CarbonRun

What is CarbonRun?

CarbonRun's mission is to enhance the natural power of rivers to remove carbon dioxide from the land and atmosphere. Based in Nova Scotia, CarbonRun is the first in the world to use a well-established river restoration approach that is estimated to have the highest net carbon removal rate (97%) of any carbon dioxide removal strategy to date.

Rivers play a vital role in delivering atmospheric and terrestrial carbon dioxide to the ocean as bicarbonate. Bicarbonate is used by various marine organisms to build sea shells, or precipitates to the ocean floor where it is stored for millenia.

Built on decades of research, CarbonRun's solution dramatically reduces acidity and restores rivers' natural ability to deliver carbon to the ocean, preventing it from returning to the atmosphere.

Introducing natural, alkaline limestone into rivers produces a multitude of environmental benefits beyond carbon removal, including improved water quality, enhanced aquatic biodiversity, repopulated fish stocks, decreased river acidity and community benefits such as capacity building and local employment.

Why this work is important

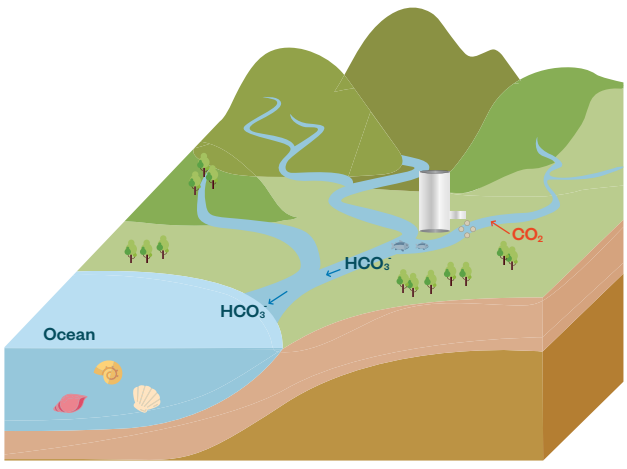
Bringing CarbonRun's river liming approach to large-scale but degraded river systems has the potential to meet approximately 10% of the needed carbon dioxide removal required to meet global climate goals.

Nova Scotia, like many watersheds around the world, has been harmed by decades of pollution, including acid rain. Acidification of rivers and oceans has compromised aquatic ecosystem health and biodiversity, driving some species, like Atlantic salmon, to the verge of extinction. Decreasing the acidity of rivers helps combat the negative effects of acid rain, restore the health and biodiversity of watersheds, and increase rivers' natural ability to capture and store CO_2, allowing them to play a critical role in cooling the planet.

How CarbonRun's Technology Works

1. Restoration of acidified rivers works by introducing safe amounts of crushed limestone into a river with the use of a doser. CarbonRun's technology releases site-specific amounts of natural, instantly dissolving alkalinity into rivers damaged by acid rain and pollution.

2. The added limestone attracts carbon dioxide and transforms it into bicarbonate, which is a natural ion. The increased alkalinity catches two sources of CO_2: terrestrial carbon released from the land into the river, and atmospheric carbon.



3. Marine organisms use this bicarbonate, along with calcium, another byproduct of this process, to build their shells and protect against the effects of ocean acidity, which decreases the presence of calcium and other minerals needed for aquatic health.

4. The remaining bicarbonate then flows from the rivers into the ocean. The restored river water offers the added benefit of mitigating ocean acidification along the coastline. The river transport system delivers scientifically measurable amounts of trapped terrestrial and atmospheric carbon to the ocean where it is stored for millenia.

Learn more about CarbonRun

CarbonRun's latest press releases and announcements can be found **HERE**.
Editorial photography and b-roll of CarbonRun's project sites and team can be found **HERE**.
Additional video content explaining CarbonRun's mission and technology can be found on **CarbonRun's YouTube Channel**.
Co-founder bios can be found **HERE**.

CarbonRun honours Indigenous knowledge and are committed to meaningful engagement with the Pictou Landing First Nation to guide priorities and approaches.

For more information, please visit: www.carbonrun.io or send an email to: info@carbonrun.io