



Natural Areas Help Mitigate Climate Change

The Benefit of Natural Areas

Maintaining existing natural areas, forests, grasslands, rivers and lakes, is a more cost-effective method of mitigating against climate change, than replacing lost ecological functions using infrastructure and technology.

Climate Change Costs Local Government and Businesses

- Climate change results in warmer temperatures and more frequent extreme weather events, such as flood, fire, and drought.
- Cities experience well documented heat island effects, where the average temperature inside a city is higher than outside the city. Extreme temperatures from climate change can intensify this effect, contributing even further to the problems.
- Impacts of climate change can be very costly to offset and repair.
- Estimated costs to drinking water and wastewater utilities in the United States over <40 years range from \$448 to \$944 billion.
- **Floods** can result in problems such as:
 - Strains on sewage and storm water management systems, sometimes requiring expensive repairs and clean-up costs.
 - Damage to infrastructure, buildings and roads.
- **Fire, drought or extreme heat** can result in problems such as:
 - Increased disease and pest outbreaks that require expensive control measures.
 - Increased demand for electricity to power indoor cooling systems.
 - Increased maintenance costs of urban trees and recreation fields, requiring more frequent watering. Since 2002, trees in Edmonton have been lost at an increased rate, requiring more trees to be replanted and maintained.



Extreme Weather Events Can Damage:

- 🌱 **Agricultural productivity and local food supply** – if fields flood or burn, or if plants cannot withstand extreme temperatures.
- 🌱 **Water quality and quantity** – if floods contaminate water, or if drought reduces supply.
- 🌱 **Transportation services** – if roads are flooded or power is lost, and more freeze-thaw cycles increase potholes.
- 🌱 **Medical services** – if people suffer from heat stroke or other injuries resulting from flooding or fire.

Natural Areas Help *Mitigate* Climate Change

- 🌱 Mitigation refers to actions that prevent, reduce or offset the impact of climate change.
- 🌱 The world's forests and oceans are sinks for carbon, together sucking up about half of the carbon released each year from burning fossil fuels.
- 🌱 Natural areas secure and recharge ground water, absorb rain water, regulate floods and protect against erosion.
- 🌱 Planting trees is a very cost effective way to mitigate climate change by capturing and storing carbon from the atmosphere and helping to reduce the severity of climate change.



Natural Areas Help *Adapt* to Climate Change

- 🌱 Adaptation refers to actions that minimize vulnerability to climate change.
- 🌱 Natural areas protect against the impacts of climate change, by buffering local climate and reducing impacts from severe climate events such as storms, floods, droughts and sea-level rise.
- 🌱 Natural areas help communities, especially those in developing countries, adapt to the effects of climate change. They are often important sources for water, food and traditional medicines.



What Policy Makers can do

- 🌱 Support the conservation and protection of existing natural areas to maintain their ecological integrity.
- 🌱 Designate ecologically significant and sensitive lands for protection.
- 🌱 Plan for connectivity to enhance natural area functions.

What EALT is doing

- 🌱 The Edmonton and Area Land Trust works to mitigate climate change impacts by conserving existing natural areas.
- 🌱 Where appropriate, EALT takes steps to sequester carbon via habitat restoration, such as large scale tree planting.
- 🌱 EALT promotes education and positive action on natural areas and climate change.

The Edmonton and Area Land Trust plays an important role in providing health, educational, economic and social benefits for the entire capital region, both urban and suburban. Contact us for more information about research sources.

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