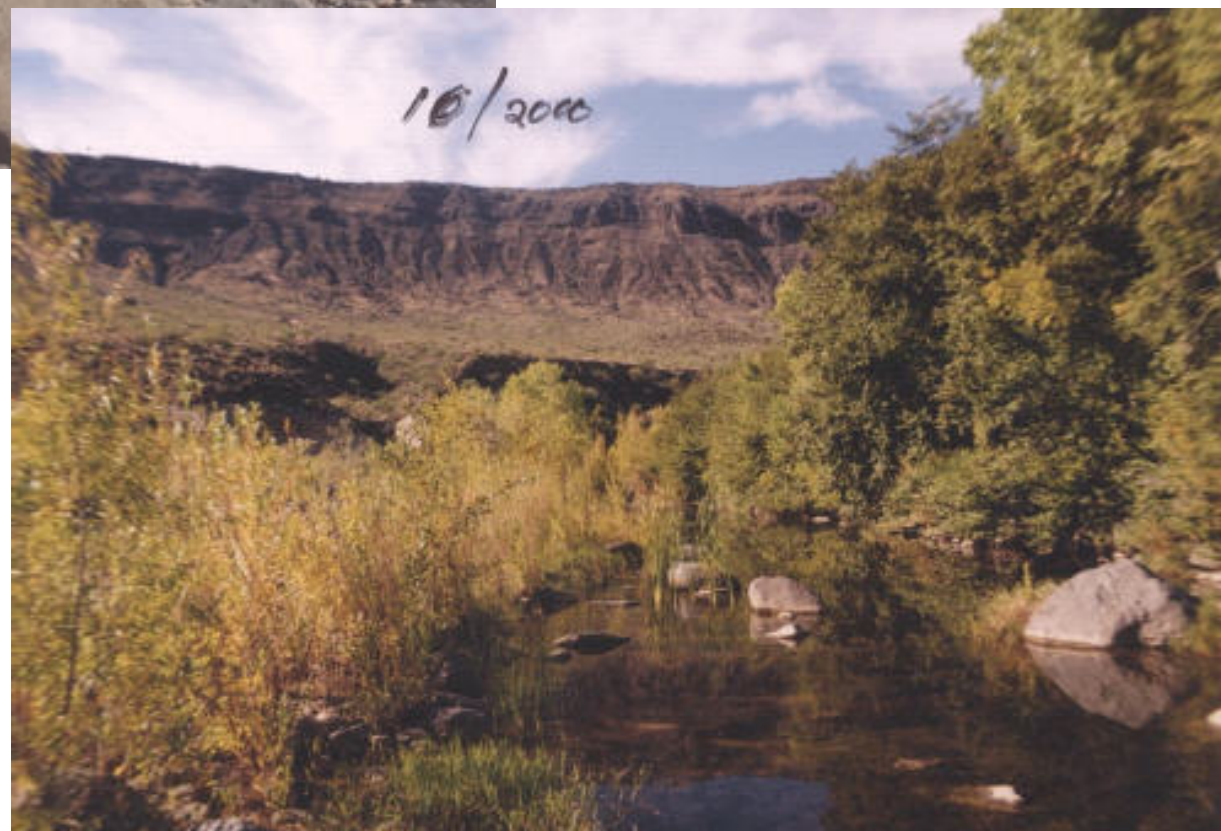
RIPARIAN
PROPER FUNCTIONING CONDITION

A Tool for Integrating the Fundamental Sciences into Collaborative Decision-Making

Dixie Creek
NV 1989

Dixie Creek
NV 1995

Burro Creek
AZ 1981



Burro Creek
AZ 2000

Address Barriers

"Information does not resolve social conflicts, people do."

(Duane 1997)

Creeks & Communities

- Work with people on their land and issues
- Requires network of individuals
  - √ Diverse backgrounds
  - √ Can read the land and communicate it effectively
  - √ Know how to work with people and manage conflict

Bring diverse groups of people together

Focus initially on the physical function

Build understanding of the attributes & processes that help produce desired benefits and values

Create respectful learning environments

Science, Technical, Social

- PFC is qualitative based on science
- It is applied by people with strong technical skills and experience
- It allows all members of the community to understand and participate

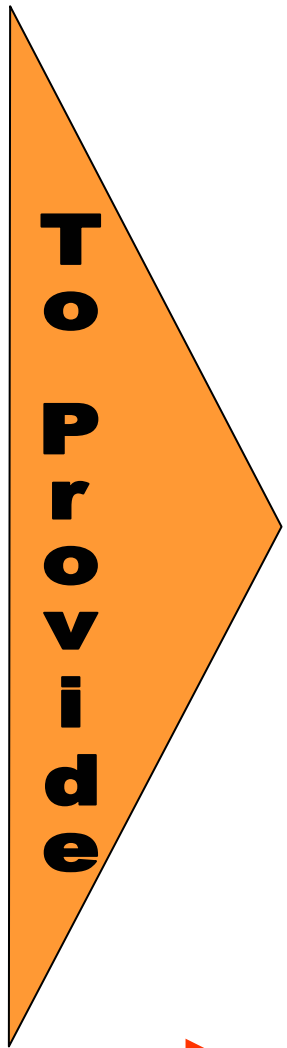
Proper Functioning Condition

- On-the-ground condition
- Assessment method

PFC On-The-Ground Condition

Adequate vegetation, land form or large woody material to:

- **Dissipate stream energy**
- **Reduce erosion**
- **Filter sediment**
- **Capture bedload**
- **Aid floodplain development**
- **Improve floodwater retention and groundwater recharge**
- **Develop root masses that stabilize stream banks**



- Increased water quality and quantity
- Diverse ponding and channel characteristics
- Habitat for fish and wildlife
- Greater biodiversity

Physics → **Values**

Adequate vegetation, landform or large woody material present

Functional - At Risk

Riparian-Wetland Areas in Functional Condition (partially)

However an existing attribute

- **Soil**
- **Water**
- **Vegetation**

Makes them susceptible to degradation during high-flow events like the 5-, 10- and 20- year events

An existing attribute makes them susceptible to degradation during high-flow events like the 5-, 10-and 20- year events = F-A-R

Nonfunctioning

Areas that are *clearly* not providing adequate vegetation, landform, or large woody debris

To:

- **Dissipate stream energy**
- **Improve floodwater retention & groundwater recharge**
- **Stabilize streambanks**
- ***And other characteristics common to PFC***

Clearly **not providing adequate vegetation, landform, or large woody debris**

= Non-Functional

Potential

The highest ecological status a riparian-wetland area can attain given no political, social, or economic constraints.

- ✓ **Potential natural community.**
- ✓ **Dimension, pattern, & profile**

- Being all it possibly can be.

Capability

Highest ecological status an area can attain given political, social, or economic constraints, which are often referred to as limiting factors.

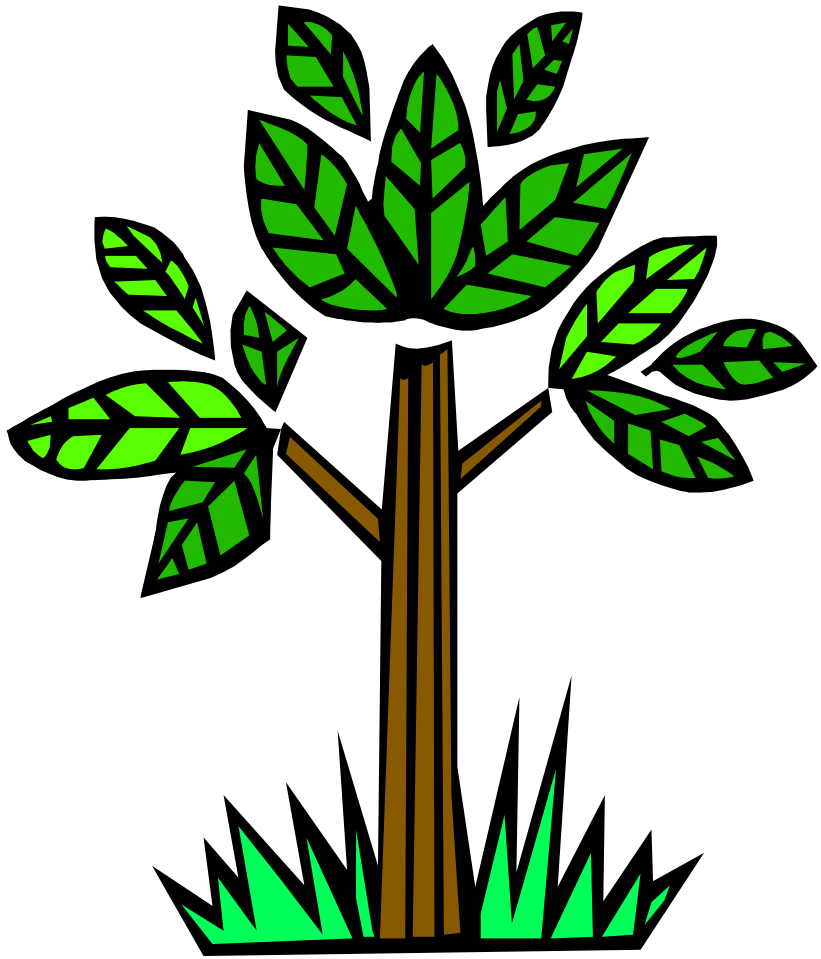
- The highest ecological status it can attain given major influences by humans.

PFC Hydrology Items

- Floodplain
- Beaver Dams
- Channel Characteristics
- Riparian Area Widening
- Watershed Influence

PFC Vegetation Items

- Diverse Age-Class
- Diverse Composition
- Soil Moisture Characteristics
- Root masses
- Vigor
- Adequate Vegetative Cover
- Source of Large Woody Material

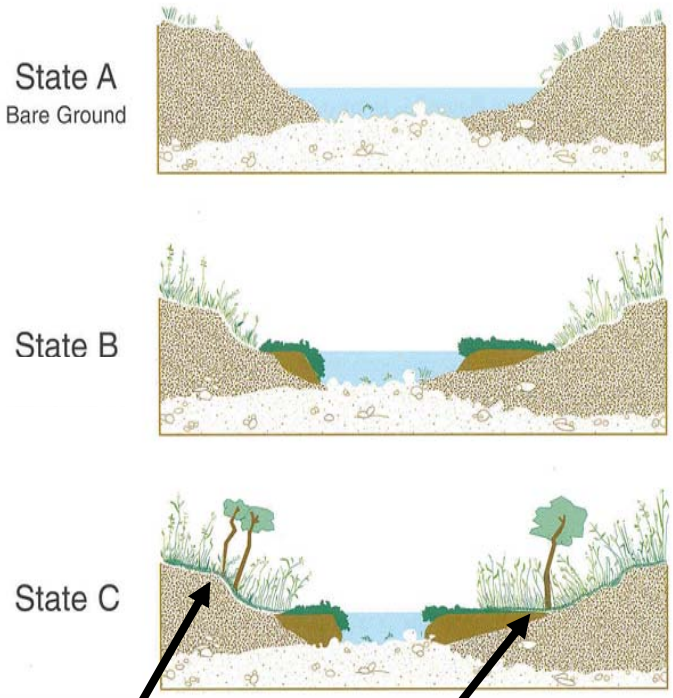


PFC Erosion/Deposition Items

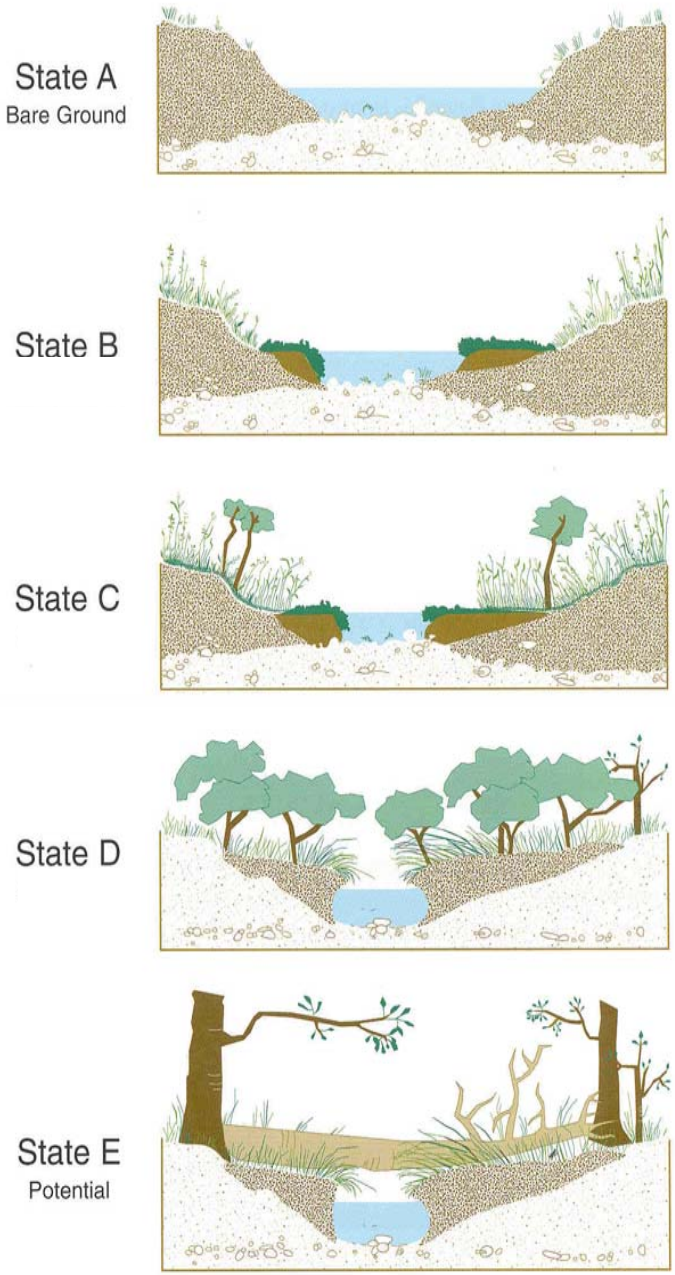
- Floodplain and Channel Characteristics
- Point Bars Revegetating
- Lateral Stability
- Vertical Stability
- Water & Sediment Balance

Functioning Condition

Some riparian-wetland areas can function properly before they achieve their potential.



Woody shrubs such as willows

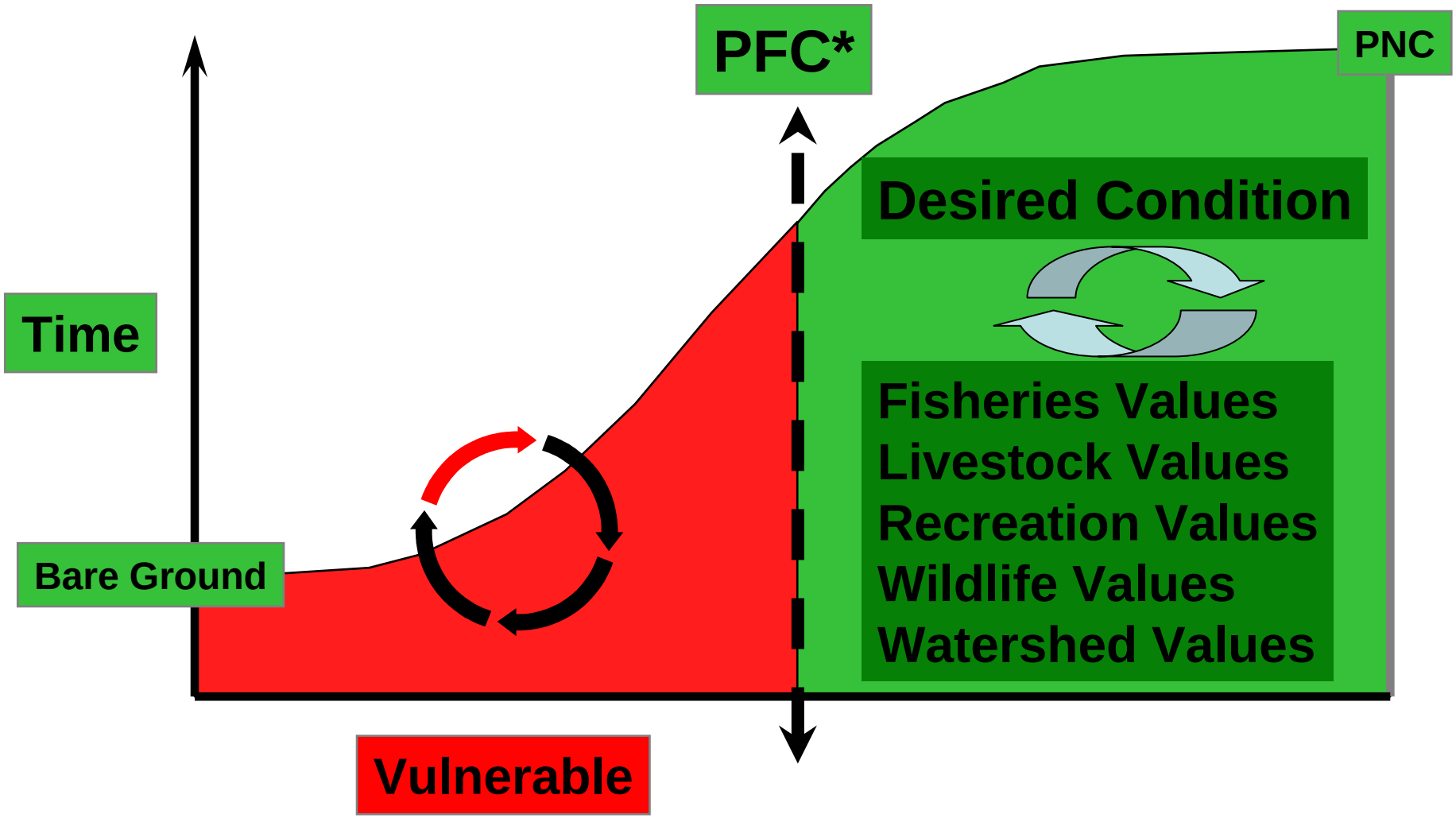


Functioning Condition

Others may require the potential vegetation to function.

When PFC has been achieved, physical processes are in a working order, and conditions can progress towards desired conditions

Riparian Area Recovery



*Proper Functioning Condition = Resilient during 5-, 10, and 20- year events

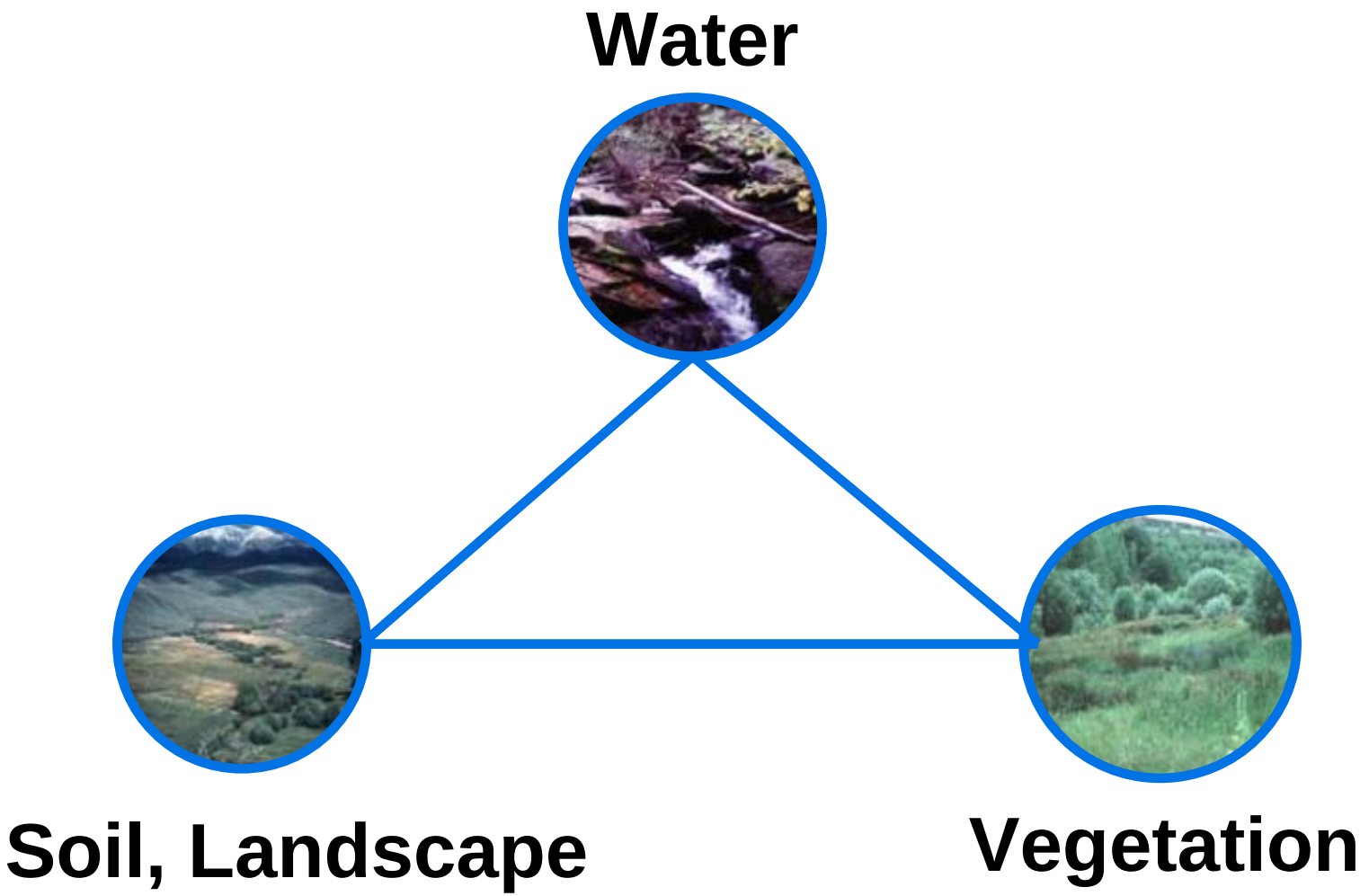
An Assessment Method

- Completed by experienced IDT, but encourages participation of local people

- First step, not last step

- Helps prioritize efforts at different scales (stream, watershed, basin)

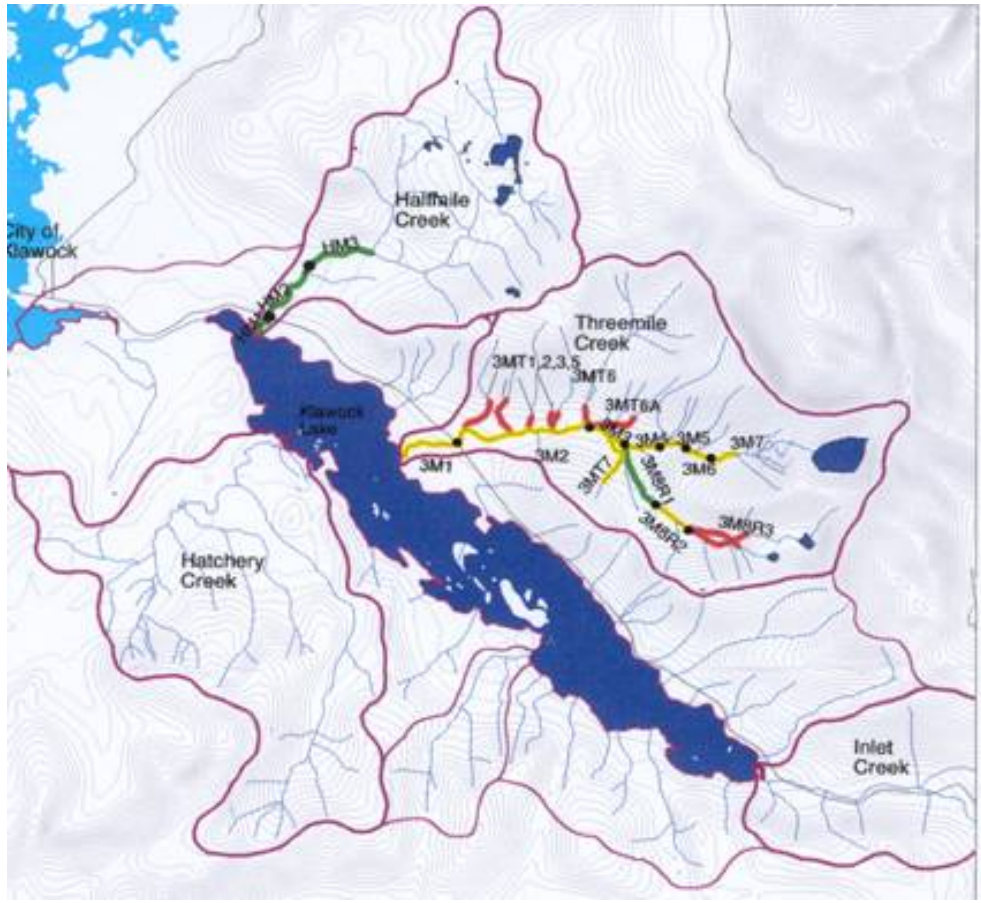
PFC Assessment Method




What may be limiting?
How can management be improved?
What further evaluations are appropriate?
What's working well?

Priority for Restoration

- Function at Risk non-apparent or downward trend
- Maintain and protect proper functioning streams
- Non-functioning streams
- There may be reasons to use different priorities



Development & Implementation

- Multi-agency team of top scientists from Hydrology, Soils, Vegetation, Biology.
- Four year study period in the 12 Western States (1988-92).
- Collected soil, hydrology, and vegetation information at field sites.

Subjective?

Learning Together

PFC workshops bring local people, government workers, scientists, farmers, ranchers and many others together

- Understanding of Processes
- Common Vocabulary
- A Common Vision

What do you see?

Pearl Creek NV
1982

Pearl Creek NV
1983

Finding a Common Interest Without Forcing Common Values

Muddy Creek WY
1986

Muddy Creek WY
1996

Riparian Function

- Better understanding of riparian function

- Enough agreement that leads to collective action through management

Testimonial

- Sustainable Northwest…one of our partners in the Klamath Basin