

Colorado Water Conservation Board Watershed Health and the Colorado Water Plan

Chris Sturm
Stream Restoration Coordinator
Colorado Water Conservation Board
chris.sturm@state.co.us



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

ORGANIZATIONAL CHART

GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

**COLORADO WATER
CONSERVATION
BOARD**

Colorado
Avalanche
Information
Center

State
Land
Board

Colorado
Oil & Gas
Conservation
Commission

Division of
Reclamation,
Mining, &
Safety

Colorado Parks
& Wildlife

Division of
Forestry

Division of
Water
Resources

**Watershed &
Flood Protection**

Interstate, Federal
& Water Information

Stream & Lake
Protection
(In-Stream Flows)

Finance
Section

Water Supply
Planning

<http://cwcb.state.co.us>



CWCB's mission is
*"to conserve, develop,
protect, and manage
Colorado's water for
present and future
generations"*

Non-consumptive and
Consumptive Water Use



PROTECTING
OUR
WATERSHEDS

FOR OUR WAY
OF LIFE AND
ECONOMY.

Watershed Health, Environment, and Recreation

Colorado's Water Plan sets a measurable objective to cover 80 percent of the locally prioritized lists of rivers with stream management plans, and 80 percent of critical watersheds with watershed protection plans, all by 2030.

Watershed

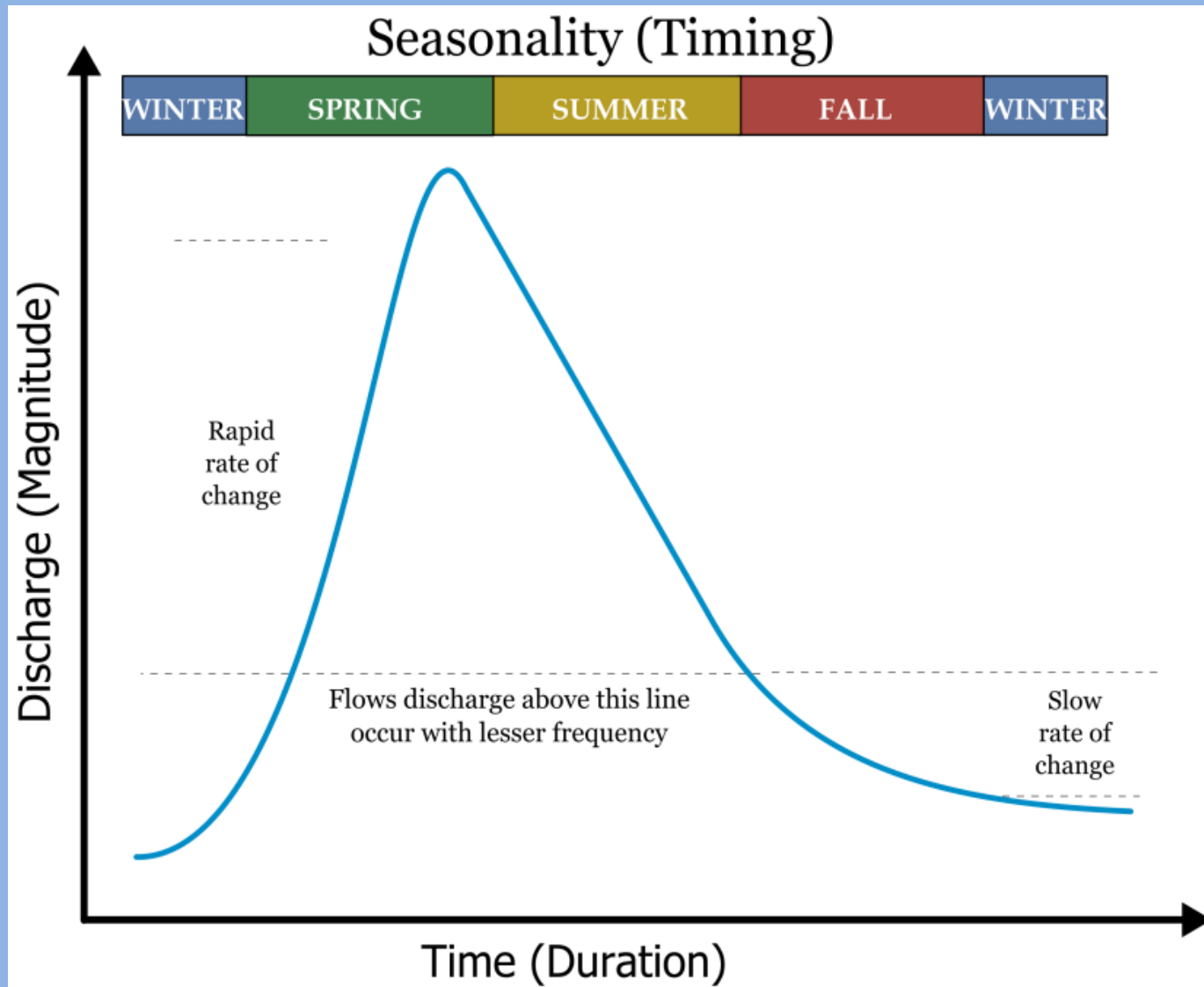
“that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community”

-John Wesley Powell

*Blue River
Watershed, Co*



Stream Hydrograph





Funding

Colorado's Water Plan sets an objective to sustainably fund its implementation. In order to support this objective, the State will investigate options to raise additional revenue in the amount of \$100 million annually (\$3 billion by 2050) starting in 2020.

Colorado Water Conservation Board Watershed & Flood Protection Section

Grant Programs:

- **Colorado Watershed Restoration Program (CWRP)**
 - ✓ **Watershed/Stream Restoration and Protection grants**
 - ✓ **Flood Mitigation grants**
 - ✓ **Stream Management Plan grants**
 - ✓ **CWCB Monitoring projects**
- **Invasive Phreatophyte Control Program (IPCP)**
- **Colorado Healthy Rivers Fund (CHRF)**
- **Fish and Wildlife Resources Fund (FWRF)**



WARNING



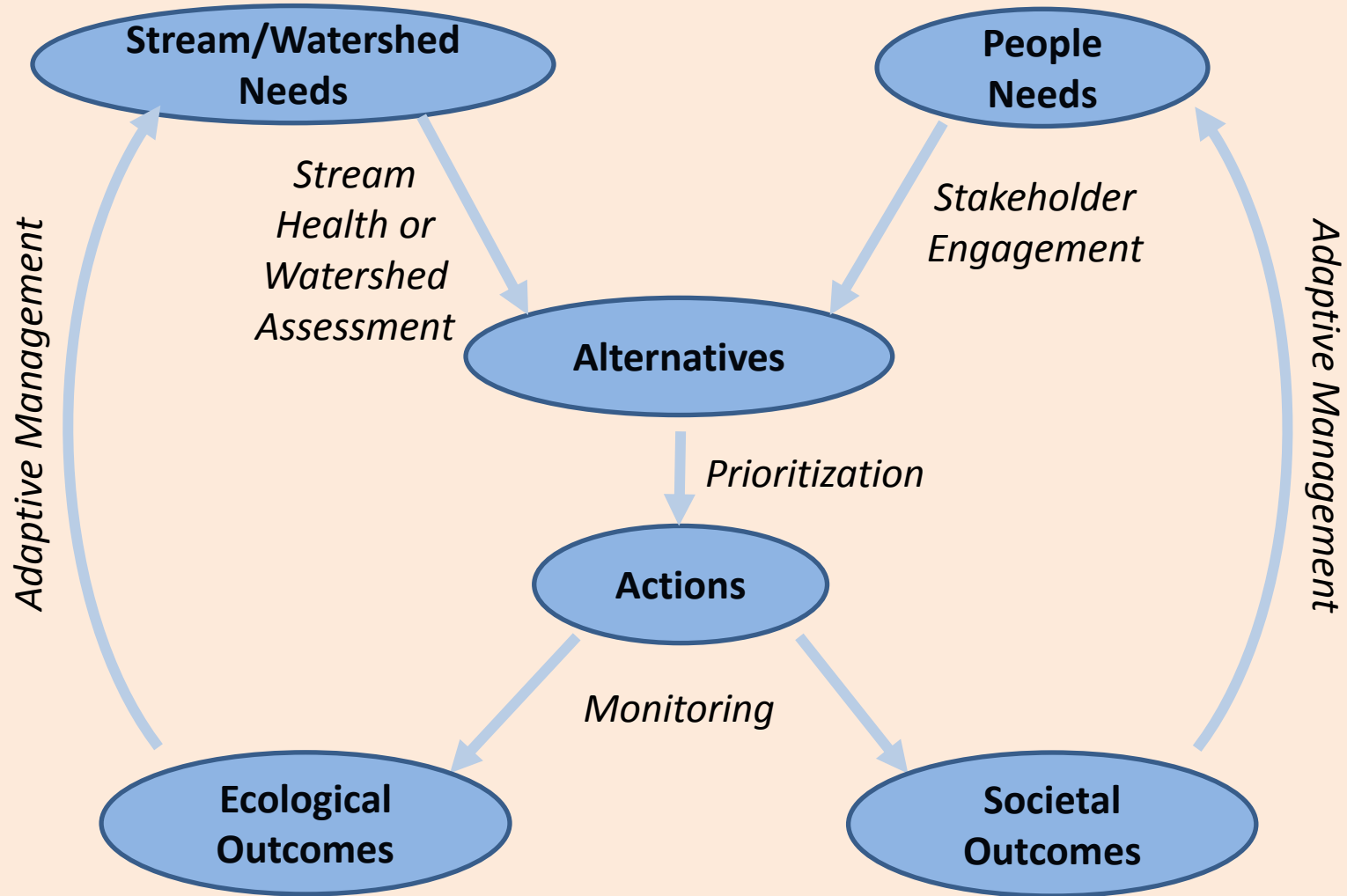
TO AVOID INJURY

**DON'T TELL ME HOW
TO DO MY JOB**

*Process
and
Methodology*

Stream Management and Watershed Planning

adapted from **Colorado Stream Health Assessment Framework**. A holistic health assessment tool for stream management and restoration planning
Presented by: Mark Beardsley, EcoMetrics & Brad Johnson, Johnson Environmental Consulting



“A collaborative approach to watershed planning includes stakeholder involvement and management actions supported by sound science”

-Colorado Water Plan

Watershed Coalitions



"Water is personal, water is local, water is regional, water is statewide. Everybody has a different idea, a different approach, a different issue, a different concern. Water is the most personal issue we have.."
– Susan Marks; 2009

Different Views of the River

ENGINEER

Hmmm?



GEOLOGIST

Hmmm?



BIOLOGIST

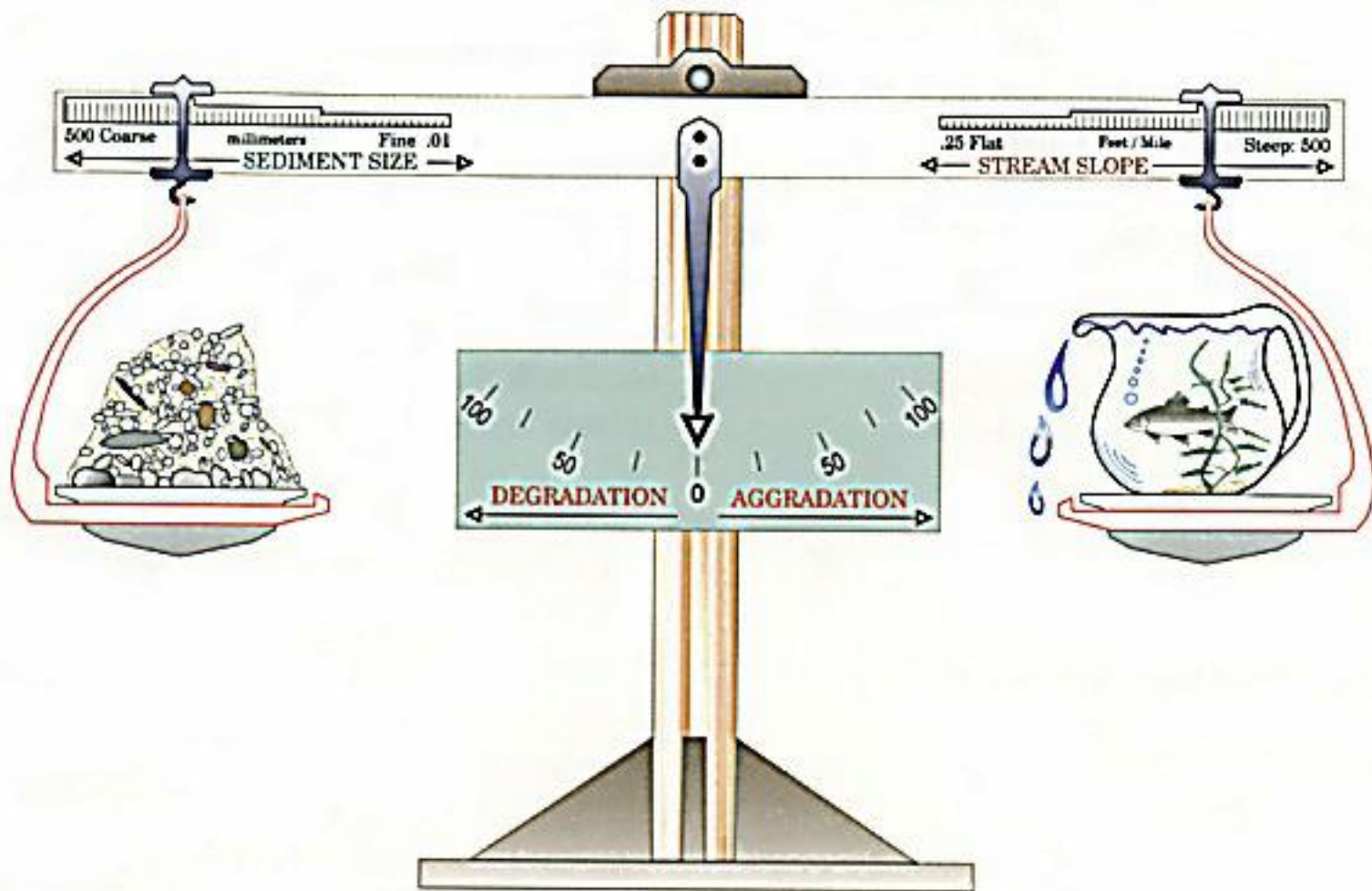


GEOMORPHOLOGIST

Hey man, like why worry? Let mother nature do her thing.



Lane's Balance

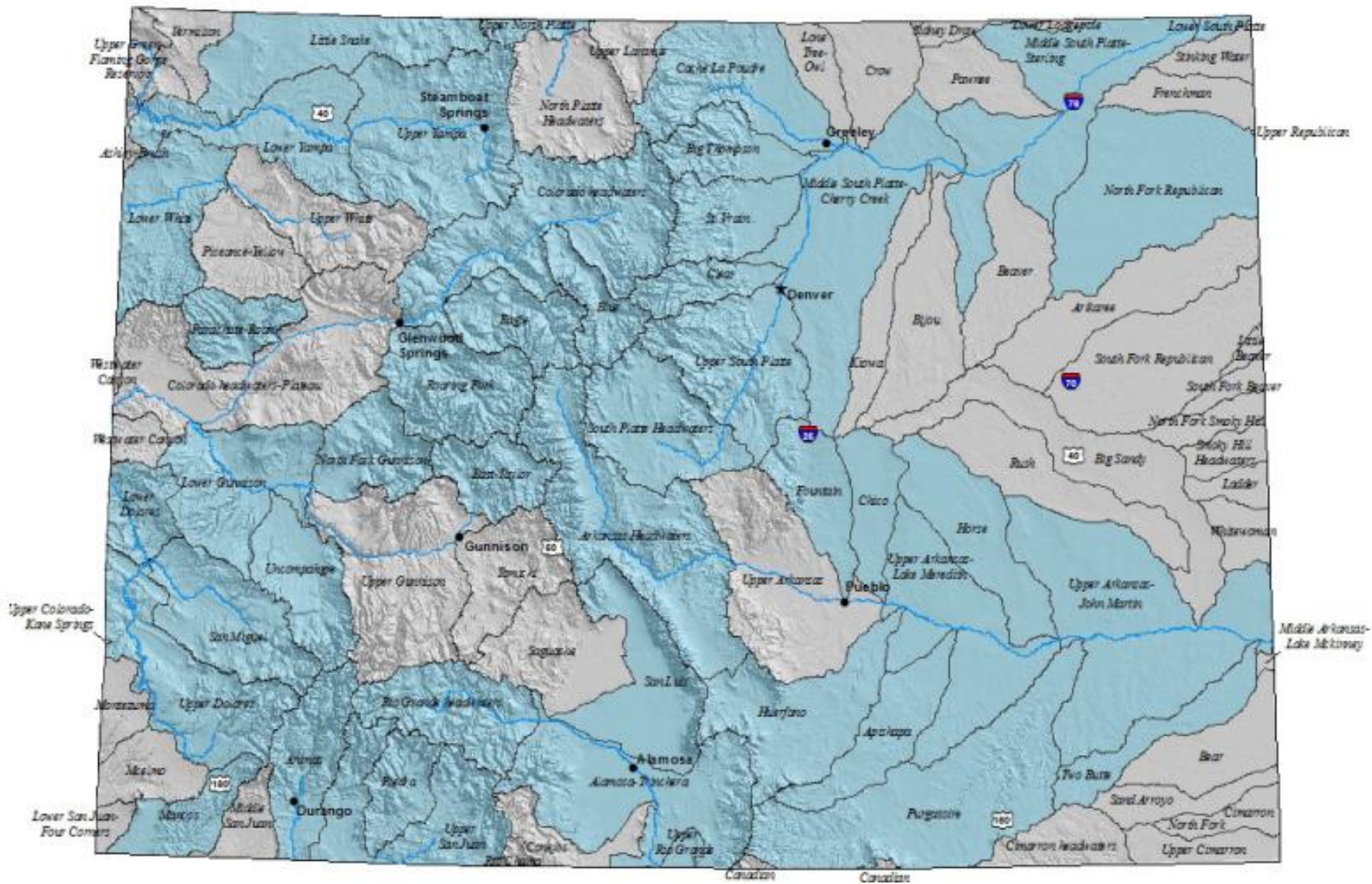
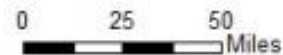


$$(\text{Sediment LOAD}) \times (\text{Sediment SIZE}) \propto (\text{Stream SLOPE}) \times (\text{Stream DISCHARGE})$$

Colorado Watersheds

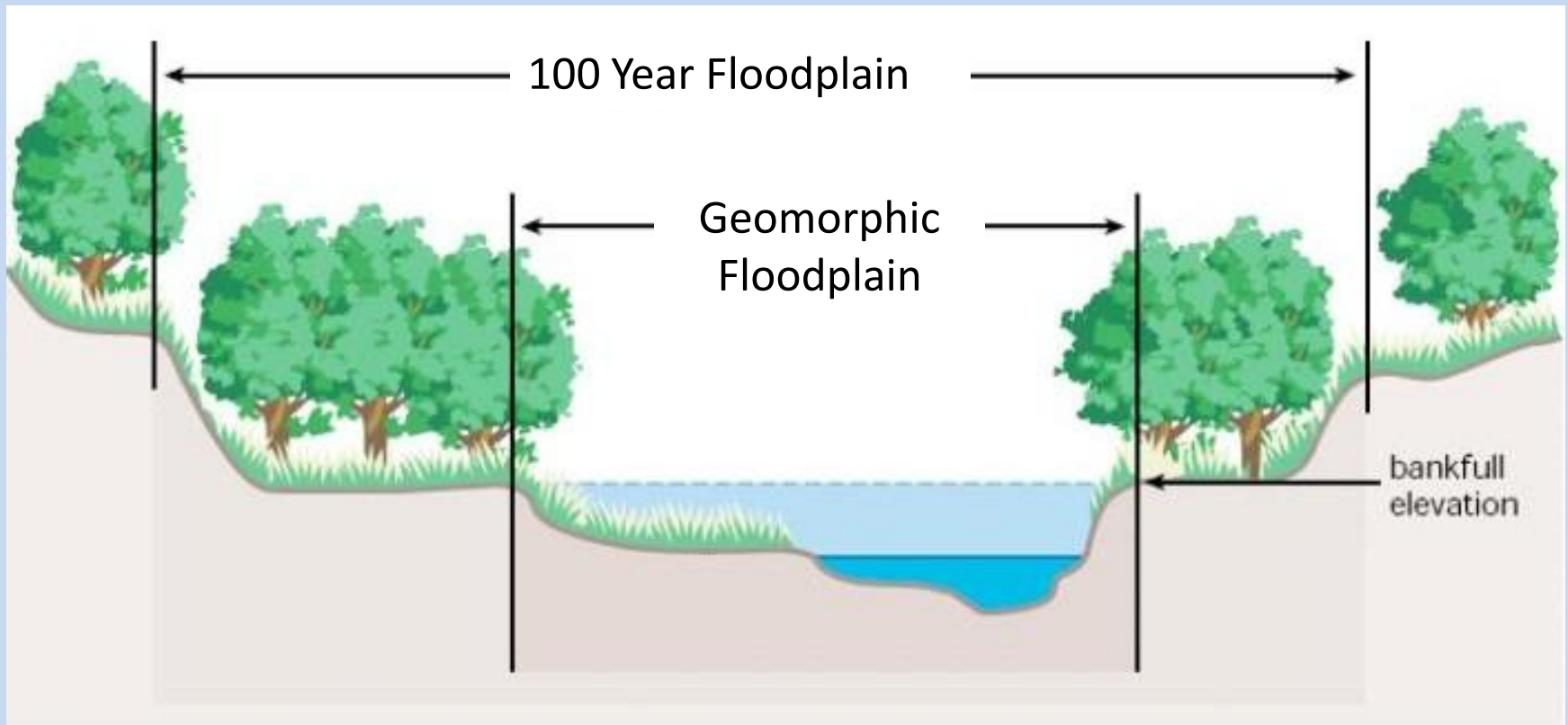
USGS Hydrologic Unit Code (HUC) 8
Scale Sub-Basins

Existing Watershed Plans

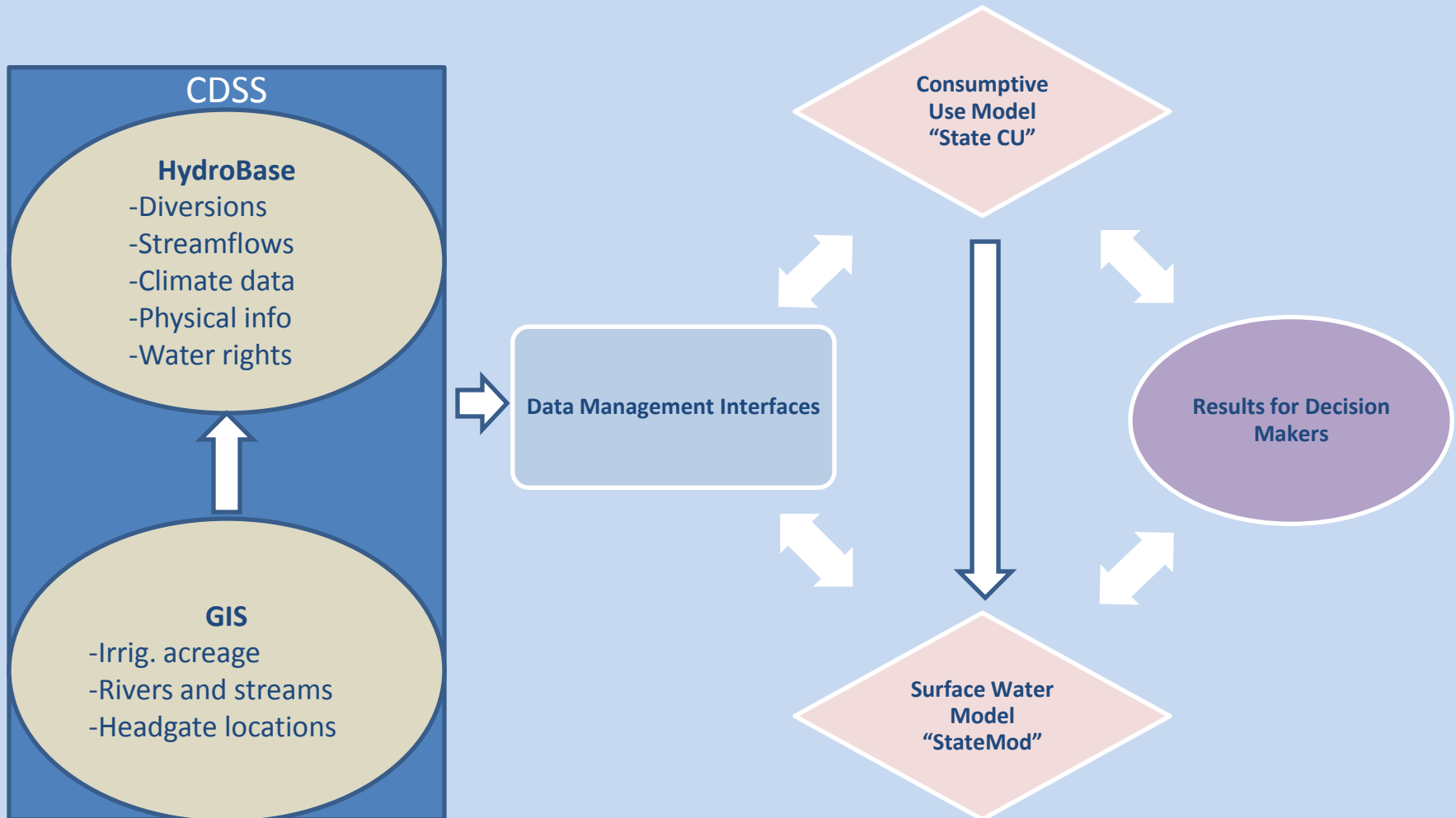


Stream Management Plans

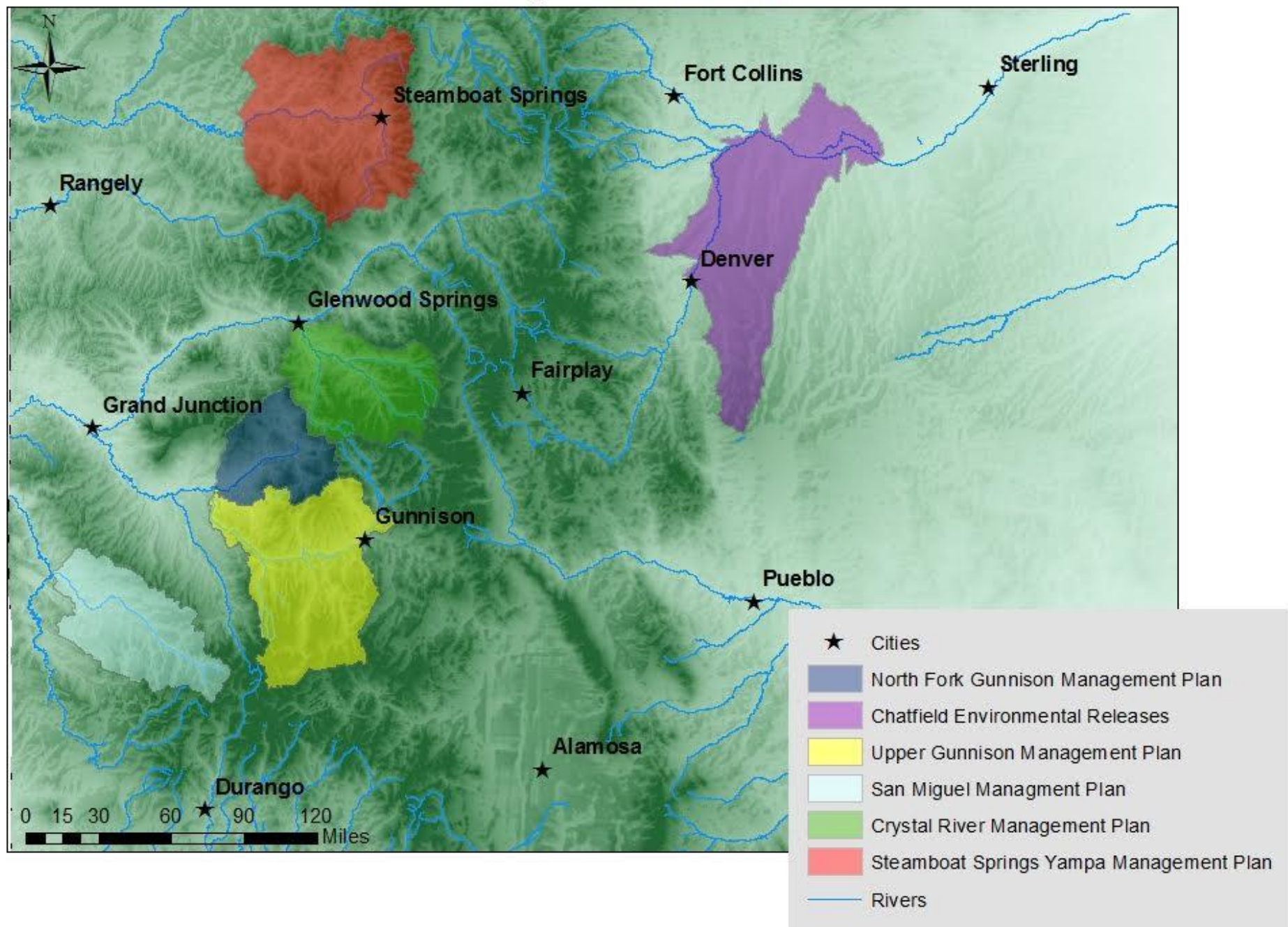
- Stakeholder Driven Collaborative
- Assess Hydrology, Biology, Geomorphology
- ID Flows and other Physical Conditions that Support Objectives
- Incorporate Goals Identified Locally and in Basin Implementation Plans
- ID and Prioritize Actions to Achieve Progress to Maintain/Improve Flow Regimes and Physical Conditions



CDSS Data-Centered Approach



Stream Management Plan Locations

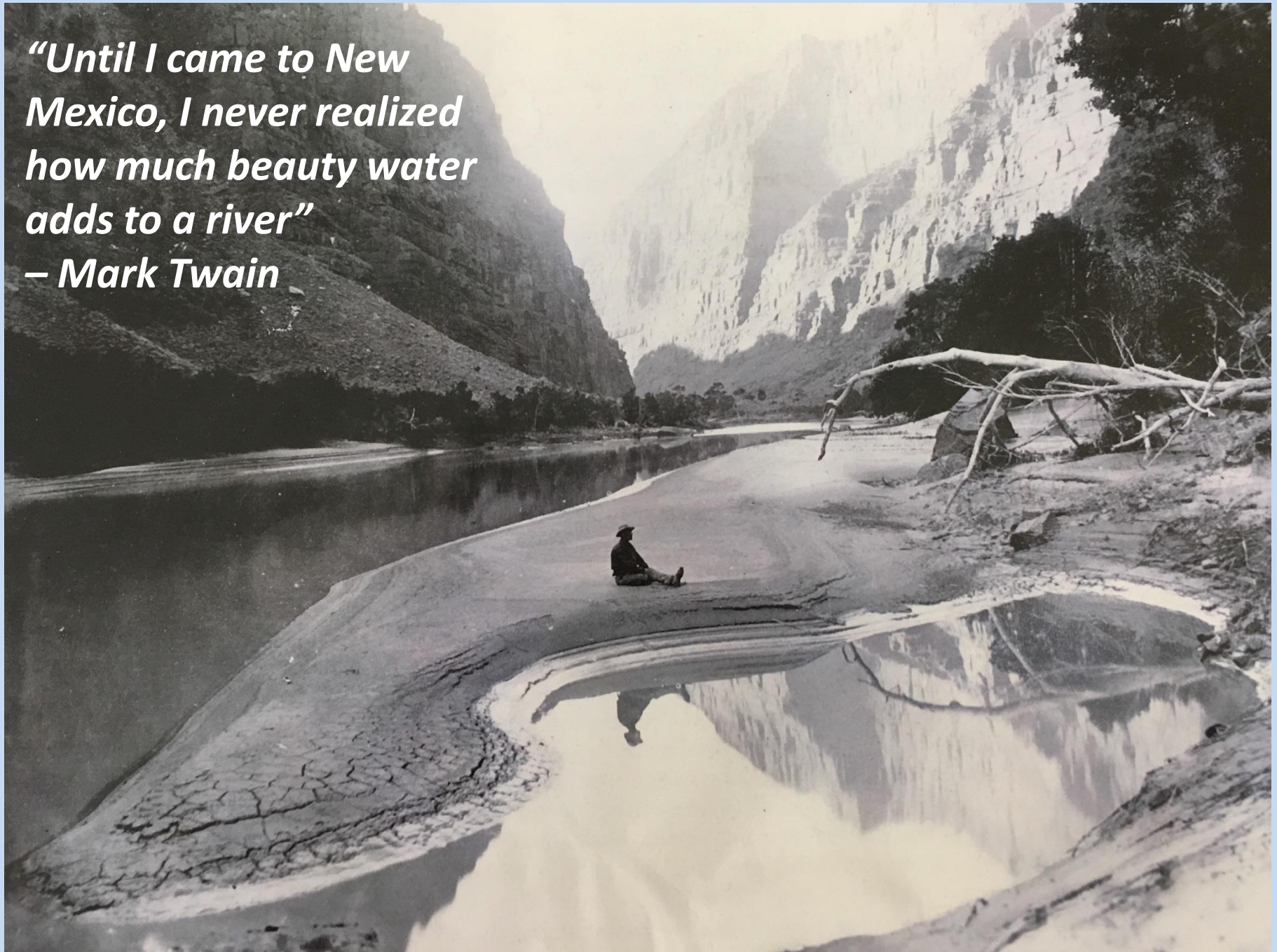


Stream Management Plan Objectives?

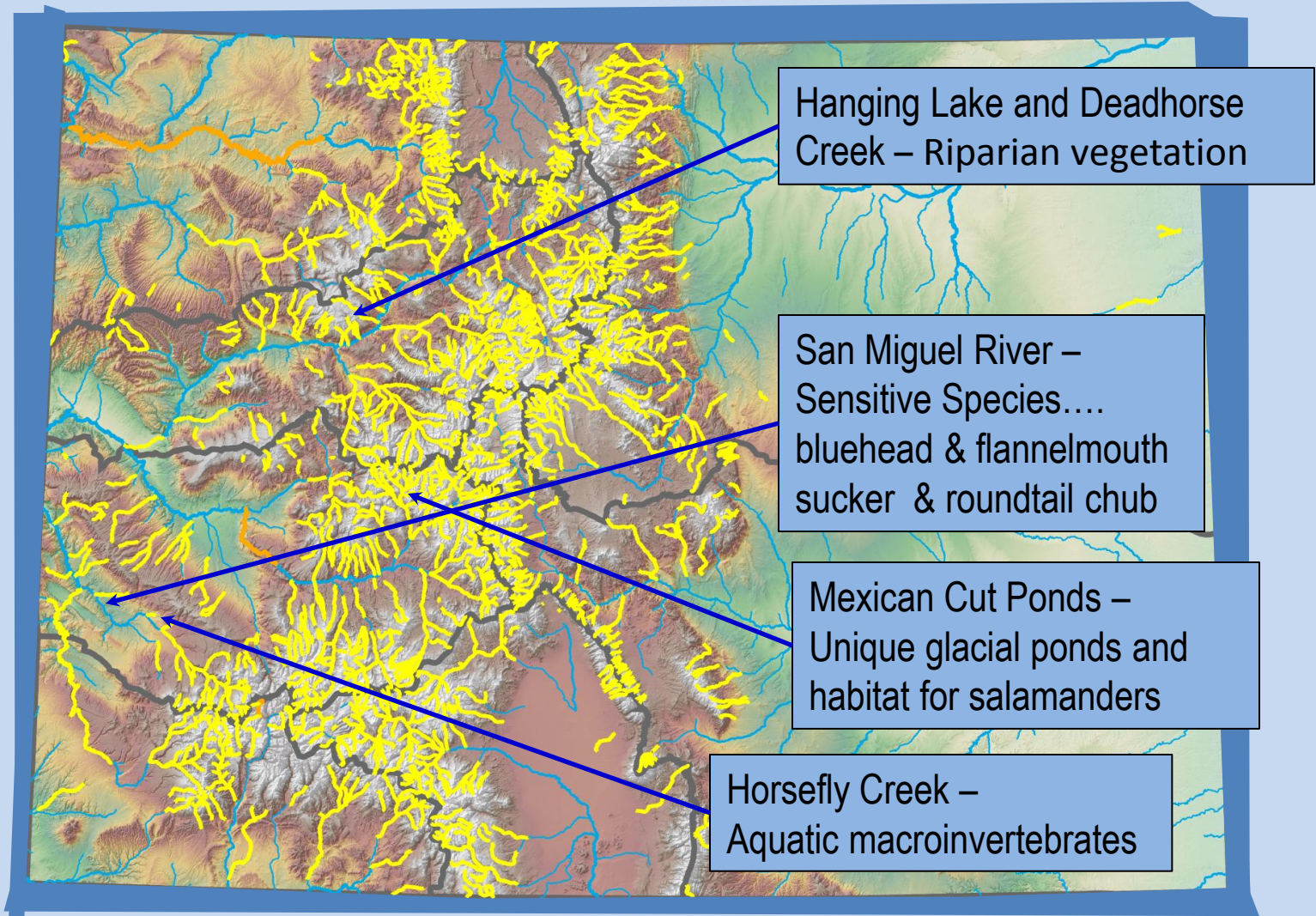
- Protect Life and Property
- Stabilize channel banks
- Reconnect floodplains with streams
- Manage sediment
- Reduce hazards and improve flood conveyance
- Enhance recreational opportunities
- Improve habitat



*“Until I came to New
Mexico, I never realized
how much beauty water
adds to a river”
– Mark Twain*

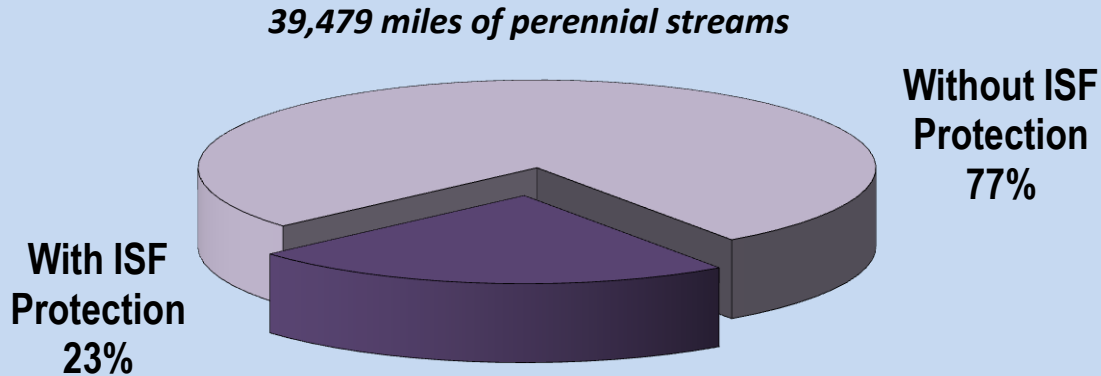


Distribution of Existing ISF Water Rights in Colorado



Yellow lines represent streams with decreed ISF rights

ISF Program Statistics



Appropriated

Instream flow water rights on

- over 1,600 stream segments,
- covering 9,352 miles of stream,
 - and 480 natural lakes

Acquired

Over 26 water right donations or long-term contracts for water totaling

420 cfs and 9,340 AF

Mapping & Regulating Fluvial Hazard Areas



Jamestown, Colorado following the 2013 flood.
Retrieved from: Steppe Newsletter



COLORADO

Colorado Water
Conservation Board

Department of Natural Resources

Objectives of Fluvial Hazard Mapping

- Reduce property loss and damage
- Promote river planning and management on a watershed scale
- Increase channel stability by improving floodplain connection and sediment transport
- Reduce public expenditures for disaster response and recovery (avoidance is cost-effective in the long run)
- Protect riparian habitat
- Encourage multiple uses of riparian areas



Swan River Restoration Site



Swan River Restoration Site





***“Natural selection will
not remove ignorance
from future generations”
- Richard Dawkins***

**More Information @
cwc.state.co.us
or email
chris.sturm@state.co.us**