

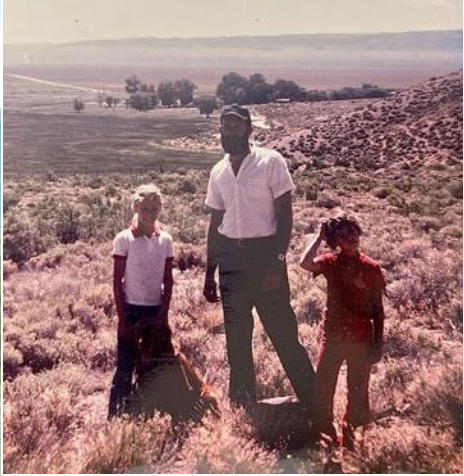


# Let's go wild

Collaborations with nature and people in ecosystem restoration

*Katharine Suding, University of Colorado Boulder*

*Photo: The Nature Conservancy*










Muir Beach, Marin County



Curtis Prairie, Univ Wisconsin

A photograph of a field of purple lupine flowers at sunset. The sun is low on the horizon, casting a warm orange and yellow glow across the sky and the flowers. The foreground shows several tall, thin green stems of the flowers, some in sharp focus and others blurred. The background is a vast field of similar flowers stretching towards the horizon under a colorful sky.

*“Our planet’s future  
may depend on the  
maturation of the  
young discipline of  
ecological  
restoration”*

--SCIENCE editors, 2009



**UN DECADE**

ON

# **ECOSYSTEM RESTORATION**

**2021-2030**



Food and Agriculture  
Organization of the  
United Nations





03 JUN 2021 | PRESS RELEASE | NATURE ACTION

# UN calls on countries to meet commitments to restore one billion hectares of land

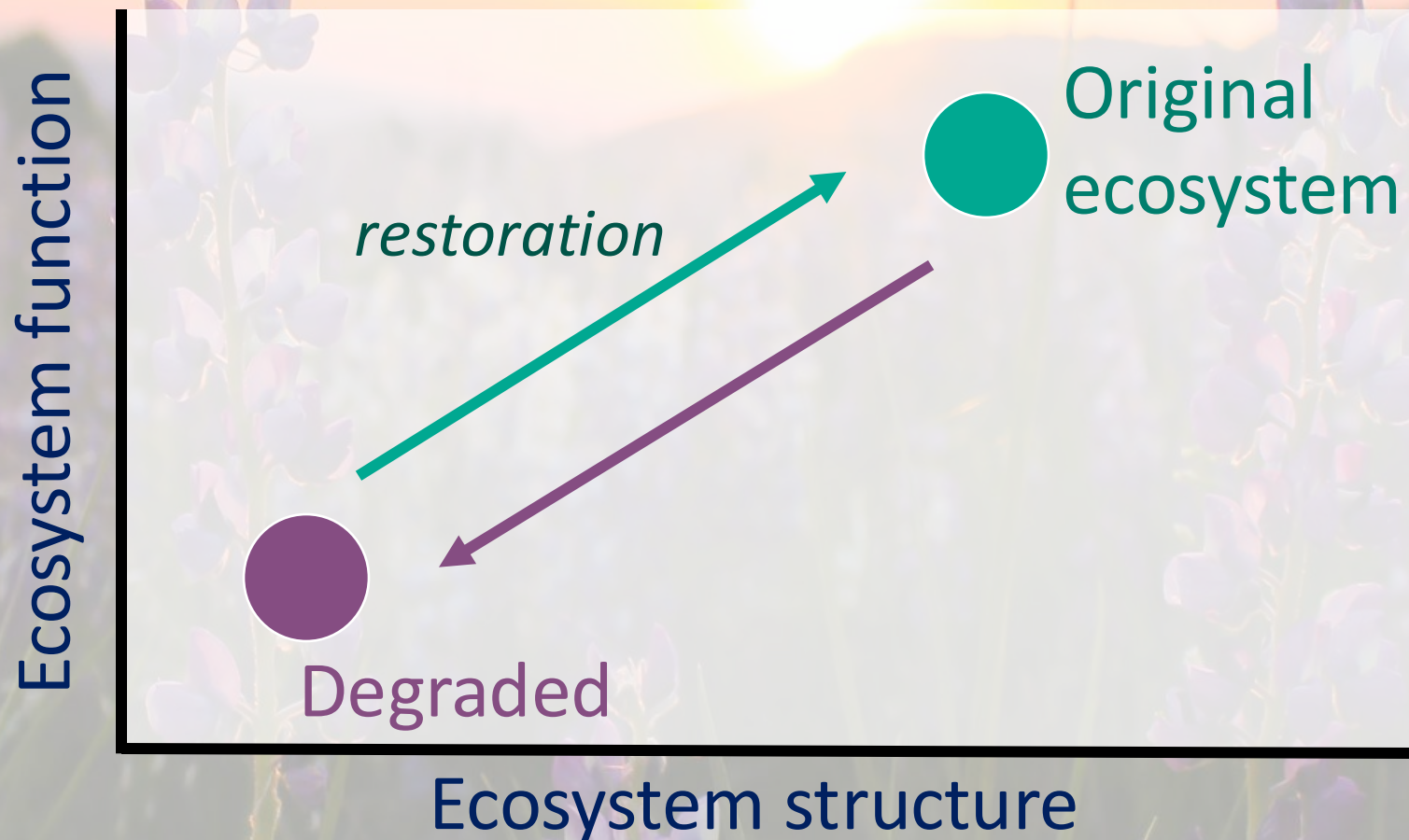




# Ecosystem Restoration

*“An acid test  
for ecology”*

*-- Bradshaw 1989*





# Ecosystem Restoration

*“the goal of intentionally altering a site to establish a defined, indigenous, historic ecosystem.”*

--SER 1990



# Ecosystem Restoration

*“the goal of intentionally altering a site to establish a **defined, indigenous, historic** ecosystem.*

--SER 1990



# Ecosystem Restoration?

*“the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.”*

--SER 2002



# Ecosystem Restoration?

*“the process of assisting the recovery of an ecosystem that has been **degraded, damaged, or destroyed.**”*

--SER 2002

Change

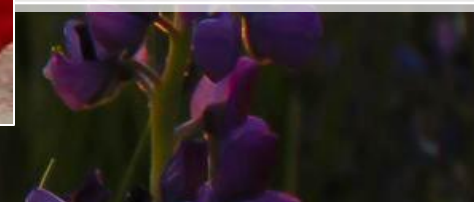





Photo: C Vara, buried aqueduct







*Restoration*

64%

Measure recovery relative  
to reference conditions at a  
single site in a single year

Shackelford et al, 2021, *Restoration Ecology*

Photo: S. Pichler



*Resilience*

86%

Management  
recommendations maintain  
existing patterns & processes

Hagerman and Pelai, 2018, *Frontiers Ecology Environment*

Photo: D. Marcu



*Adaptive capacity*

Resilience-based recommendations to guide adaptation rarely implemented due to uncertainty and risk.

Dudney et al, 2018, TREE

Photo: M. Castelli





# Let's re-imagine

*What it means to  
restore*

*Where "wild" fits  
within our practice*

*How we  
collaborate into  
the future*



# EXPANDING THE PORTFOLIO: What it means to restore



Nachusa Grassland Reserve, IL



## **WILDERNESS**

Stewarding ecosystems as caretakers. Threat reduction.

# REHABILITATED LANDSCAPES

Interventions to rebuild  
resilience, as a place for  
nature and people.





# WORKING LANDSCAPES

Restoration of land for  
production with a role of  
biodiversity.



# URBAN & CULTURAL LANDSCAPES

Restoration of land  
for ties to history,  
people, and  
ecosystem services.





**EXPANDING THE PORTFOLIO:**

# **Many reasons and ways to restore**



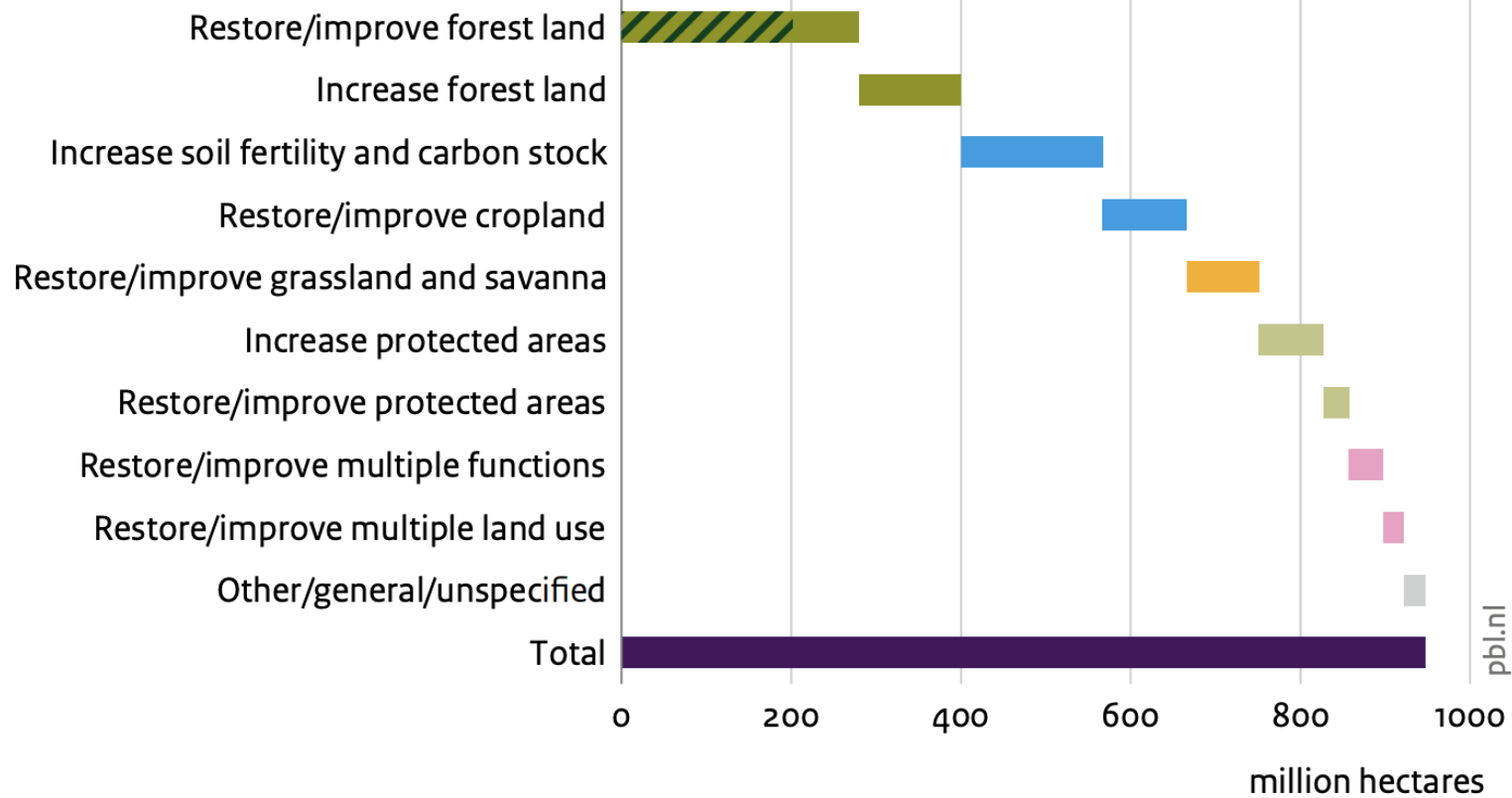
“With more countries building synergies between global restoration commitments and initiatives, we can capture these win-win opportunities:

*wins for biodiversity, wins for carbon, wins for people, wins for the economy, wins for women, and wins for our planet.”*

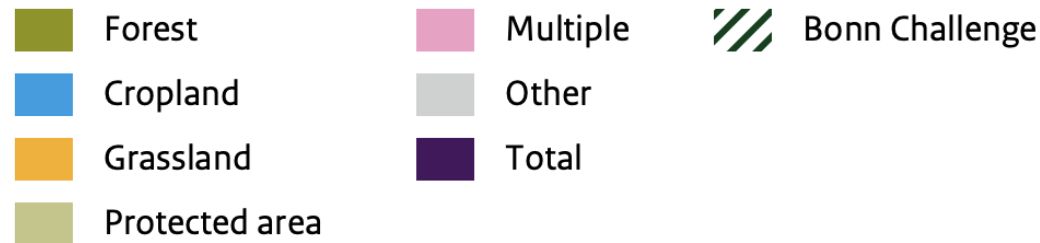
--Inger Andersen, Director General IUCN



# Global Restoration Commitments



Land category (middle estimate)



Source: UNCCD, UNFCCC, CBD, Bonn Challenge; collected and adapted by PBL for Global Restoration Commitments database, August 2020





**RECONSIDERING WILDNESS:**

# **Where wild fits across our practice**





# BIODIVERSITY & CLIMATE CHANGE ASSESSMENT

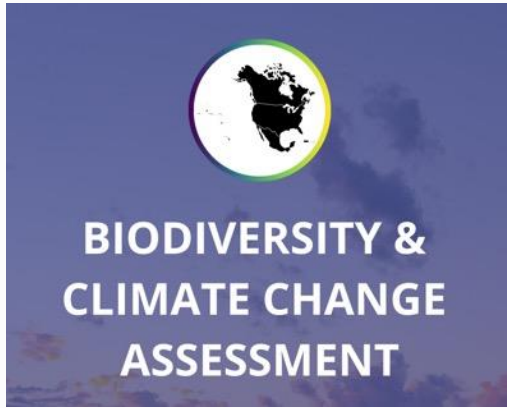
**Panel Discussion on US Policy Implementation**

October 15th, 2024, 11am-1pm PT / 2-4pm ET

The Public Comment Period will be open for 60 days.

## RECONSIDERING WILDNESS:

# Lessons of resilience in natural systems



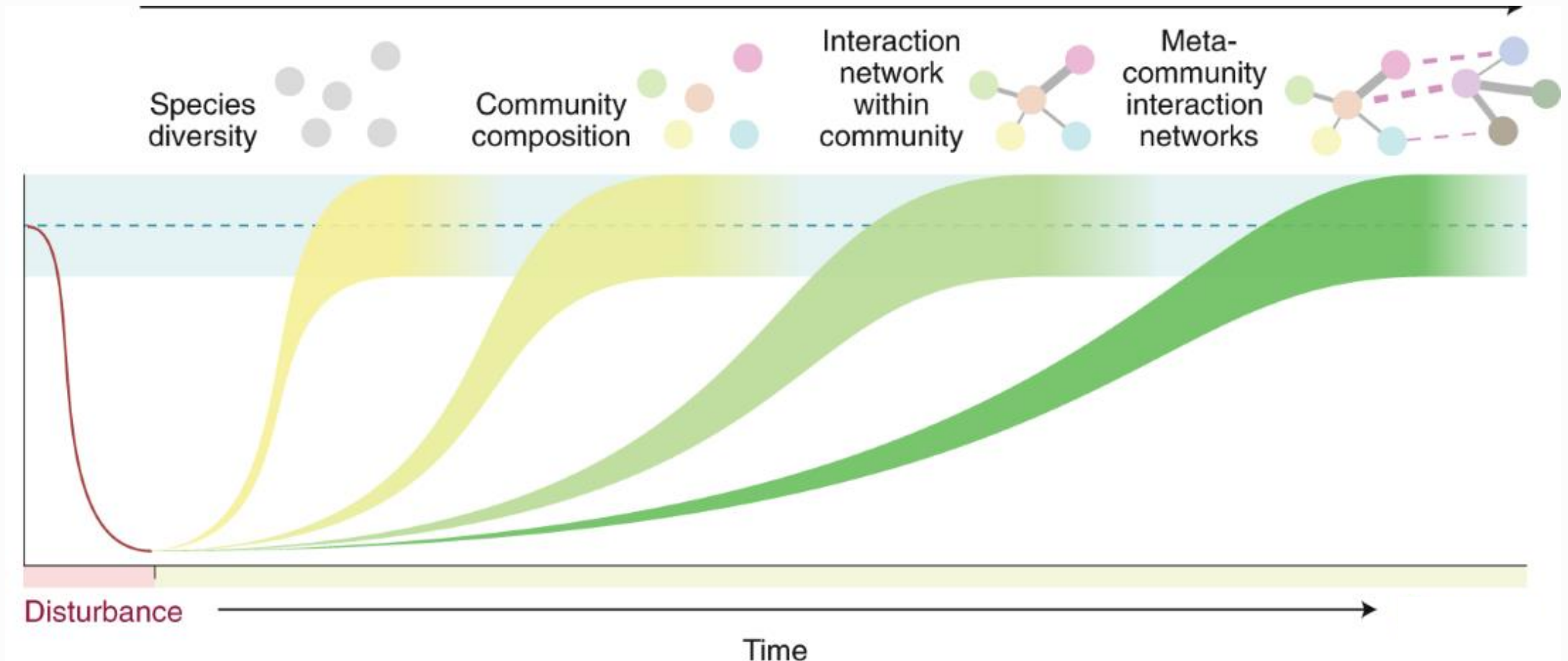
A. Bates, Univ Victoria

- Climate change losers, but **also winners**
- Species ranges are shifting, *but not all in expected ways*
- Community composition is changing, *with both increasing and decreasing biodiversity*
- Despite evidence of local extinction, *limited evidence of global extinction* due to climate change (for now)





# RECONSIDERING WILDNESS: Can we restore wild resilience?













RECONSIDERING WILDNESS:

**Aim to increase wild resilience across all**



IN COLLABORATION:

# Changing the questions we ask



Deep Creek Canyon, R Schnitzer



**INSTEAD OF:**

**Should we graze our public lands?**



LETS ASK:  
**Under which climate conditions does grazing  
support diversity?**



INSTEAD OF:

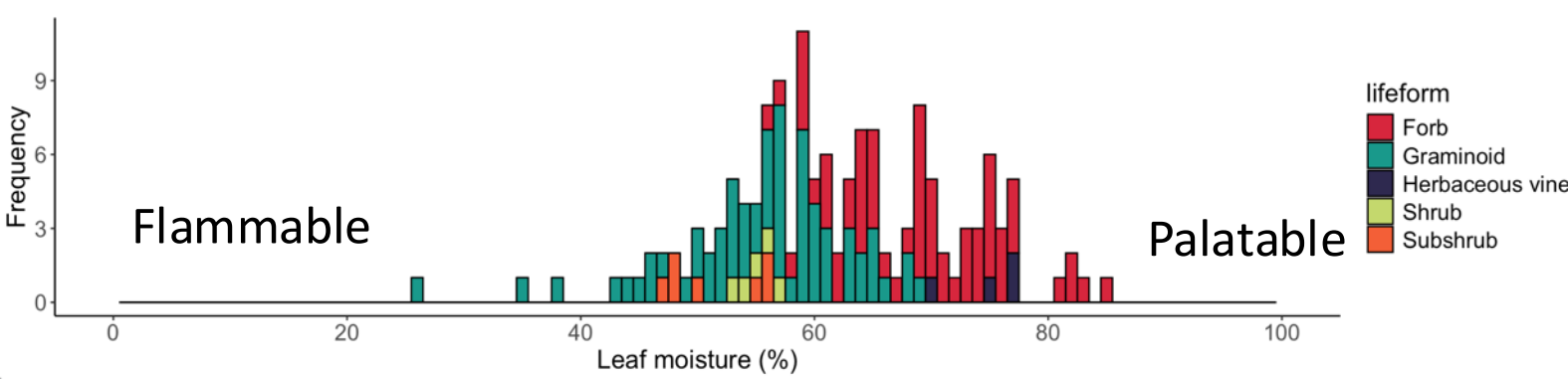
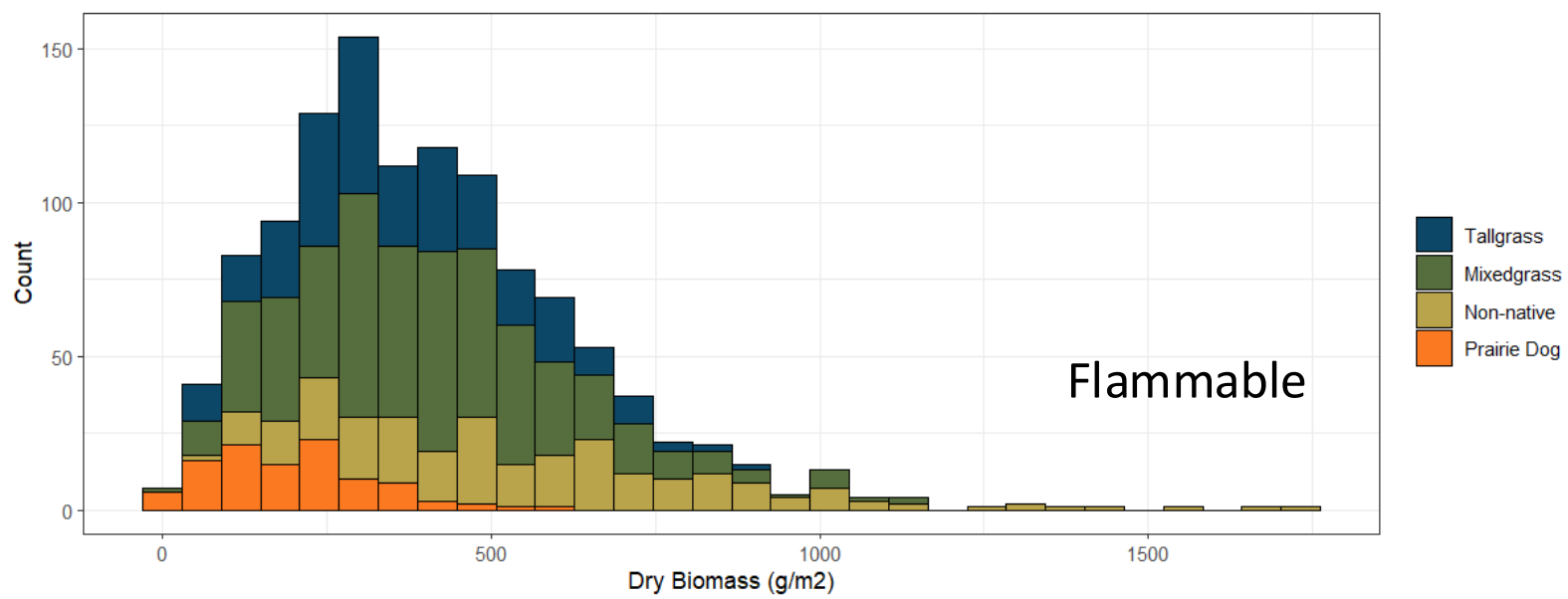
**How can we stop grasslands from burning?**



LET'S ASK:  
**What can we do to reduce overall fire risk?**



# LET'S ASK: What can we do to reduce overall fire risk?



INSTEAD OF:

**How can we destroy all non-native species?**



LET'S ASK:  
**How can we down-size the role of non-native species?**





# IN COLLABORATION: Allow change and adaptation







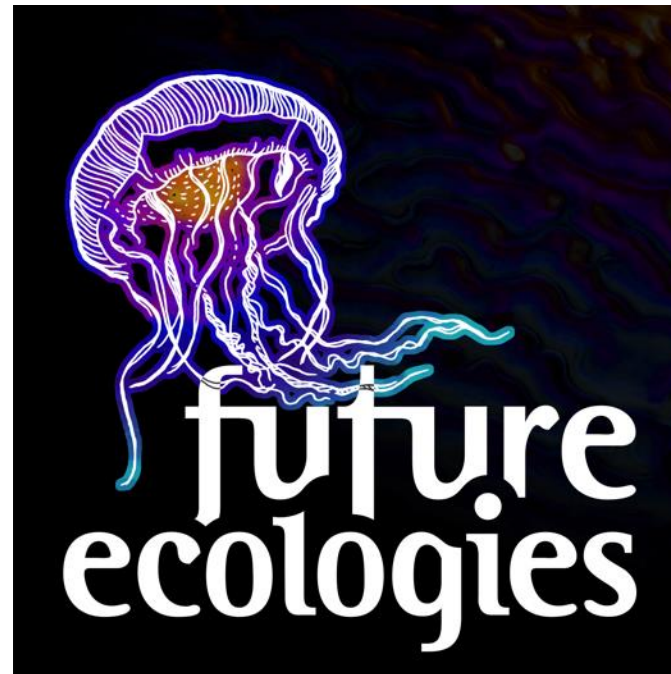
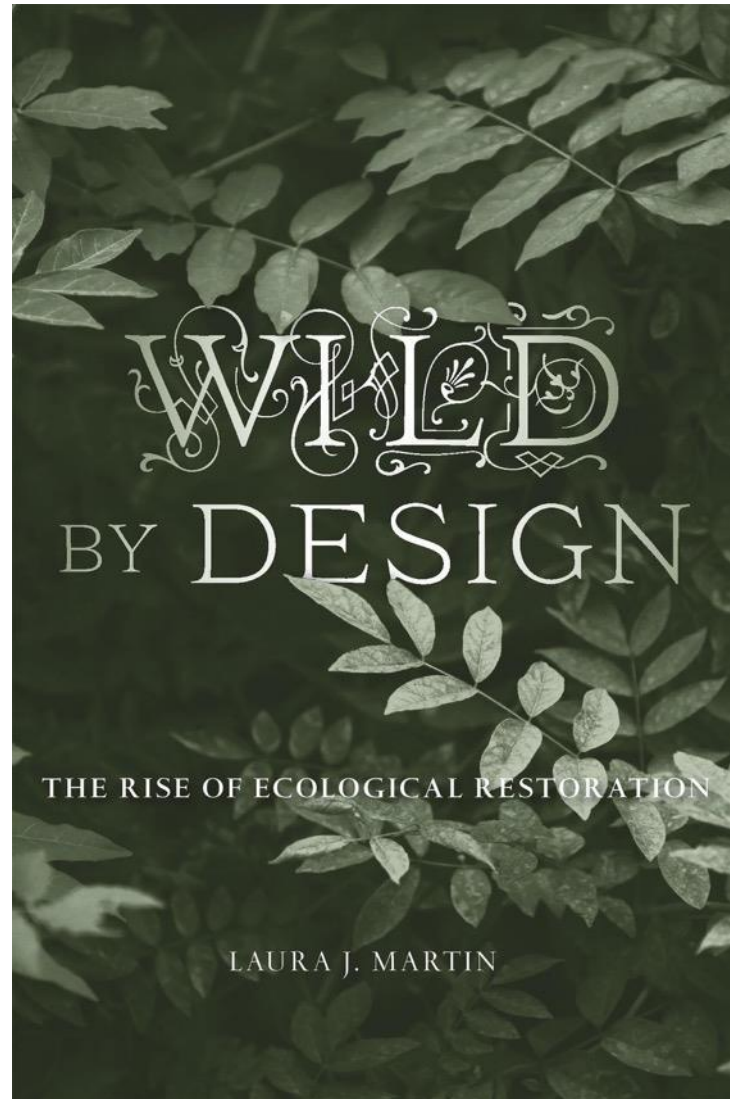
# Let's go wild!

*Expand the portfolio of what it means to restore...*

*where we can build wild resilience everywhere...*

*with people and nature in collaboration*

# IF YOU WANT TO MORE, AND MANY THANKS



**Suding Lab Boulder Grassland Group:** Julie Larson, Caitlin White, Tom Merchant, Jon Henn, Sam Ahler, Advyth Ramachandran, Sarah Elizabeth Stockman, Hunter Geist-Sanchez

**CU:** Tim Seastedt, Bill Bowman, Laura Dee, Lisa Corwin

**Local Partners:**  
City of Boulder Open Space, Boulder County Open Space, Denver Botanical Gardens, Lefthand Watershed Center

**North American Climate Change Assessment:**  
Amanda Bates, Racine Rangel, Alicia Mastretta-Yanes, Cascade Sorte, Celia Symons, Brian McGill, Nick Haddad



[www.sudinglab.org](http://www.sudinglab.org)