



# Restore Biodiversity with Indigenous Methods

Lessons from the Kumeyaay People

SERCAL 2023

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RECON

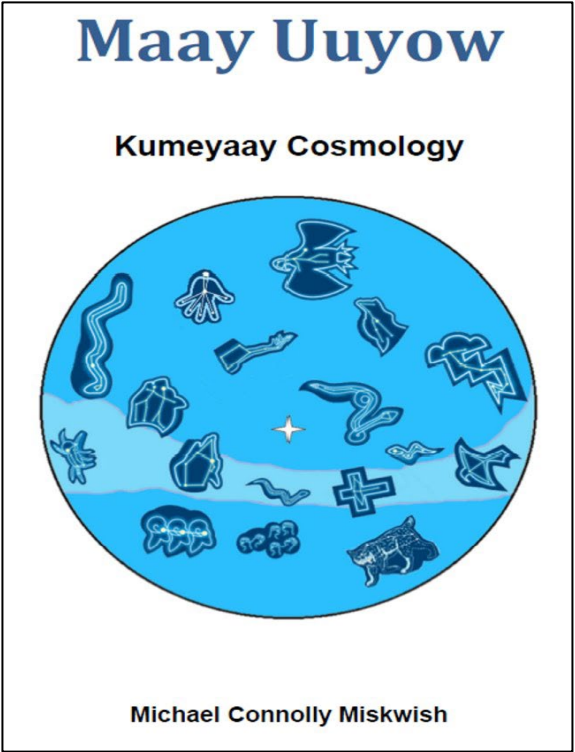
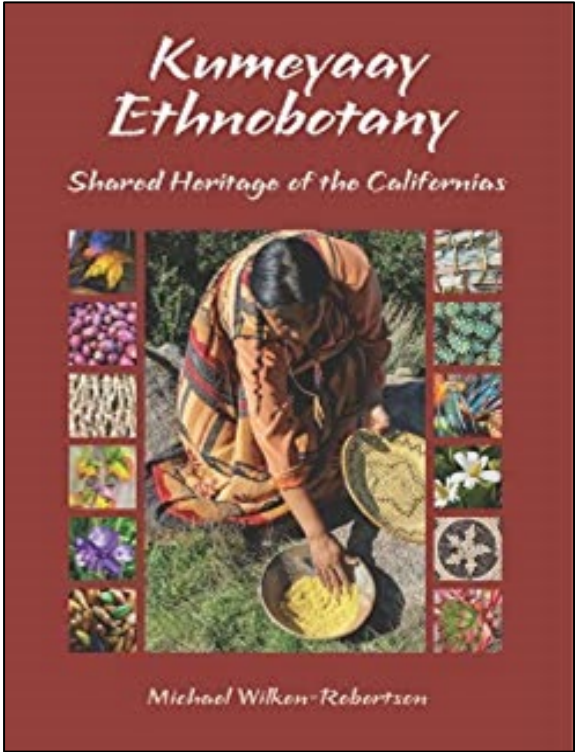
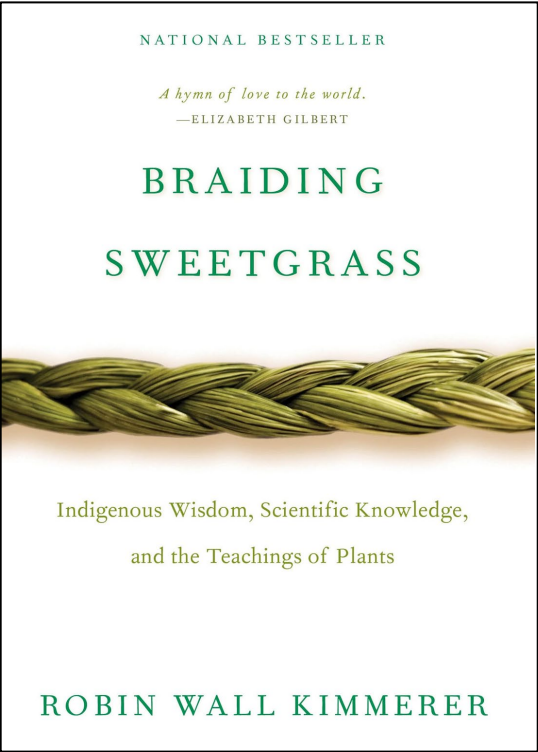
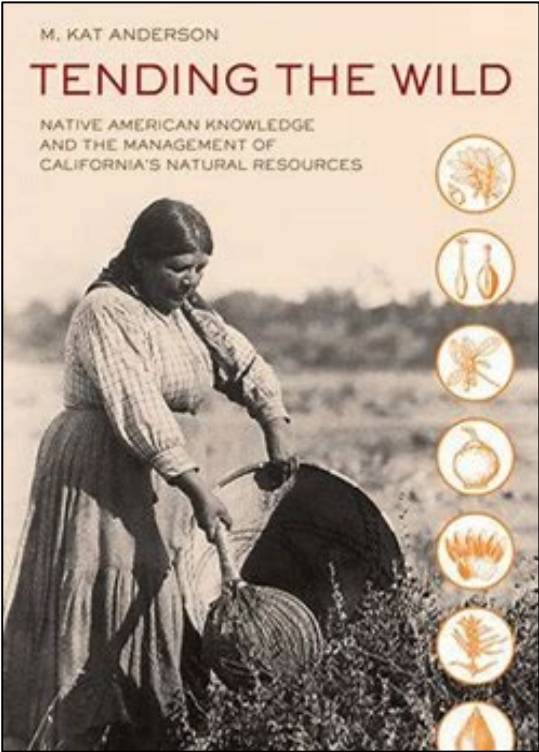


# References and Resources



**KUMEYAAY**  
COMMUNITY COLLEGE

- [Tending the Wild documentary shorts on PBS/Youtube](#)
- [Sunbelt Spotlight: Kumeyaay Cosmology with Michael Connolly Miskwish - YouTube](#)



# Findings

- Mainstream ecology is based on non-Indigenous values. We protect and restore resources according to non-Indigenous values, not Indigenous ones.
- Policymakers, biologists, and restoration practitioners today don't know what the land was like before European contact, when it was cared for by Indigenous people.
- By learning more about Indigenous people and their relationship with the land, we can adapt our practices to benefit Indigenous people and the land.



# Goals for our Industry

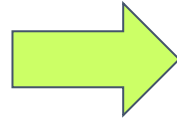
- Question our ecological values and practices.
- Educate ourselves about Indigenous cultures and their relationships with the lands we manage.
- Consult Indigenous people and advocate for their greater presence in restoration and land management.



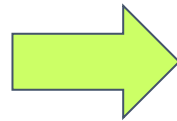
# Unlock New Perspectives

## Non-indigenous perspectives

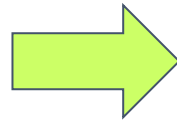
People and nature are separate



People harm nature



Healthy ecosystems are climax communities with little disturbance



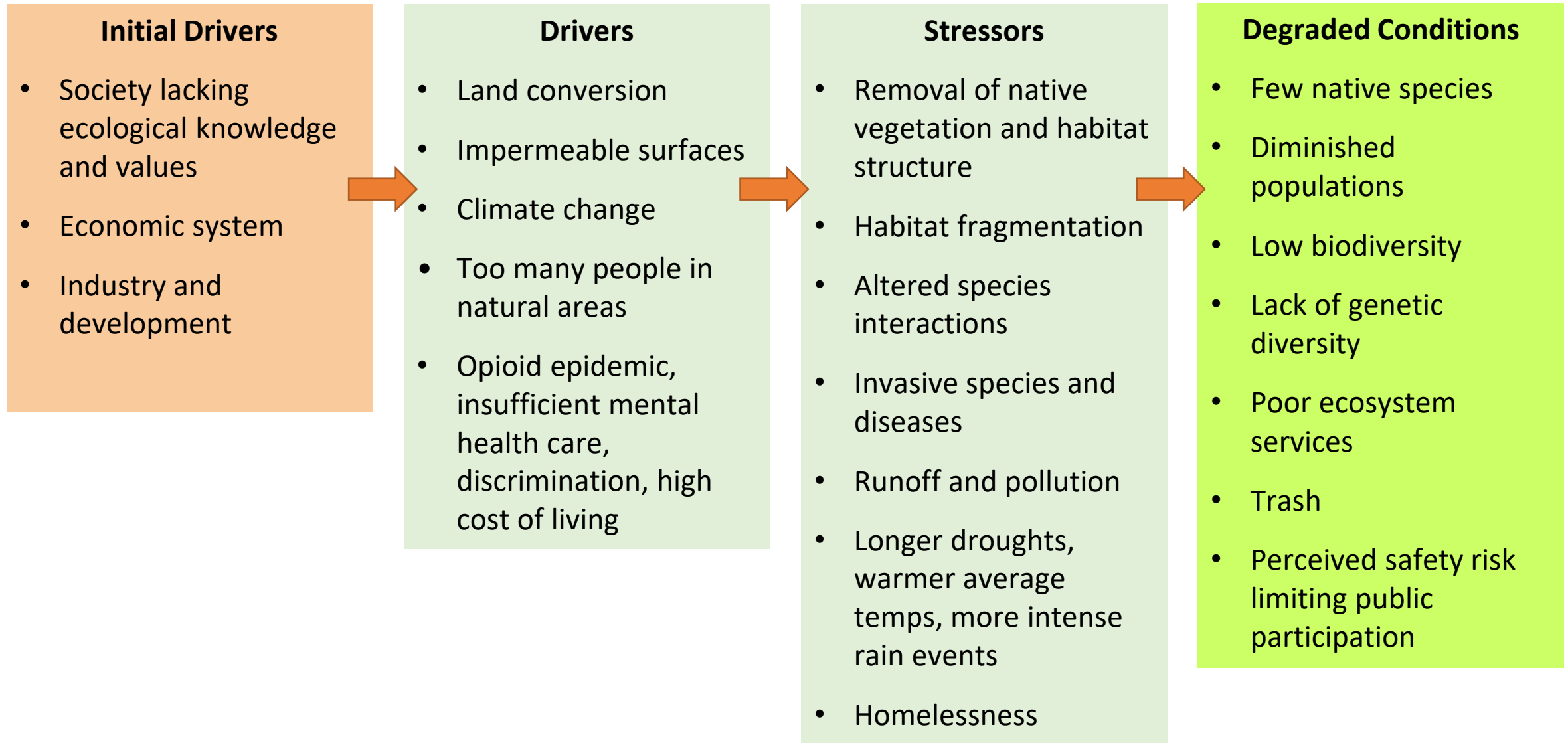
## Indigenous perspectives

People and nature are one

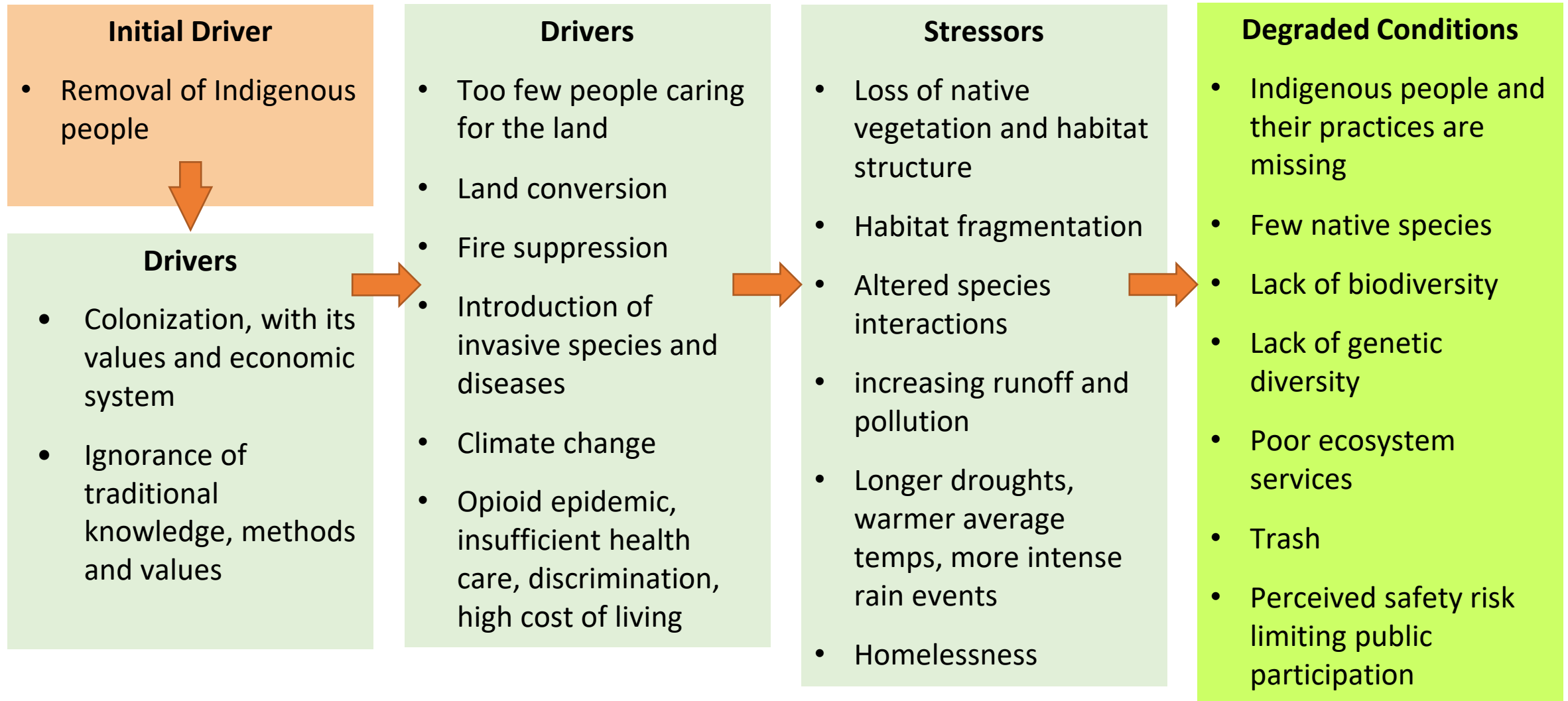
Native habitats are incomplete without people, especially Indigenous people

Healthy ecosystems are mosaics of ecological communities at varying states of succession due to regular disturbance

# Ecological Model: Non-Indigenous Perspective



# Ecological Model: A More Complete Picture



# An Authoritative Perspective



1000s of years of trial and error

+

paying attention

=

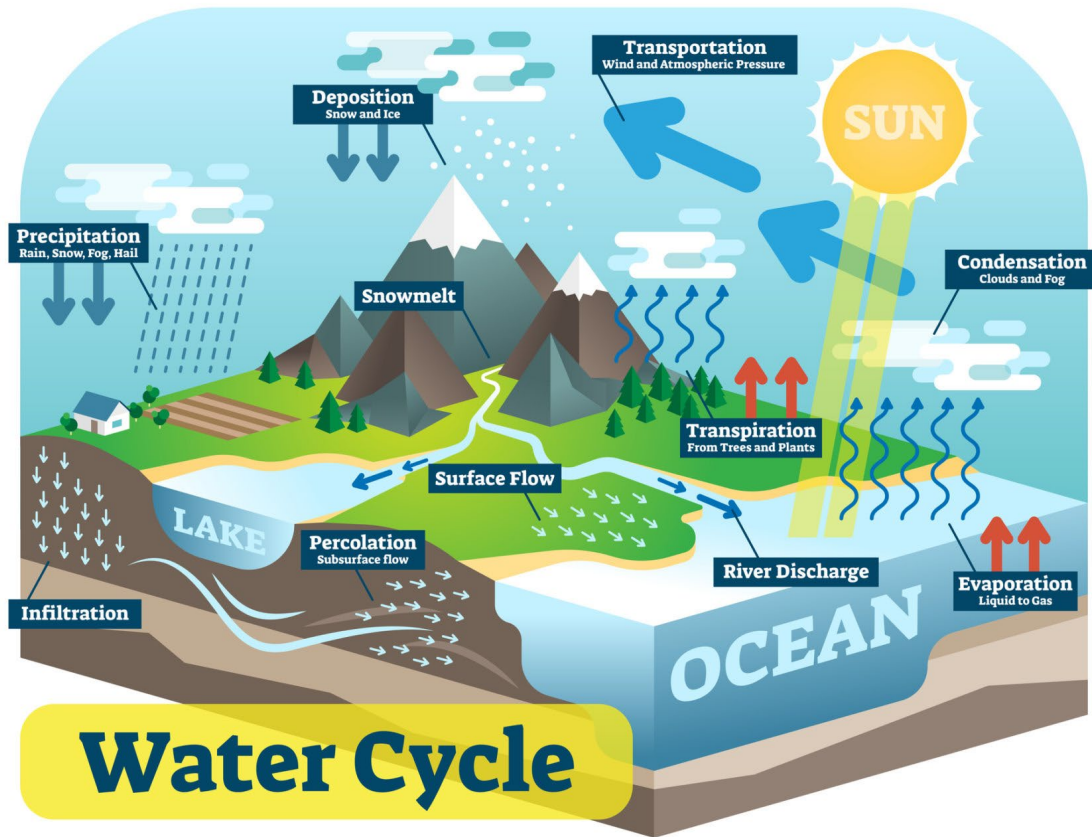
Intimate knowledge of the land

+

Successful, reciprocal  
relationship of sustainability



# An Authoritative Perspective



1000s of years of trial and error  
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Intimate knowledge of the land

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# Caring for the Land with Disturbance-based Methods

- **Pruning, coppicing** and **knocking** branches to promote growth (e.g., long, straight stems for baskets) and remove dead branches susceptible to disease.
- **Scattering seed** during “sloppy” seed collection. Seen as a way of giving back to the land.
- **Tilling** and **distribution of roots**, tubers and rhizomes during collection.
- **Rock drops** in streams to slow flow, widen wetlands, support utilitarian plants such as basket rush and tule, and increase perennial springs.
- **Good fire** improves the burn area and increases biodiversity overall



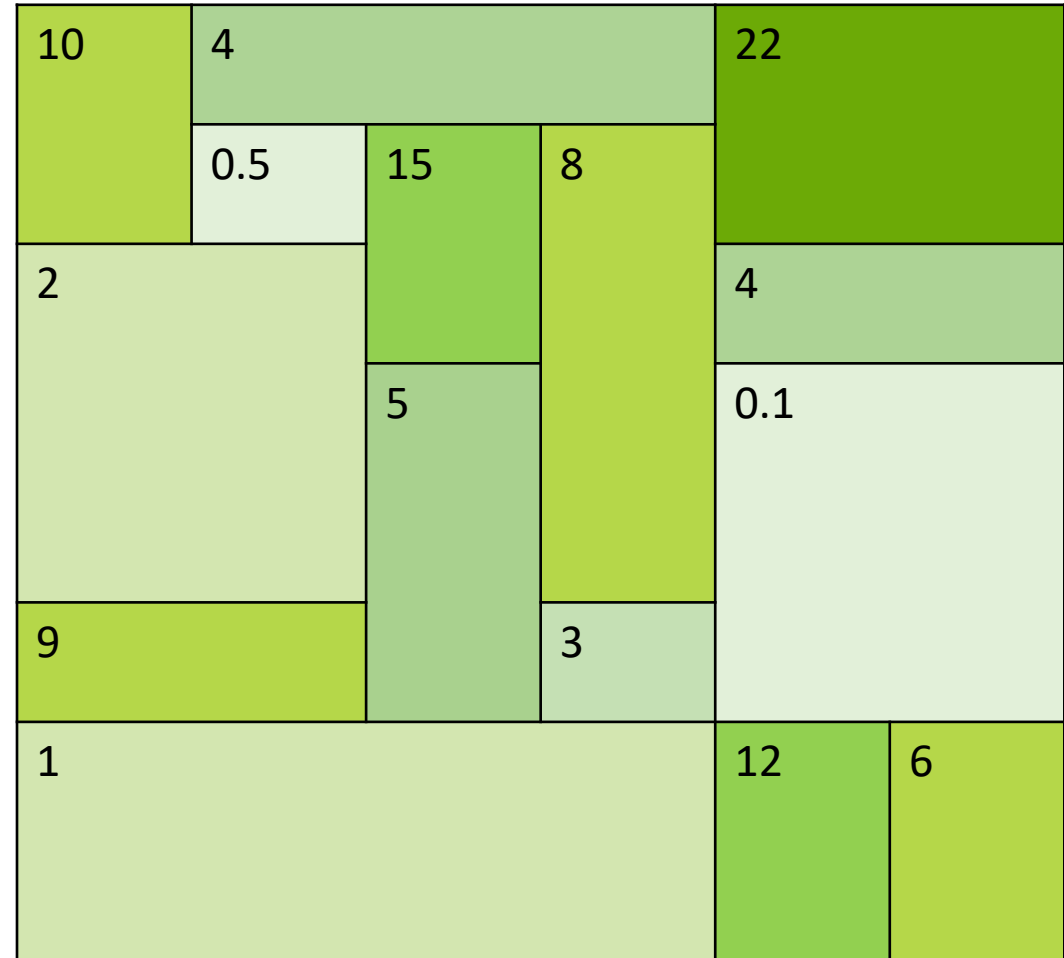
# Tending the Land: Good Fire

- Managed, low intensity fire
- Ceremonial process
- Benefits within the burn area:
  - Prevent catastrophic fires
  - Control unwanted plants and pests
  - Accelerate decomposition and nutrient cycling
  - Increase abundance of specific food plants and fungi
  - Encourage specific growth patterns of utilitarian plants, such as deergrass used in basketry
  - Facilitate travel and manage wildlife: increase forage, fire for hunting, manage relationship with bears



# Good Fire: Creating a Biodiverse Fire Mosaic

- Visible mosaic of “time-since-fire” habitat patches
- Each patch has been disturbed by fire at a different time, and is thus at a different stage of plant succession = greater biodiversity at landscape scale
- More edge habitat
- Ability to prevent succession
- Note Indigenous and non-Indigenous views/values of succession



# Revisit our Values

- Why are we restoring?
- What are we restoring to?
- Who are we restoring for?
- Who are we restoring with?



# Update our Methods

Design and implement projects based on:

- Traditional uses of the area and its resources
- Reconstructed landscape and species compositions
- Indigenous methods
- Former disturbance regimes



*Cooking*  
THE  
NATIVE WAY





# Gathering with Respect

Ask for permission

Give intention

Make a prayer



Eyaay ahan! Thank you!

