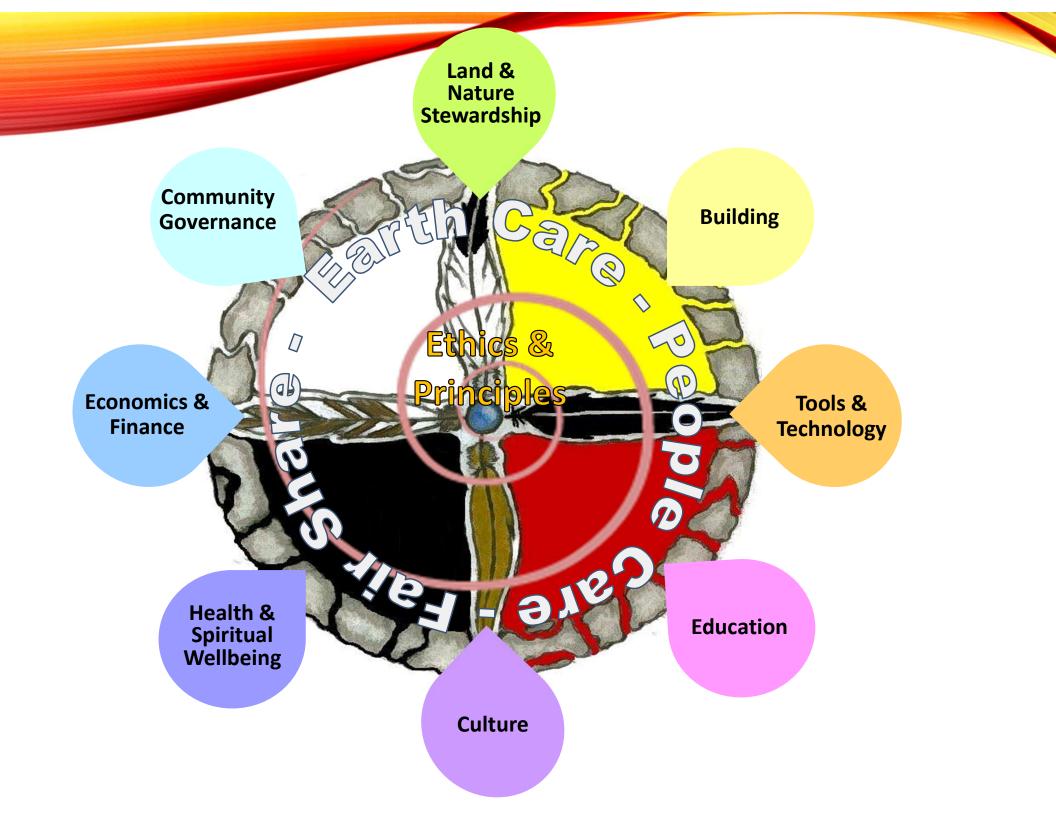
# Indigenous Watershed Restoration Methods



Carmen Gonzales Director of Indigenous Water Wisdom

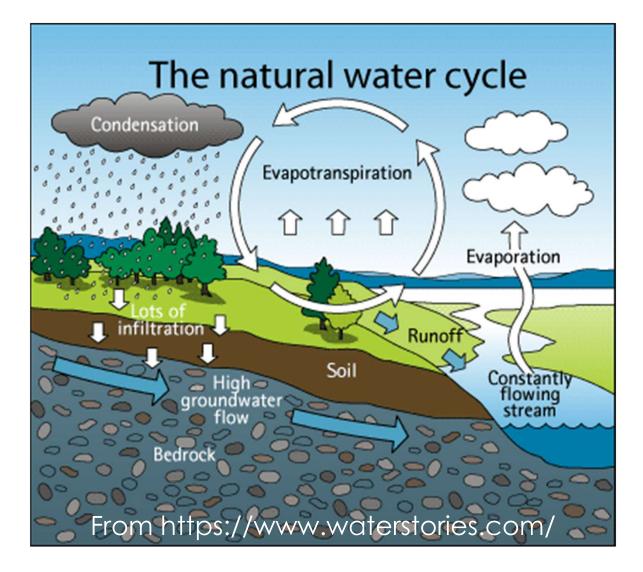


"

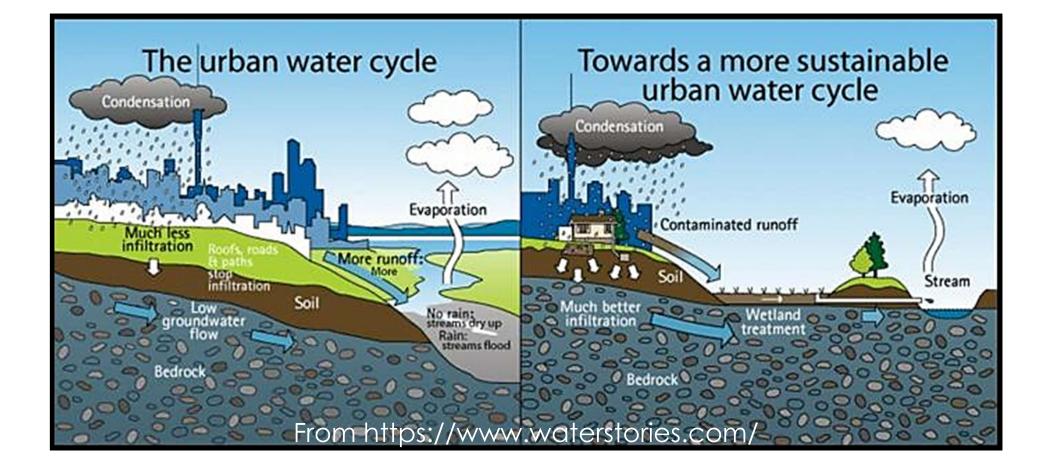
## We forget that the water cycle and the life cycle are one.

~Jacques Cousteau

#### THE NATURAL WATER CYCLE



#### MOVING TOWARDS SUSTAINABILITY



## OUR SOCIETIES RELATIONSHIP...













## A WATER PROTECTORS VIEW



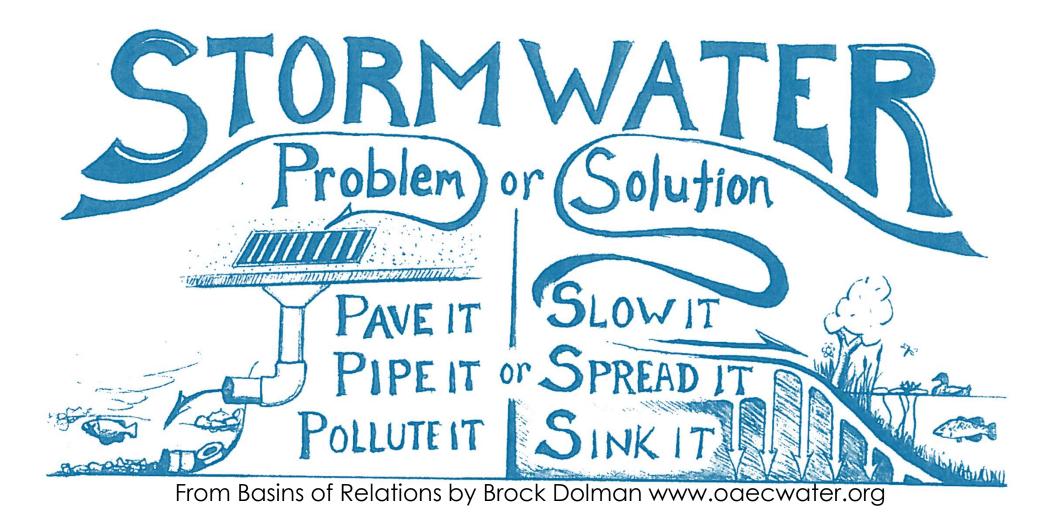


# The frog does not drink up the pond in which he lives. "

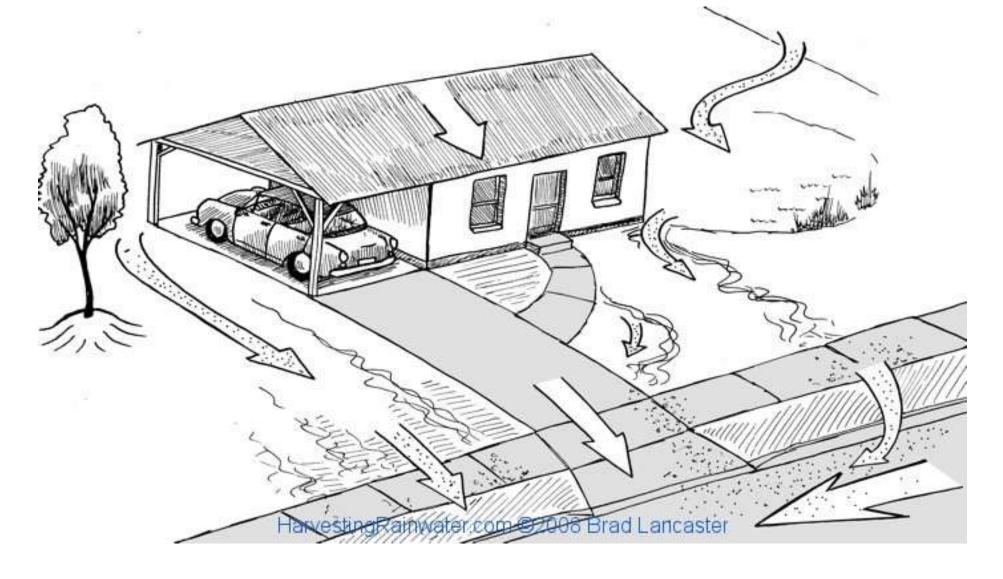
"

~Native American Saying

#### SLOW IT, SPREAD IT, SINK IT



#### FROM DRAIN-AGE



## TO RETAIN-AGE





Reduce paved or compacted areas



Build Rain Gardens



Build Low Impact Erosion Control

#### RAINWATER HARVESTING TOOLBOX





Catch and store energy

Observe and interact

Permaculture Principles in Rainwater Harvesting



Obtain a yield



Use small and slow solutions



Use and value renewable resources



Creatively use and respond to change



Design from patterns to details

#### BUT, CARMEN, WE DON'T GET RAIN!!!

 Annual Average Rainfall in Fallon, NV

4.99 inches/year

### OH, YES WE DO!!!

catchment area (ft<sup>2</sup>) × rainfall (ft) × 7.48 gal/ ft<sup>3</sup> = maximum runoff (gal)

#### $\frac{1}{2}$ an acre = 21780 ft<sup>2</sup> 4.99 inches per year = .415 ft

## 67,609 gallons per year!!!

www.harvestingrainwater.com/

66

## Irrigation of the land with seawater desalinated by fusion power is ancient.

## It's called rain

~Michael McClary

,,

EROSION CONTROL IS RAINWATER HARVESTING

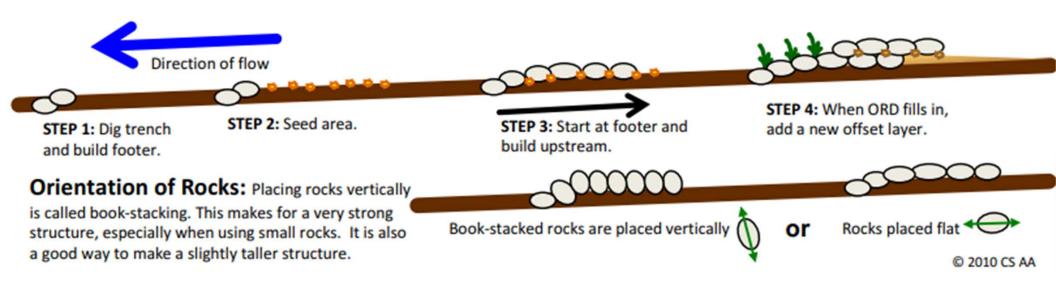
### DESIGN PRINCIPLES FOR RESTORING ERODED LAND

- 1. Enhance ecosystem processes
- 2. Protect and expand natural moisture storing areas
- 3. Stabilize active erosion & prevent further incision
- 4. Restore dispersed flow & increase infiltration
- 5. Cultivate regenerative plant communities to retain & build soil

### DESIGN PRINCIPLES FOR RESTORING ERODED LAND

- 6. Harvest runoff in place when possible. Use caution when re-directing flows.
- 7. Transform sediment & runoff into regenerative resources
- 8. Create site-specific solutions using natural forms & processes
- 9. Anticipate failure & make adaptive changes
- 10. Strive for beauty & inspiration

## ONE ROCK DAM



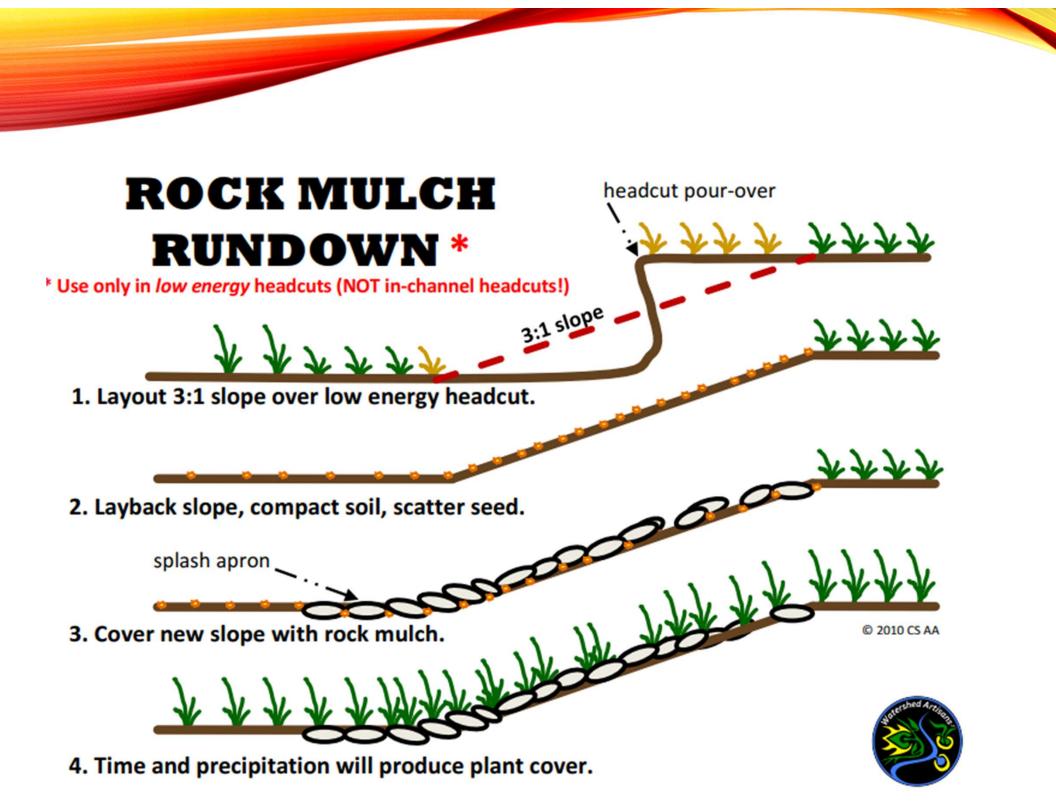
#### ONE ROCK DAM

Always maintain a low point in the channel cross section to prevent bank erosion.



## ONE ROCK DAM





#### ROCK MULCH RUNDOWN



COMMUNITY BASED WATERSHED RESTORATION

#### AN INDIGENOUS MODEL

A return to community stewardship

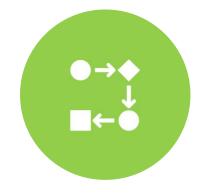
Remembering together

Our birthright and responsibility

#### SUSTAINING THROUGH UNCERTAINTY



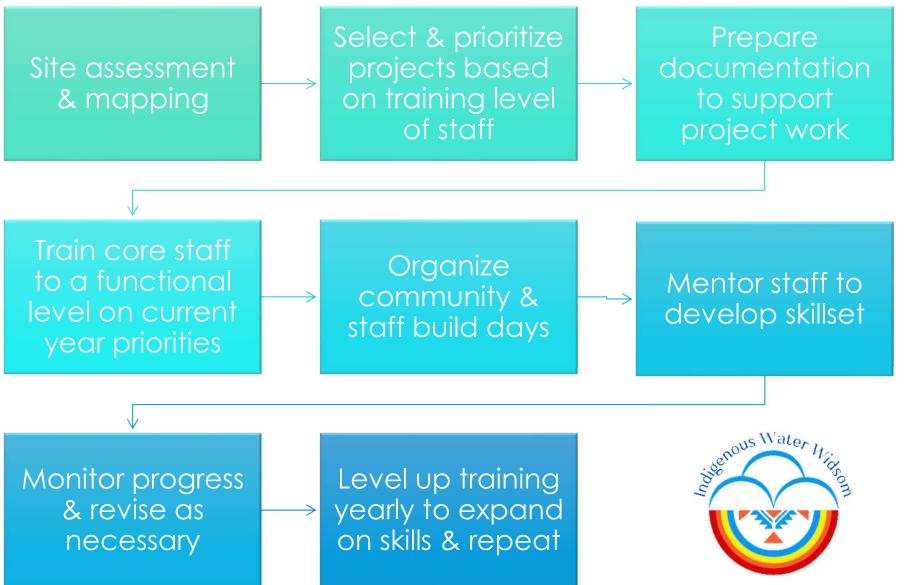




COMMUNITY BASED EFFORTS CAN SUPPORT RESTORATION DURING DIFFICULT TIMES FOCUS ON SMALL AND SLOW SOLUTIONS

A LONG-TERM COMMITMENT OVER "ONE AND DONE" PROJECTS

#### THE INDIGENOUS WATER WISDOM PROCESS



#### MENTORING COMMUNITIES FOR SUCCESS









#### PRAYER, GRATITUDE & RECIPROCITY





## THE WAY OF THE GREAT PEACEMAKER



#### RETURNING TO BALANCE TOGETHER



# WHERE DO WE GO FROM HERE?

## LEARNING PATHWAYS

#### Indigenous Water Wisdom

Indigenouswaterwisdom.org

#### • Ecoversity

• Ecoversity.org

#### Earth Activist Training

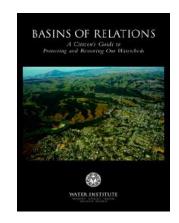
Online.earthactivisttraining.org

## RESOURCES

Rainwater

larvesting

- Brad Lancaster
  - Harvestingrainwater.com
- WATER Institute
  - Oaec.org
- Quivira Coalition
  - https://quiviracoalition.org/





WORKING WITH NATURE TO HEAL EROSION Soil loss caused by flowing water diminishes the fertility, productivity and healing capacity of the land. This guide was created to empowe landowners and managers to take

and nearing capacity of the land. This guide was created to empower landowners and managers to take action and reverse soil ension at every opportunity. These methods promote harvesting and storing runoff and sediment with structures based on natural forms that initiate long-lasting regenerative processes. For more information visit





Rainwater

Harv

### INDIGENOUS WATER WISDOM

- I look forward to connecting
  - Carmen Gonzales
  - <u>https://indigenouswaterwisdom.org/</u>
  - carmen@indigenouswaterwisdom.org
  - (702) 988-2300





"Don't ask what the world needs. Ask what makes you come alive, and go do it. Because what the world needs is people who have come alive."

~Howard Thurman