



# Basin Implementation Planning: Nonconsumptive Workshop

April 30, 2014



**COLORADO**

Colorado Water  
Conservation Board

Department of Natural Resources



## **Goals of workshop**

1. Revisit Nonconsumptive analyses and resources (SWSI II – present)
2. Review original data sources
3. Expectations for nonconsumptive analyses in BIPs
4. Gap Analysis Framework
5. Nonconsumptive workshops – May 2014



## SWSI II

- Greater understanding of nonconsumptive attributes and needs in the state.
- State provided a list of environmental and recreational resources to consider – they were mapped as well.
- Served as the foundation for Phase I mapping process in SWSI 2010.

### ▼ Environmental Coverages

- Boreal Toad Distribution
- Audubon Important Bird Areas
- Colorado Natural Heritage Program – Riparian/Wetland Plants and Plant Communities
- Federally Listed Critical Habitat
- Water Quality Control Division Monitoring and Evaluation List
- Water Quality Control Division 303(d) List
- Colorado Pikeminnow Distribution
- Humpback Chub Distribution
- Razorback Sucker Distribution
- Bonytail Chub Distribution
- Greenback Cutthroat Trout Distribution
- Arkansas Darter Distribution
- Flannelmouth Sucker Distribution
- Bluehead Sucker Distribution
- Roundtail Chub Distribution
- Colorado River Cutthroat Trout Distribution
- Rio Grande Cutthroat Trout Distribution

# SWSI 2010 – Phases I & II

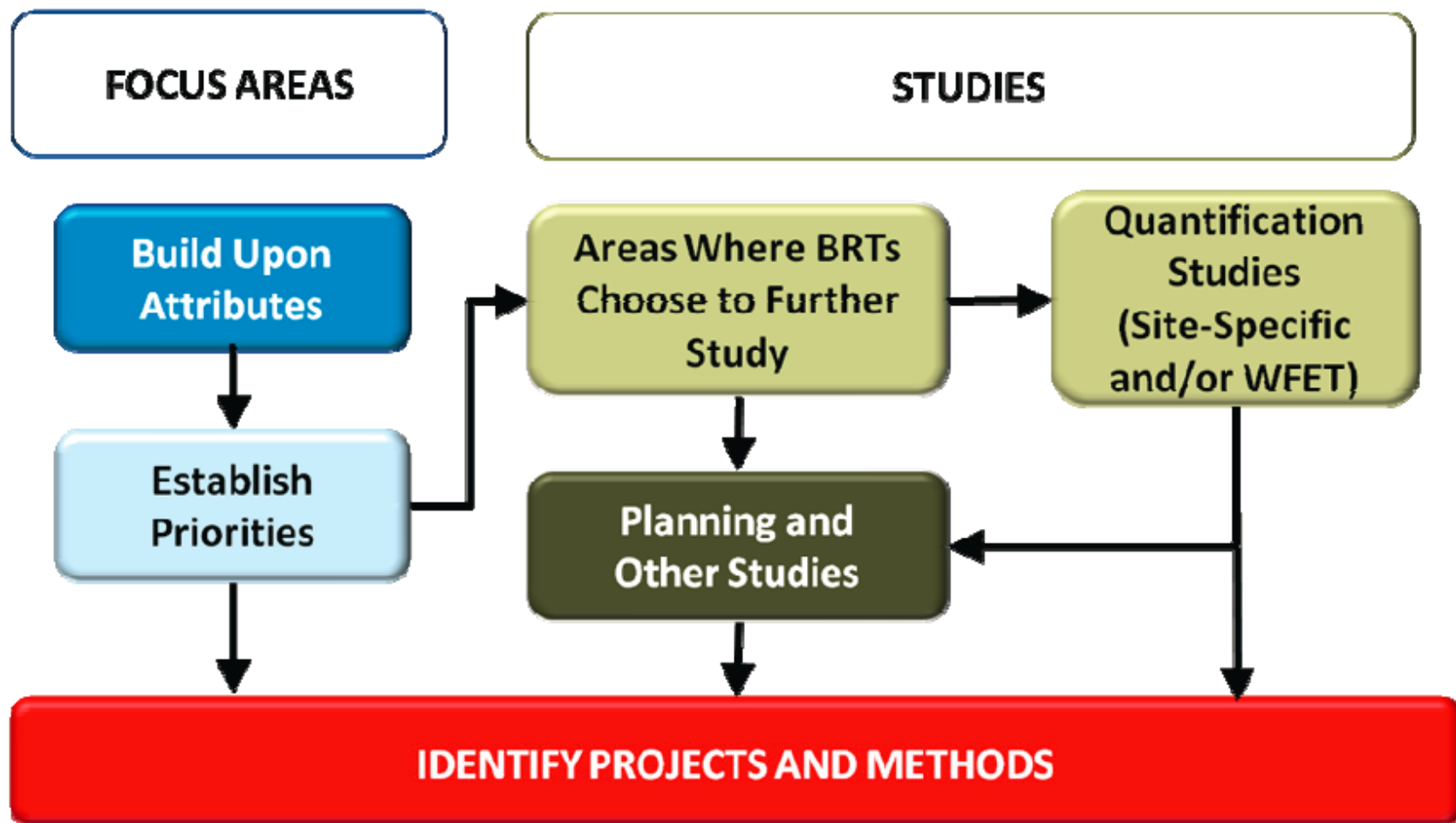


Figure 1-2 State of Colorado Nonconsumptive Needs Assessment Approach

# Statewide Nonconsumptive Needs Assessment Focus Map



**North Platte Basin**  
Environmental and Recreational  
Subcategory Count by Stream Segment

- 1 - 2
- 3 - 4
- 5 - 6

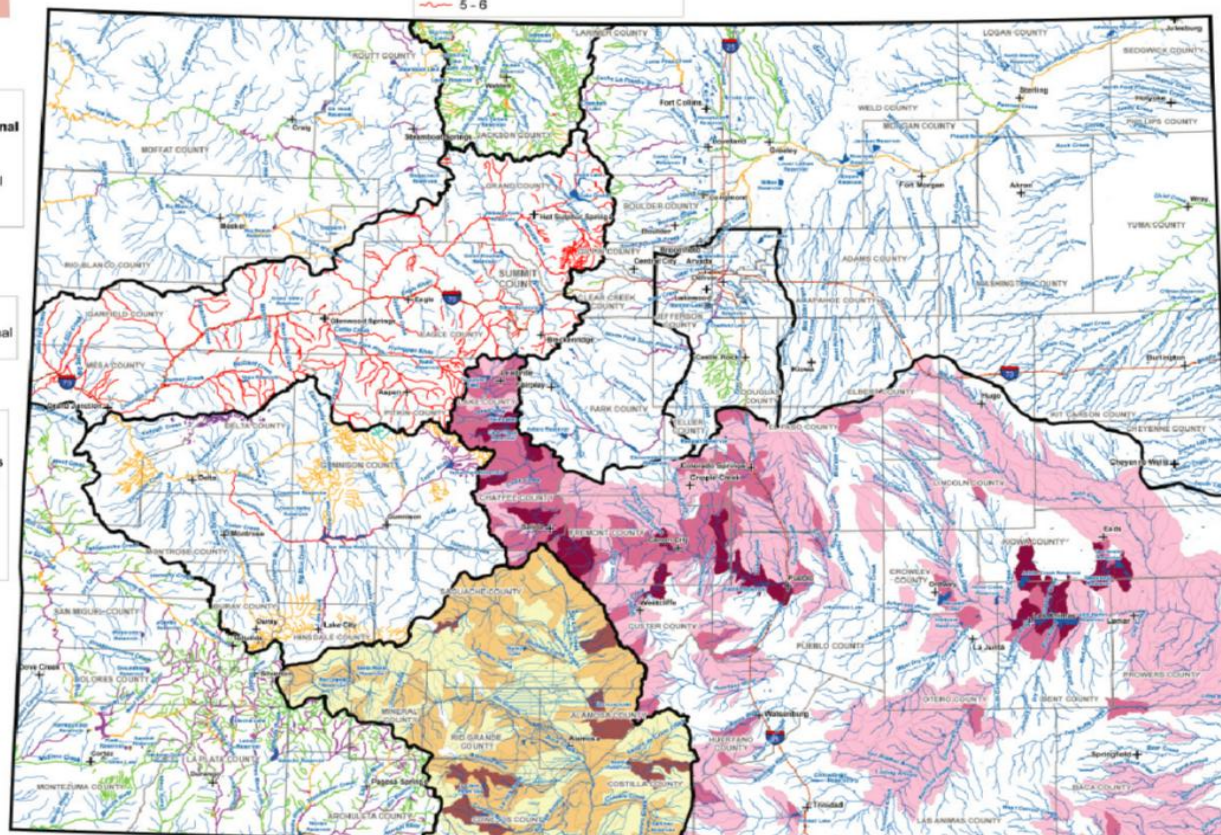
**Yampa/White Basin**  
Major Environmental and Recreational  
Segments

- Environmental Segments
- Environmental and Recreational Segments
- Recreational Segments

**Colorado Basin**  
Environmental and Recreational  
Features at Risk

**Gunnison Basin**  
Major Environmental, Recreational  
and Scientific/Educational Segments

- Environmental and Recreational Segments
- Recreational Segments
- Scientific and Educational Segments
- Environmental Segments



**South Platte/Metro Basin**  
Candidate Environmental and  
Recreational Focus Areas

- Environmental Focus Area
- Environmental and Recreational Focus Area
- Recreational Focus Area

**Arkansas Basin**  
Environmental and Recreational  
Subcategory Count by HUC

- 1 - 2
- 3 - 4
- 5 - 7

**Basemap Legend**

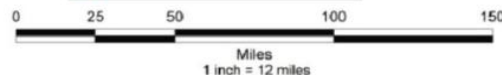
- Rivers and Streams
- Lakes and Reservoirs
- Cities and Towns
- Highways
- Counties
- Basins

**Southwest Basin**  
Environmental and Recreational  
Subcategory Count by Stream Segment

- 1
- 2 - 3
- 4 - 6

**Rio Grande Basin**  
Weighted Environmental and Recreational  
Subcategory Count by HUC

- 1 - 3
- 4 - 5
- 6 - 8



\*\* Note: See individual basin maps and documentation in Appendix D of the NCNA Mapping Report for detailed Needs Assessment information. \*\*



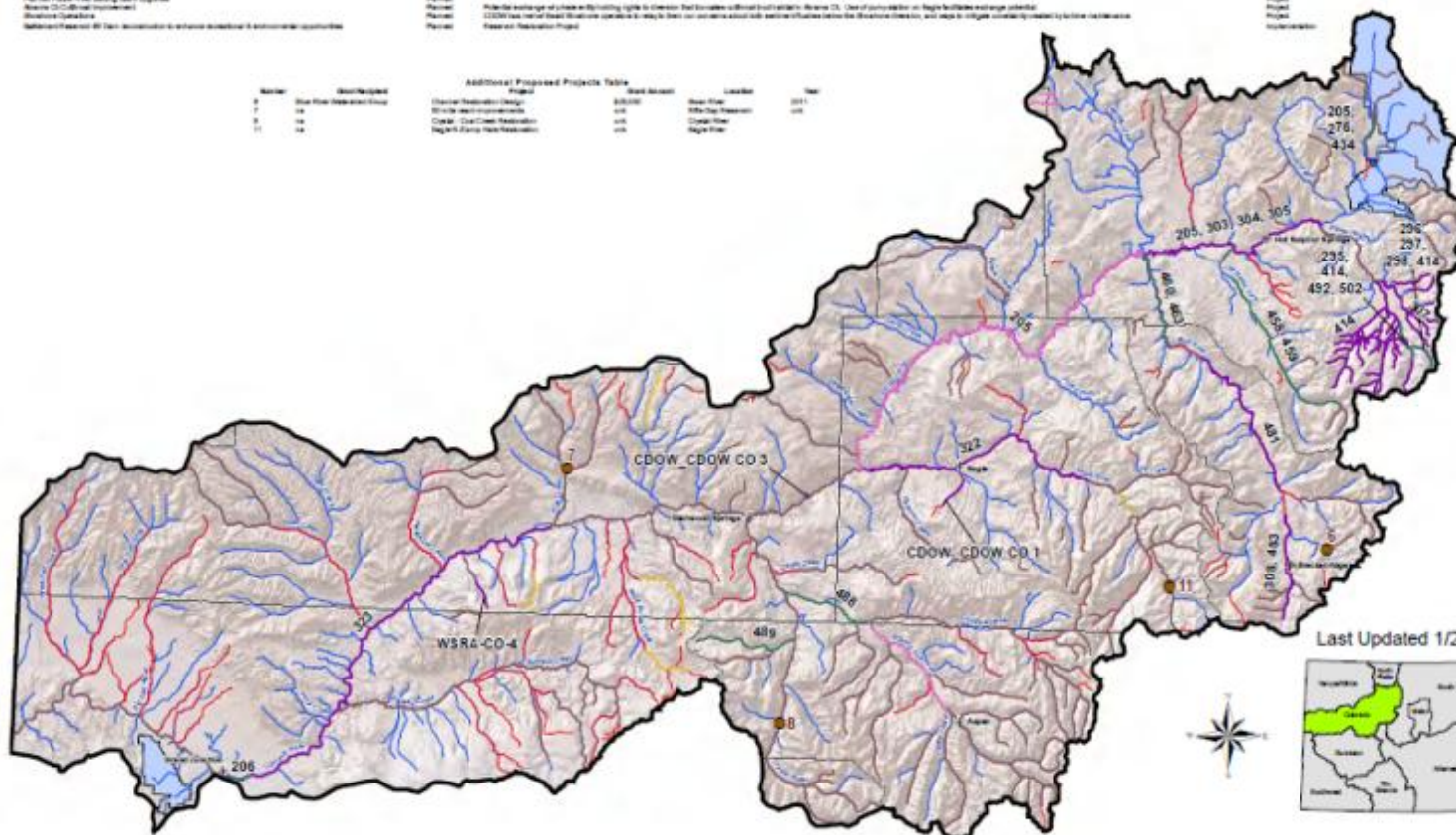
## Colorado Basin Nonconsumptive Needs Assessment Focus Map Proposed or Planned Projects

[illegible]

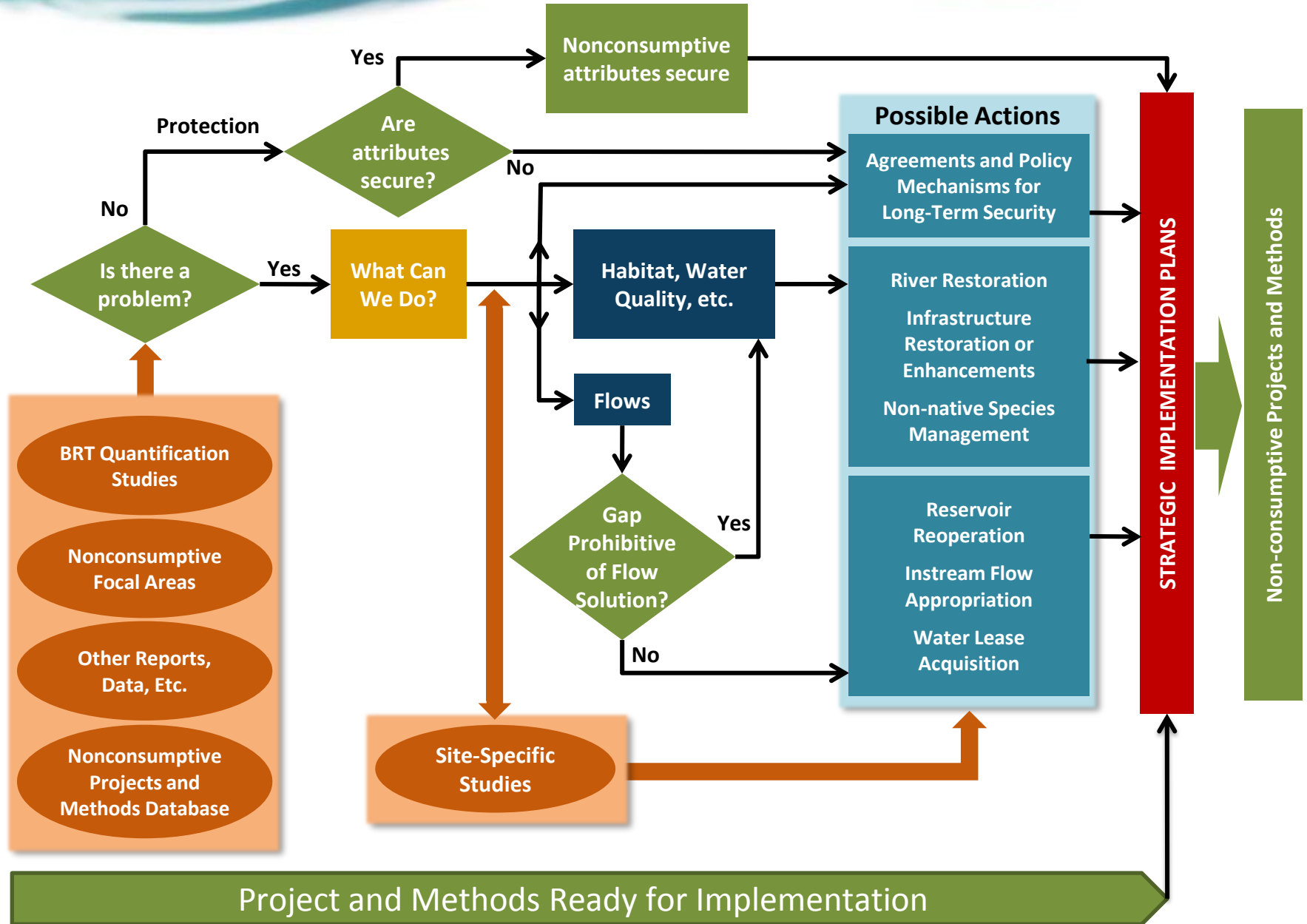
-  ISF Reaches Pending Decree  
 Recommended ISF Reaches  
**Planned/Proposed Projects**  
 Flow Protection  
 Project  
 Additional Planned Projects -2012  
 Basin Focus Areas  
 w/Existing Project or Method  
 Nonconsumptive Gap Areas  
 Rivers and Streams  
 Cities and Towns  
 National Parks  
 County Boundary

**\*\* Note: Use Project IDs to obtain further detail on planned or proposed projects. \*\***

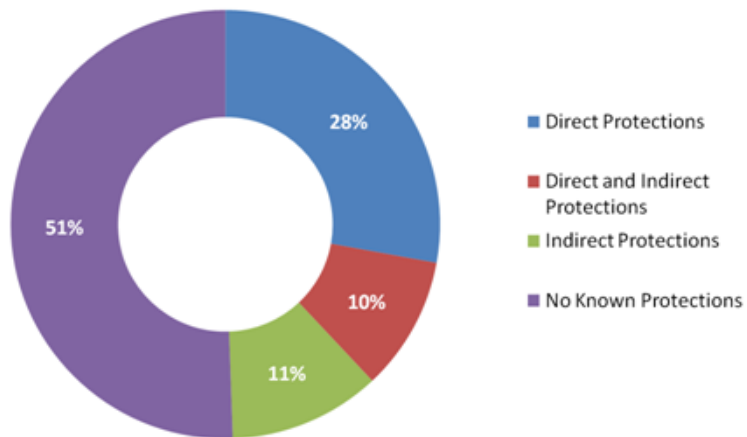
**DRAFT**



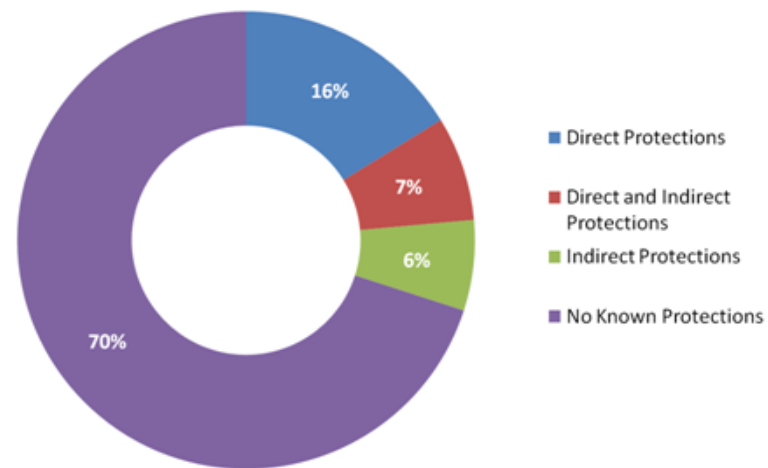
Last Updated 1/22/2013



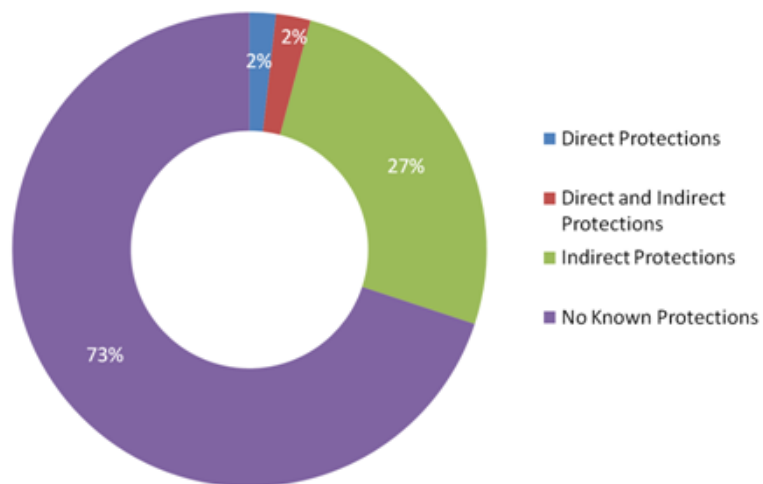
**Colorado River and Greenback Cutthroat Trout  
(3,288 Stream Miles)**



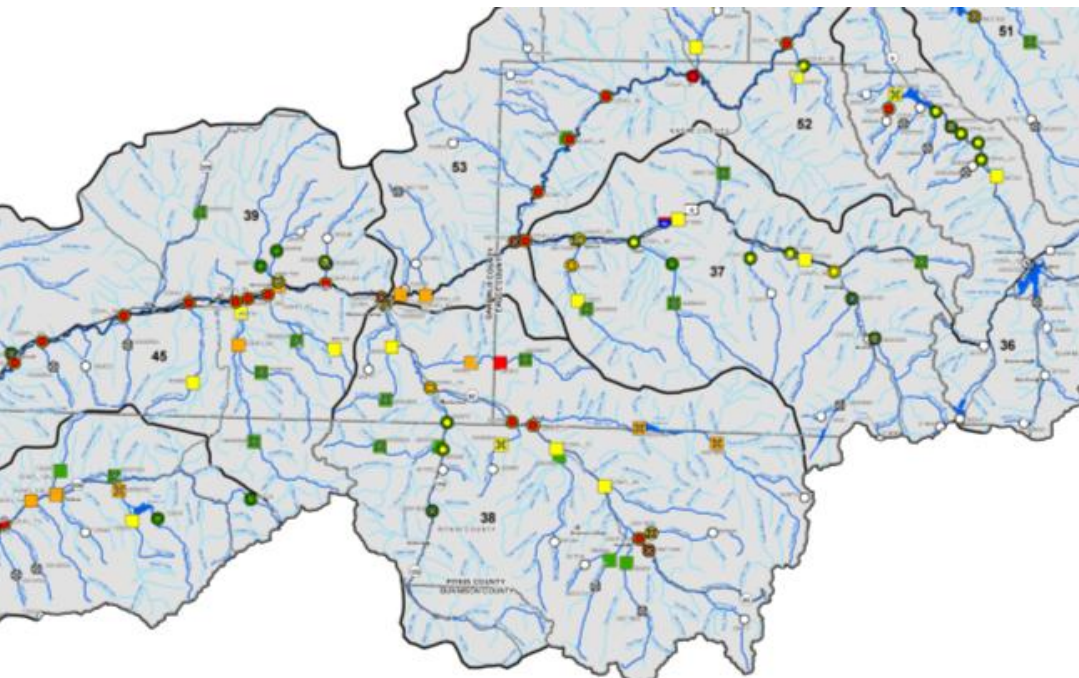
**Warmwater Fish (8,569 Stream Miles)**



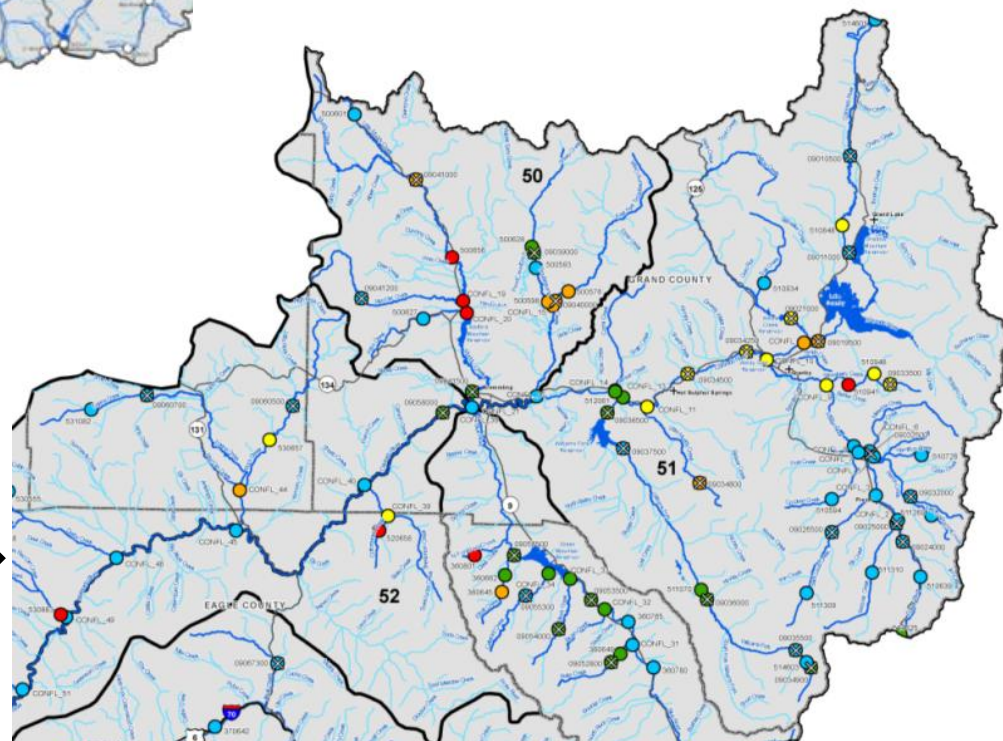
**Important Riparian and Wetland (18,767 Stream Miles)**



# Watershed Flow Evaluation Tool (WFET)



← Example Results – **Riparian**



Example Results – **Trout** →

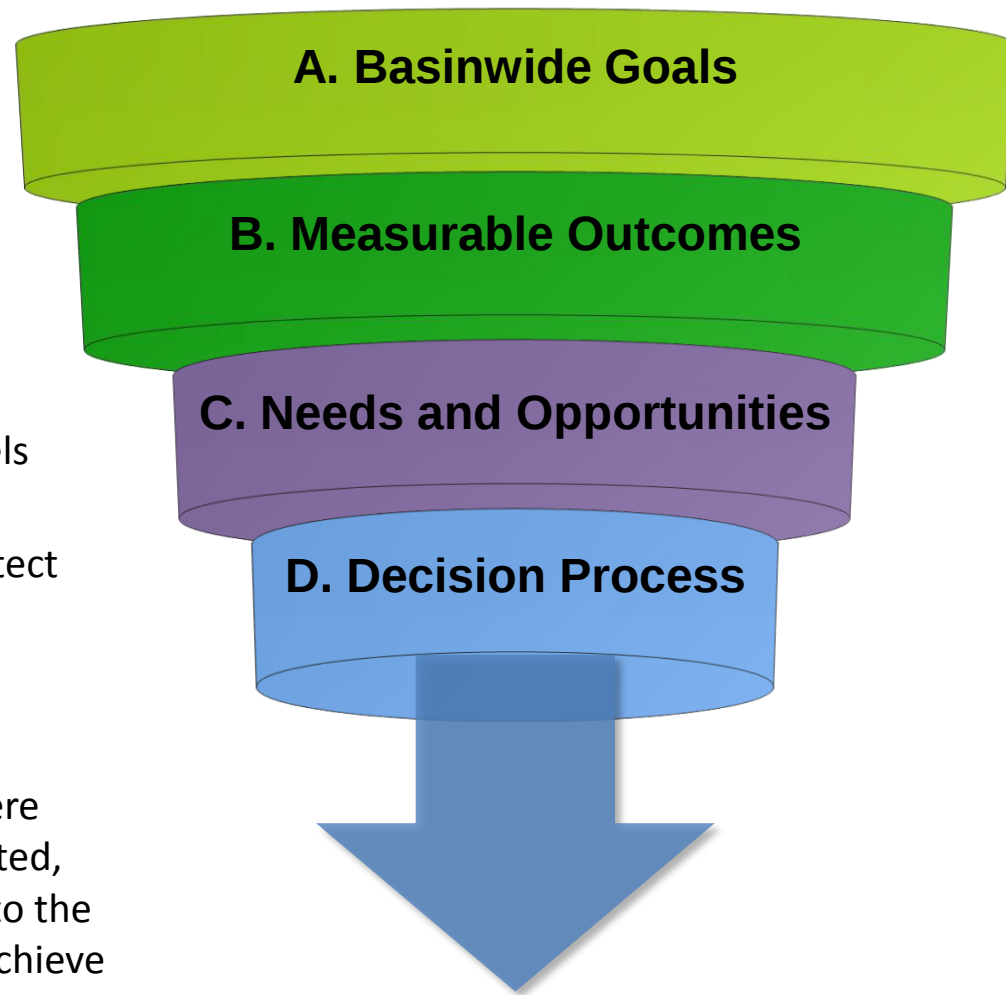
# Nonconsumptive Needs Toolbox

Step A example: Maintain population of native fish species so that none are listed.

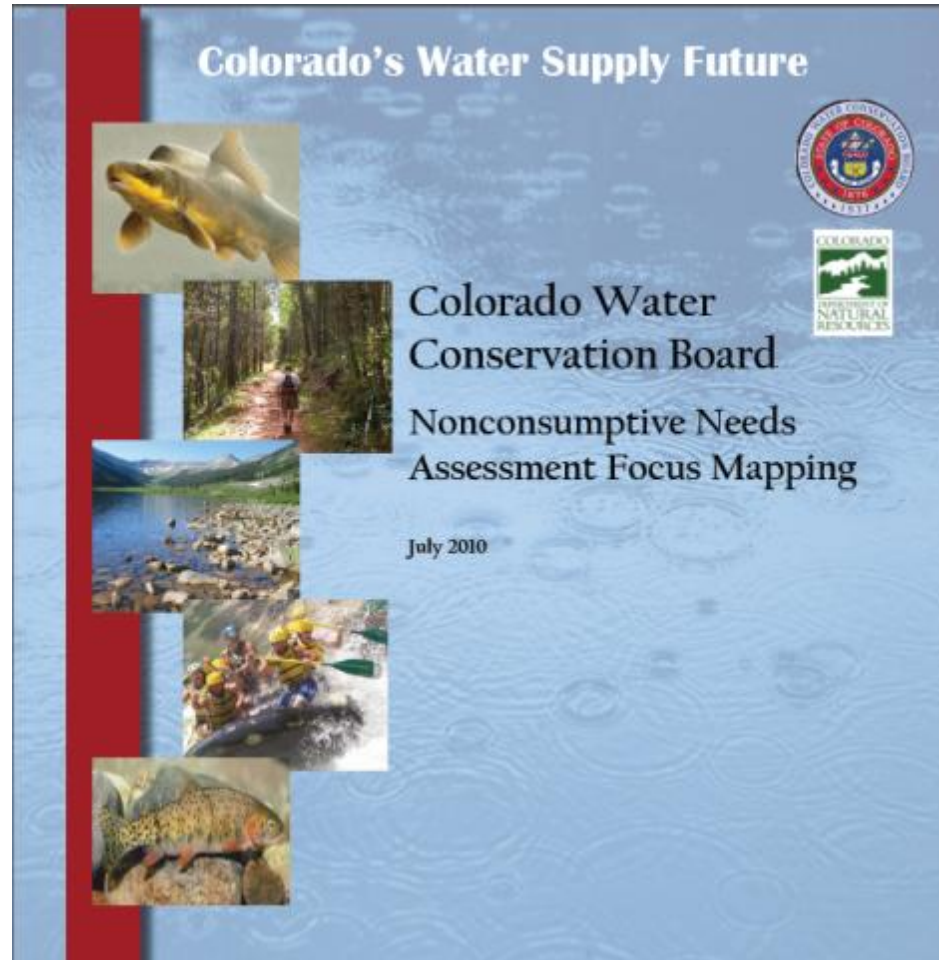
Step B example: Sustain 10 populations of bluehead sucker in 10 different river locations.

Step C example: Based on analysis of existing levels of protection, only five populations of bluehead sucker are protected. As a result, we need to protect an additional five populations to meet our established measurable outcomes.

Step D example: For one of the five locations where protection of bluehead sucker populations is limited, moving through the decision template may lead to the determination that reservoir reoperation could achieve desired outcomes.



# Original data – Attributes of Interest



# Original data – Attributes of Interest

Appendix B  
NCNA Mapping Data Sources

- Appendix B of  
Nonconsumptive  
Needs Assessment  
Focus Mapping  
(July 2010)

Table B-1: Arkansas Basin GIS Data and Sources

| SWSI 2 Shapefile                               | Data Source                                             |
|------------------------------------------------|---------------------------------------------------------|
| Greenback Cutthroat Trout Streams              | CDOW                                                    |
| Greenback Cutthroat Trout Lakes                | CDOW                                                    |
| Arkansas Darter                                | CDOW                                                    |
| Boreal Toad Known Breeding Sites               | CDOW                                                    |
| Significant Riparian/Wetland Plant Communities | CNHP                                                    |
| Instream Flow Streams                          | CWCB                                                    |
| Natural Lake Level Lakes                       | CWCB                                                    |
| Audubon Important Bird Areas                   | National Audubon Society                                |
| Whitewater Boating                             | Whitewater of the Southern Rockies<br>Southwest Paddler |
| Recreational In-Channel Diversion Structures   | CWCB                                                    |

| Additional Data Layers                                      | Data Source                                                                                                                                                                                                         |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bald Eagle Active Nestsites                                 | CDOW (NDIS)                                                                                                                                                                                                         |
| Piping Plover                                               | CDOW (NDIS)                                                                                                                                                                                                         |
| Least Tern                                                  | CDOW (NDIS)                                                                                                                                                                                                         |
| Colorado Birding Trail Locations                            | National Audubon Society                                                                                                                                                                                            |
| Waterfowl Hunting                                           | CDOW parcels with waterfowl hunting                                                                                                                                                                                 |
| Reservoir/Lake Fishing                                      | NCNA Committee Members, Trout Unlimited, Colorado Springs<br>CO State Parks Boatable Waters List<br><a href="http://parks.state.co.us/Boating/BoatableWaters/">http://parks.state.co.us/Boating/BoatableWaters/</a> |
| River/Stream Fishing                                        | NCNA Committee Members, Trout Unlimited, Colorado Springs                                                                                                                                                           |
| National Wetlands Inventory                                 | FWS, USGS<br><a href="http://www.fws.gov/wetlands/Data/DataDownload.html">http://www.fws.gov/wetlands/Data/DataDownload.html</a>                                                                                    |
| Colorado Outstanding Waters                                 | digitized from WQCD list<br><a href="http://www.blm.gov/nstc/WaterLaws/pdf/Colorado2.pdf">http://www.blm.gov/nstc/WaterLaws/pdf/Colorado2.pdf</a>                                                                   |
| Additional Wilderness Area and Wilderness Study Area Waters | digitized waters within WA and WSA boundaries not included in CO Outstanding Waters list                                                                                                                            |
| Additional Whitewater Boating                               | Colorado State Parks, NCNA Committee Members                                                                                                                                                                        |
| Flatwater Motorized and Non-motorized Boating               | CO State Parks Boatable Waters List<br><a href="http://parks.state.co.us/Boating/BoatableWaters/">http://parks.state.co.us/Boating/BoatableWaters/</a>                                                              |



# Original data – Projects

- Source: SWSI 2010 – Section 3, Appendix F
- 5 Main Sources

| Source Category  | Example                                    |
|------------------|--------------------------------------------|
| CDOW             | Great Plains Reservoir Restoration         |
| CWCB             | Mine Remediation through Wetland Treatment |
| ISF              | Currant Creek                              |
| NCNA Interviewed | Jackson Creek Wetlands Project             |
| Stewardship      | Conservation Easement                      |
| WSRA             | Tamarisk Control                           |

- **BIPs should update NCNA Interview projects and their status**

# Original data – Projects

- NCNA Interviewed Projects

**Table 3-1 Summary of Meetings to Collect Nonconsumptive Project and Methods Information**

| <b>Basin Roundtable</b> | <b>No. of Individuals or Organizations Contacted</b> | <b>No. of Meetings</b> | <b>No. Projects and Methods in Focus Areas</b> | <b>No. Projects and Methods Outside Focus Areas</b> | <b>Total No. Projects and Methods</b> |
|-------------------------|------------------------------------------------------|------------------------|------------------------------------------------|-----------------------------------------------------|---------------------------------------|
| Arkansas                | 7                                                    | 5                      | 40                                             | 0                                                   | 40                                    |
| Colorado                | 21                                                   | 12                     | 168                                            | 35                                                  | 203                                   |
| Gunnison                | 9                                                    | 4                      | 44                                             | 15                                                  | 59                                    |
| Metro                   | See South Platte                                     | See South Platte       | See South Platte                               | See South Platte                                    | See South Platte                      |
| North Platte            | 1                                                    | 1                      | 41                                             | 7                                                   | 48                                    |
| Rio Grande              | 10                                                   | 5                      | 59                                             | 0                                                   | 59                                    |
| South Platte            | 17                                                   | 14                     | 54                                             | 53                                                  | 107                                   |
| Southwest               | 17                                                   | 12                     | 84                                             | 10                                                  | 94                                    |
| Yampa-White             | 9                                                    | 4                      | 22                                             | 16                                                  | 38                                    |
| <b>TOTAL</b>            | <b>91</b>                                            | <b>57</b>              | <b>512</b>                                     | <b>136</b>                                          | <b>648</b>                            |

# All these data...so now what?

## Minimum BIP expectations:

1. SWSI 2010 Projects & Methods list
  - Review project name, type, location, basin, status
  - Provide status updates if applicable
  - Provide information for projects and methods not in list
2. RICDs
3. Wild & Scenic reaches

*Project can be implemented in the near-term?*

*Project meets Goals/Measurable Outcomes?*

|     | NO | YES                                                                        |
|-----|----|----------------------------------------------------------------------------|
| NO  |    |                                                                            |
| YES |    | <b>MINIMUM<br/>EXPECTATIONS FOR<br/>BASIN<br/>IMPLEMENTATION<br/>PLANS</b> |



# Gap Analysis Framework

- Designed to help BRTs evaluate projects and methods and identify where there may be opportunities to address gaps in nonconsumptive needs.
- Using the dataset generated from the Nonconsumptive Needs Assessment (NCNA), serves as an initial framework for organizing and categorizing existing Projects and Methods within each basin to consider potential gaps in protection.
- Helps to quantify existing levels of protection for attributes for basinwide goals and measurable outcomes → identify longer-term goals and outcomes.

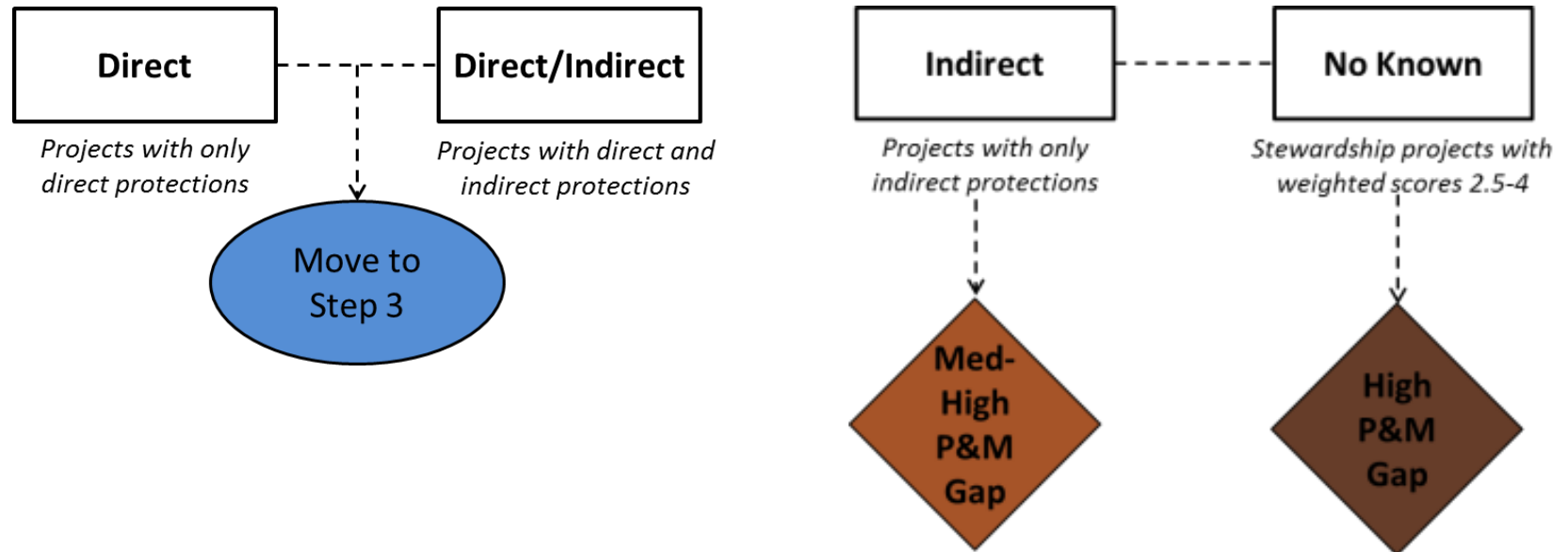
## STEP 1. IDENTIFY NONCONSUMPTIVE ATTRIBUTES WITHIN A PROJECT REACH

**Species**  
(fishes, birds,  
cottonwood, etc.)

**Habitat**  
(riparian, aquatic,  
plant communities)

**Recreation**  
(boating, fishing)

## STEP 2. CLASSIFY EXISTING PROTECTIONS



## STEP 3. FOR PROJECTS WITH DIRECT/INDIRECT PROTECTIONS, CATEGORIZE THE PROJECT TYPE

### STEP 3. FOR PROJECTS WITH DIRECT/INDIRECT PROTECTIONS, CATEGORIZE THE PROJECT TYPE

**Information/  
Knowledge**

*Projects emphasizing  
knowledge generation or data  
gathering (Plans, Studies, etc.)*



**ISFs/RICDs**

*Projects identified as  
Instream Flows or  
Recreational In-Channel  
Diversion Structures*

**Implementation**

*Projects emphasizing  
application (Flow Protection,  
Restoration, Habitat, etc.)*

**Stewardship**

*Stewardship projects with  
weighted scores 1-2.49*

All Direct or Direct and Indirect protections  
with NO state-listed species ----->  
(also includes federally-driven programs  
[e.g. Flow Agreement, Critical Habitat, PBOs, HCPs])

**Low  
P&M  
Gap**

All Direct protections WITH  
state-listed species ----->

**Med  
P&M  
Gap**

Both Direct and Indirect  
protections ----->

**Med  
P&M  
Gap**



**STEP 4. VERIFY PROTECTION CLASSIFICATIONS AND IDENTIFY LOCATIONS FOR  
ADDITIONAL PROJECTS AND METHODS**

**High  
P&M  
Gap**

A stream reach or waterbody that does not have a Project or Method that directly addresses nonconsumptive needs.

*\* Tends to be Stewardship (land management) with a SRGAP status score of 2.5-4.*

**Med-  
High  
P&M  
Gap**

A stream reach or waterbody that is highly in need of additional Projects and Methods to meet nonconsumptive needs due to significant gaps in existing or planned Projects and Methods.

**Med  
P&M  
Gap**

A stream reach or waterbody that is moderately in need of additional Projects and Methods to meet nonconsumptive needs due to the presence of Projects and Methods that may not be fully addressing nonconsumptive attributes.

**Low  
P&M  
Gap**

A stream reach or waterbody whose nonconsumptive needs are met with existing or planned Projects and Methods and is therefore a low priority for additional Projects and Methods.

*\*These projects should consider the Monitoring Program.*

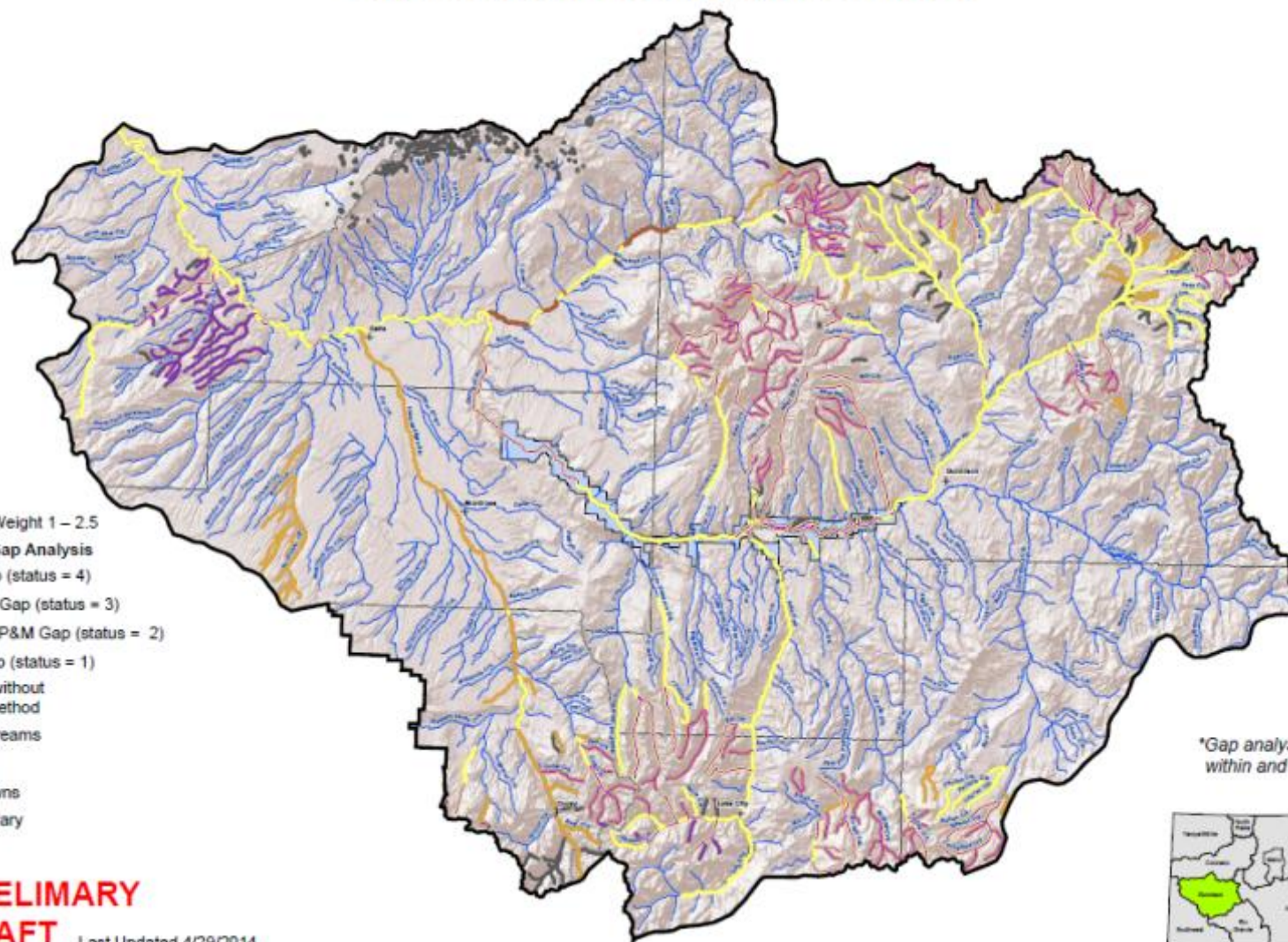
**Table 1: Existing Needs for Additional Protections by Attribute for Each Basin**

| Basin<br>Protection                                   | Arkansas |          |      |      |
|-------------------------------------------------------|----------|----------|------|------|
|                                                       | High     | Med-High | Med  | Low  |
| Arkansas Darter                                       | 0%       | 0%       | 1%   | 99%  |
| Arkansas Headwaters Recreation Areas                  | 0%       | 32%      | 29%  | 39%  |
| Arkansas State Wildlife Areas and State Fishing Units | 0%       | 0%       | 0%   | 99%  |
| Audubon important bird areas                          | 0%       | 0%       | 0%   | 100% |
| Birding Trails                                        | 0%       | 0%       | 0%   | 100% |
| Colorado Outstanding Waters                           | 0%       | 0%       | 100% | 0%   |
| Durango Natural Studies                               | 0%       | 1%       | 0%   | 99%  |
| Eligible Wild and Scenic                              | 0%       | 0%       | 100% | 0%   |
| Flatwater Boating                                     | 0%       | 0%       | 0%   | 100% |
| Gold Metal Trout Lakes                                | 0%       | 0%       | 0%   | 100% |
| Gold Metal Trout Streams                              | 0%       | 0%       | 0%   | 100% |
| Greenback Cutthroat Trout                             | 0%       | 3%       | 0%   | 97%  |
| High Recreation Lakes and Reservoirs                  | 0%       | 0%       | 0%   | 99%  |
| High Recreation Rivers                                | 0%       | 0%       | 0%   | 100% |
| Important Wetlands                                    | 0%       | 0%       | 0%   | 100% |
| Lake Fishing                                          | 0%       | 0%       | 0%   | 100% |
| Least Tern                                            | 0%       | 0%       | 0%   | 100% |
| Lesser Prairie Chicken                                | 0%       | 32%      | 0%   | 68%  |
| Piping Plover                                         | 0%       | 0%       | 0%   | 100% |

**Table 1: Existing Needs for Additional Protections by Attribute for Each Basin**

| Basin<br>Protection                  | Rio Grande |          |      |     |
|--------------------------------------|------------|----------|------|-----|
|                                      | High       | Med-High | Med  | Low |
| Boreal Toad                          | 0%         | 0%       | 100% | 0%  |
| Colorado Outstanding Waters          | 0%         | 0%       | 87%  | 13% |
| CWCB Instream Flow Water Rights      | 0%         | 0%       | 62%  | 38% |
| CWCB Natural Lake Level Water Rights | 0%         | 0%       | 100% | 0%  |
| Eligible Wild and Scenic             | 0%         | 0%       | 100% | 0%  |
| Federally Listed Critical Habitat    | 0%         | 0%       | 100% | 0%  |
| Flatwater Boating                    | 0%         | 0%       | 82%  | 18% |
| Gold Metal Trout Lakes               | 0%         | 0%       | 97%  | 3%  |
| Gold Metal Trout Streams             | 0%         | 0%       | 97%  | 3%  |
| Important Wetlands                   | 0%         | 0%       | 91%  | 9%  |
| Lake Fishing                         | 0%         | 0%       | 100% | 0%  |
| National Wetlands Inventory          | 0%         | 0%       | 88%  | 12% |
| Northern Cricket Frog                | 0%         | 0%       | 96%  | 4%  |
| Other Fishing Streams and Lakes      | 0%         | 1%       | 88%  | 11% |
| Rare Aquatic-dependent plants        | 0%         | 0%       | 96%  | 4%  |
| Rare Plants                          | 0%         | 0%       | 66%  | 33% |
| Rio Grande Chub                      | 0%         | 0%       | 90%  | 10% |
| Rio Grande Cutthroat Trout           | 0%         | 0%       | 88%  | 12% |
| Rio Grande Sucker                    | 0%         | 0%       | 98%  | 2%  |

## Gunnison Basin Nonconsumptive Needs Projects and Methods Gap Assessment



**PRELIMINARY  
DRAFT**

Last Updated 4/29/2014





## **Next Steps: Nonconsumptive Workshops for Individual Basins**

- Assistance with continued analysis through the Gap Analysis Framework:
  - Updating Projects and Methods, creating maps
  - Assessing levels and types of protection
  - Categorizing/filtering projects
    - Which areas need further study?
    - Where is no action needed?
    - What can be done?
    - Where is flow or water level quantification helpful?
    - Where can a project (restoration, flow, etc.) move forward?