CPAWS
CANADIAN PARKS AND WILDERNESS SOCIETY

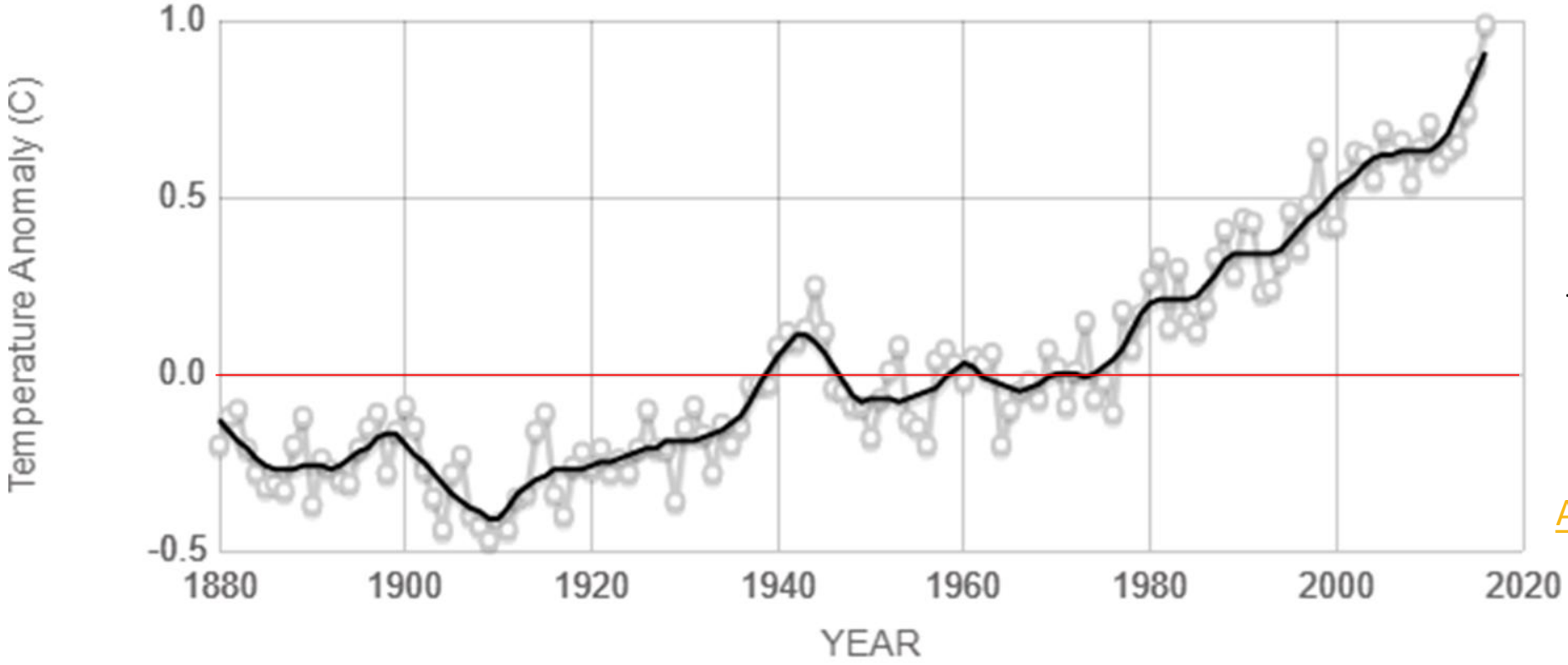
Climate Change & Conservation in Alberta

Quin Jackson-Buck, Community Ambassador
CPAWS Northern Alberta

Canadian Parks and Wilderness Society

- The only national charitable non-profit organization dedicated solely to the protection of Canada's public lands and waters.
  - 13 Chapters nationwide
  - Our vision: Protect at least half!
- Northern Alberta Chapter established in 1968,
  - Science-based decision making
  - Collaboration
  - Community outreach

The globe is warming….

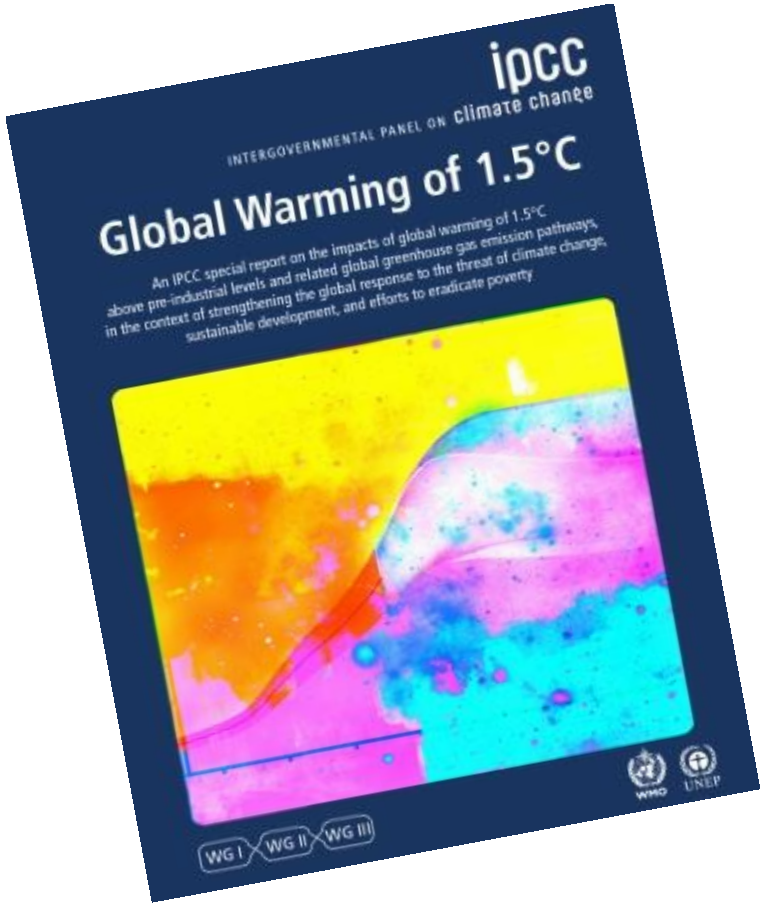


Source: climate.nasa.gov

"Temperature anomaly" is how much warmer or colder the temperature for the the year is than we would expect

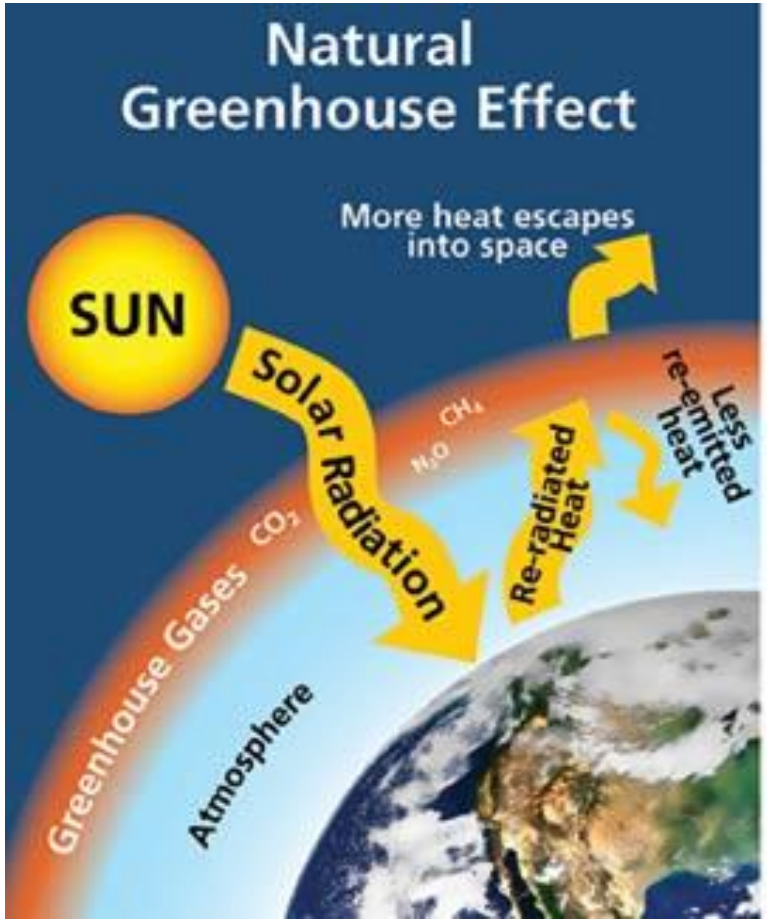
Another Interpretation

The globe is warming….



- Now, the globe is ~1°C warmer than expected.
- Paris Climate Accord (2016)
  - Keep global temperature rise well below 2°C by the end of the century.
- IPCC Recommendation (2018)
  - Limit warming to 1.5°C within the next 12 years.
- We have already experienced this amount or warming in Alberta!

Natural warming processes...

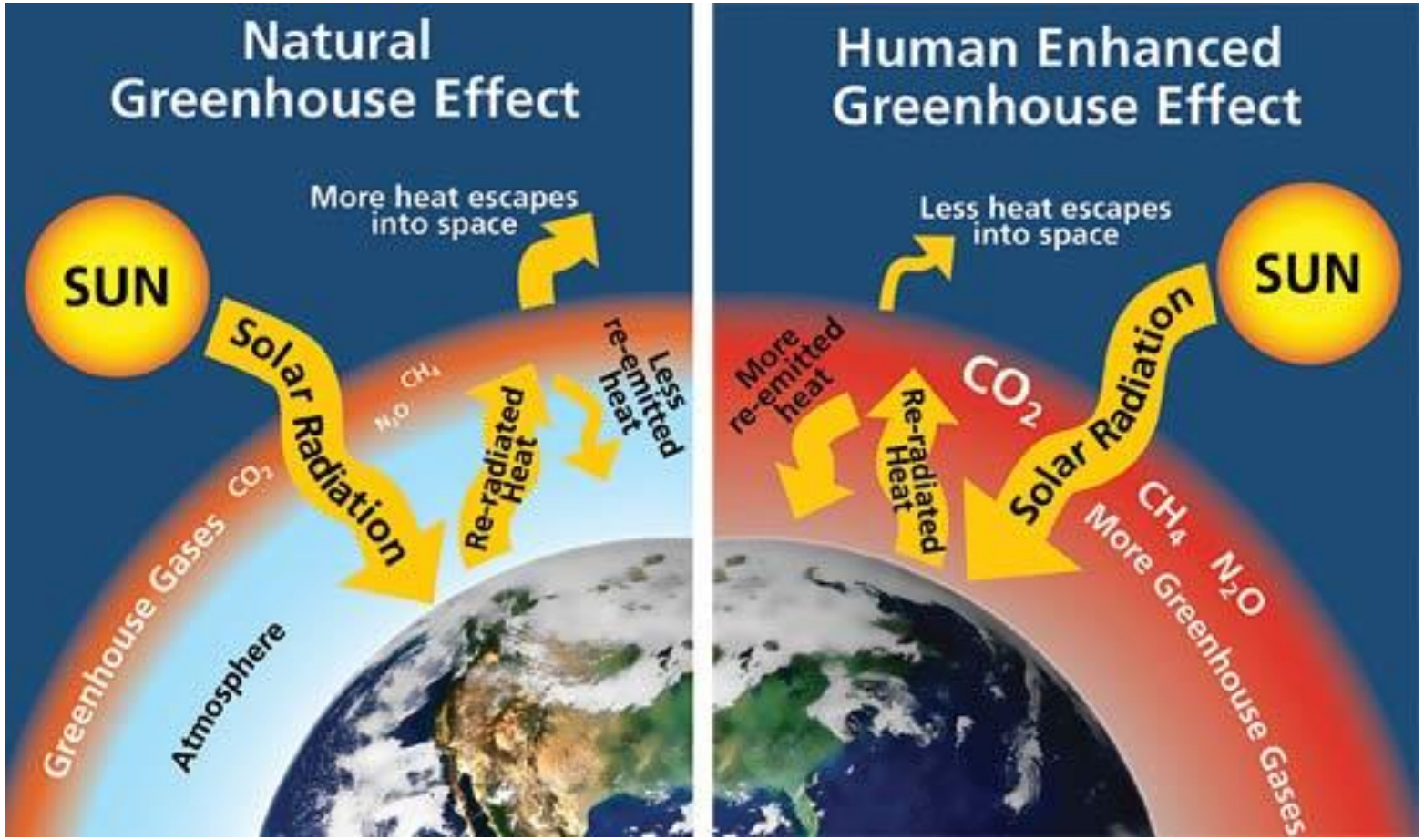


Will Elder, National Park Service

Some gases block heat from escaping into space and get trapped in our earth's atmosphere.

This keeps our planet habitable!

But, the globe is warming too much



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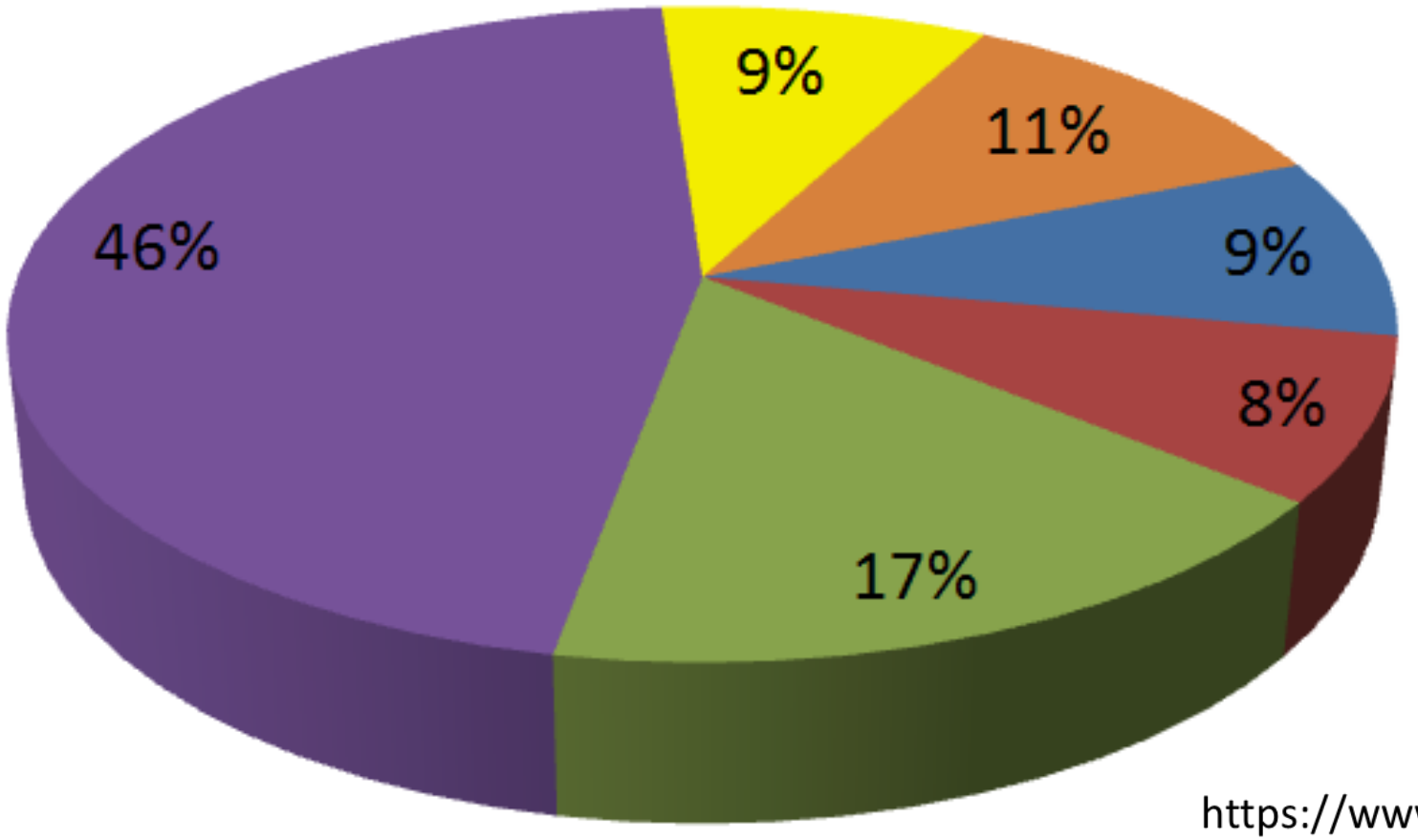
As more and more greenhouse gases are trapped in our atmosphere, they cause our earth to warm TOO quickly.

Greenhouse Gases: Sources in AB



Source	%
Agriculture, Forestry and Waste	9%
Buildings and Homes	8%
Electricity Generation	17%
Oil and Gas	46%
Other Industry, Manufacturing and Construction	9%
Transportation	11%

https://www.alberta.ca/climate-change-alberta.aspx

How do WE contribute?


WHY SHOULD I CARE?

How does Climate Change impact me?

Wildfire smoke blankets B.C. and Alberta, prompting air quality advisories

August heat wave: Calgary could break all-time high temperature on Friday

Town of Taber declares state of local emergency due to flooding

Calgary Weather: Golf-Ball-Sized Hail Rains Down On The City

More fall snow makes tough Alberta harvest season tougher: 'It's depressing. It's stressful'

Cattle running out of grazing crops as drought dries up Alberta farms and ranches

Mountain pine beetle takes over Jasper National Park forests

Thousands in northwest Alberta put on evacuation alert as wildfires grow

How climate change impacts us

CIMMYT, FLICKR

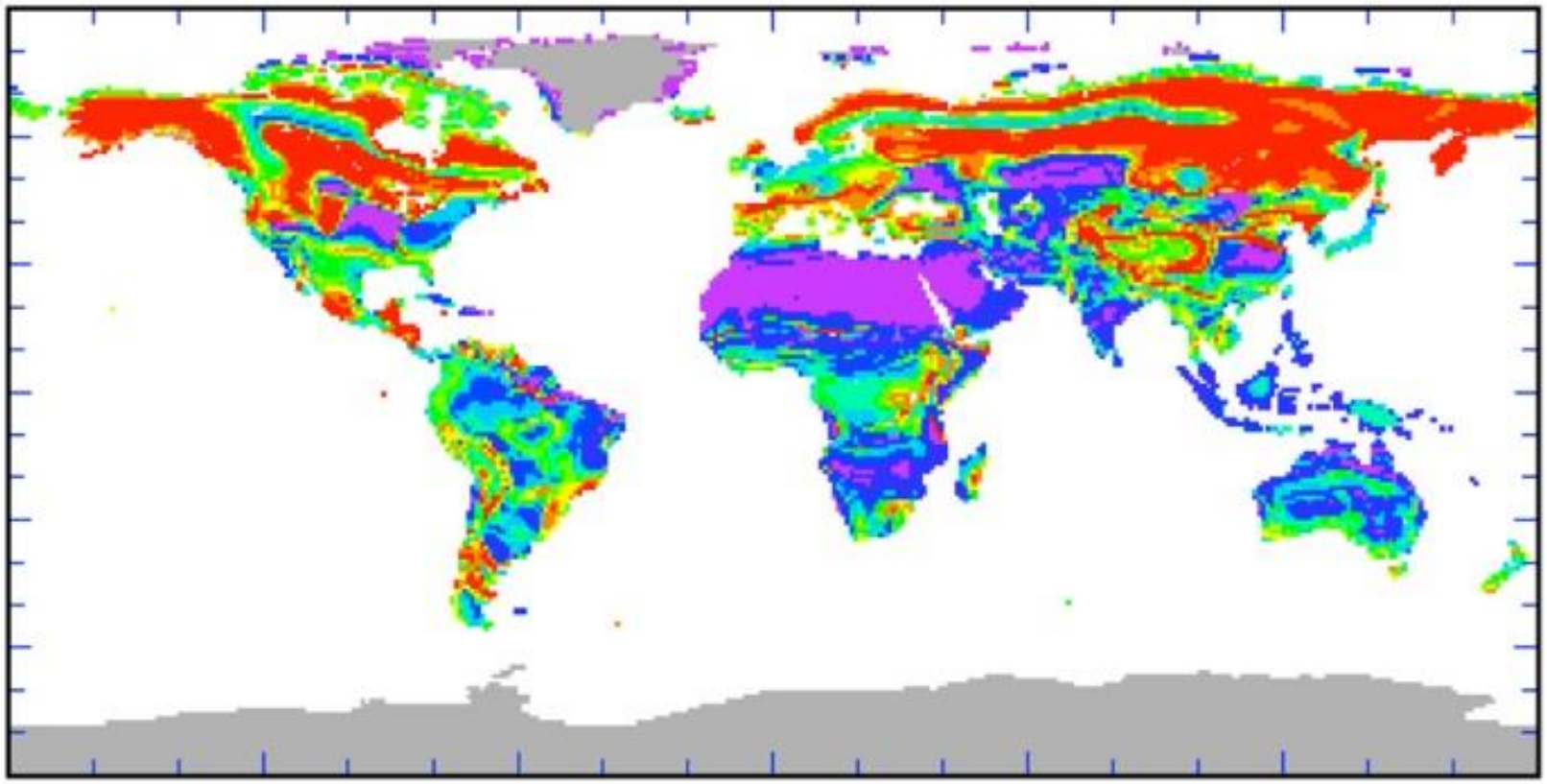
How climate change impacts us

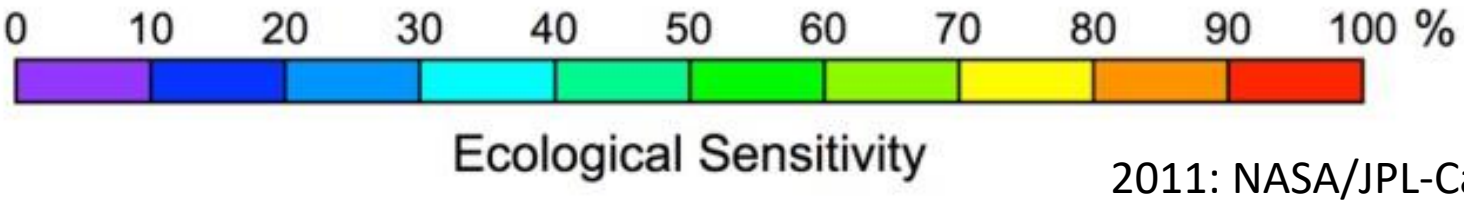
John McColgan, Wikimedia Commons

How climate change impacts us

Johnathan Hayward, The Canadian Press

21st Century Ecological Sensitivity 1





2011: NASA/JPL-Caltech

TODAY

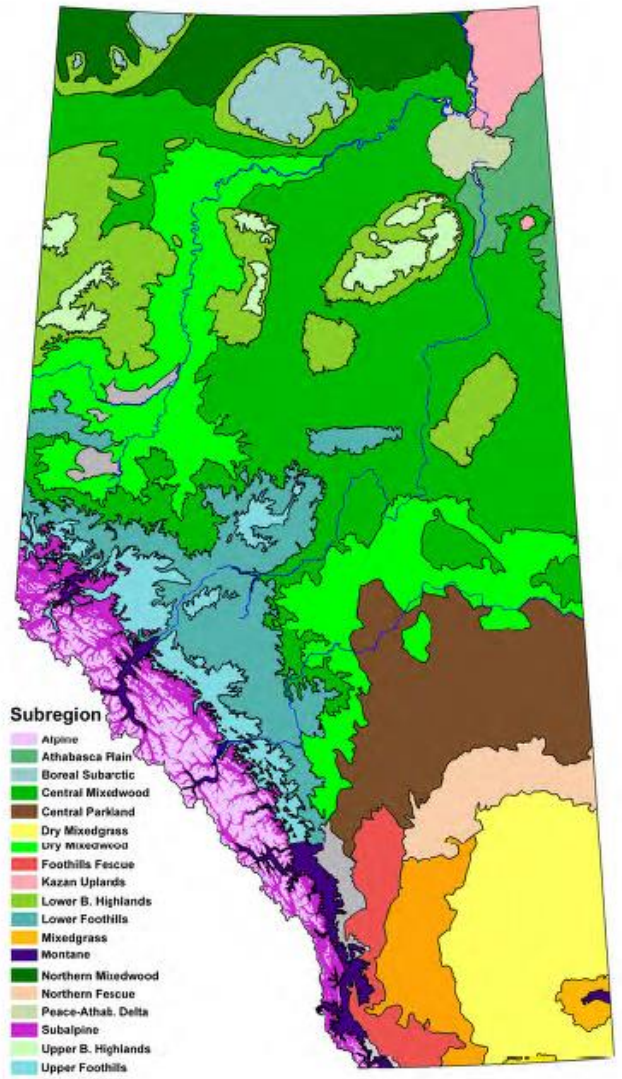
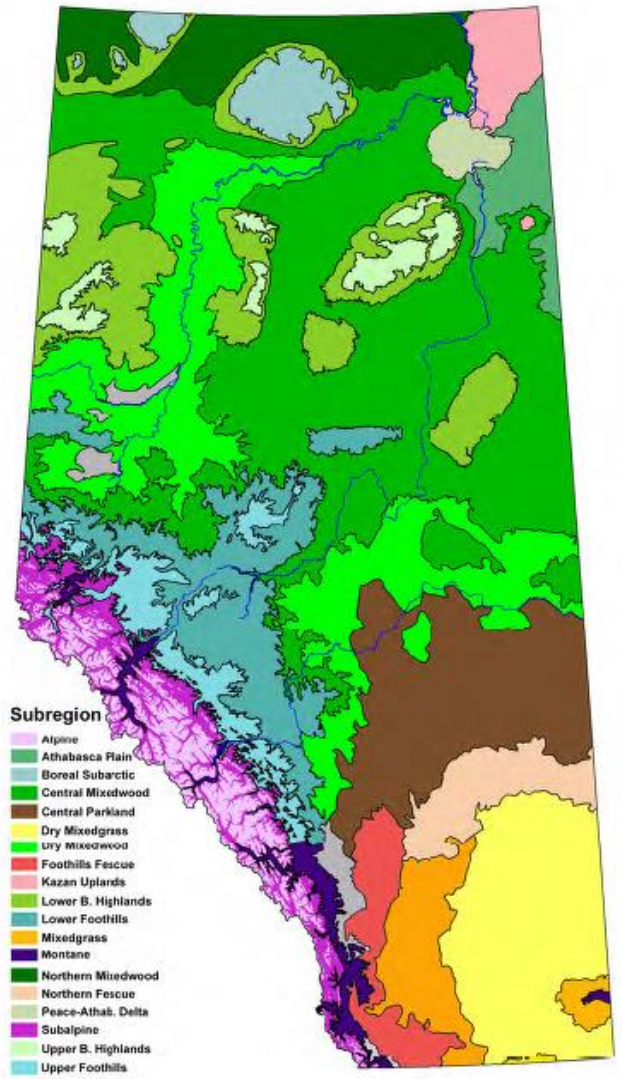


Fig. 1.1. The Natural Subregions of Alberta.

Schnieder, et al., 2013

Currently, Alberta sustains **19 different** kinds of ecological subregions!

TODAY



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2050

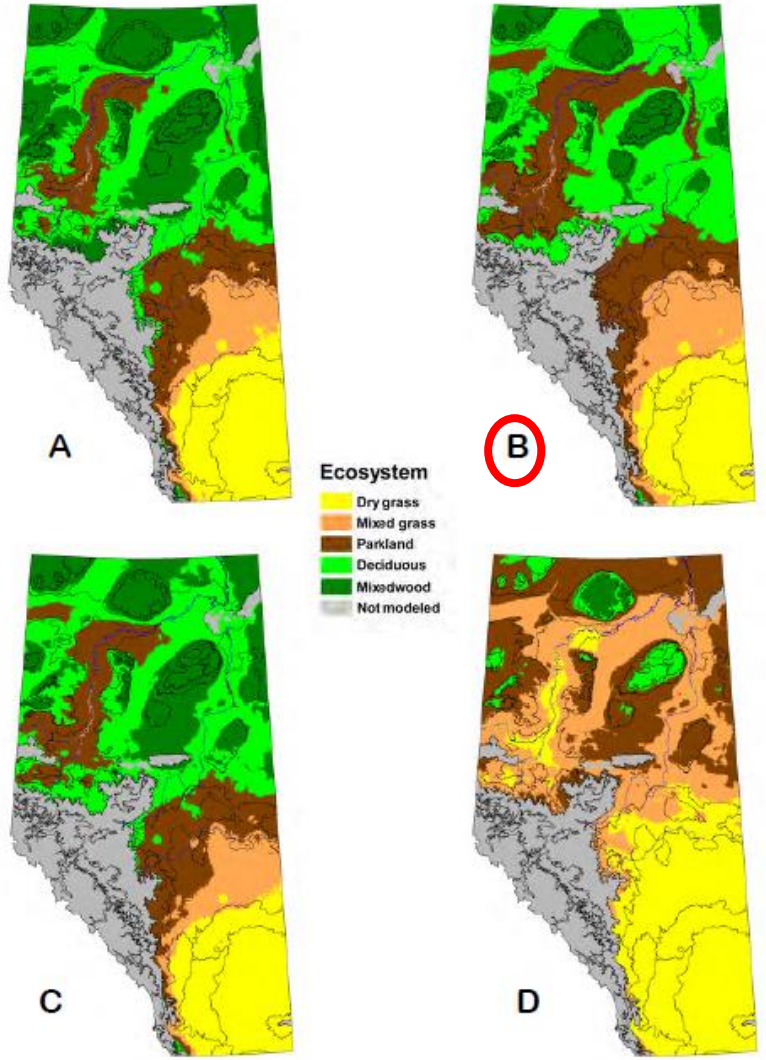
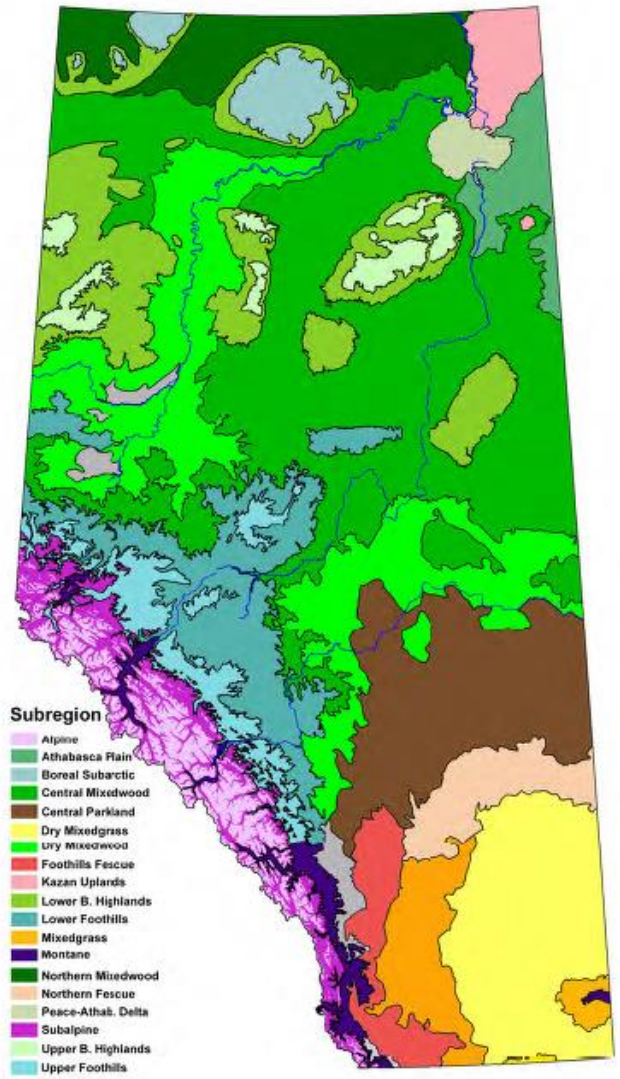


Fig. 4.14. Grassland to Boreal Bioclimatic Envelope Model for the **2050s**: Panel A= Cool model; Panel B = Median model; Panel C = Dry model; Panel D = Hot model. See Fig. 3.7 for historical reference.

Scenario B projects land cover changes assuming a 4 degree Celsius warming by the end of the century, **which is exactly what Alberta is on track for right now**.

TODAY



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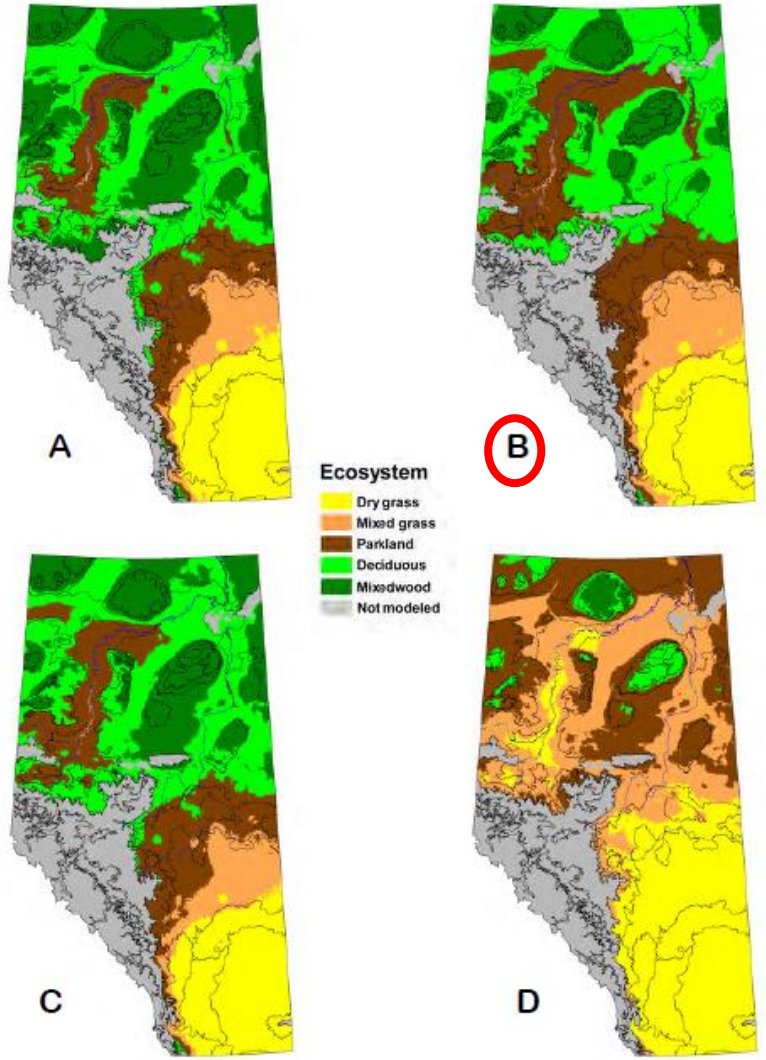

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2080

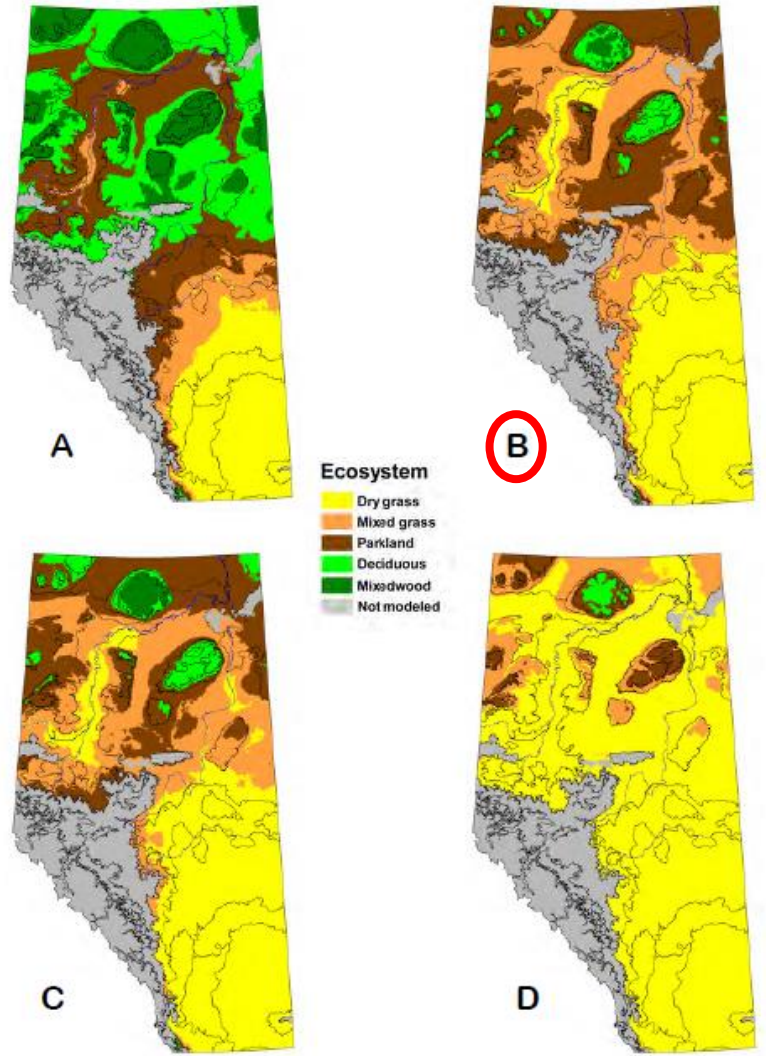
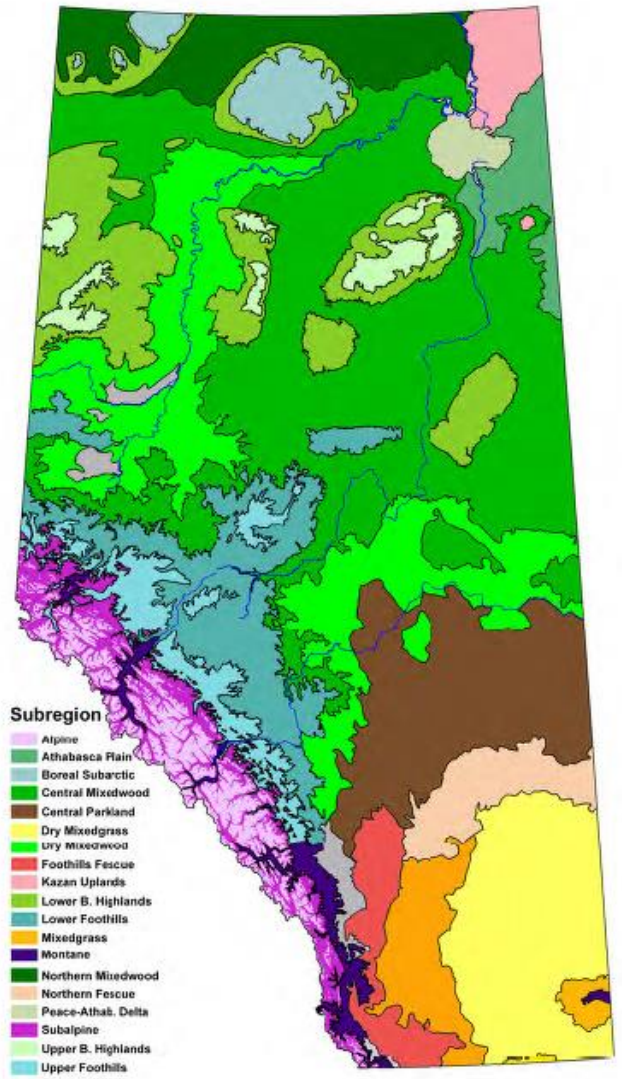


Fig. 4.15. Grassland to Boreal Bioclimatic Envelope Model for the **2080s**: Panel A= Cool model; Panel B = Median model; Panel C = Dry model; Panel D = Hot model. See Fig. 3.7 for historical reference.

TODAY



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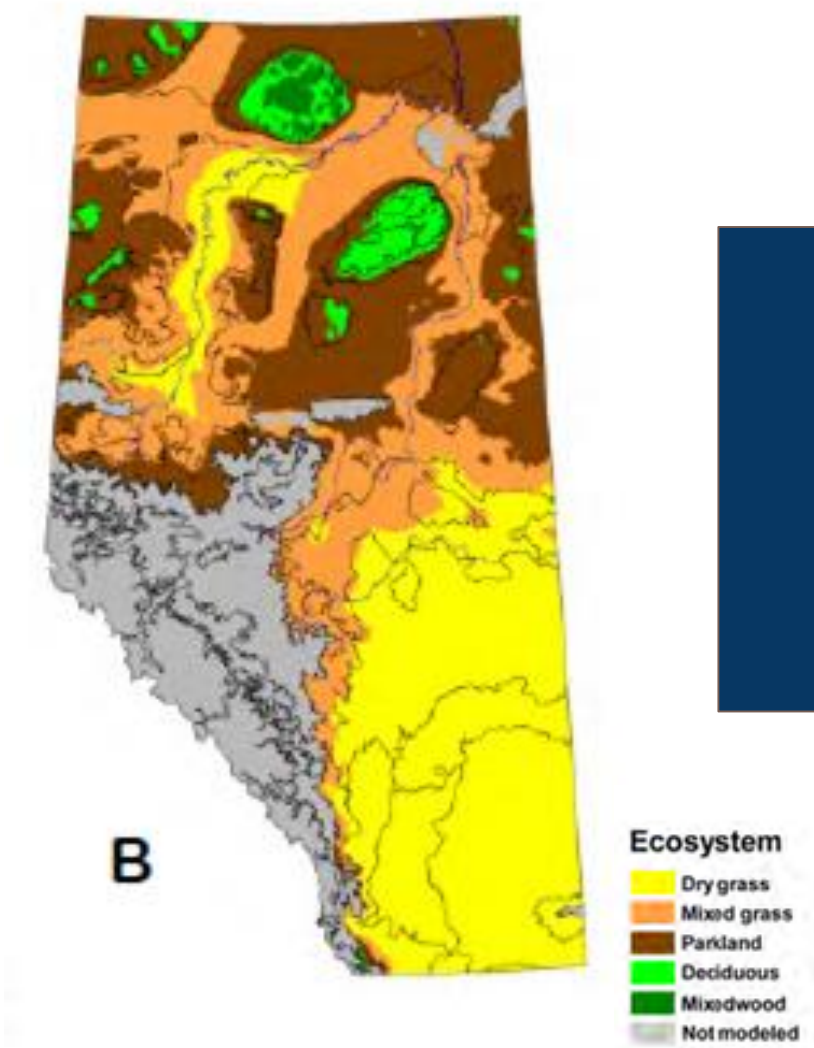
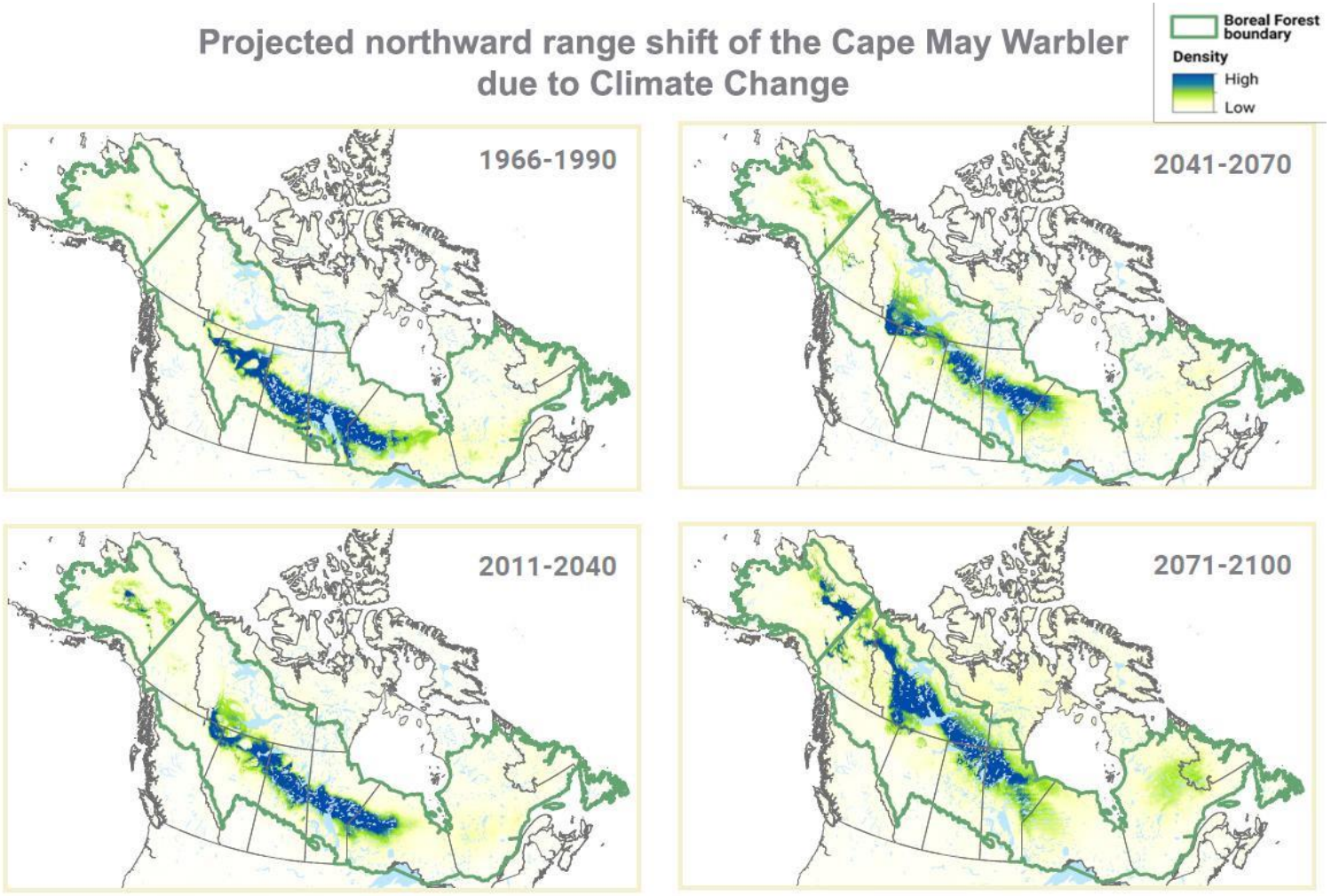


This could be one of the most important and devastating impacts of climate change here, in Alberta.

For Example: Cape May Warbler



Diana Stalberg

Boreal Songbird Initiative


DON'T WORRY
WE GOT DIS
memes.com

So what do we do about it?

We can focus on building climate resiliency:

Increasing the capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or re-organizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation (IPCC).

This requires a 2-pronged approach.

So what do we do about it?

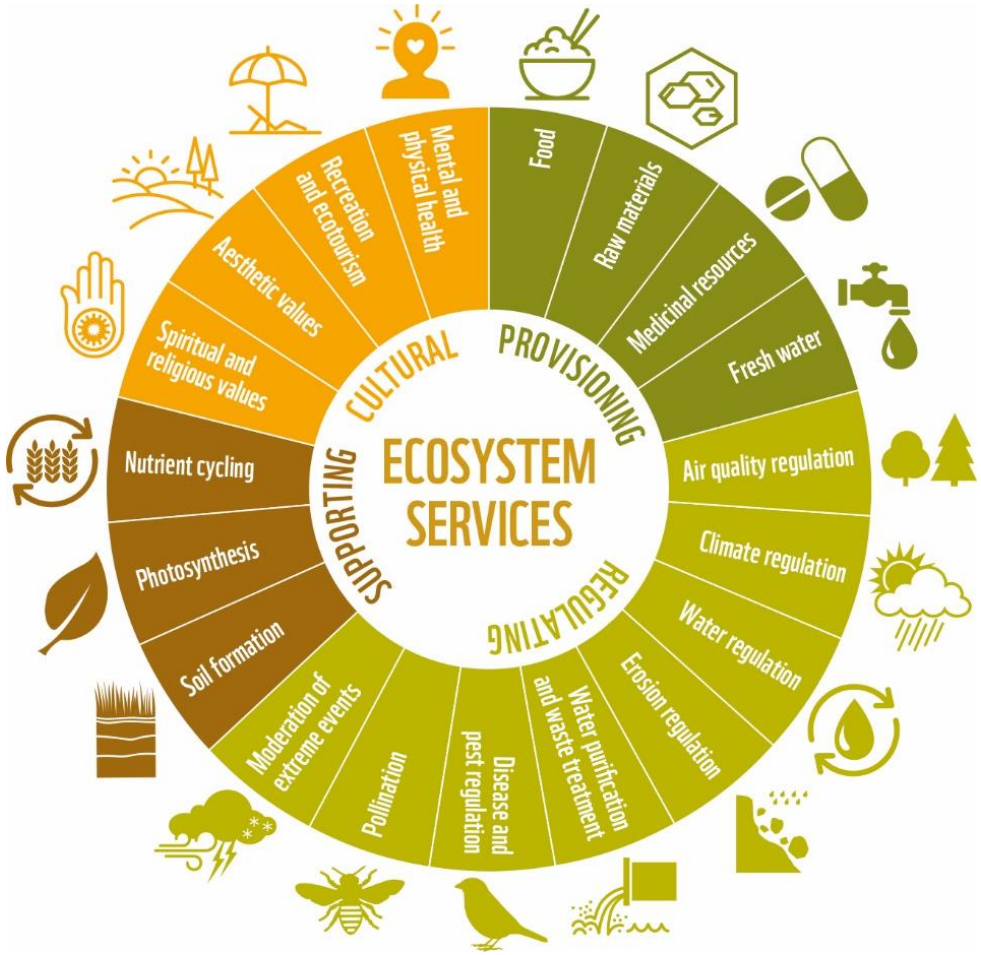
Climate Change Mitigation:

Reducing emissions and stabilizing the amount of greenhouse gases in the atmosphere

Climate Change Adaptation:

Actions taken to help communities and ecosystems cope with a changing climate

BBC



Nature-based solutions are a great option for mitigating *AND* adapting to climate change

Nature-based Mitigation

When ecosystems are used to reduce GHG emissions or increase GHG sequestration. For example:

- Protection of natural carbon sinks,
- Creation of protected areas that prevent future industrial development,
- Wetland restoration or conservation.

Save our forests!

Forests remove roughly 30% of all fossil fuel emissions from the atmosphere annually

Global deforestation contributes roughly 14 % of carbon emissions worldwide. This is the rough equivalent of total annual emissions produced by all cars and trucks on the planet.

But, forests are more than just the trees...

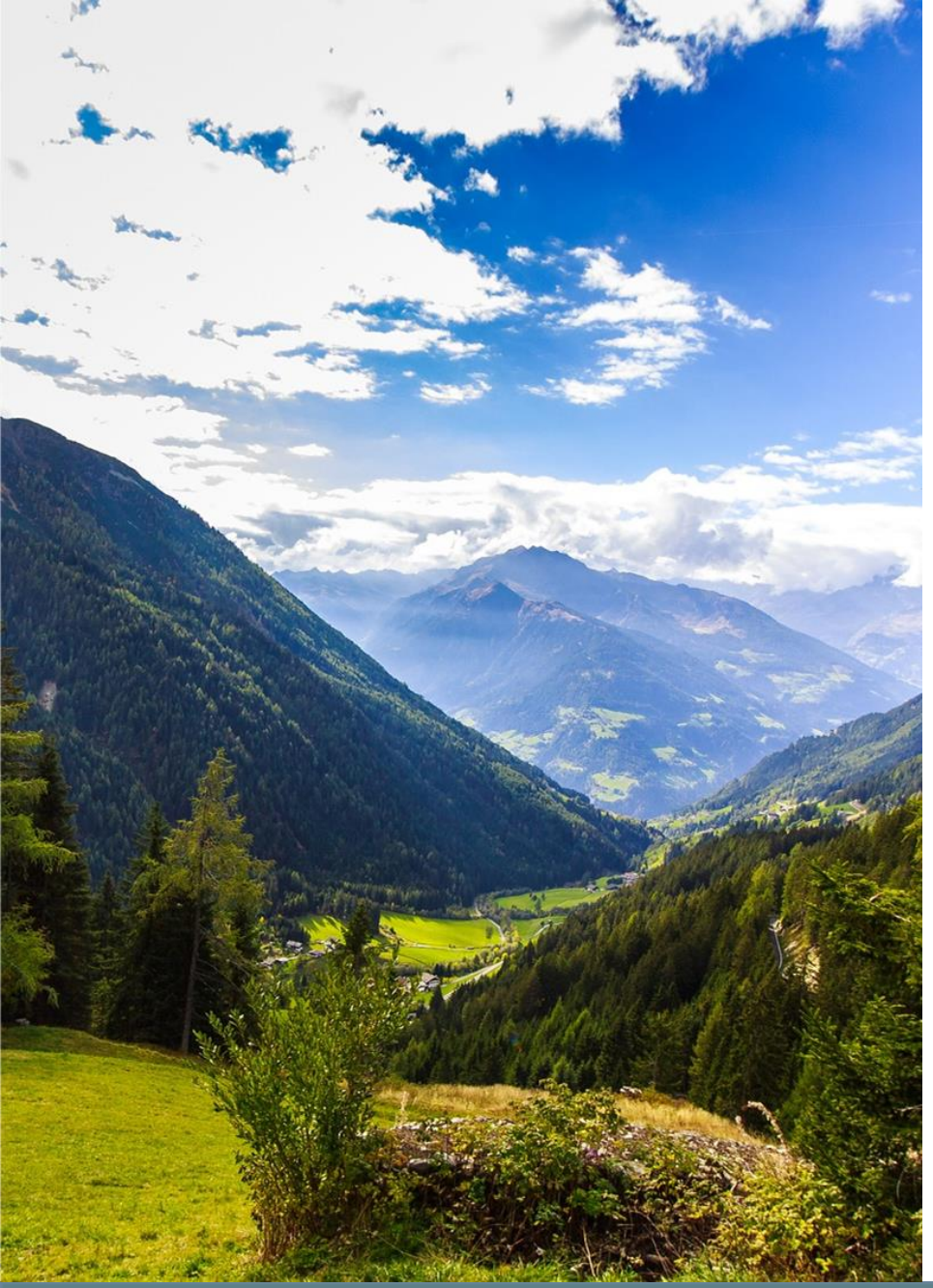
Most of the carbon in the boreal forest is actually stored *underground*, as organic matter decays. Our cool northern temperatures help slow the rate of decomposition and keeps the carbon in the soil longer.

Now, more than ever, is the time to focus on limiting disturbance of our boreal forest and keep it intact.

Nature-based Adaptation

Ecosystems can be used to reduce the impact of climate change on humans and wildlife.

For example, preserving forests along our waterways can significantly help prevent floods and reduce intensity of floods

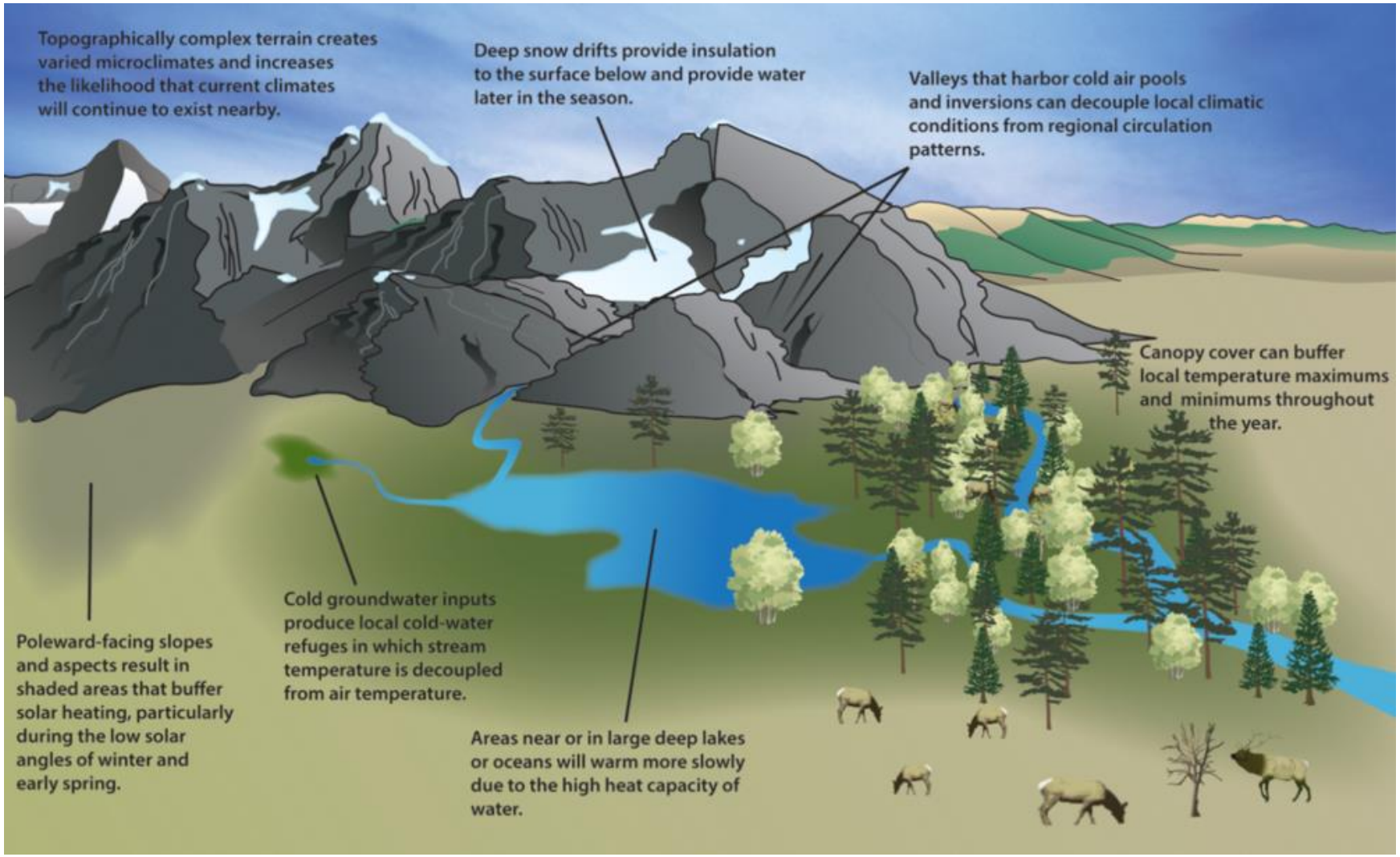


Nature-based Adaptation

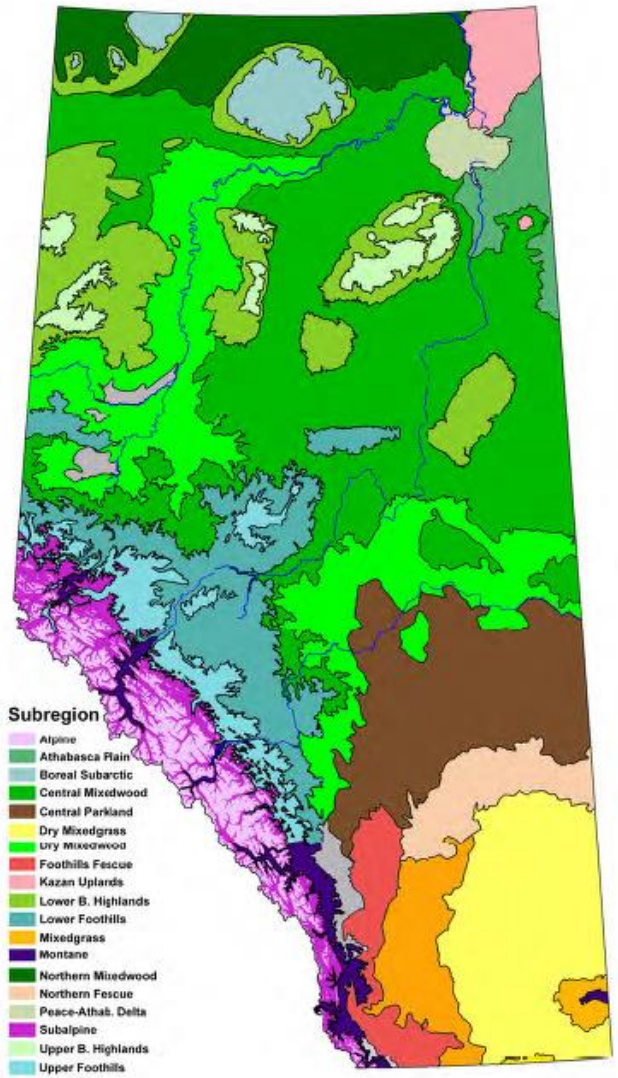
Enhancing the connectivity of protected areas to aid wildlife in migrating or adapting to new conditions.

Different kinds of **climate refugia** and **climate corridors** will help wildlife adapt to climate change.

Nature-based **Adaptation** Measures



www.climaterefugia.org



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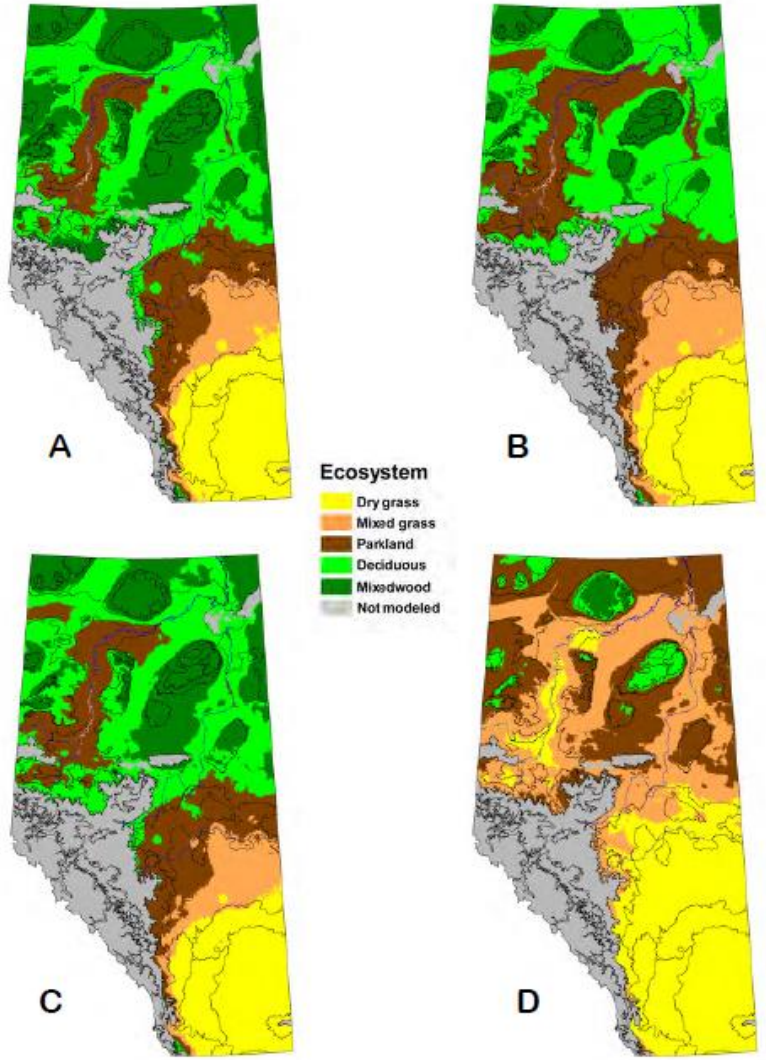

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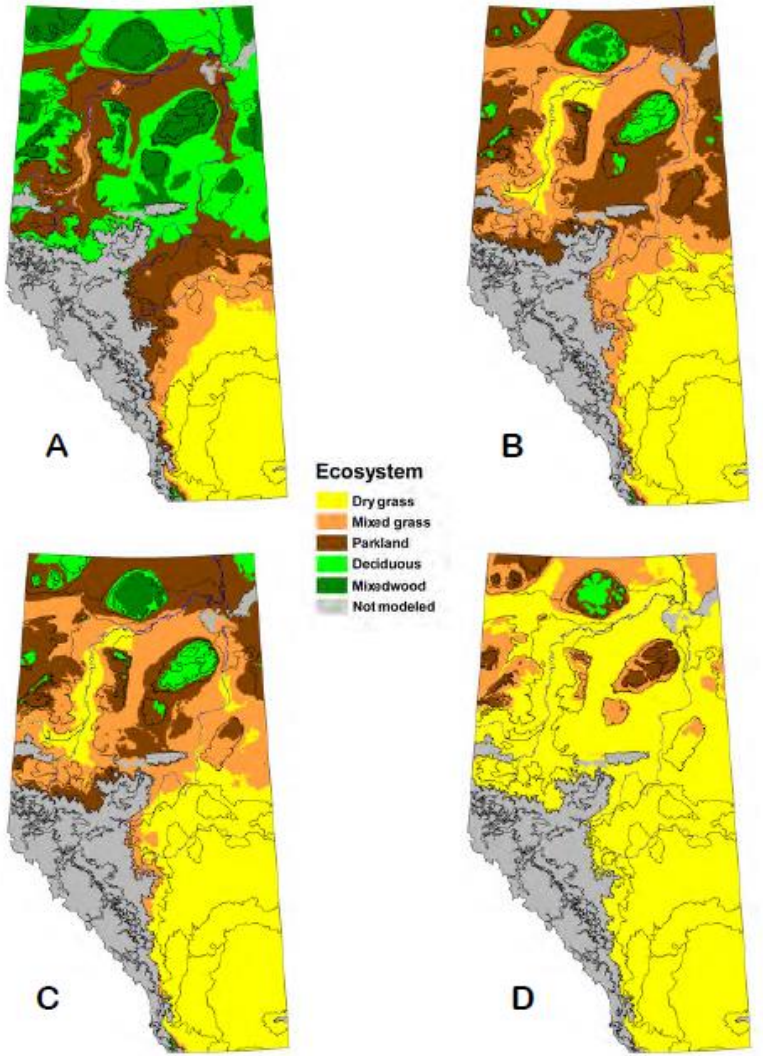

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CREATE MORE PARKS!!

The creation of parks and protected areas can help preserve forests and other critical ecosystems in their natural state.

There is a need for connected habitats and large landscape preservation to allow wildlife to either migrate or adapt to a changing environment.

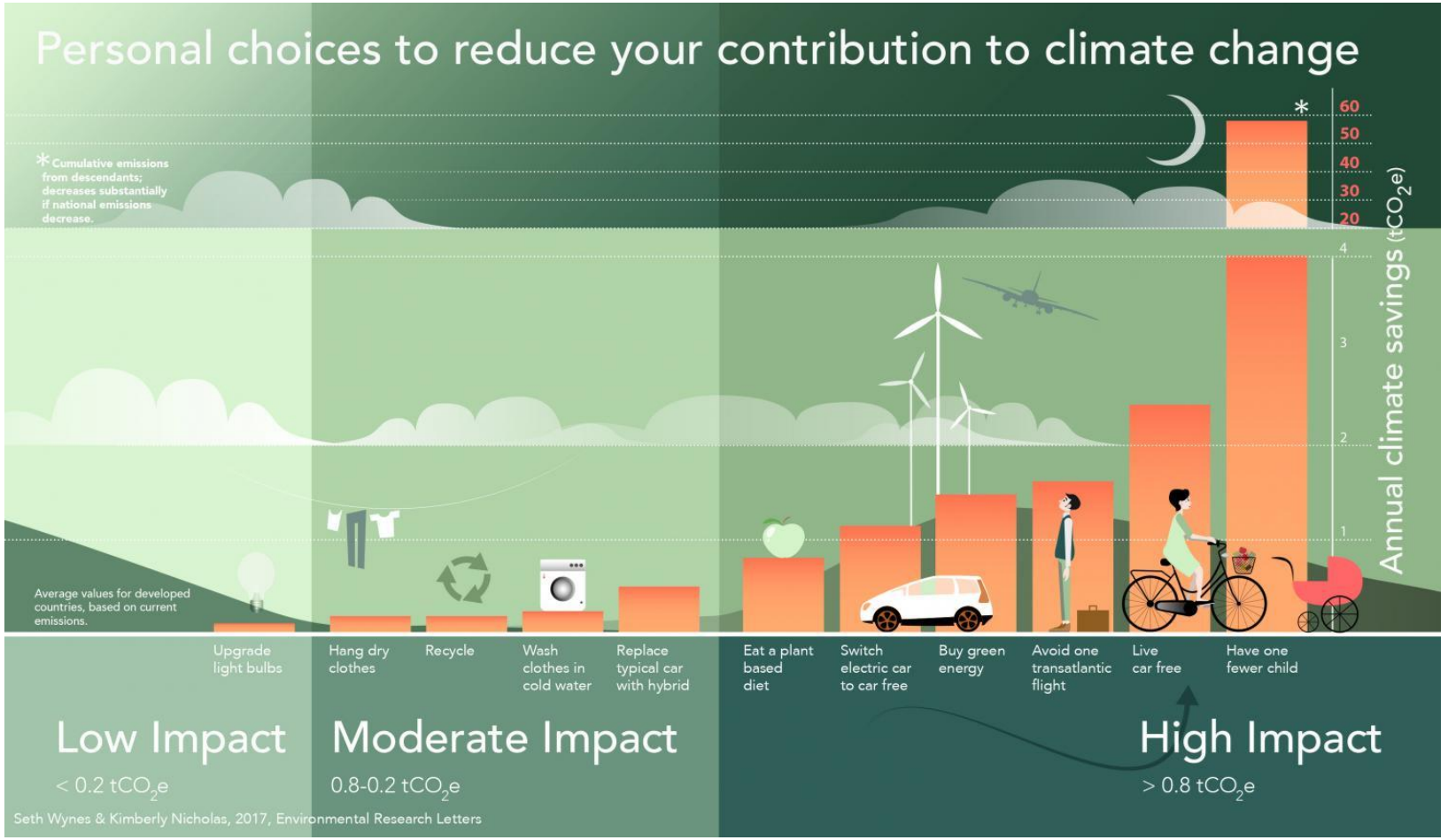
*Fun fact: the Boreal Forest constitutes **58%** of Alberta's landscape.*

What else can I do?

Calculate your carbon footprint and see what you can do to reduce it!

carbonfootprint.com

What else can I do?



What about the government?

What can the government do?

What else can the government do?

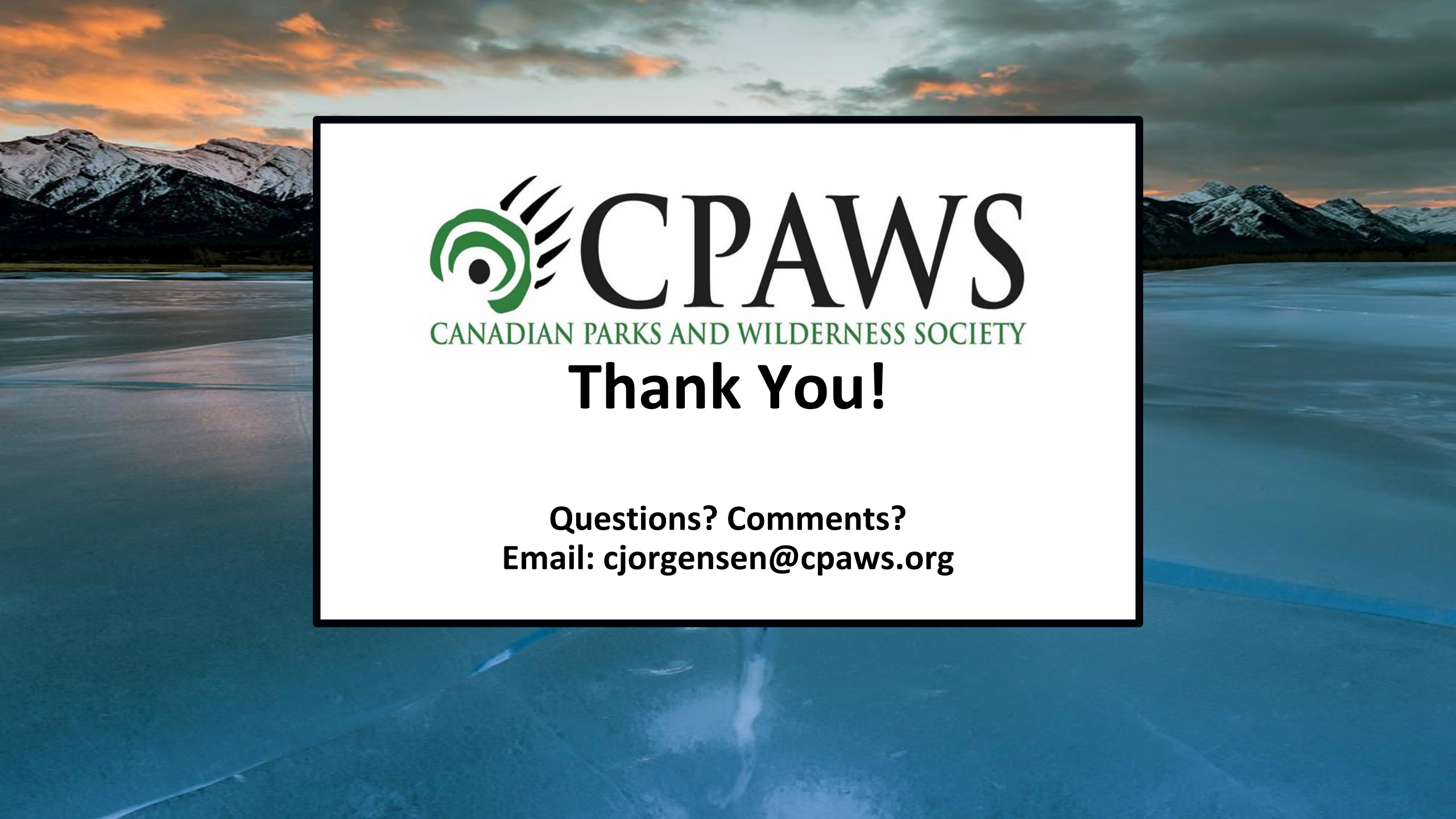
Sign the open letter to government at: https://www.protectalberta.org/energy-efficiency

Review: What am I going to do?

Reduce my carbon footprint to help mitigate the effects of climate change

Talk to government officials about climate change policy and public land protection.

Support organizations like CPAWS!



Thank You!

Questions? Comments?
Email: cjorgensen@cpaws.org