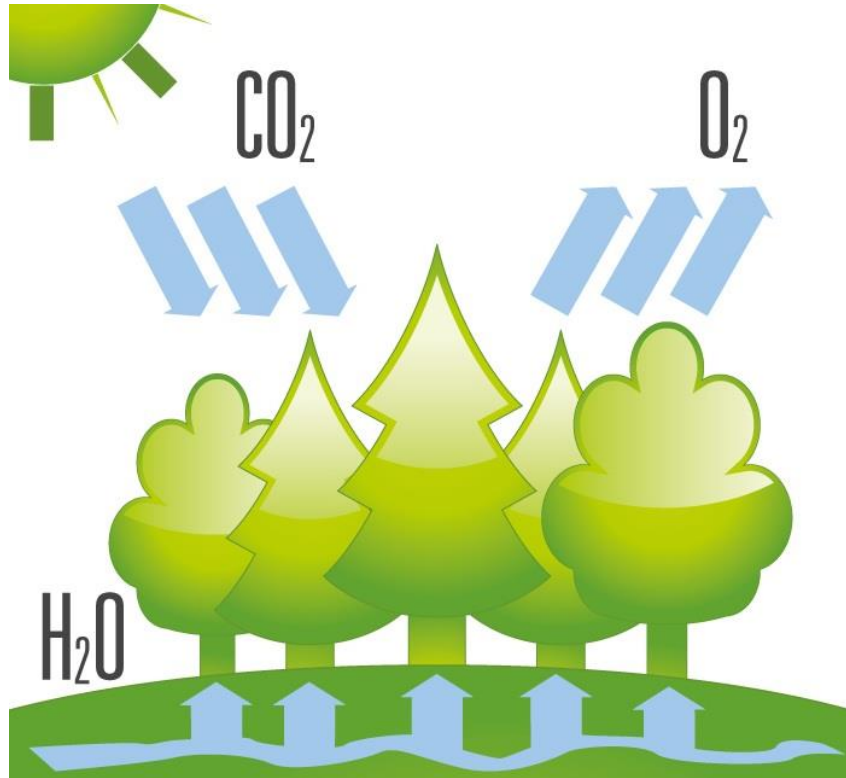


## Climate and ecological mapping for forest adaptation to climate change

# Forests are counted on for climate Change Mitigation

**Forests absorb 1/3 of the carbon emission from fossil fuel.**



**Forests provide green materials to reduce the use of  $\text{CO}_2$  emission intensive materials, such as cement and steel**



A 18-story wooden building in Vancouver



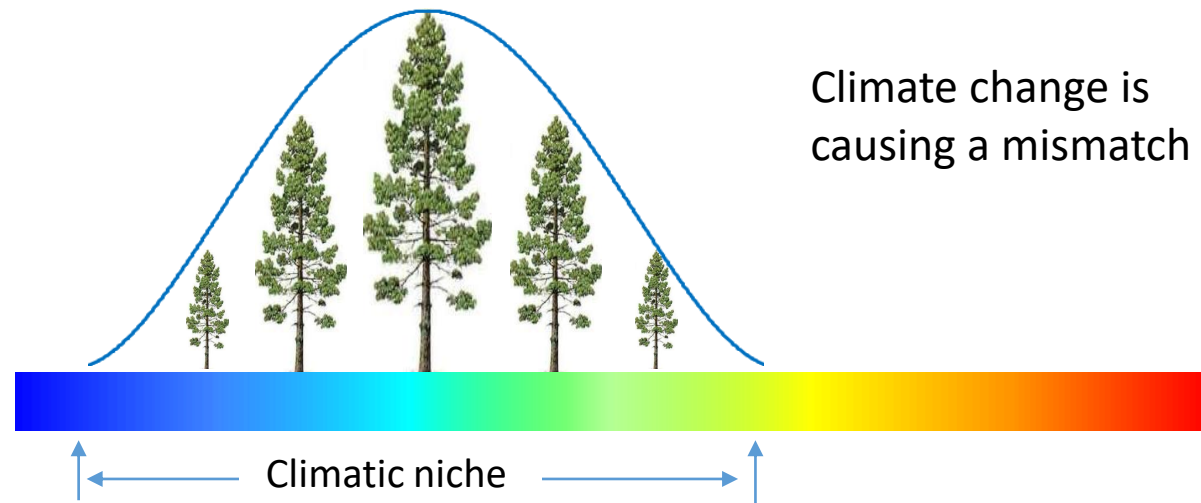
The tallest wooden tower (Norway)



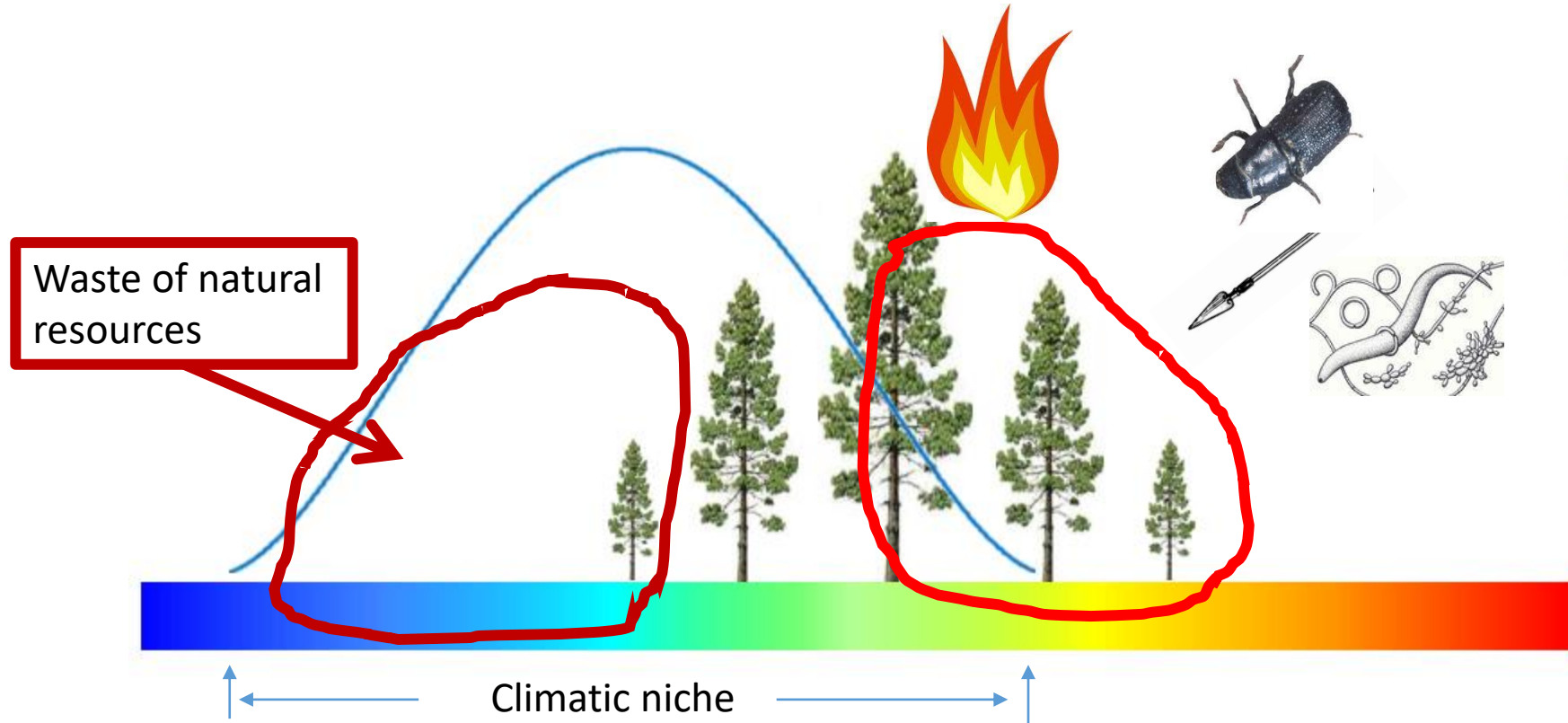
# The role of forests in mitigation of climate change has been recognized.

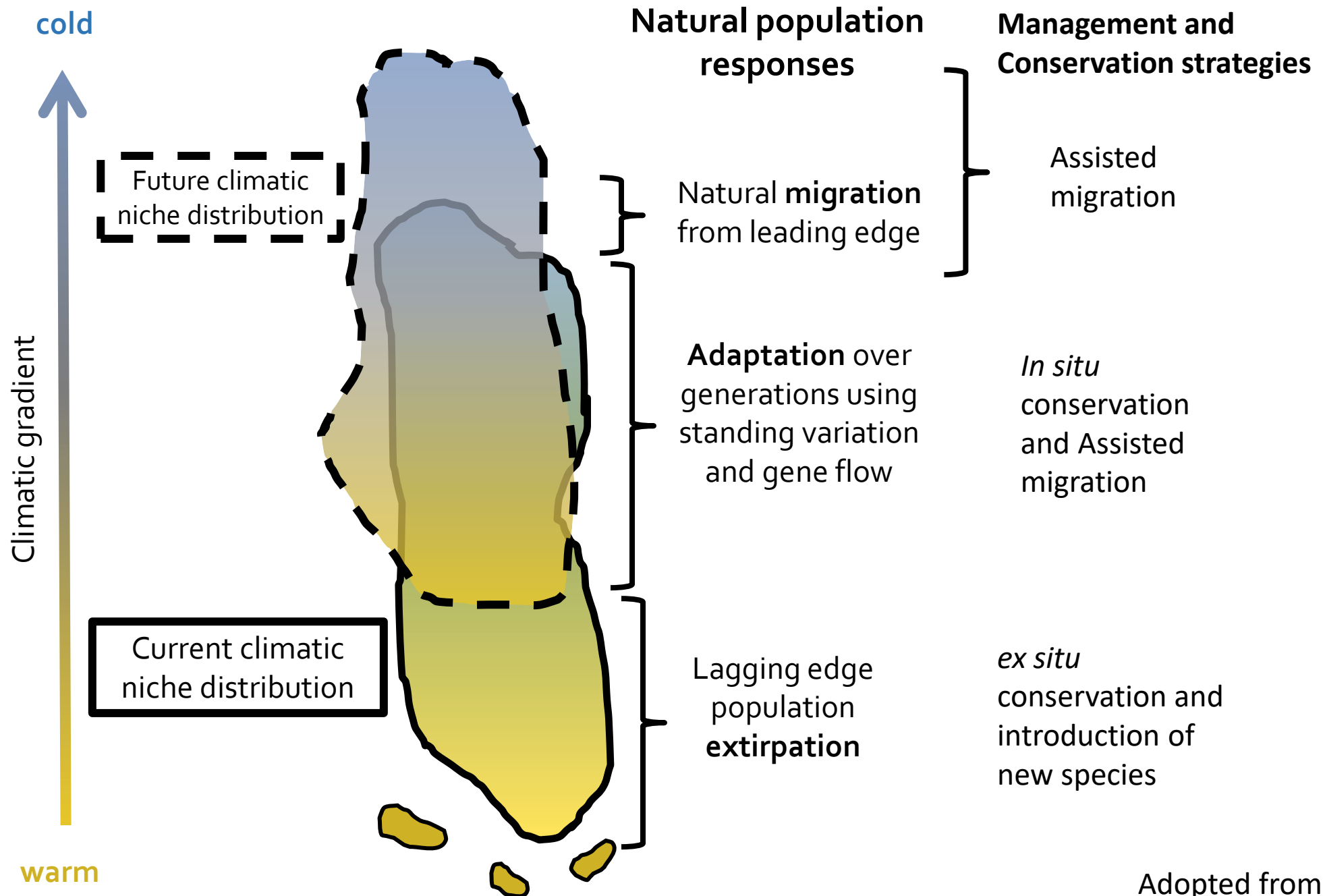
- Forests can serve as a carbon sink only when they are healthy and productive
- Forests can also be a carbon source when they suffer from maladaptation





Trees left out their suitable climate habitat will be vulnerable

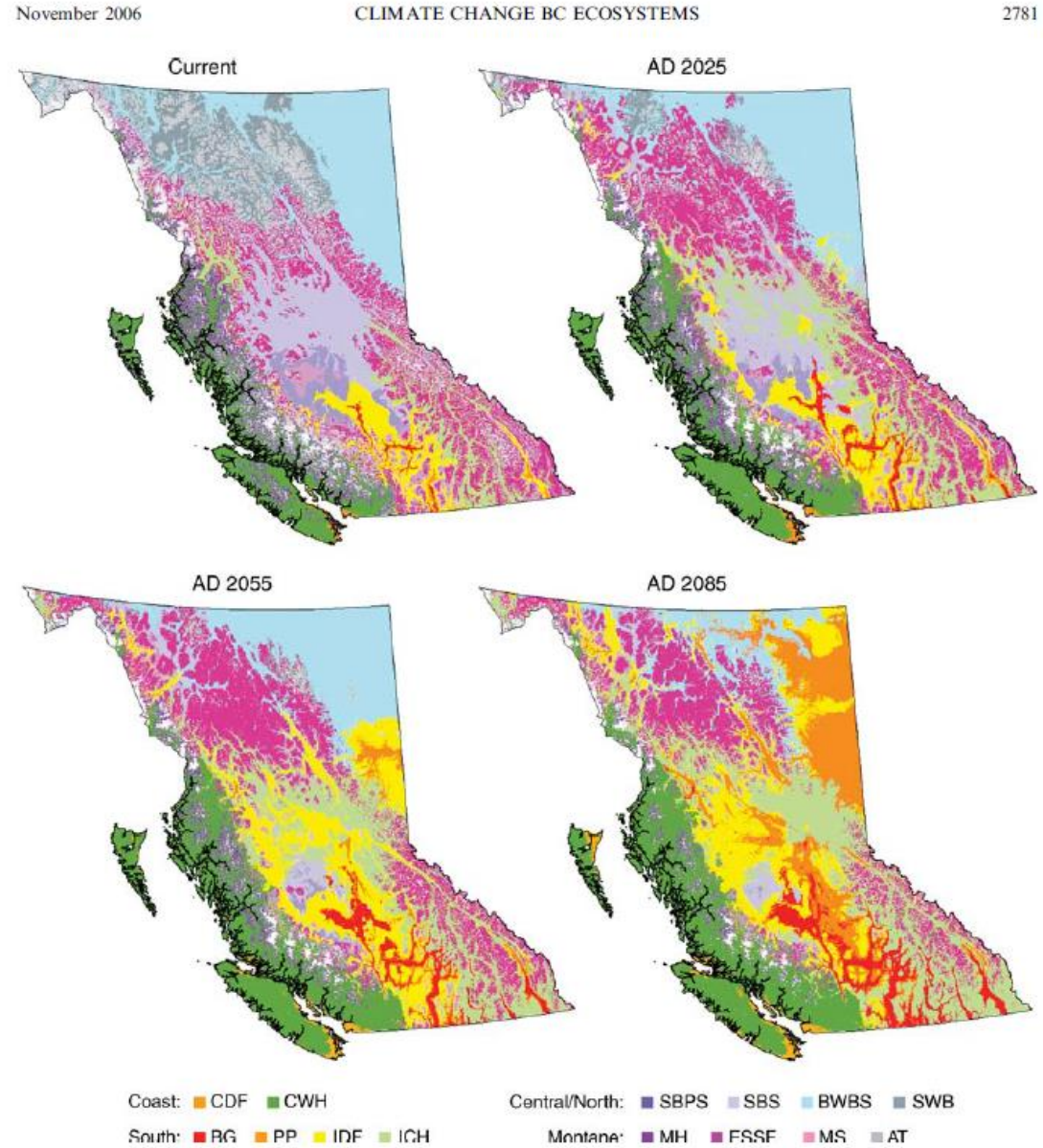




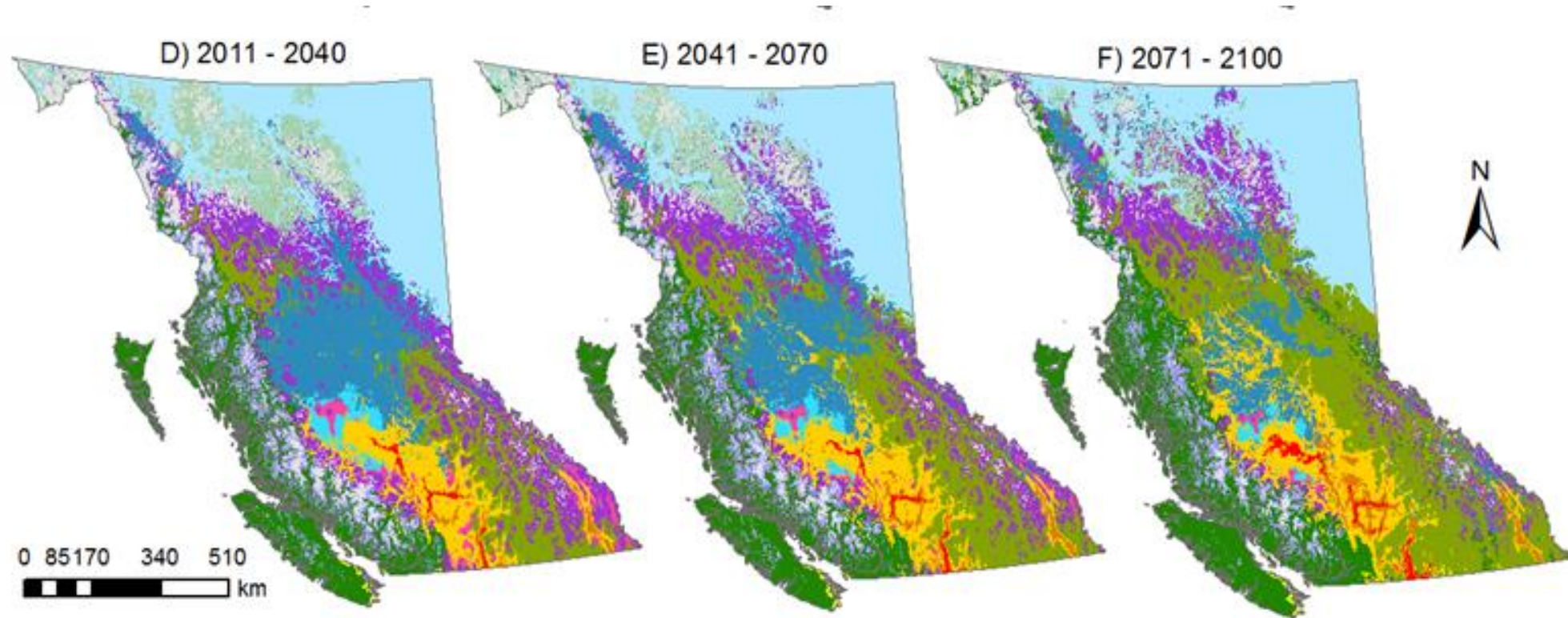
Adopted from Aitken



# Flying BEC 1.0



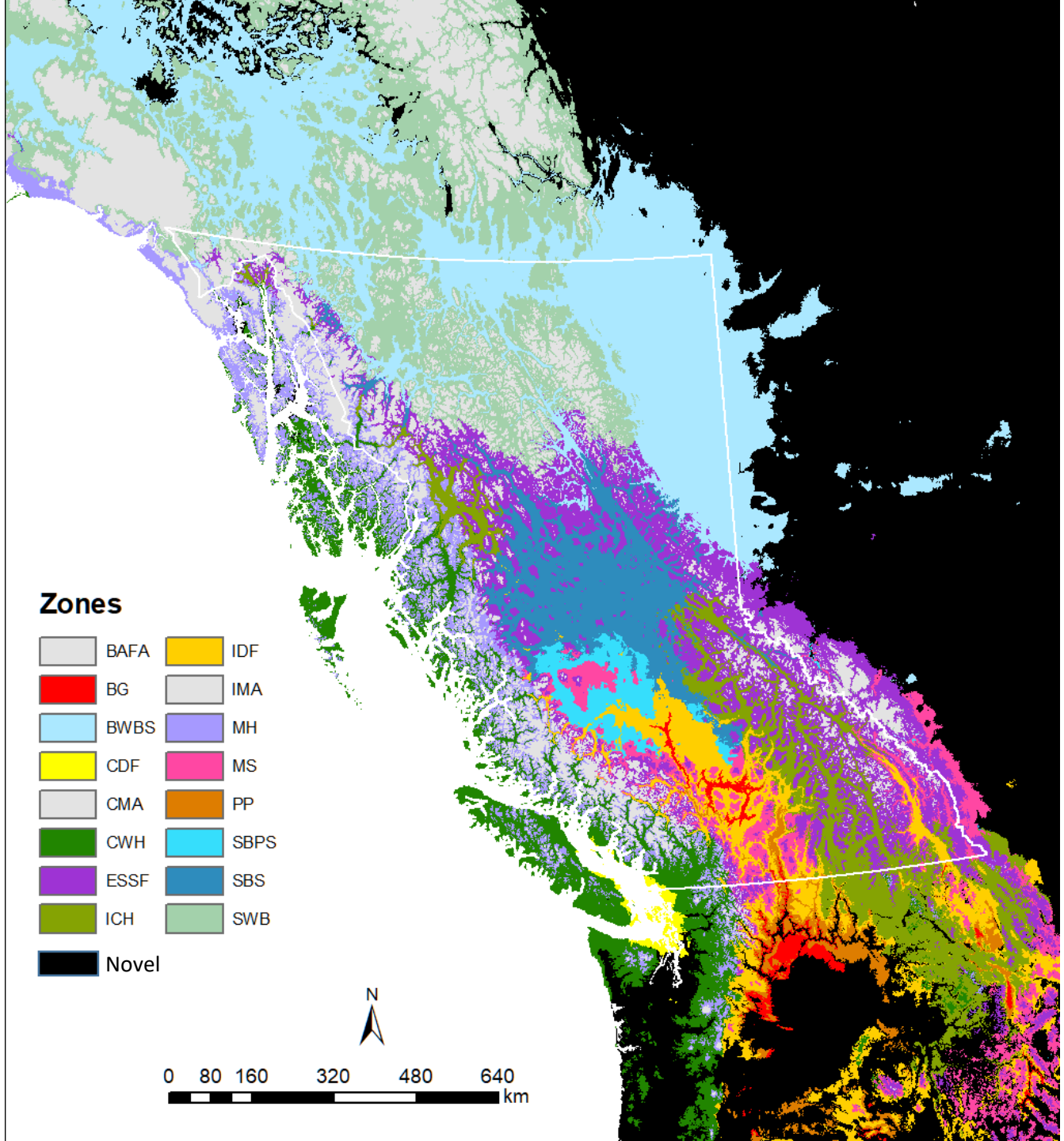
# Flying BEC 2.0



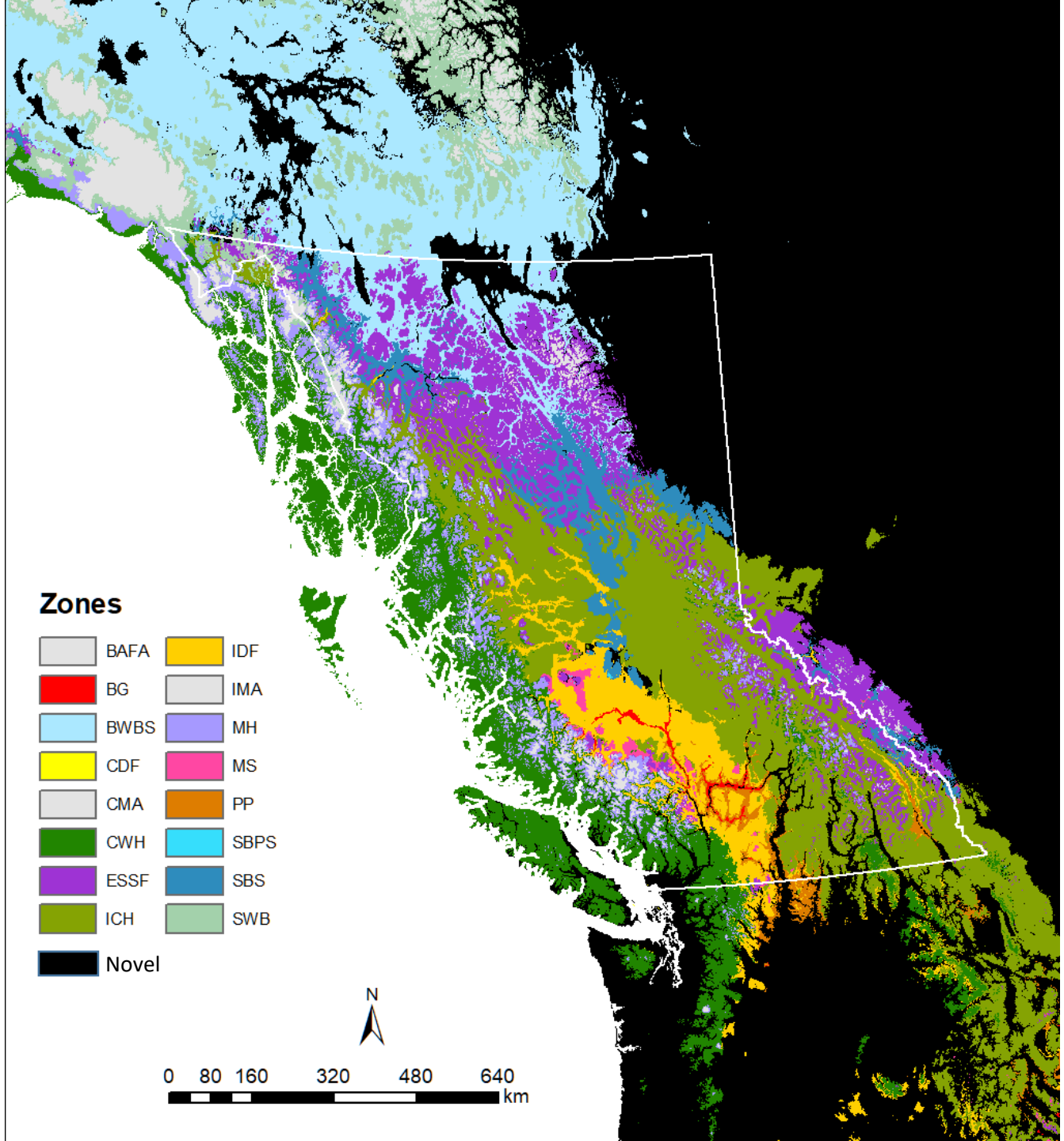
Wang et al. 2012



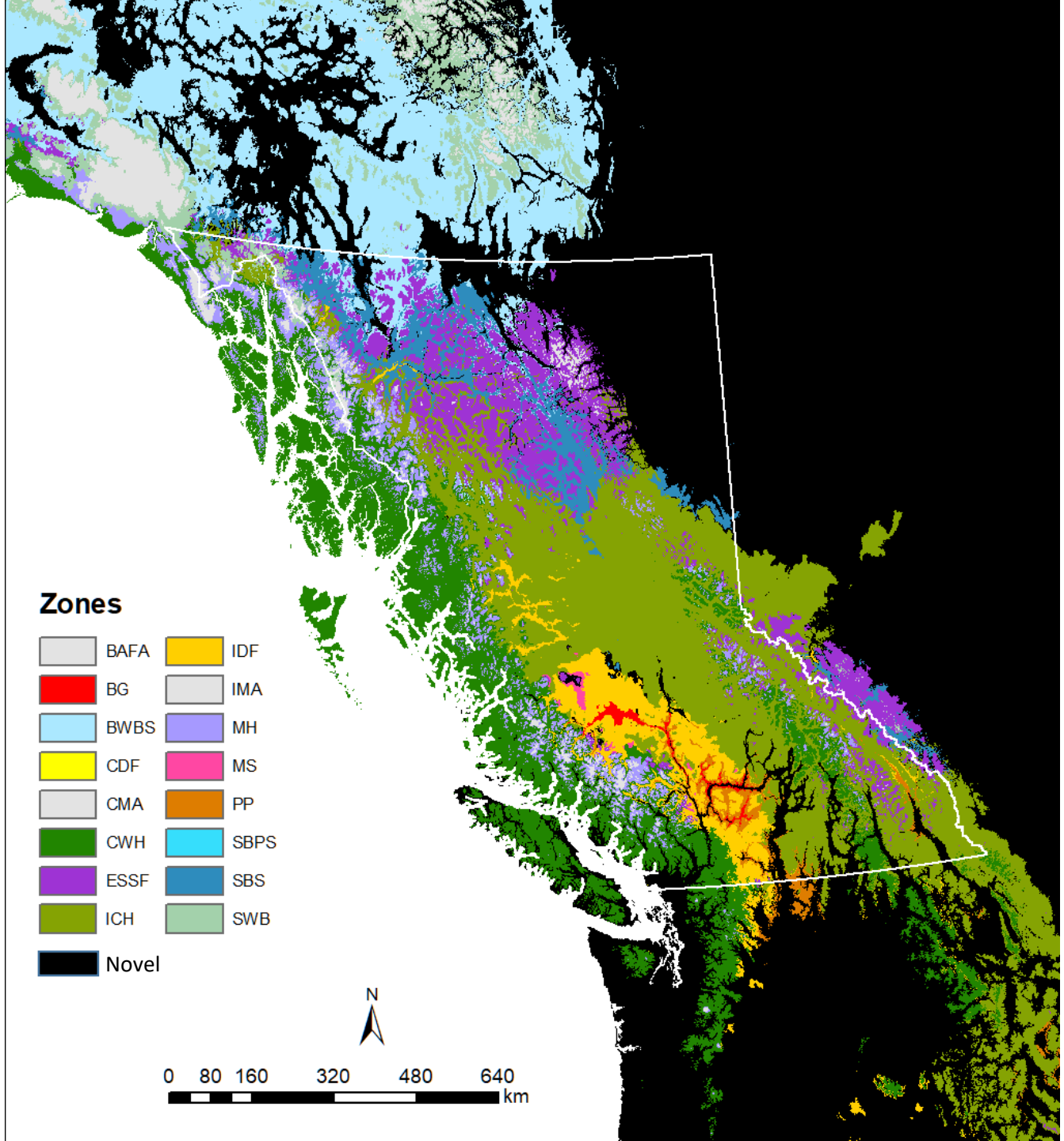
BEC11\_Current



WNA\_ssp245\_2050s

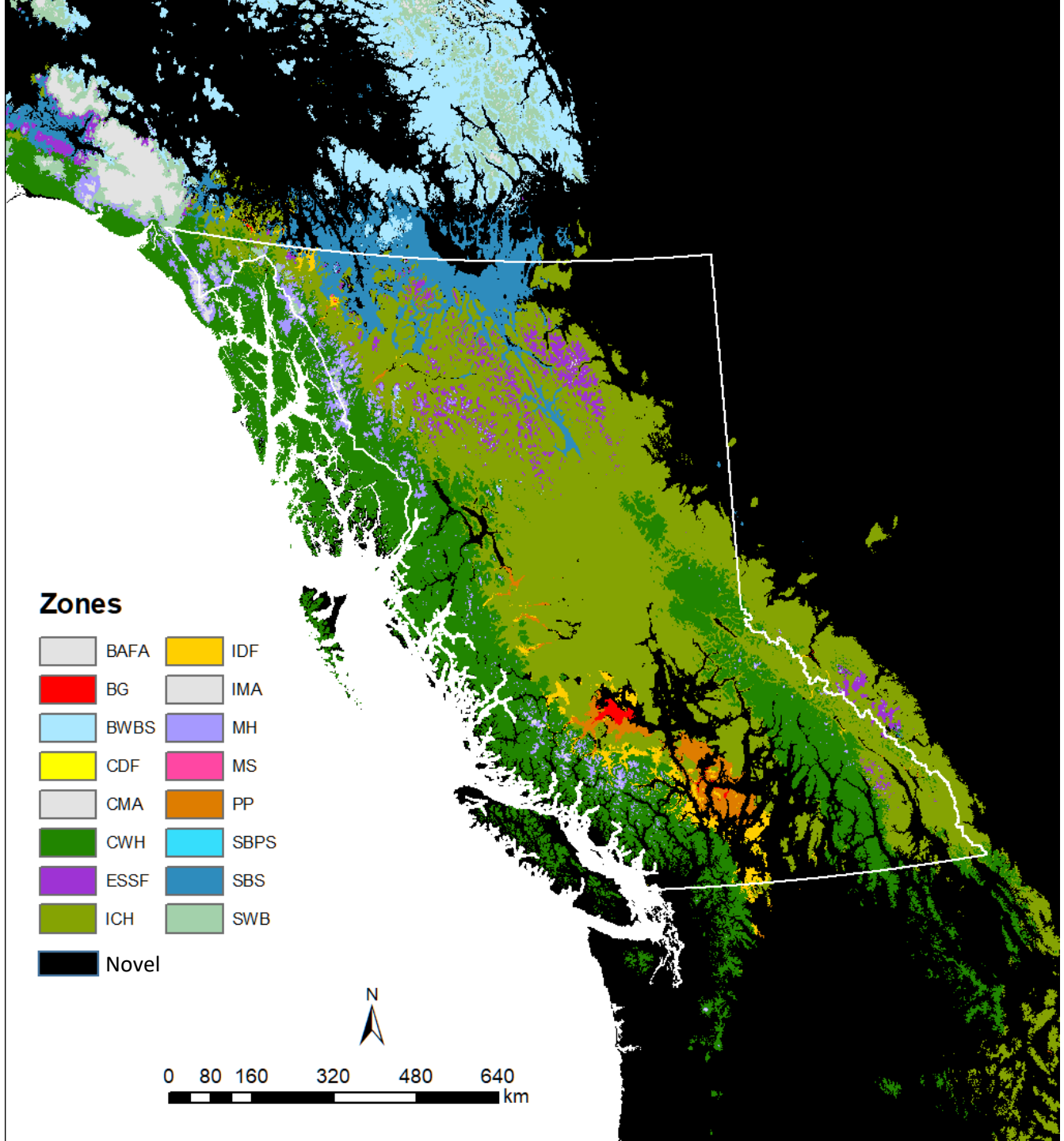


WNA\_ssp245\_2080s

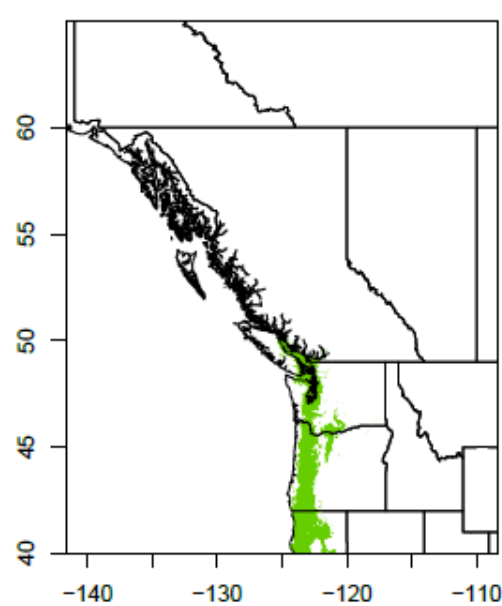




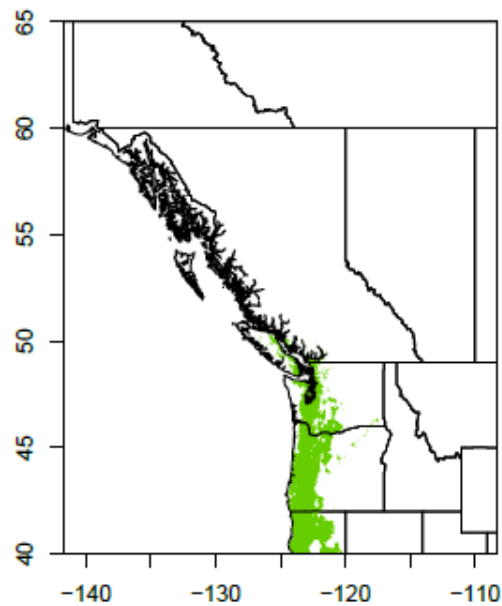
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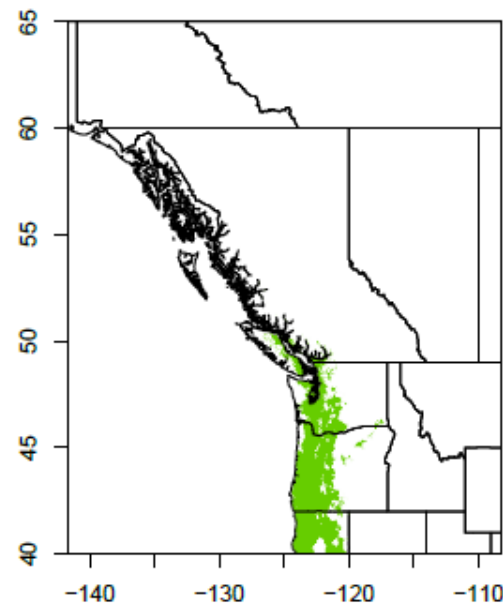
Garry oak



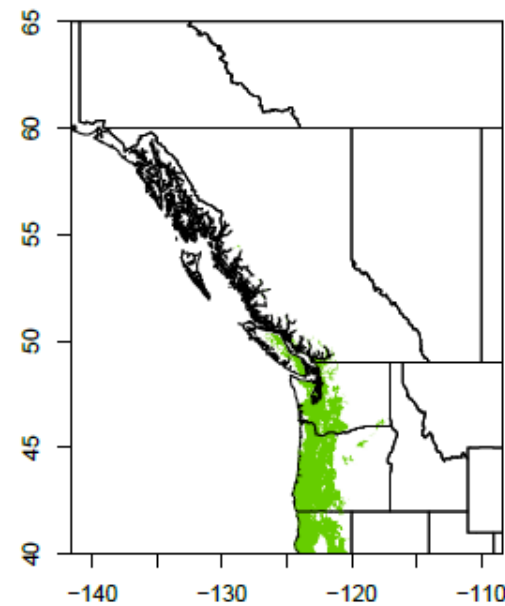
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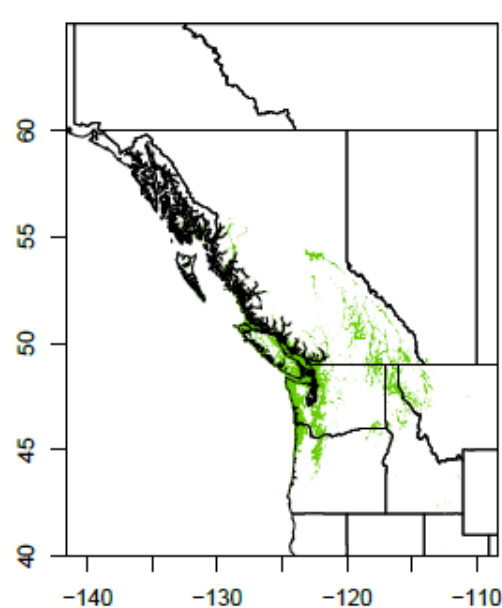
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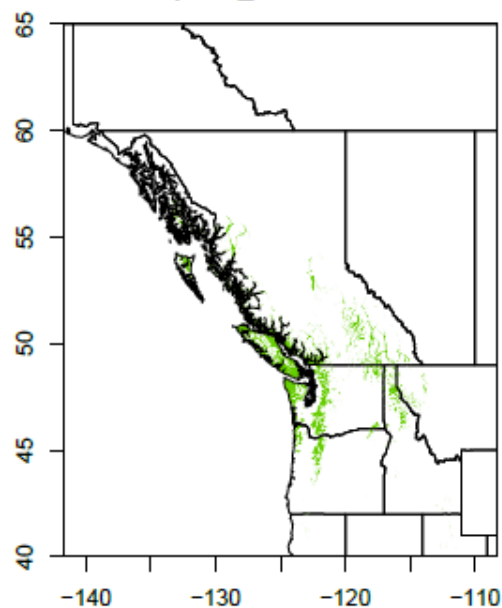
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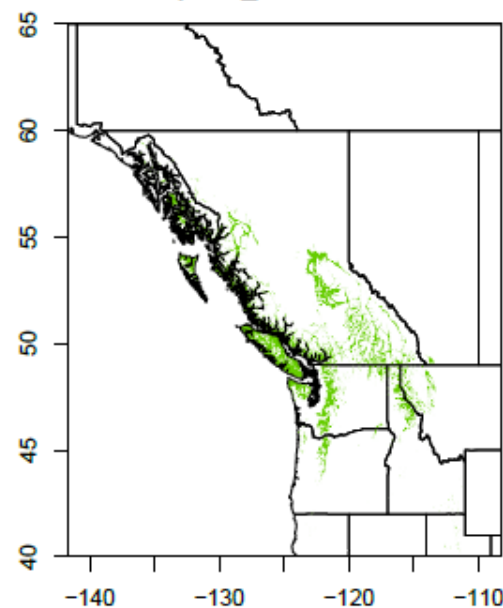
Cascara



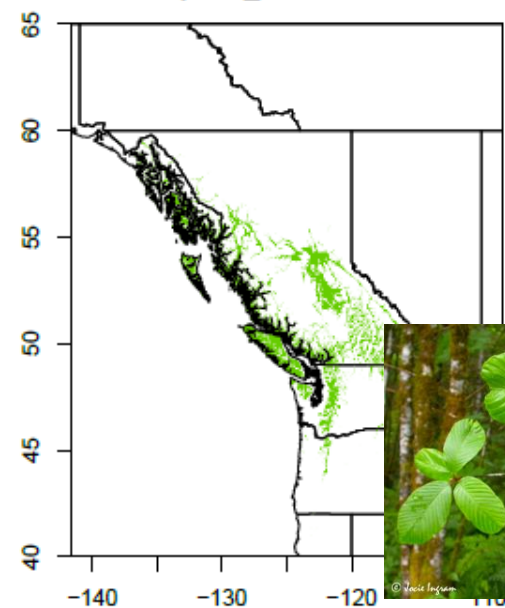
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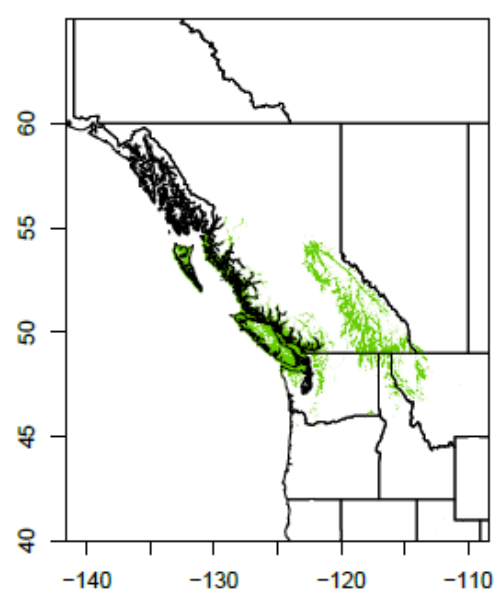
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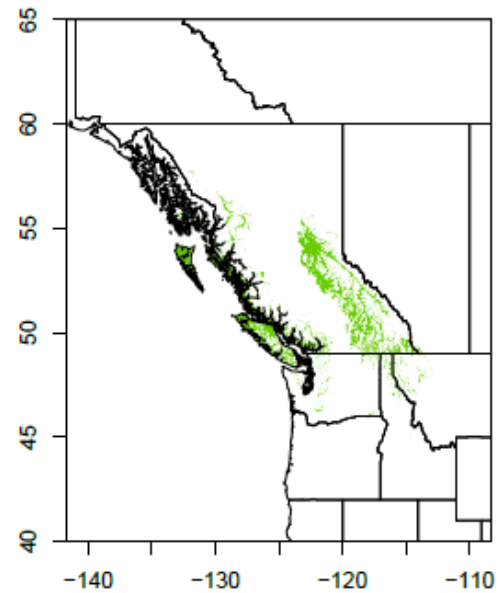
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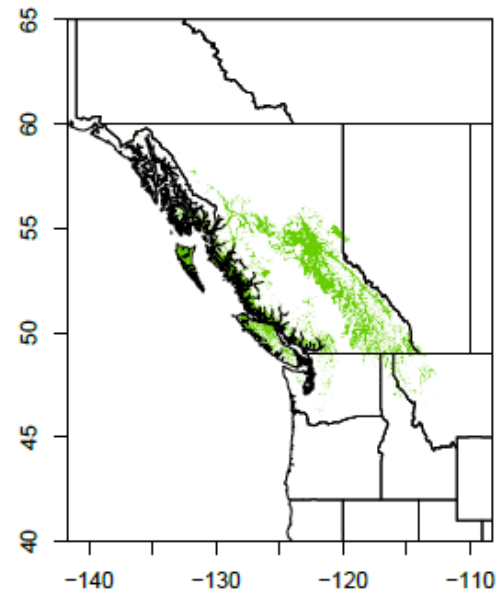
Pacific yew



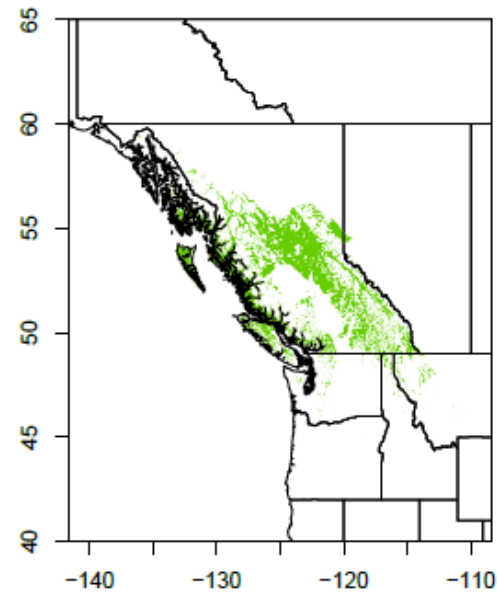
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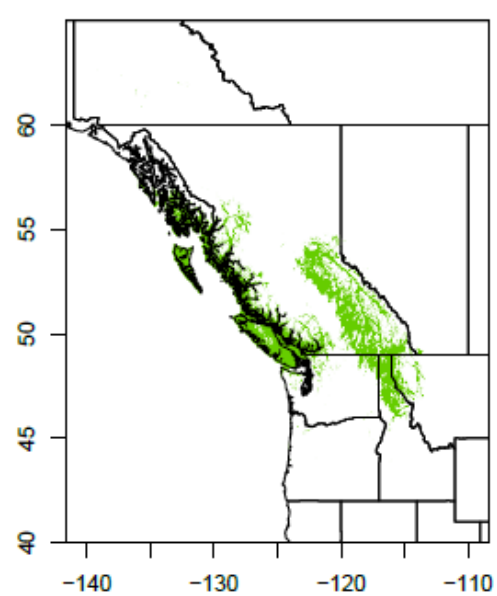
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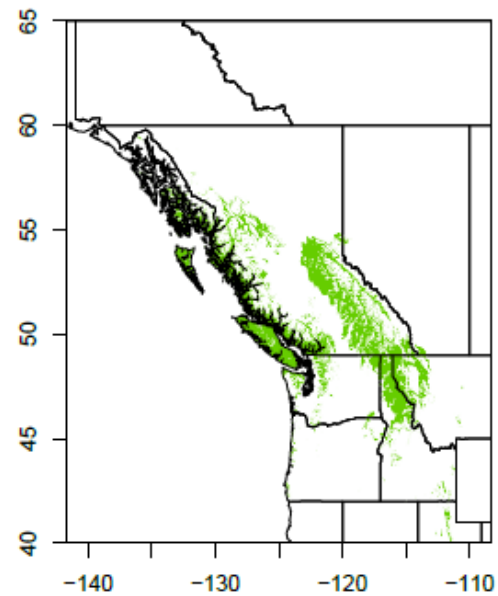
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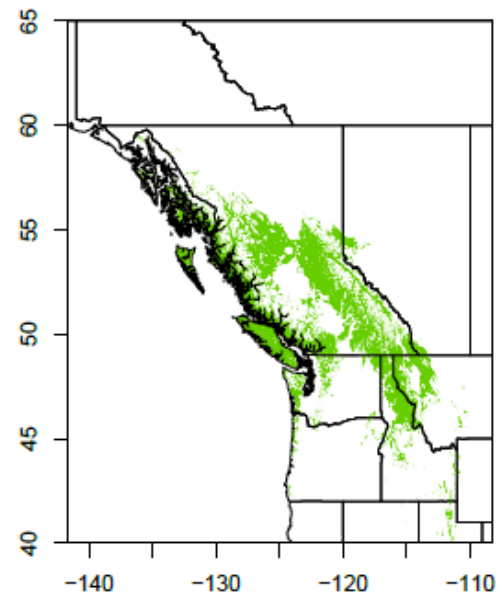
Western redcedar



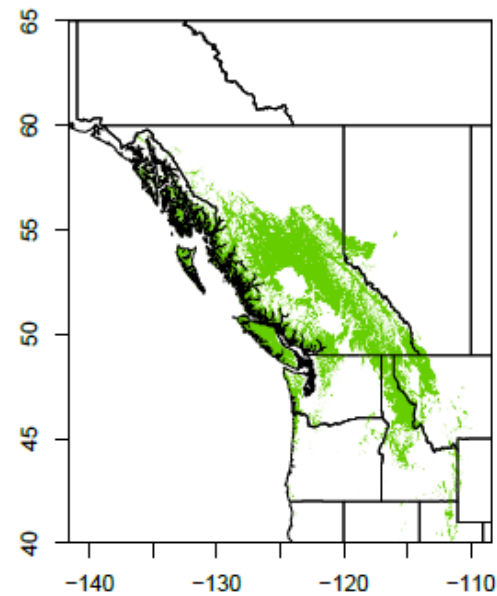
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sp245\_2041-2070.

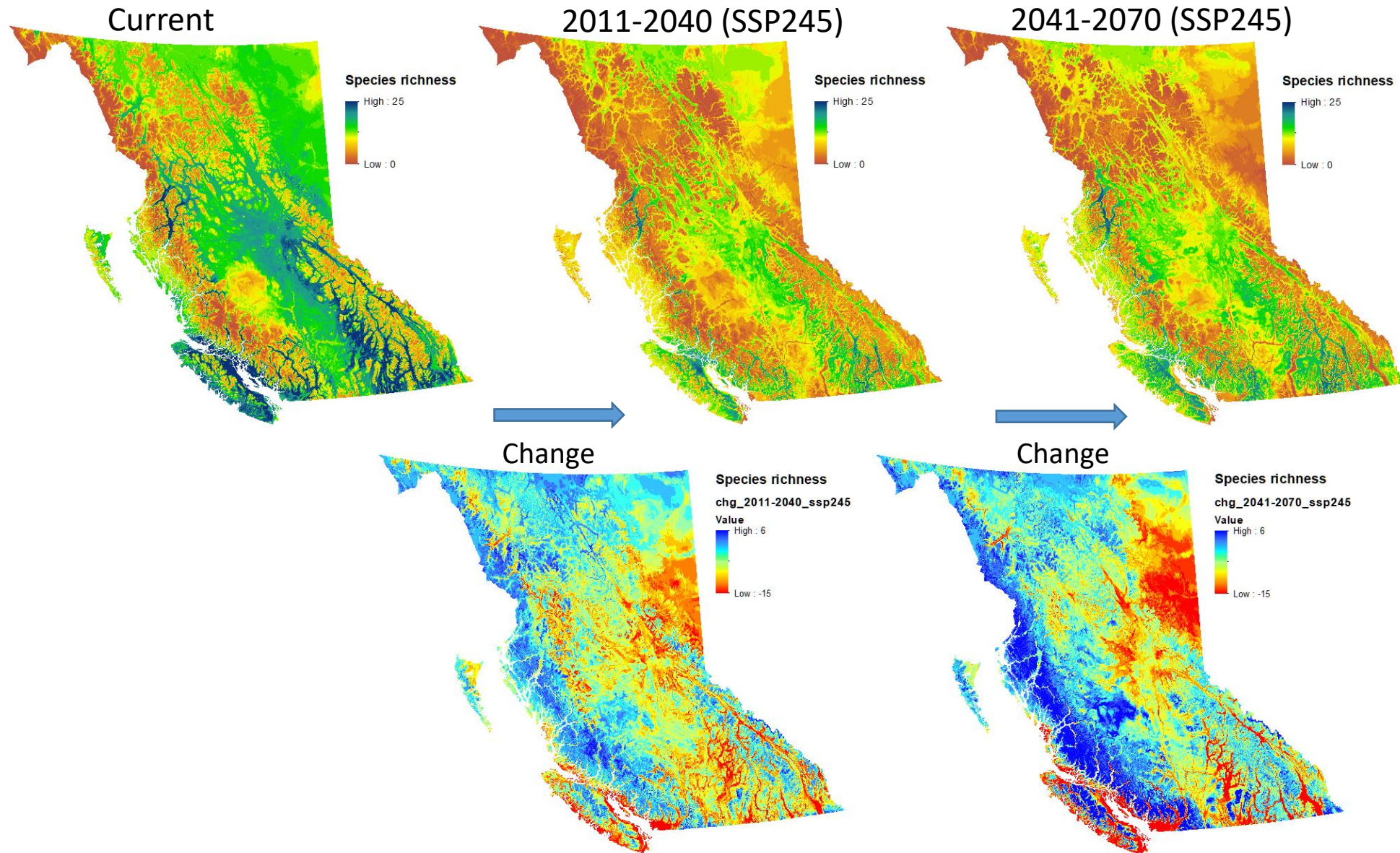


sp245\_2071-2100.

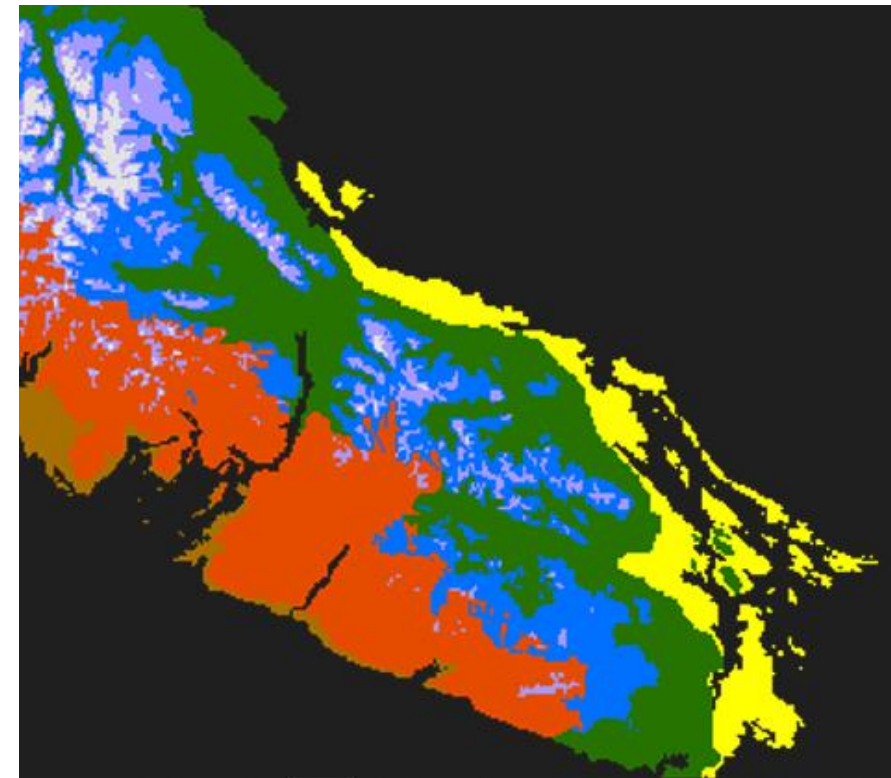
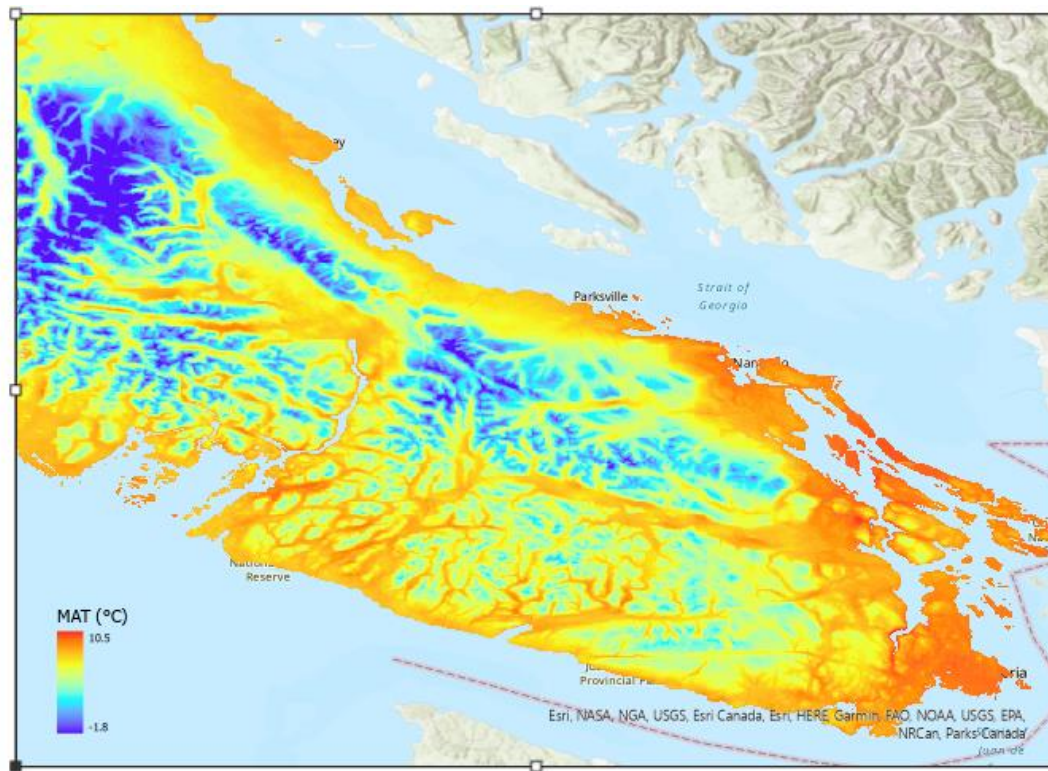




# Species richness (number of the 43 species investigated)



# Climate and BEC variant mapping for CDF (90x90m)



Legend for BEC variants:

- CDF mm
- CMA unp
- CWH dm
- CWH ds
- CWH mm
- CWH vh
- CWH vm
- CWH xm
- MH mm

# Thanks!

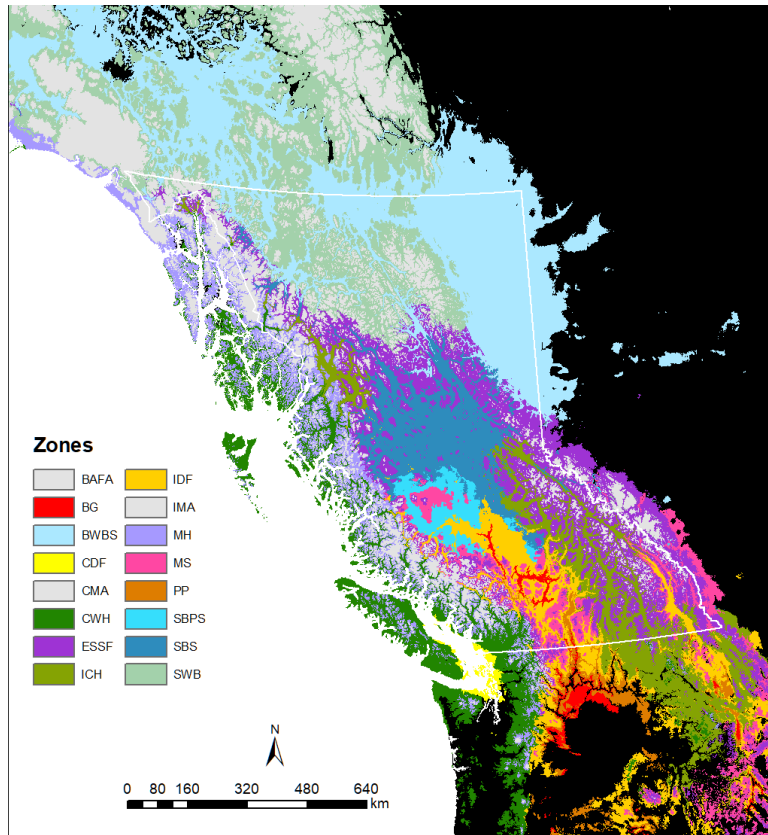
Questions to: [tongli.wang@ubc.ca](mailto:tongli.wang@ubc.ca)



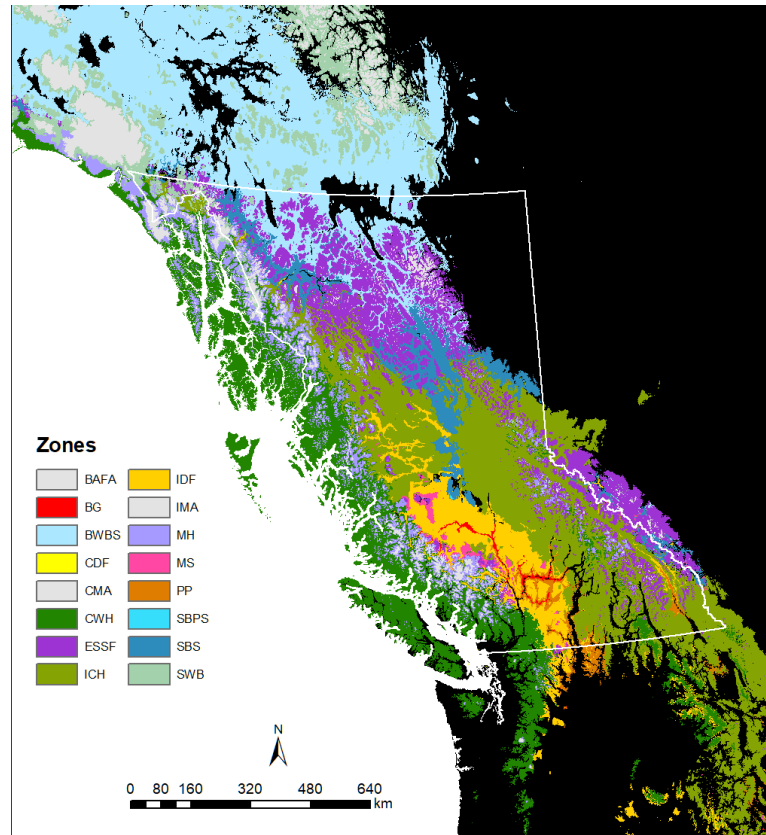
# Potential planning applications? (if resolution increased)

- **Ecological connectivity/corridor analysis**
  - Whether a corridor will likely be there in future
  - Identifying potential climate refugia (e.g. wetter, cooler areas where ecological communities are more likely to persist)
- **Conservation planning**
  - Parkland/property acquisition, treaty parks
  - Establishing ESA's and EDPAs
  - Biodiversity Strategies and Green Infrastructure Networks
- **Referrals**
  - E.g. Is project sited on a potential climate refuge or corridor?
- **Restoration/reforestation planning**
  - E.g. Deciding on tree species to plant

BEC11\_Current



WNA\_ssp245\_2050s



WNA\_ssp245\_2080s

