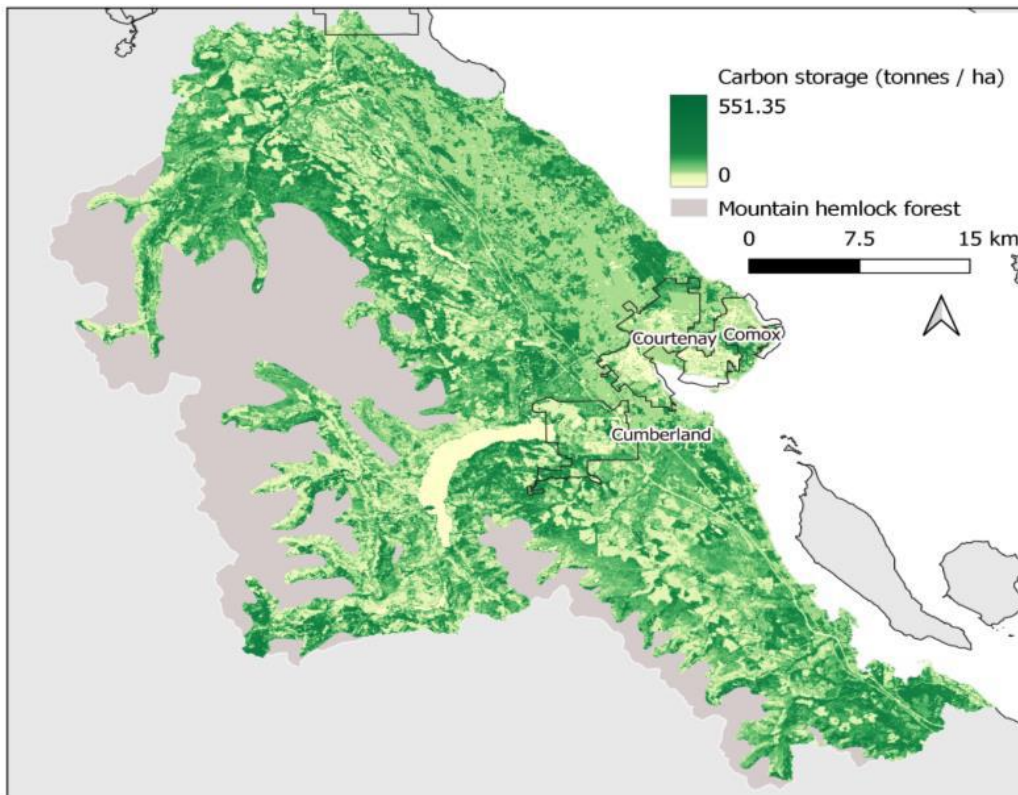


Figure 1: Forest carbon storage measured in tonnes carbon per hectare.

Carbon Sequestration Opportunities

1. Protecting forest carbon from logging

The Pinchin Study identifies the protection of high value forests from logging and development as the best opportunity to support biological carbon sequestration in the Comox Valley. While most forests are located within the Agricultural Land Reserve and Private Managed Forests lands, there may be an opportunity to protect select forests from logging directly through parks land acquisitions, such as being contemplated under the new regional parks and trails service.

Biological carbon sequestration is specifically identified as an ecosystem service benefit within one of the evaluation criteria for parkland acquisition in the 2024 Regional Parks and Trails Strategic Plan. This evaluation criteria framework considers environmental values, recreational and cultural values as well as community and social values, and will be used to standardize the assessment and prioritization of areas of interest for consideration as a regional park or trail. While there are many values and interests to be achieved (e.g., regional trail connectivity, conservation and biodiversity, outdoor recreation, etc.), the [forest carbon mapping completed by the CVCP](#) can help to inform regional park and trail land acquisition decision-making by highlighting areas with the most valuable forests from a carbon sequestration perspective, including forests and wetlands.

The findings and mapping can also be integrated into any future efforts to acquire or protect forests as part of the CVRD’s interest in wildfire resilience and watershed protection as well as advocacy efforts focused on Privately Managed Forest Lands.

2. Protection of forest carbon from development impacts

Given the jurisdictional limitations for the CVRD to influence logging practices within Private Managed Forest lands and the Agricultural Land Reserve, a potential opportunity for the CVRD to impact forest carbon sequestration is to limit the removal of valuable forest carbon as part of land development, especially within core settlement areas (e.g. municipal areas and settlement nodes) where development is most likely to occur.

Staff are currently working to develop the Saratoga Beach Local Area Plan, which is working towards developing an ecosystem-based approach to land use management and will include policies that support ecosystem health, climate resilience, and restoring natural spaces. The results of this study can play a significant role in supporting Local Area Plan policies that identify and protect carbon rich forest lands within the settlement node to support GHG emissions reductions and promote climate resilience.

More broadly, the protection of forests from development aligns with several values in the CVRD *Regional Growth Strategy* (RGS) and *Rural Comox Valley Official Community Plan* (OCP), including the protection and stewardship of the natural environment (RGS, p. 21; OCP 4(2), p. 14) and greenhouse gas reduction (RGS Objective 8-D, p. 73); OCP 12(3), p. 18-19). Existing goals to ensure settlement nodes are “developed in a compact and transit-supportive manner” (RGS, p. 82), and provide for mixed housing forms (OCP 21(1), p. 27) are also supported by further concentrating development within existing settlement nodes away from dense tracts of forest.

As a regional district, the CVRD lacks the authority to enact a tree cutting bylaw (except in relation to hazard areas) but is empowered under Section 488 of the *Local Government Act* (LGA) to regulate how land alteration and development can occur through the establishment of a Development Permit Area (DPA). This authority extends to the protection of carbon-sequestering ecology provided that it can be identified, mapped, and designated as a DPA. The Province’s “Development Permit Areas for Climate Action” guide advises that, in addition to other form and character requirements, a DPA can be used to create siting requirements to “cluster buildings [and] *retain existing vegetation and natural areas – for carbon storage*”.

While preserving forestland in general will increase overall sequestration in the region, it is understood that some forests may need to be cleared to facilitate future development, and any future DPA would need to narrow in on the most valuable tracks of forest from a stored carbon perspective. Further investigation is required to understand whether and how a DPA could be used as a tool to protect forests for carbon storage purposes.

3. *Coastal salt marsh restoration and protection*

While salt marsh restoration was found to have a high impact per hectare of marshland restored or protected, there is very little salt marsh within the region relative to other land types, so the overall potential impact is lower than other actions. However, there is value in incorporating the findings of the Study into ongoing work around coastal flood mitigation and redesign of coastal parks. Examples include the Dyke Road Park revitalization project and the Goose Spit Climate Resiliency Project, where staff will identify opportunities to protect or restore coastal salt marsh as part of future projects. Staff will also look for opportunities to partner with local community groups pursuing related work (e.g., Comox Valley Conservation Partnership).

4. *Soil carbon storage enhancement in agricultural lands*

While improving the carbon sequestration rate of agricultural soils has a relatively low impact compared to other actions, the CVRD is already engaged with the local farming community through the Comox Valley Agricultural Plan, which includes recommendations for sustainable farming practices, including soil conservation and carbon sequestration. There already exists a motivated stakeholder group among local farmers interested in sustainable farming practices within the region and staff can consider relevant findings of the Study in their ongoing work with the agriculture community.

Offsetting corporate GHG emissions

Biological carbon sequestration presents an opportunity to neutralize corporate GHG emissions while keeping funds within the region and pursuing other community values, such as preserving biological diversity, expanding and maintaining outdoor recreation spaces, wildfire prevention, and watershed protection. In the short term, it is recommended that the CVRD consider this work independently of the potential to neutralize corporate GHG emissions, as the current corporate focus is on reducing GHG emissions from CVRD operations to achieve the 2030 reduction target (50 per cent below 2019). As we approach corporate net zero commitments for 2050, it will become more necessary to consider how these carbon sequestration projects can contribute to neutralizing

remaining GHG emissions. This study can then be utilized to develop sequestration projects to achieve required carbon neutralizations while maximizing the community benefit of investments.

Options

It is recommended that the report be referred to K’ómoks First Nation, the Electoral Area Services Committee, the Regional Parks and Trails Committee, and member municipalities for consideration in relevant work. The Board could specify an additional or alternative direction.

Financial Factors

There may be future budgetary considerations from the development of biological carbon sequestration projects as we approach 2050 corporate emissions targets; none are related to the current recommendation.

Strategic Considerations - Strategic Drivers							
Fiscal Responsibility	Climate Crisis and Environmental Stewardship and Protection	✓	Community Partnerships	✓	Indigenous Relations	✓	Accessibility, Diversity, Equity and Inclusion

Fiscal Responsibility

While findings and recommendations have no immediate impact on CVRD budget or financial operations, it is widely acknowledged that there are significant societal costs associated with global warming, as noted in the CVRD Internal Cost of Carbon Policy, and that the cost of inaction far outweighs the cost to mitigate GHG emissions through responsible land use and reducing reliance on fossil fuels.

Climate Crisis and Environmental Stewardship and Protection

The contents of this report that support this strategic driver are highlighted throughout.

Community Partnerships

There is an opportunity to work with regional community organizations to support this work, including the Comox Valley Conservation Partnership and the Comox Valley Land Trust.

Indigenous Relations

Significantly forested areas exist throughout the traditional territories of K’ómoks First Nation and on their Treaty Settlement Lands. There could be opportunities for collaboration with K’ómoks on future carbon sequestration work if there is such an

interest, and it is recommended that this report and study be referred to K'ómoks for information.

Strategic Considerations - Regional Growth Strategy Goals						
Housing	✓	Ecosystems, Natural Areas and Parks	✓	Local economic development		Transportation
Infrastructure		Food Systems		Public Health and Safety		Climate Change
						✓

Housing

As noted above, the protection of forests from development has the potential to align with the Regional Growth Strategy goal to ensure settlement nodes are “developed in a compact and transit-supportive manner” (RGS, p. 82) by further concentrating development within settlement nodes away from dense tracts of carbon sequestering forest through infill densification. And any work undertaken to protect forests from development would take into consideration the need to facilitate an increase in housing stock as part of the region’s interest in mitigating the ongoing housing crisis.

Ecosystems, Natural Areas and Parks

Aspects that support the RGS goal to protect, steward and enhance the natural environment and ecological connections and systems are highlighted throughout the report.

Climate Change

Aspects that support the need to address climate change are highlighted throughout the report, but specifically to the RGS, relate to:

- Objective 8-A: Reduce GHG emissions created by the building sector.
- Objective 8-D: Reduce GHG emissions created by deforestation (land use change)
- Objective 8-F: Plan for climate change adaptation.

Intergovernmental Factors

Staff at member municipalities have expressed interest in the findings of this work during project updates shared at Local Government Climate Action Working Group meetings. This report and the study can be forwarded to member municipalities for their consideration in upcoming related work (e.g., OCP and zoning amendments, urban forest and tree cutting efforts).