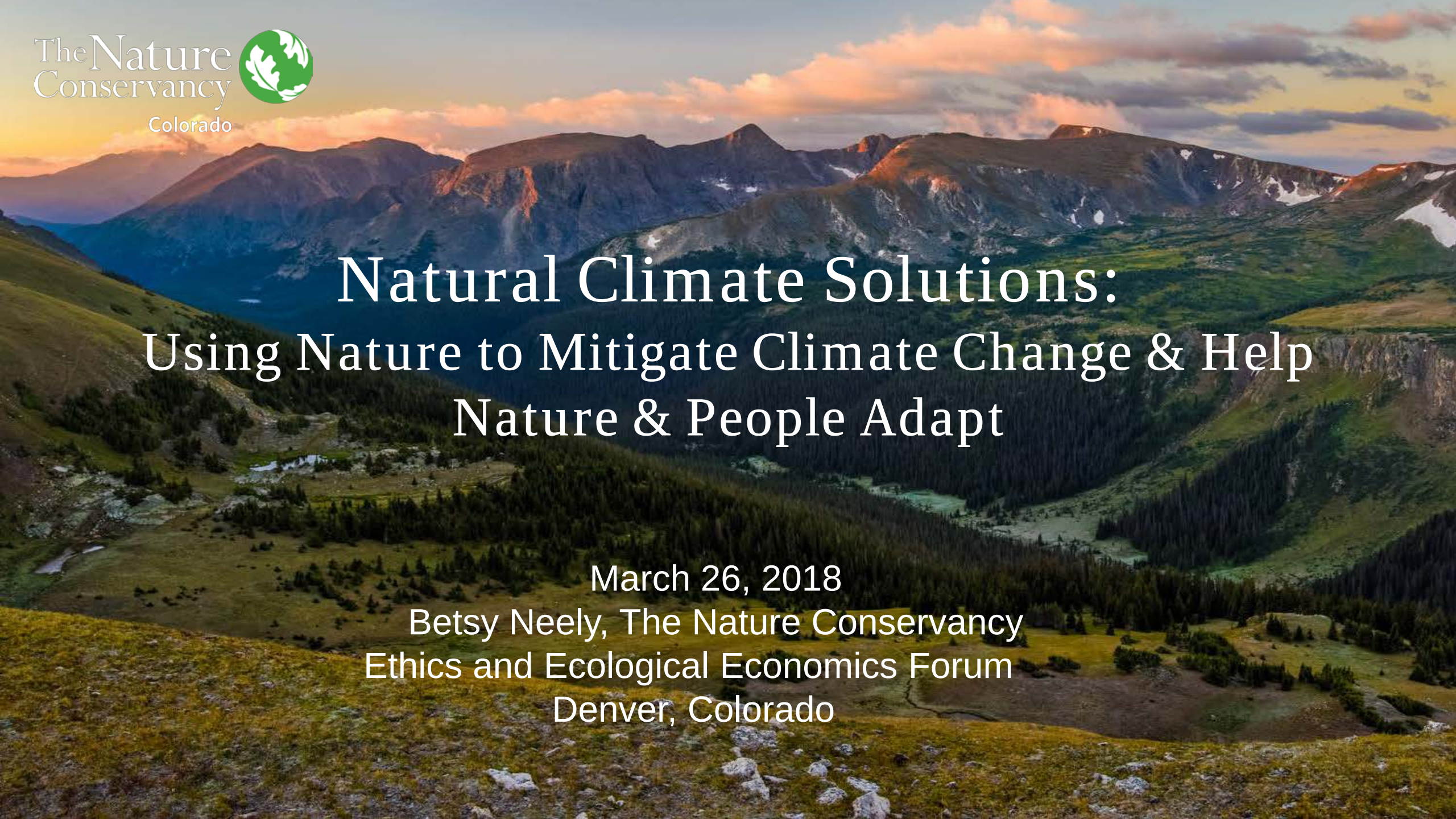


Natural Climate Solutions:
Using Nature to Mitigate Climate Change & Help Nature & People Adapt

March 26, 2018

Betsy Neely, The Nature Conservancy

Ethics and Ecological Economics Forum

Denver, Colorado

The Nature Conservancy

3,600
conservationists

1,300
prominent volunteer leaders

72
countries

400
scientists

A FAR-REACHING ALUMNI NETWORK
of leaders in the conservation community

50
U.S.states

1 MILLION
dedicated members

Mission: conserve the lands & waters on which all life depends.

Vision: we envision a world where the diversity of life thrives, people act to conserve nature for its own sake & for its ability to enrich and fulfill our lives.

Shared Conservation Agenda: focus all of our energy, passion, innovation & experimentation on solving the biggest challenges facing our mission so that we can move at a pace & scale that matters.

What is Standing in the Way of a Future where People and Nature Thrive Together?

8 GLOBAL CHALLENGES

Climate Change –
Mitigation and Adaptation

High Agricultural Inputs

Wood Products and
Connected Air & Water Pollution

Deficient Sanitation & Wastewater

Energy Expansion & Sprawl

Expanding Footprint of Cities

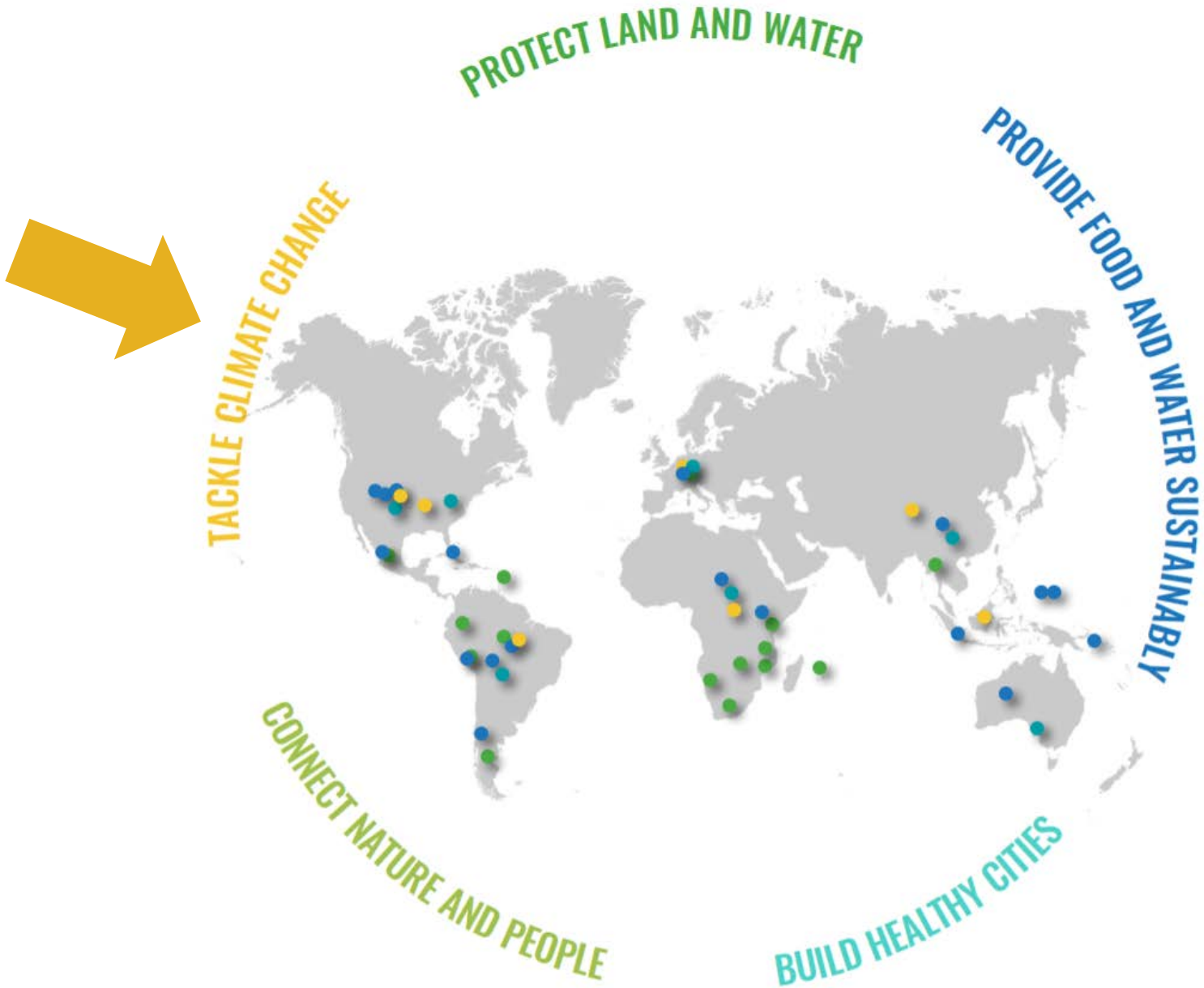
Invasive Species

Unsustainable Fisheries

Forests & Fire Suppression –
U.S. Only

The Nature Conservancy
Protecting nature. Preserving life.™

Global Priorities



Tackle Climate Change

North America Priority Strategies

Climate Action
Reduce US emissions by at least 26% from 2005 levels with policies in place for steeper reductions.

Energy and Infrastructure
Double renewable energy compared to 2016 with at least 75% of new projects & infrastructure deployed in low-impact areas.

Natural Climate Solutions - Mitigation
Reduce GHG emissions annually by 118 MMtCO2e by avoided forest conversion, reforestation & improved forest management.

Natural Climate Solutions - Adaptation
Influence decision-making & bring nature-based solutions to enough communities at risk that investments become standard practice, to prepare for, adapt to & manage the effects of flooding & drought.

Natural Climate Solutions

Restoring, conserving & better managing forests, grasslands, farmlands & wetlands

Could deliver 37% of carbon reductions needed by 2030 to keep warming below 2°C & help nature & people adapt

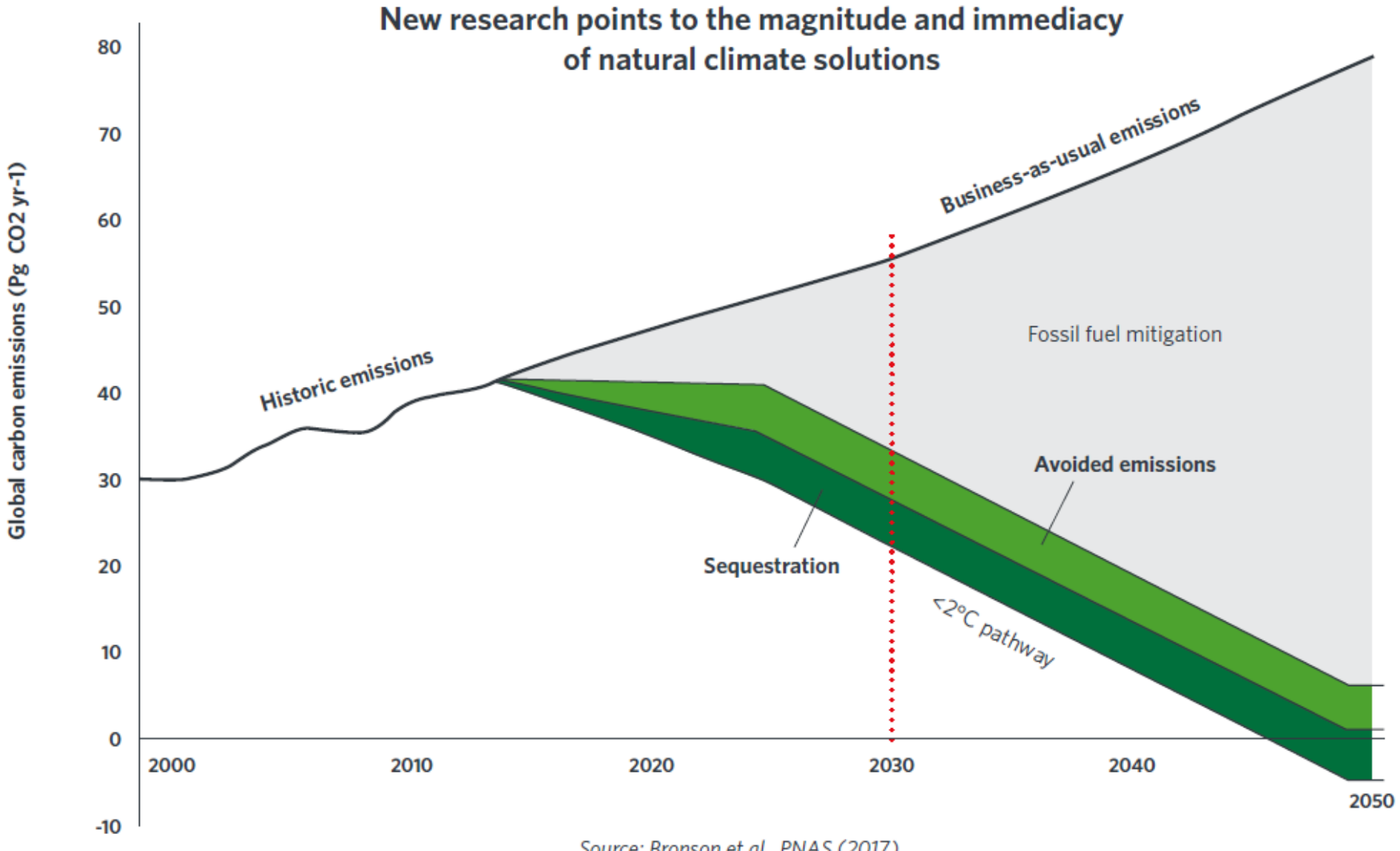
Griscom et al. 2017 PNAS

Natural Climate Solutions

https://global.nature.org/initiatives/natural-climate-solutions/natures-make-or-break-potential-for-climate-change

Griscom et al. 2017 PNAS

Rapid decarbonization of energy sector alone is insufficient



Source: Bronson et al., PNAS (2017)

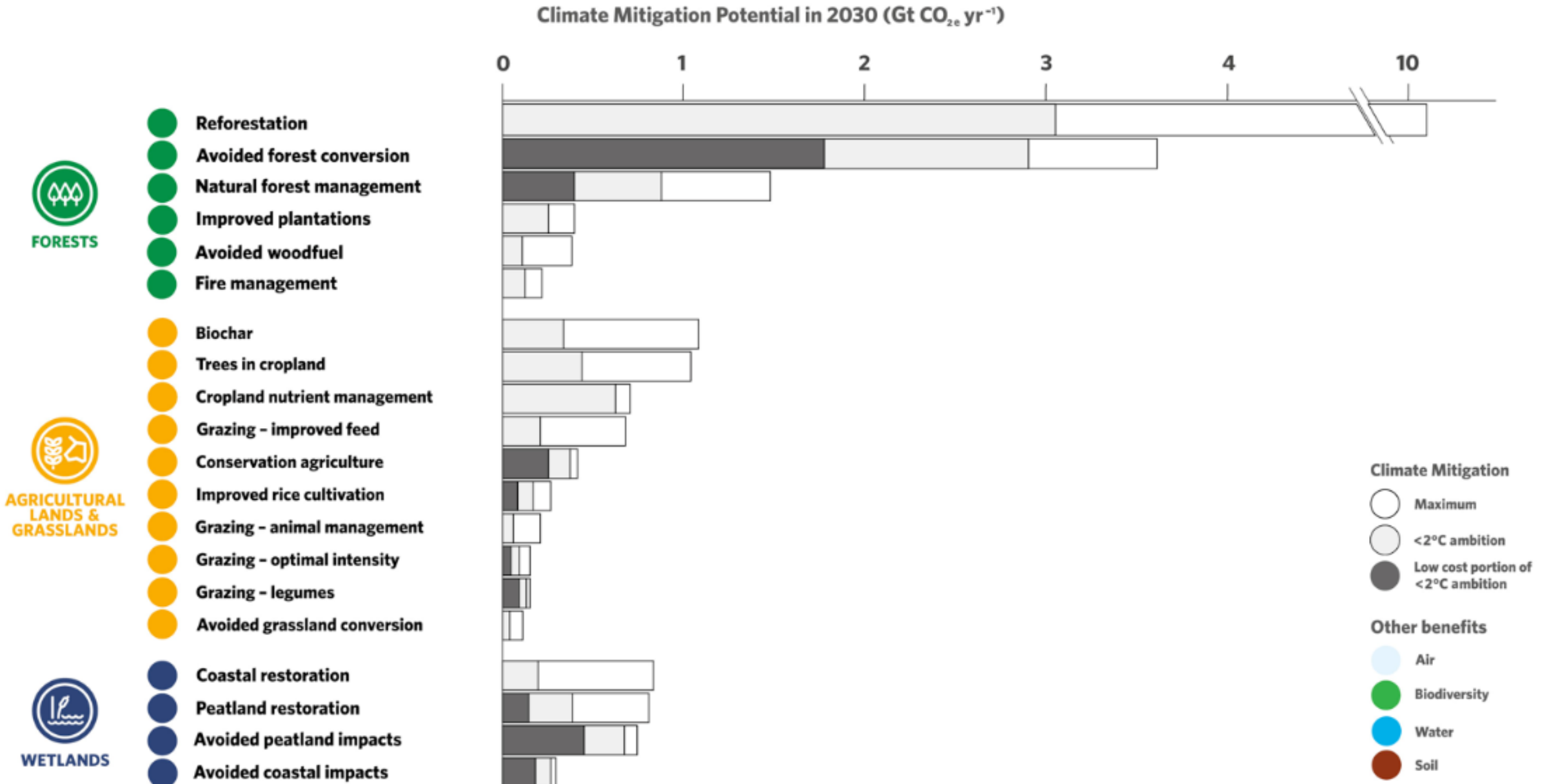
*“We cannot hit the 2° C or below target through reforms in energy, industry & transportation sections **alone.***

Preventing further loss of nature & investing in NCS are essential to climate stability.

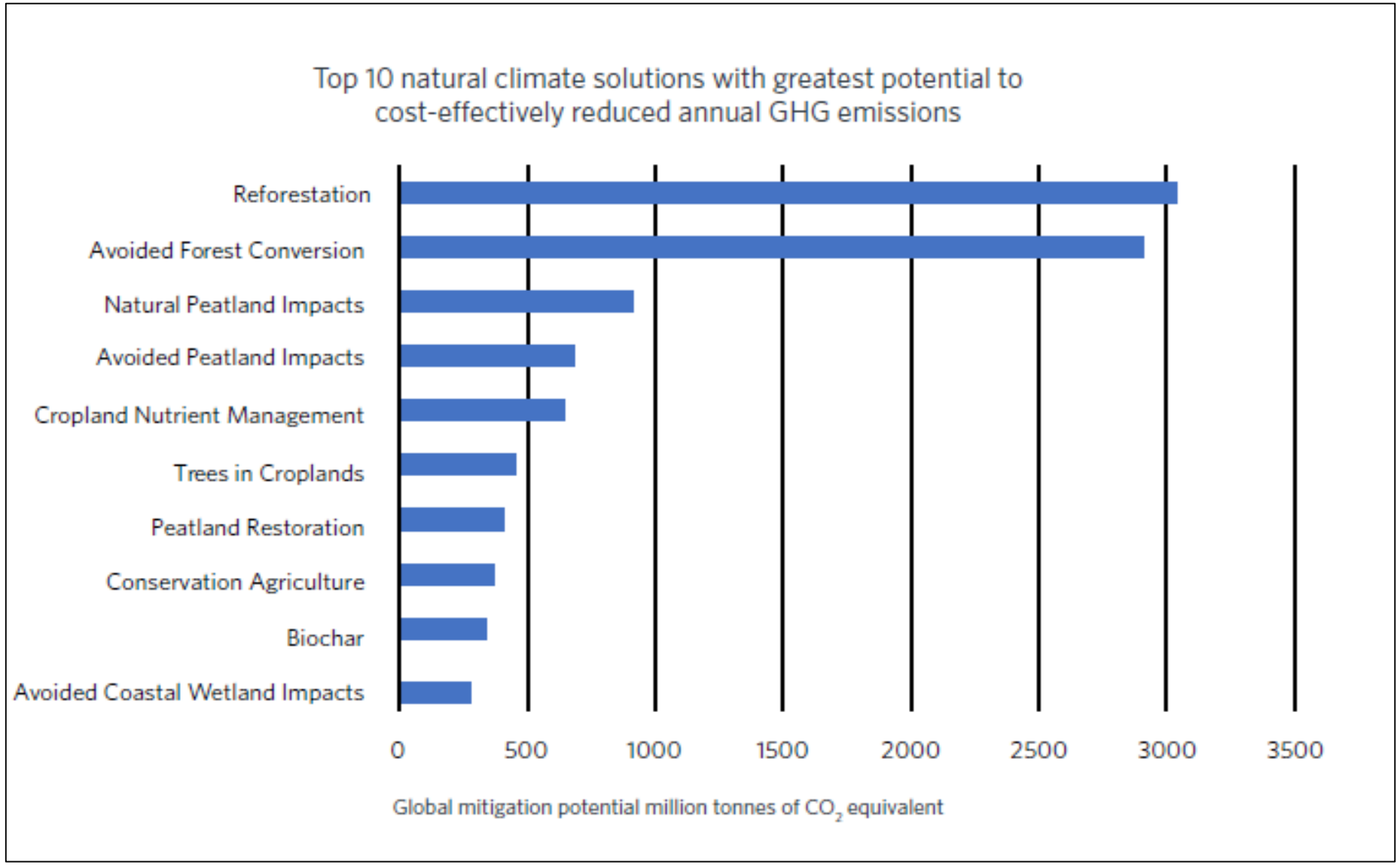
The good news is that these opportunities are abundant & have many other benefits.”

Bronson Griscom, Director, Forest Carbon Science, TNC

Climate Mitigation Potential of 20 Natural Pathways



Top 10 Cost-Effective Natural Climate Solutions

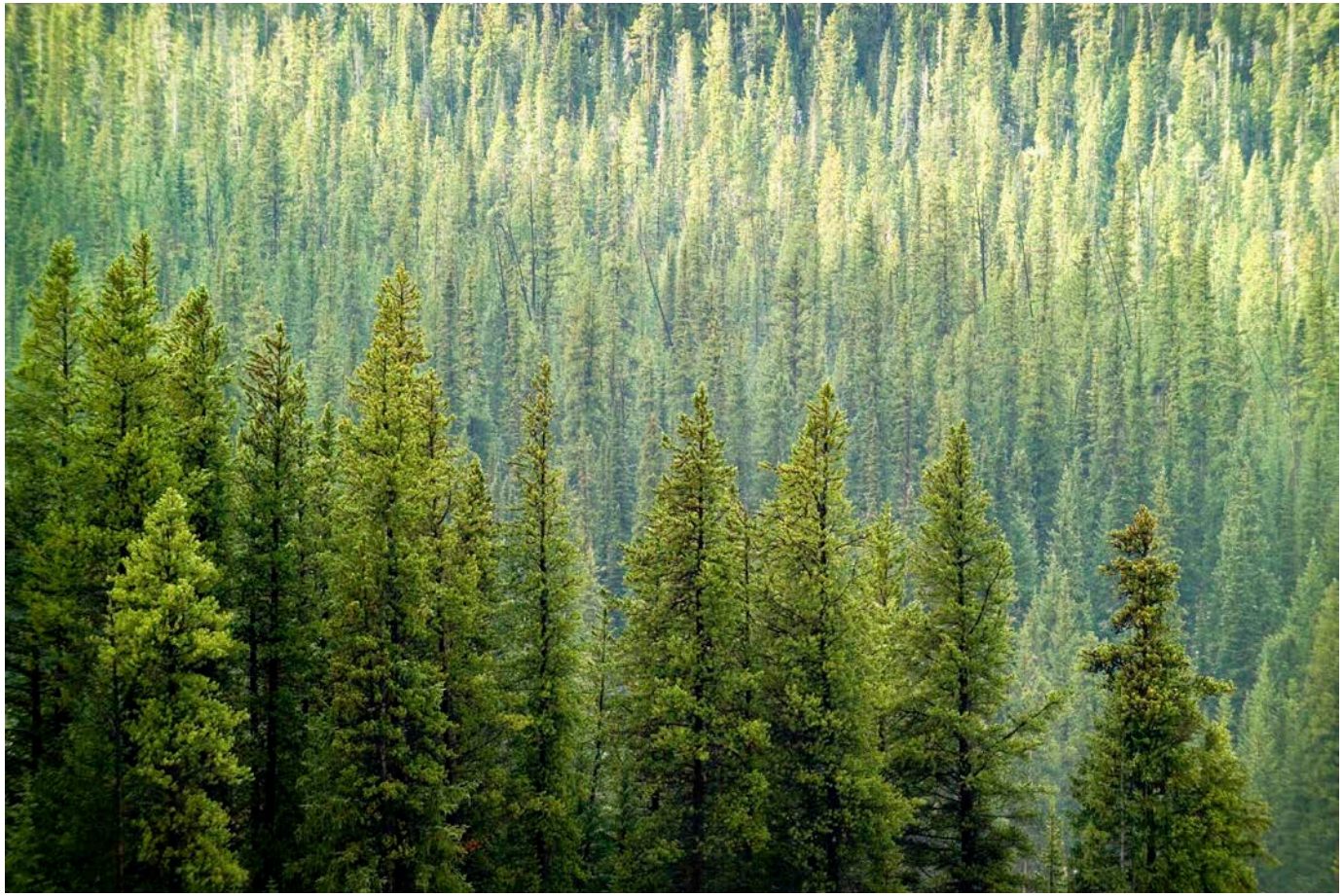


Griscom et al. 2017

North America Priority
Natural Climate Solutions: Mitigation

Greenhouse gas emissions are reduced annually by 118 MMtCO2e by:

- Improved forest management
- Reforestation
- Avoided forest conversion



North America Priority
Natural Climate Solutions: Adaptation

Bring nature-based solutions to communities at risk so that investments in response to climate change become standard practice to:

- prepare for, adapt to &
- manage the effects of flooding and drought.

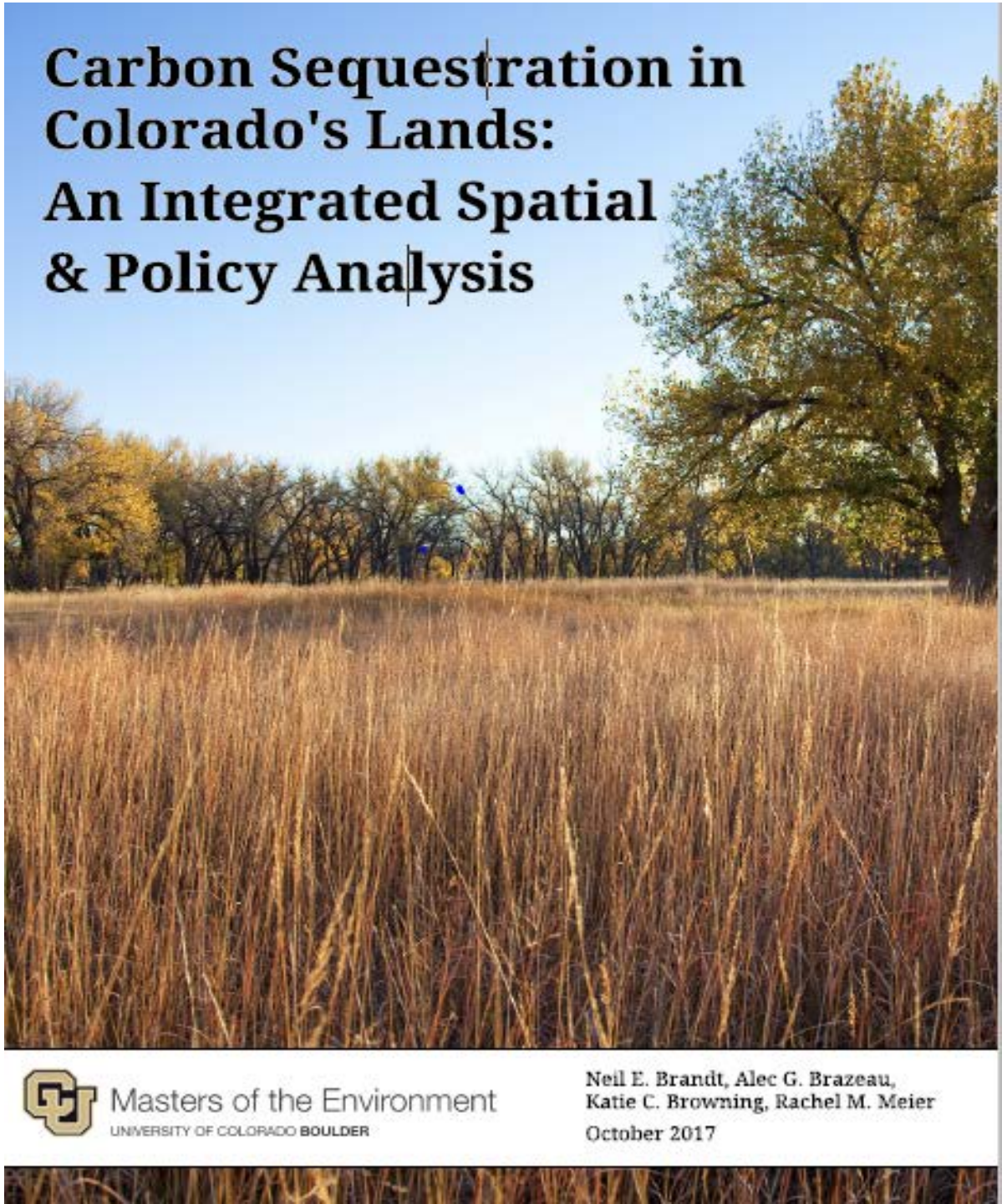
Aerial view of the Colorado River flowing into the Gulf of California in May 2014 after the Delta Pulse Flow made possible by the Minute 319 agreement. © Sonoran Institute

Natural Climate Solutions: Colorado

Questions

1. How much carbon is currently sequestered in CO & how much might be sequestered in the future?

2. What programs & policies have the greatest impact to improve carbon sequestration rates?

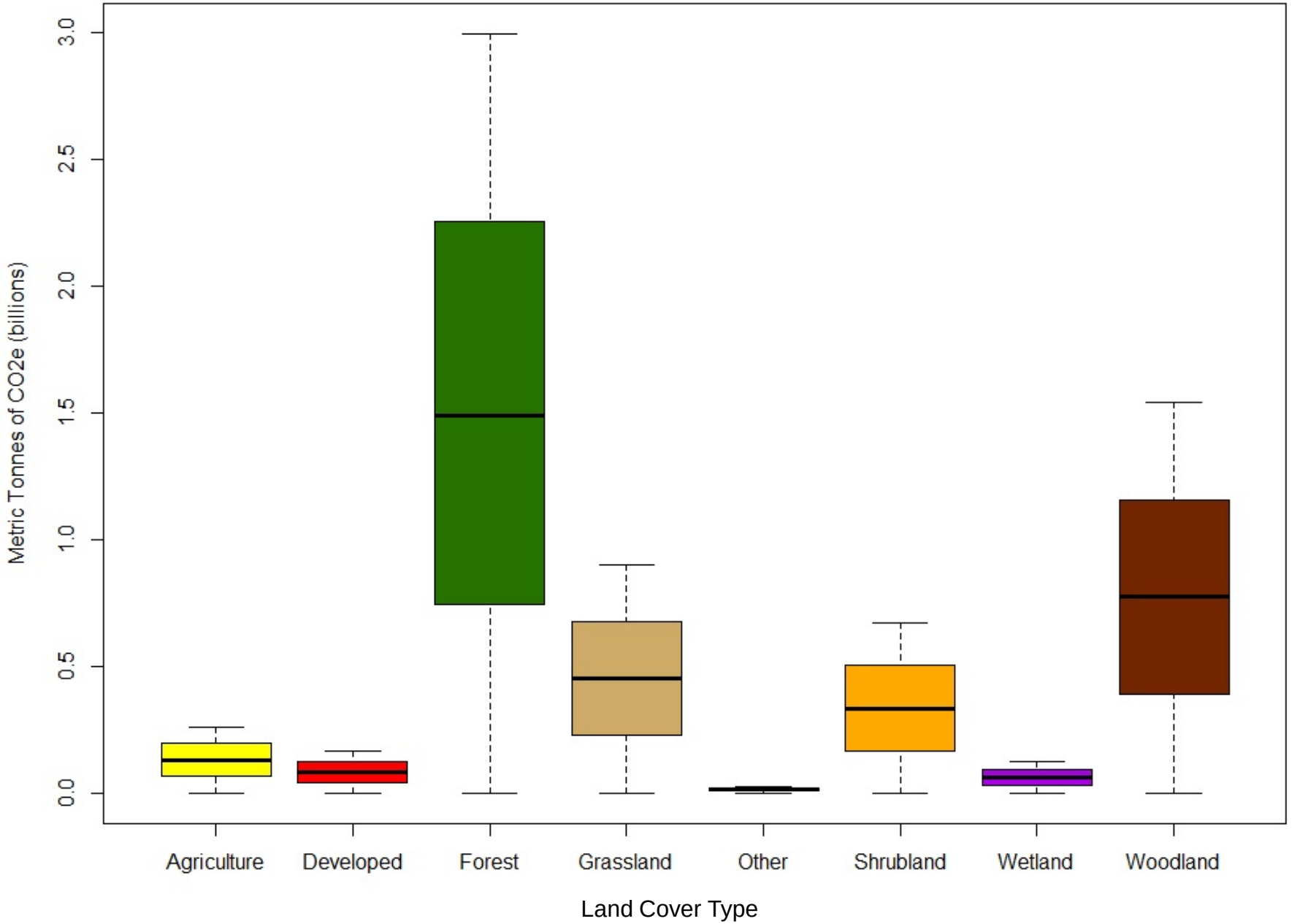


Definitions

Stock: Amount of carbon stored in a landscape (MT CO2eq)

Sequestration: process by which atmospheric carbon dioxide is taken up by plants through photosynthesis & stored as carbon in biomass & soils

Carbon Stocks by Land Cover Type - 2011



Conclusions

1. Colorado lands play a crucial role in mitigating climate change
2. Managing lands to improve carbon sequestration can contribute to climate goals (CO goal: reduce emissions by 26% of 2005 levels by 2025)
3. Seek policies & practices to improve land management for carbon



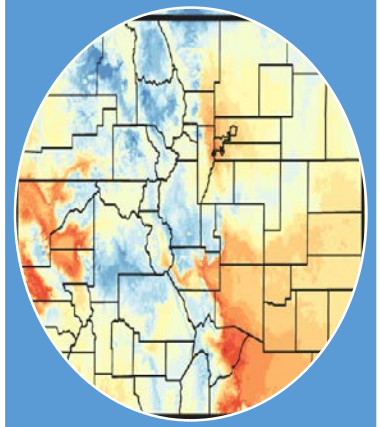
Climate Impacts & Opportunities Project



Goals

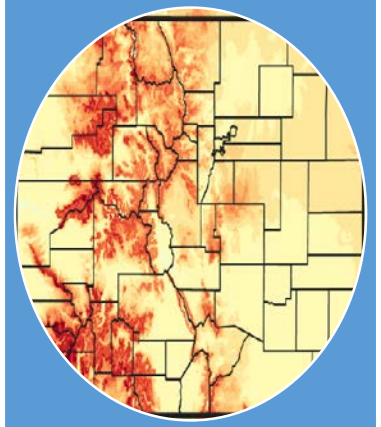
Targets &
Goals

Climate Scenarios



Hot & Dry
Feast & Famine
Warm & Wet
Hot & Wet

Ecological Response Models



Drought
Fire
Insects
Stream Flows
Temperature

Situation Analysis

Social &
Ecological
Connections
Climate Impacts
Interventions

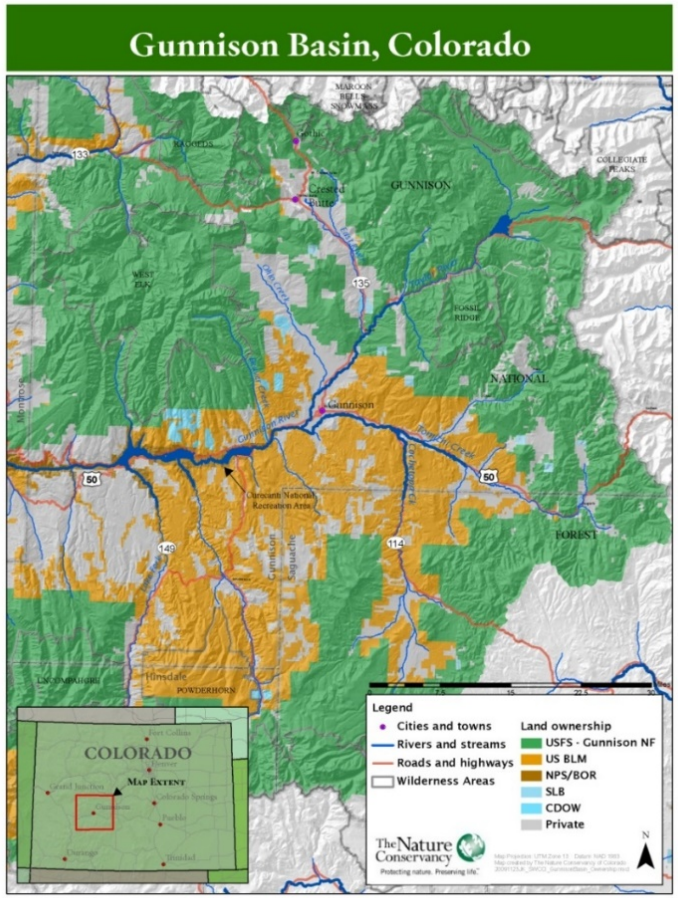
Results Chains

Strategies

Actions

Gunnison Climate Working Group

Preparing for Change in the Gunnison River Basin

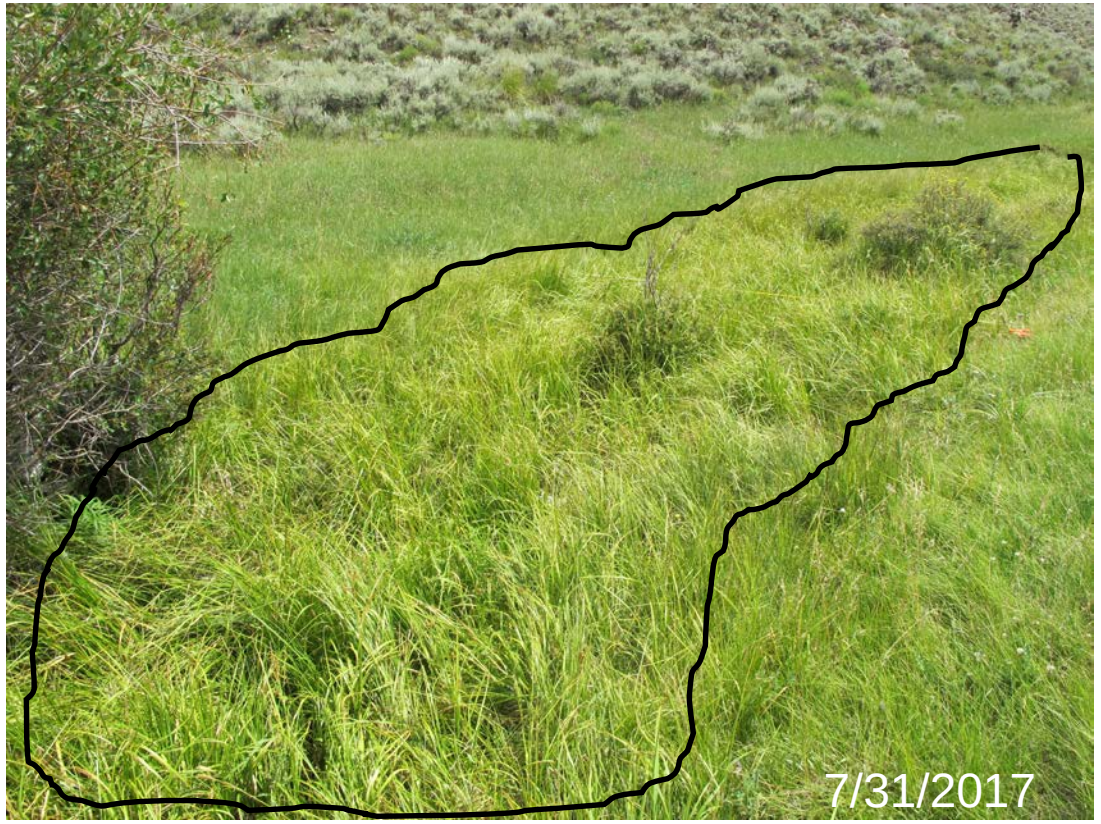


Restore & Build Resilience of Wet Meadows in Sagebrush Steppe

A Collaborative Project of the Gunnison Climate Working Group

The Nature Conservancy
Colorado

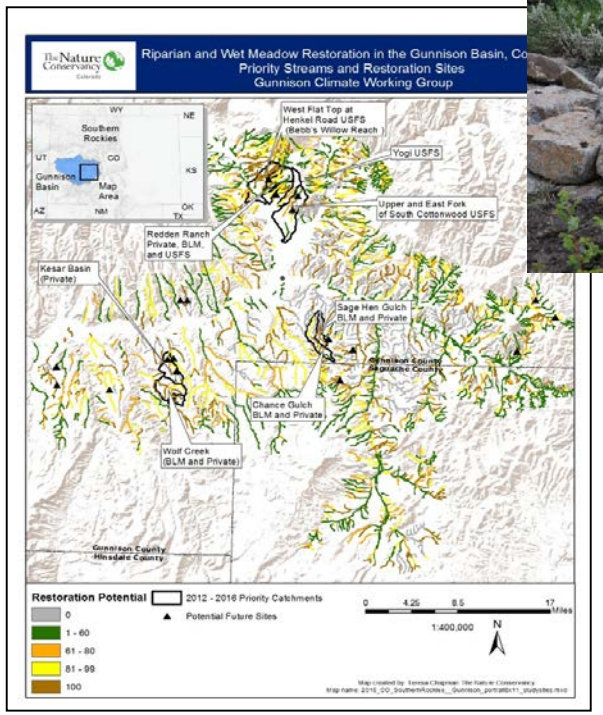
Monitor Progress & Share Best Practices

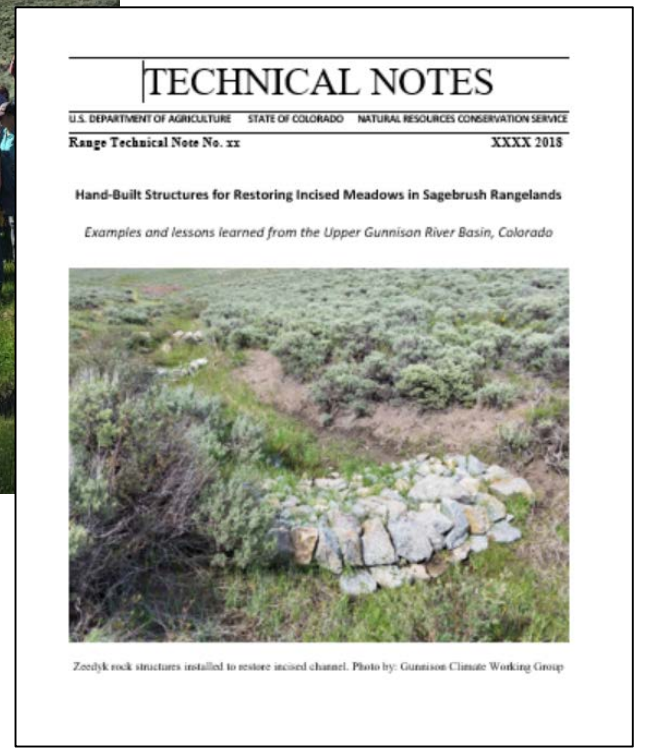


Restore & Build Resilience of Wet Meadows in Sagebrush Landscape

Rondeau, CNHP

Scaling Up for Greater Impact





TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE STATE OF COLORADO NATURAL RESOURCES CONSERVATION SERVICE

Range Technical Note No. xx XXXX 2018

Hand-Built Structures for Restoring Incised Meadows in Sagebrush Rangelands

Examples and lessons learned from the Upper Gunnison River Basin, Colorado

Zeedyk rock structures installed to restore incised channel. Photo by: Gunnison Climate Working Group

Reforestation

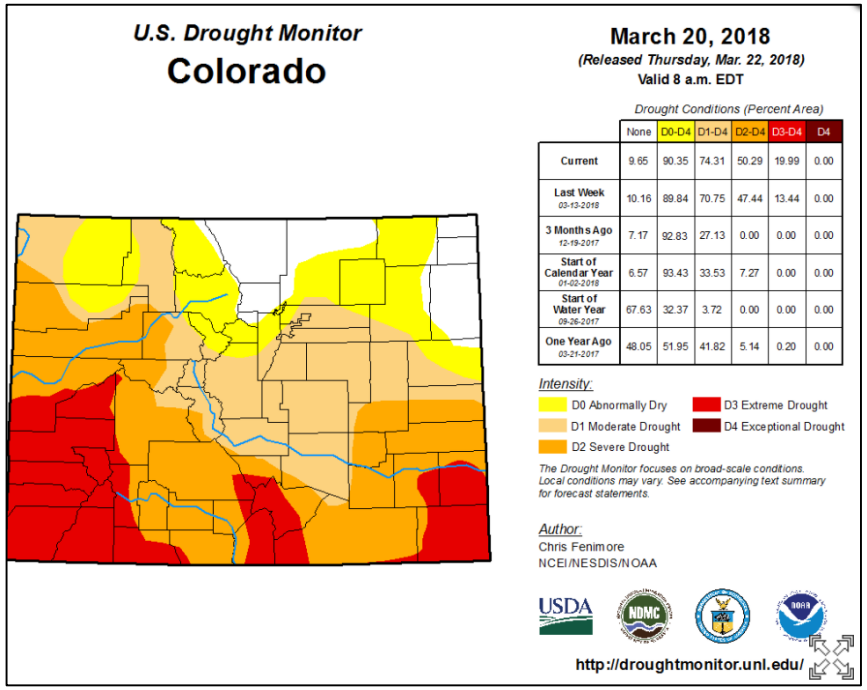
Scope feasibility of accelerated reforestation of severely burned areas

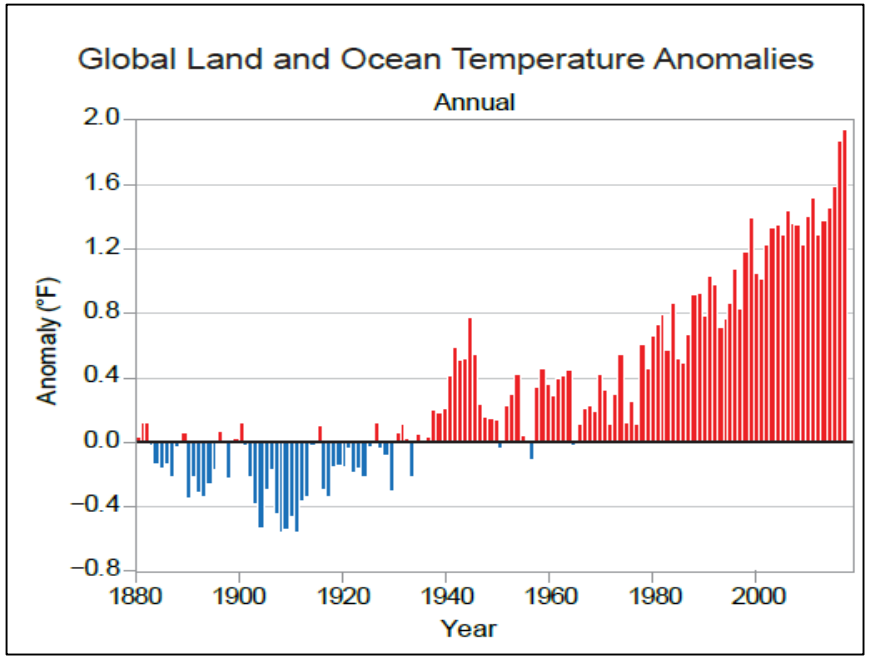
Benefits: carbon storage, forest resilience, wildlife habitat, flood control

Moving the Needle

1. Statewide collaborative cross-boundary climate initiative

2. CO Climate Summit
   - Natural climate solutions
   - Adaptation
   - Mitigation





4th National Climate Assessment 2017

Questions?

Thank you!

Betsy Neely
bneely@tnc.org
720-974-7015
The Nature Conservancy

www.nature.org/Colorado
https://global.nature.org/initiatives/natural-climate-solution

OTHER SLIDES

What is Standing in the Way of a Future where People and Nature Thrive Together?

8 GLOBAL CHALLENGES

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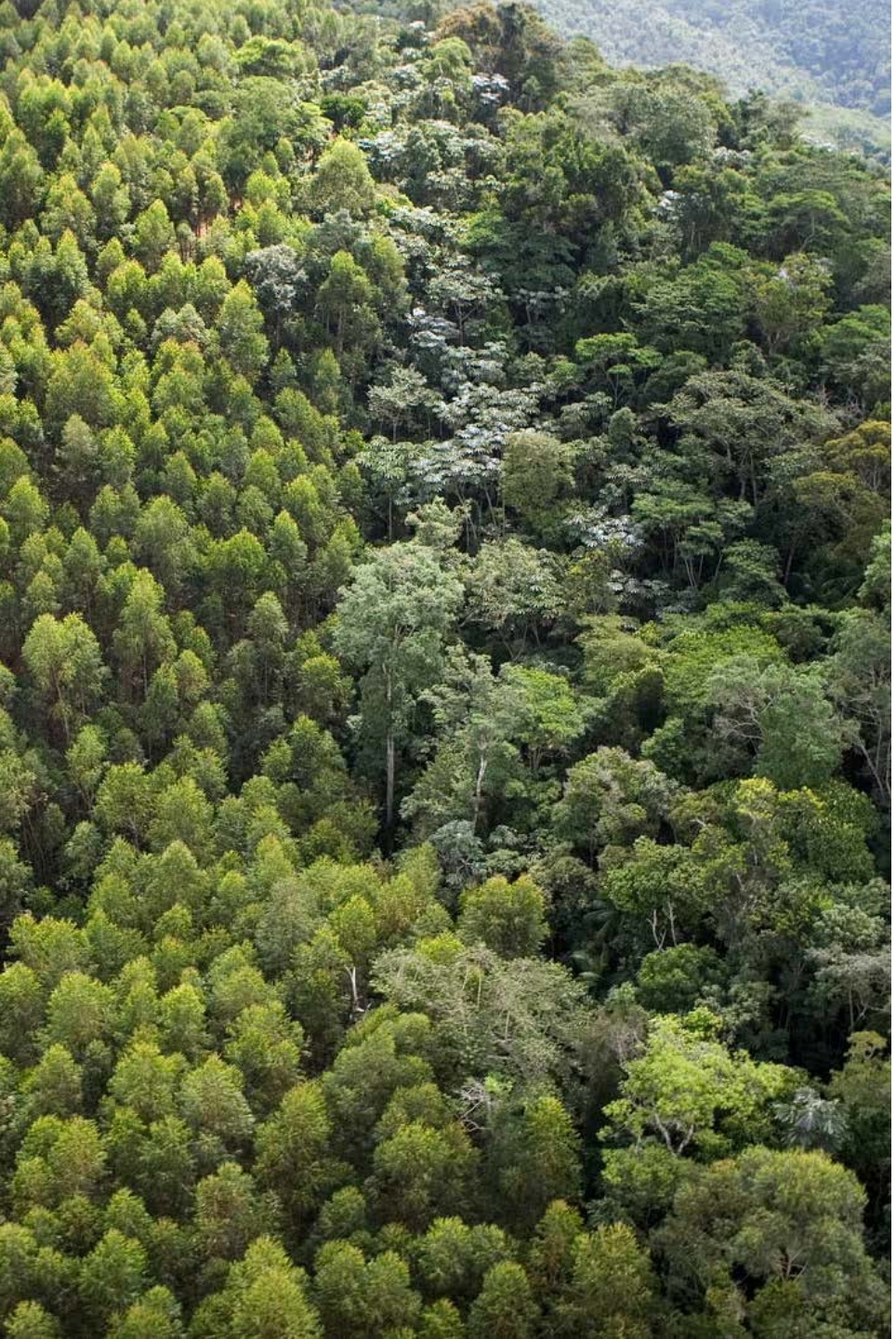


Tackle Climate Change /
Make the Case for Natural Climate Solutions

Reforestation in Brazil

The OPPORTUNITY

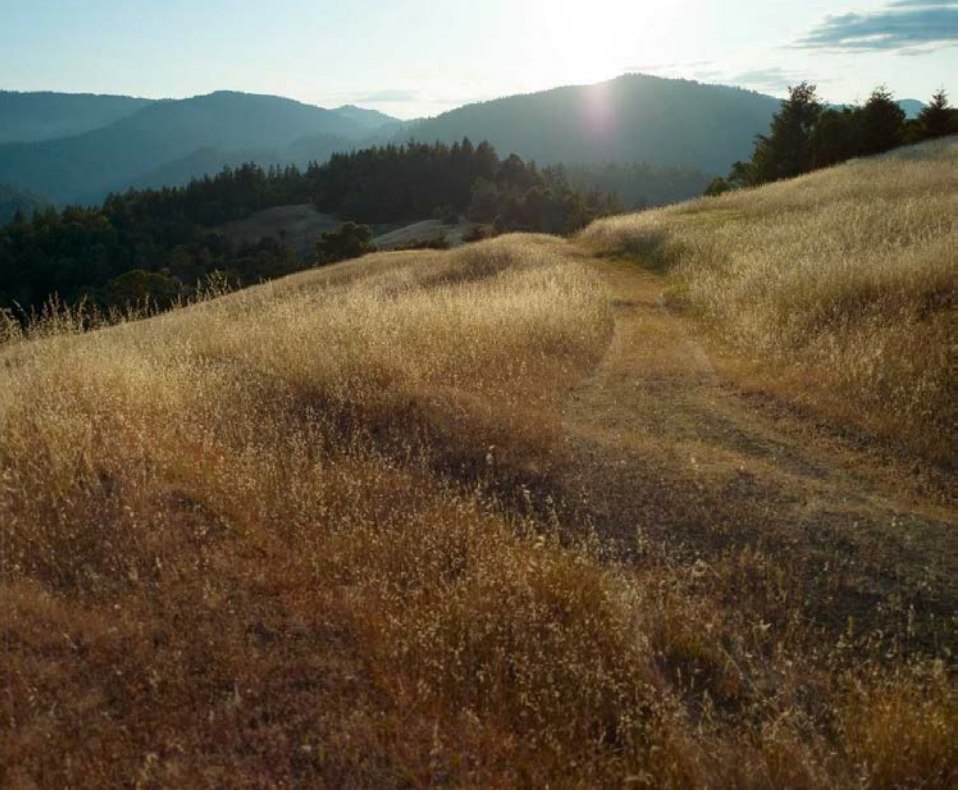
Reforestation is the biggest untapped opportunity to solve climate change with the potential to sequester the equivalent of half of global transportation emissions.

The IDEA

Help countries around the world turn bold climate commitments into action by demonstrating how **reforestation can create jobs and grow the economy.**

The PLACE

Reforesting **150,000 hectares in Brazil's Serra da Mantiqueira region** could make the case needed to accelerate restoration globally.



Tackle Climate Change /
Inspire Climate Action

Climate Policy and Action in the U.S.

The OPPORTUNITY

Reduce greenhouse gas emissions by informing policy and **investing in nature-based solutions.**

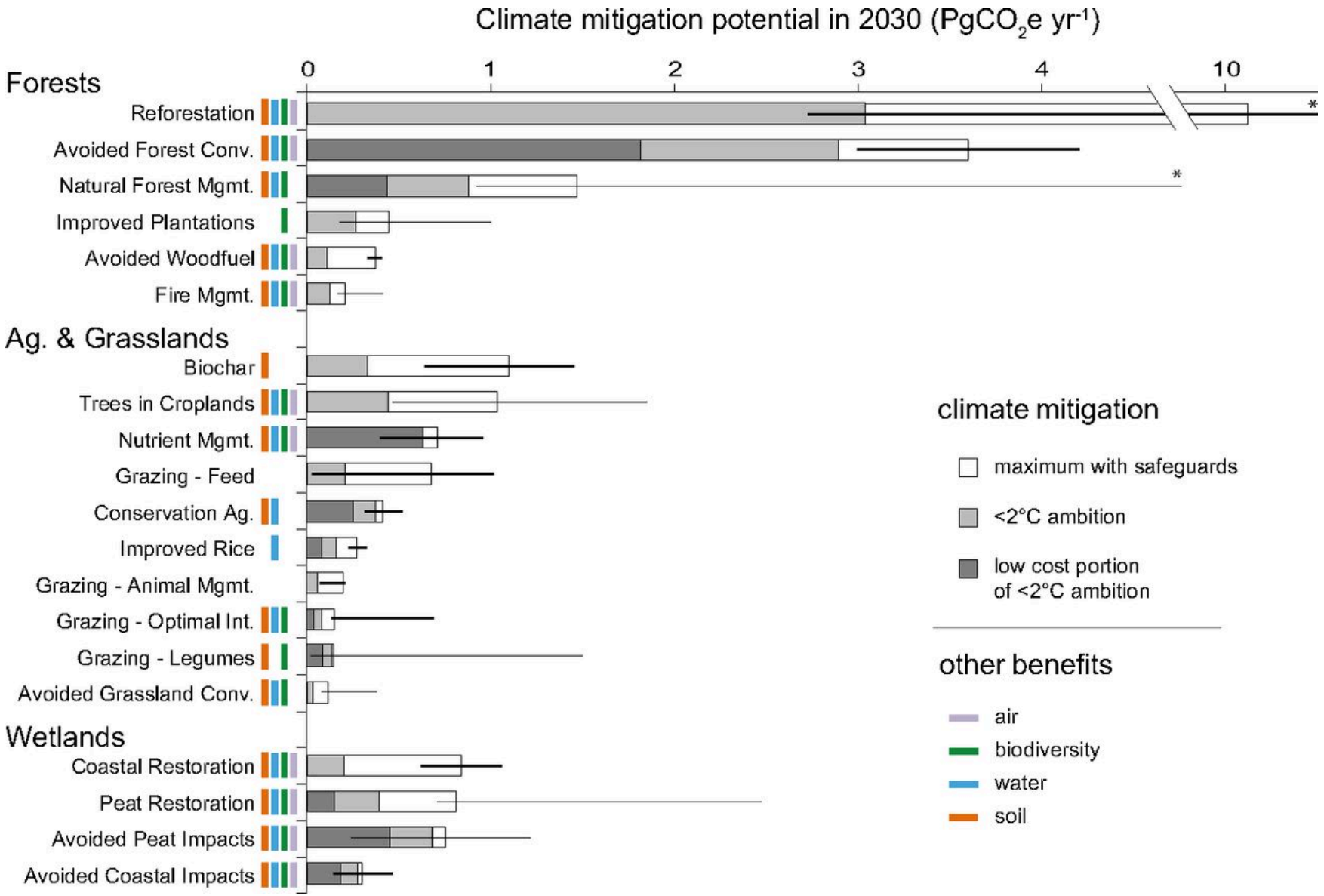
The IDEA

Harness local knowledge and relationships in each of TNC's U.S. state programs to promote clean energy, generate bipartisan support and **reduce emissions nationwide.**

The PLACE

TNC's California program is bringing innovative on-the-ground conservation solutions together with advocacy efforts to reduce emissions, sequester carbon and adapt to climate change.

Climate Mitigation Potential of 20 Natural Pathways.



Griscom et al. PNAS 2017;114:11645-11650