

# Nature-Based Climate Solutions

The potential of Canada's natural carbon sinks to mitigate climate change and help achieve greenhouse gas emission targets.



Canada has globally significant carbon stocks in its forests, wetlands, grasslands, and agricultural lands that can play a critical role in mitigating, but also accelerating, climate change. *Nature-Based Climate Solutions* provides an overview of the mitigation potential of proposed solutions, options for enhancing carbon sequestration or reducing emissions in various ecosystems, and potential co-benefits.

Nature-based climate solutions can be implemented in:



Forests



Agriculture and grasslands



Freshwater systems

Coastal zone



## MEETING CANADA'S CLIMATE COMMITMENTS

### THE GOAL

Canada has committed to:

- Reducing greenhouse gas emissions to at least 40% below 2005 levels by 2030
- Achieving a net-zero economy by 2050
- Honouring its commitments as a Paris Agreement signatory



### MITIGATION POTENTIAL OF CARBON SINKS

Full implementation of nature-based climate solutions would mitigate a **small fraction** of Canada's current annual emissions, even with aggressive support and deployment.

This contribution is modest, but important, and will require strong action in many other sectors.

### OTHER BENEFITS INCLUDE

- ↑ Coastal flood control
- ↑ Air and water quality
- ↑ Biodiversity
- ↑ Property values
- ↓ Reduced urban heat island effects
- ↓ Soil erosion



# INDIGENOUS LEADERSHIP IS ESSENTIAL

**Indigenous Peoples are critical to the long-term success of many nature-based climate solutions as all carbon stocks across Canada exist on their traditional territories.**



Indigenous self-determination is a precondition and a catalyst for the implementation, adoption and long-term deployment of NBCSs.



Attempts to enhance carbon sequestration in naturally occurring carbon sinks without Indigenous Knowledge and leadership will not succeed.



Indigenous Guardians can help communities build capacity, strengthen decision-making, and honour traditional ways of being through monitoring, using, and protecting lands.



Indigenous Protected and Conserved Areas (IPCAs) may enhance the ongoing sequestration of atmospheric carbon as well as emissions reduction.



## NOT ALL NATURE-BASED CLIMATE SOLUTIONS ARE EQUAL

Implementing nature-based climate solutions will require careful consideration of costs, policies, behavioural barriers and technical impediments to determine which ones are most promising for widespread use in Canada.

Improved forest management mitigates emissions and improves sequestration alongside actions to increase forest resilience and adaptive capacity.

Avoided conversion of grasslands to other land uses and changing the management of croplands to sequester more carbon and reduce emissions, provide the greatest mitigation potential.

Avoiding the conversion of peatlands to other uses has the greatest mitigations potential. Wetland restoration and retention are expensive, and there's often pressure to develop these areas.

Tidal wetlands restoration and seagrass restoration have regionally impactful mitigation potential.



## NATURE-BASED CLIMATE SOLUTIONS ARE PART OF A COMPREHENSIVE STRATEGY TO MITIGATE CLIMATE CHANGE

Protecting Canada's existing carbon stocks is imperative to successful climate action.

An aggressive commitment to reducing human-caused emissions remains critically important.

Accurate and sustained monitoring of NBCSs can inform decisions about the success of policy mechanisms.

Regional responsiveness of NBCSs can vary across landscapes; actions may have more mitigation potential at different scales.