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# From Tradition to Transformation: The Potential of Carbon Credits from Cultural Burning

A feasibility study in the Tsilhqot'in

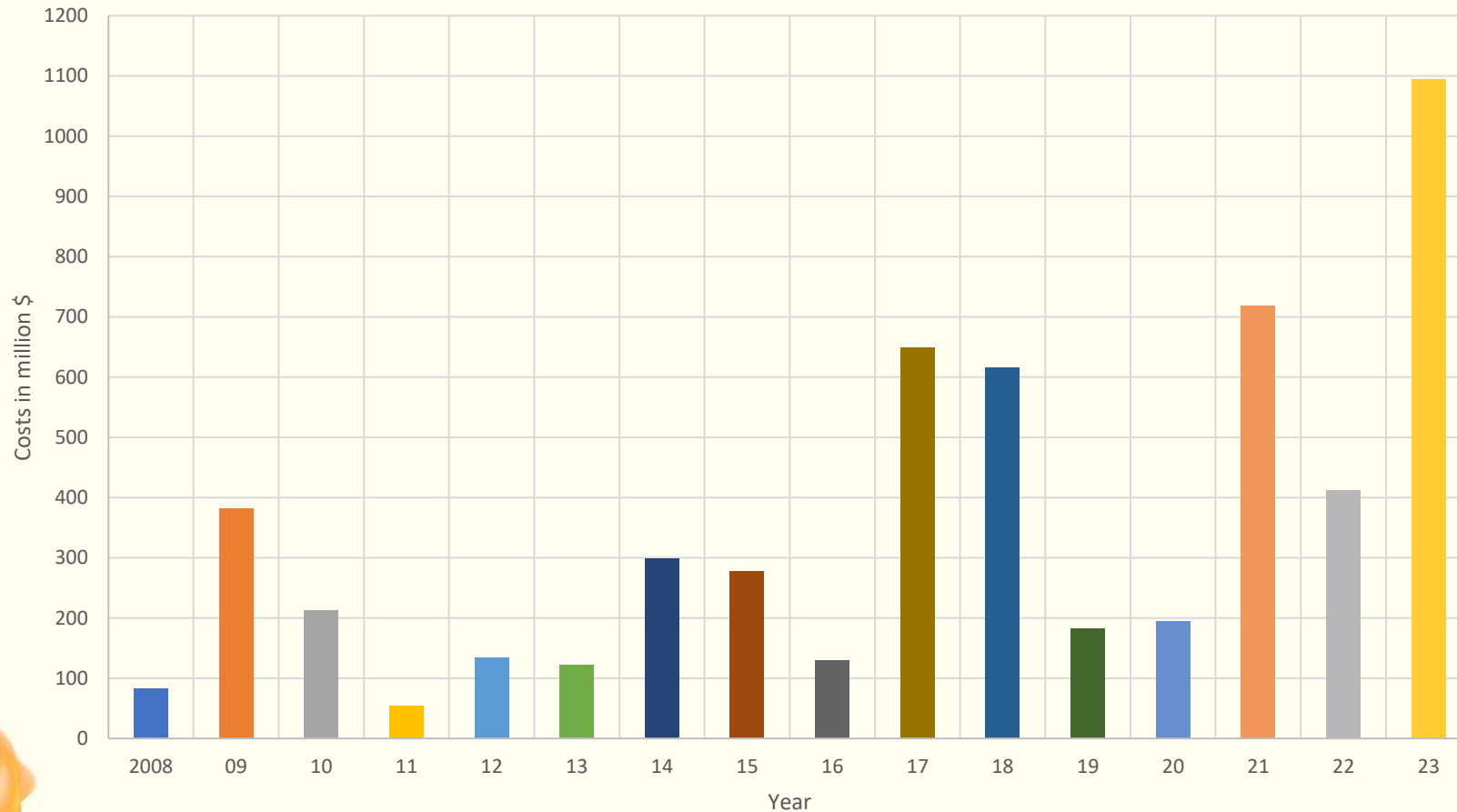
**Dr. William Nikolakis**  
Supervisor



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# Wildfire Costs in BC

Fire Suppression Cost in BC



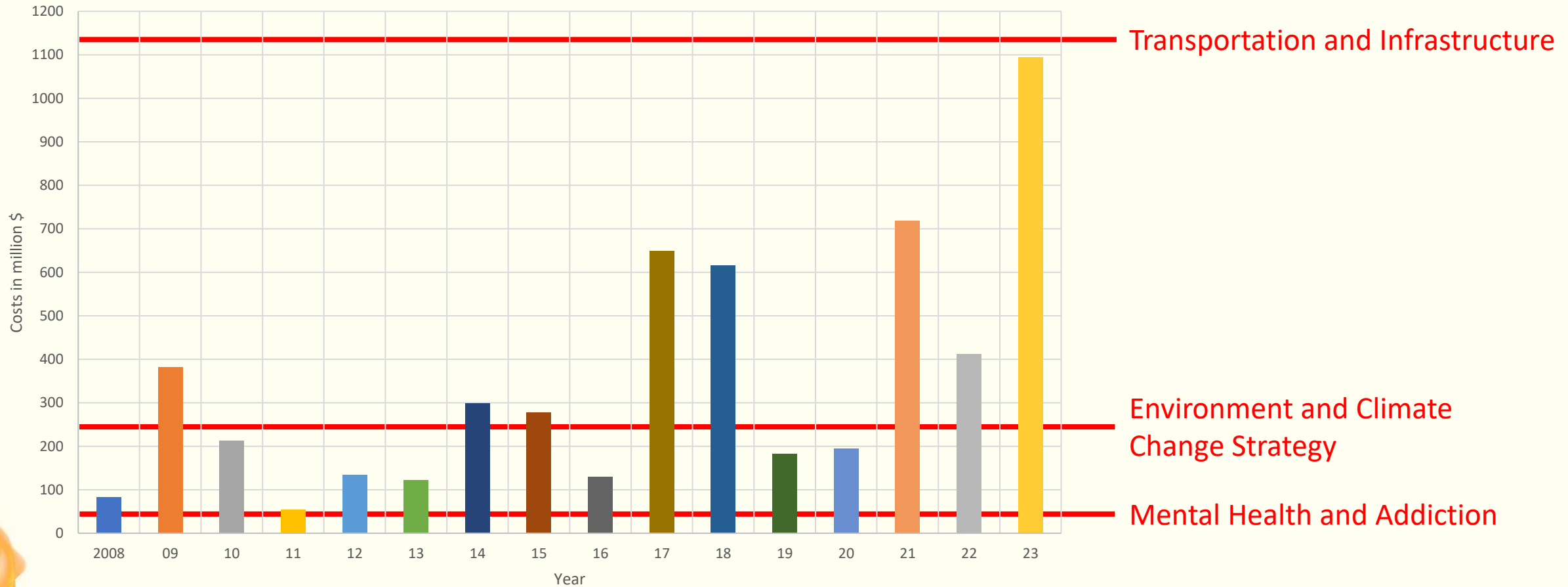
Indirect Costs of Wildfires may be 2-30 times more.

- Ecosystem function
- Infrastructure
- Evacuations
- Health (physical and **mental**)
- Timber Value
- Economy (jobs, tourism)
- Environmental
- Etc.

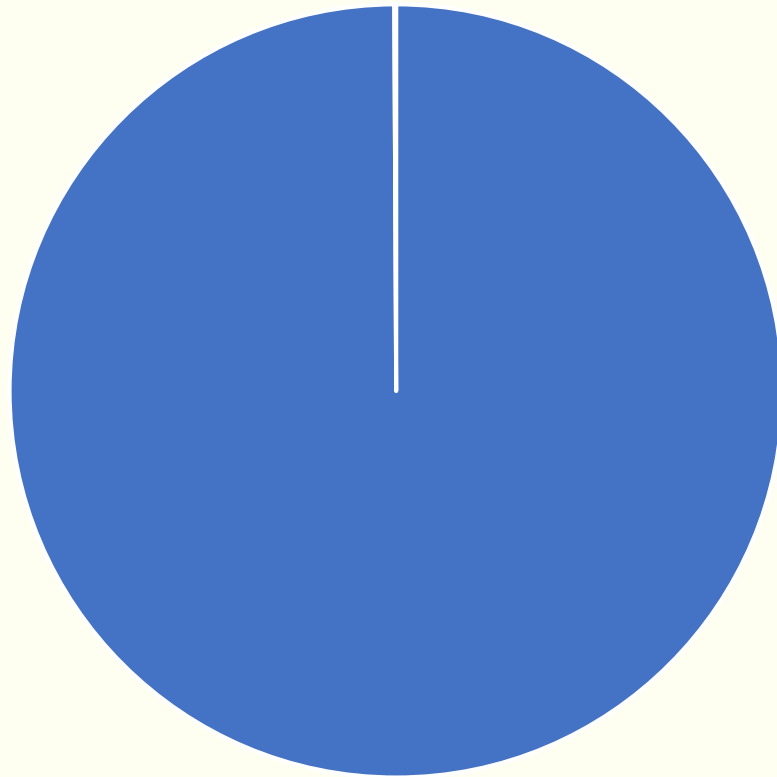


# Wildfire Costs in BC

Fire Suppression Cost in BC



# Area Burnt Vs Area Treated in 2023

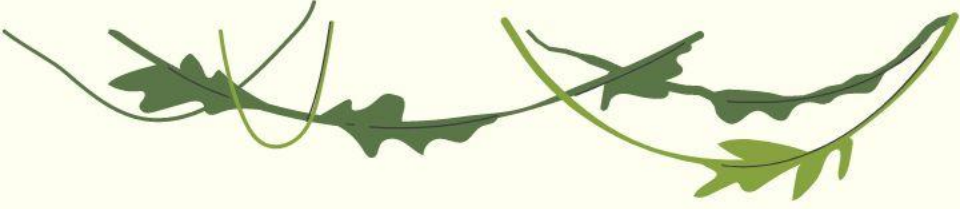


■ Area Burnt ■ Area Treated

**Area Burnt = 2 840 000 Hectares**

**Area Treated = 2241.4 Hectares**

**0.079%**



# Yunesit'in Fire Stewardship Program

Started in 2018

Reclaiming Fire  
Reclaiming their Tradition



Working  
**ON** the Land  
**FOR** the Land  
**WITH** the Land





# Indigenous Fire Stewardship

## Cultural

Transfer of knowledge  
Protect cultural sites  
Well-being



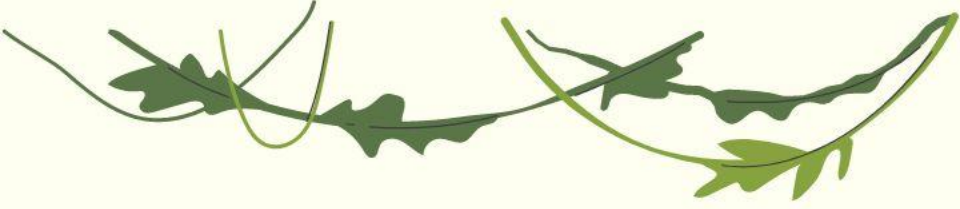
## Land

Restoration  
Wildfire prevention

## All living things

Food / Medicine  
Removal of parasites  
Easier access





# Barriers to Implementation



## Perceptions, Authority and Jurisdiction

Fear of fire

## Governance, Law and Management

Burn Permit

## Access to Accreditation and Training

Indigenous experience is not recognized

## Liability and Insurance

History of convicting Indigenous people

## Capacity and Resources

Trained personnel  
Capital



From: Hoffman et al. (2022). The right to burn: Barriers and opportunities for Indigenous-led fire stewardship in Canada. FACETS

# Theory



Indigenous Fire Stewardship



Reduction in Wildfire Risk

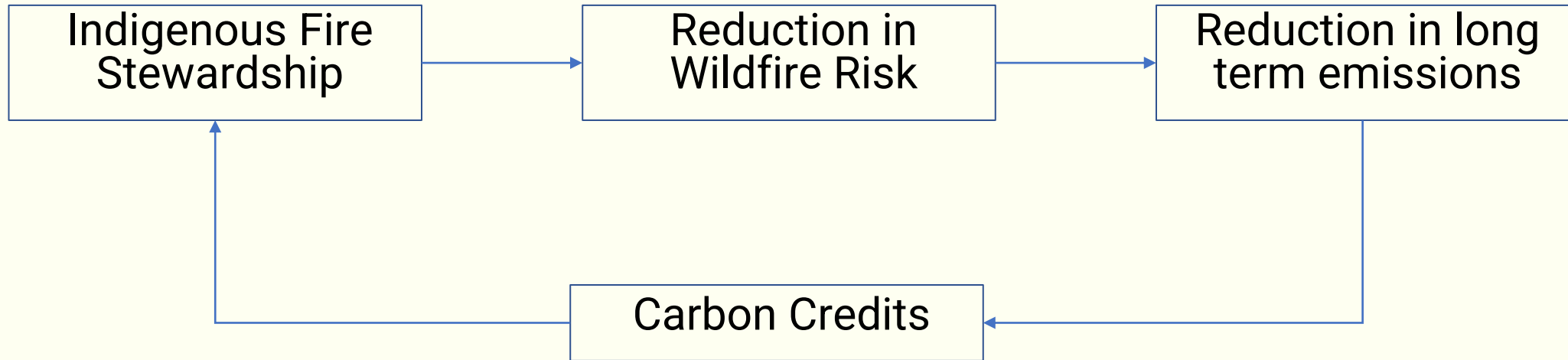


Reduction in long term emissions

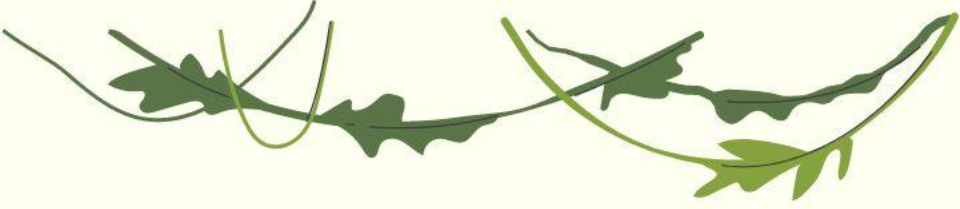
Carbon Credits



Real  
Verifiable  
Permanent  
Additional







# Australia

Savanna fire management 2018 – emission avoidance and sequestration



*Wonnarua Country, Hollydeen, June 2021, photo credit Jessica Wegener*

Western Arnhem Land Fire Abatement (WALFA) – Northern Territory

- 3 million credits between 2011 and 2019
- AUD 30.9 million in revenue



# What are the differences?

Tsilhqot'in



Interior Douglas Fir and  
Sub-Boreal Pine-Spruce

Multi-decadal

No Existing methodology

Ecosystem



Fire Frequency



Carbon Framework



Australia

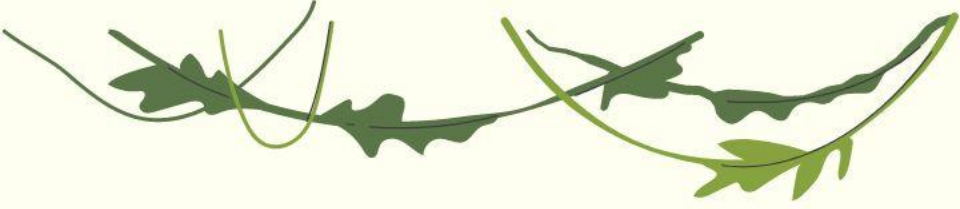


Savannas

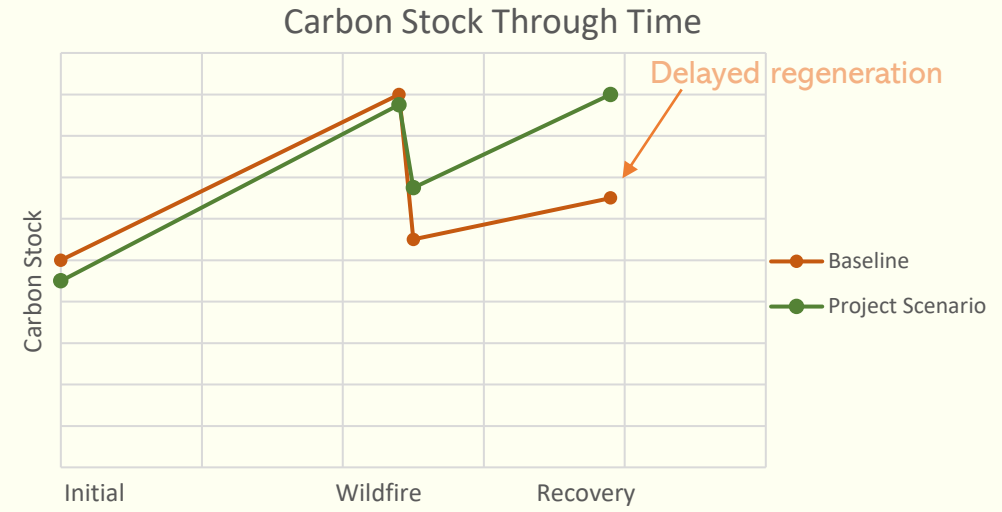
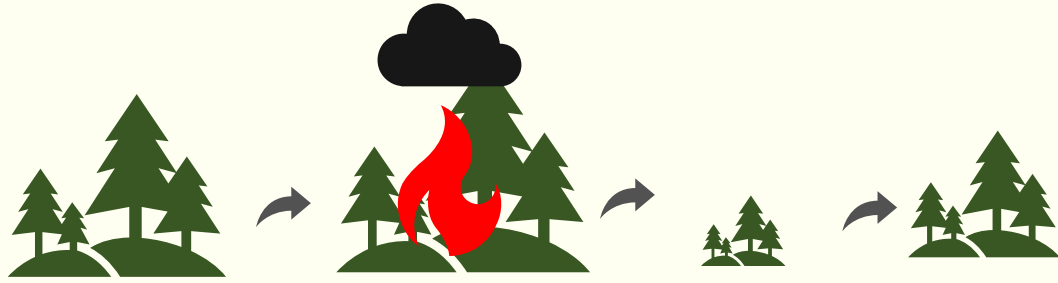
Yearly

Existing methodology

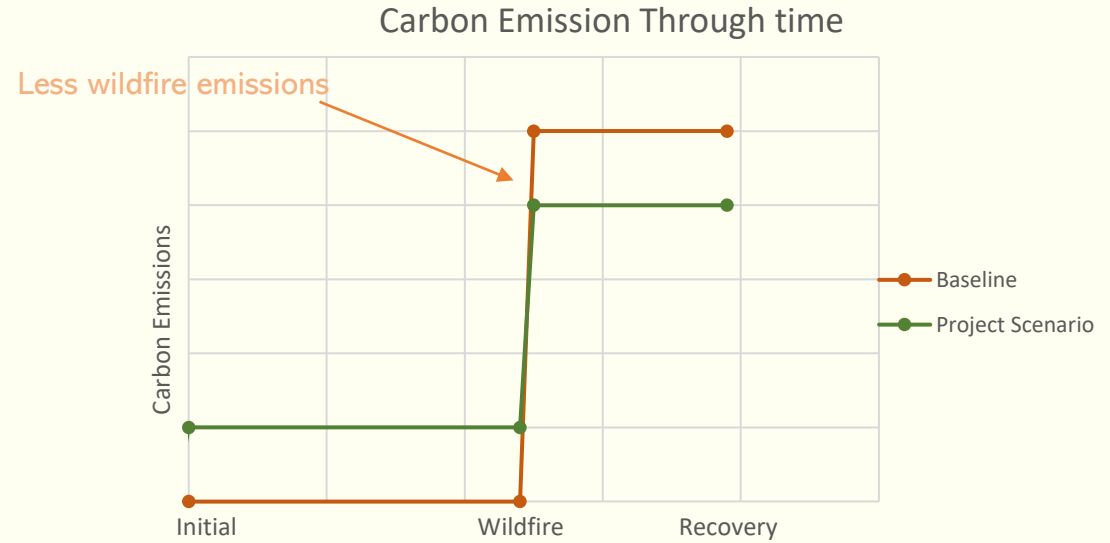
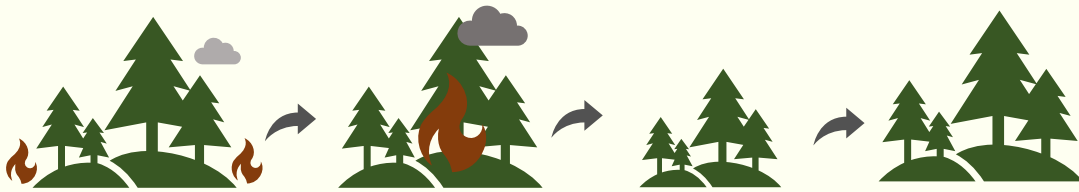
# Reduction in Emissions from Megafires

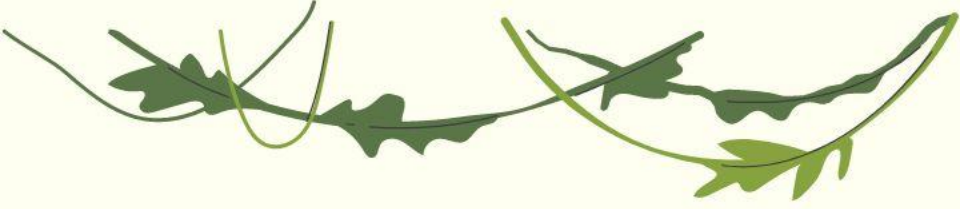


Baseline



Project





# Reduction in Emissions from Megafires

## Carbon sources

Forest carbon stocks  
(Growth)

Emissions from treatment  
(Recaptured)

Forecasted emissions from future fires  
(Reduced)

Carbon impact from delayed regeneration  
(Severe Wildfire)

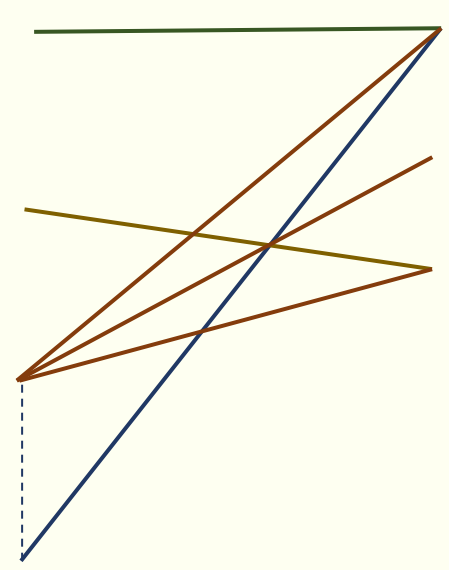


## Models

Growth and Yield Model (FVS-FFE)

Wildfire Behavior Model (Flammap)

Wildfire Emission Model (Fofem)





# Carbon Credits vs Barriers



**Perceptions, Authority  
and Jurisdiction**

**Governance, Law  
and Management**

**Access to Accreditation  
and Training**

**Liability and Insurance**

**Capacity and Resources**

# Questions?

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Thank you!