

**FY-2004/05 PROPOSED SCOPE OF WORK for:**  
Tributary Basin Management Plans

**Project #: 114**

Lead Agency: U.S. Fish and Wildlife Service

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Category:

- Ongoing project
- Ongoing-revised project
- Requested new project
- Unsolicited proposal

Expected Funding Source:

- Annual funds
- Capital funds
- Other

I. Title of Proposal:

Develop management plan(s) for significant tributaries of the Upper Colorado River Basin that promotes recovery of endangered fishes and offsets impacts of existing and foreseeable future water depletions from these tributary basins to meet human needs.

II. Relationship to RIPRAP:

General Recovery Program Support Action Plan  
I.D. Develop tributary management plan

Green River Action Plan: White River

I.A. Develop estimates of basin water needs

I.B. Initially identify year-round flows needed for recovery

III.A. Reduce negative interactions between nonnative and endangered fishes

Colorado River Action Plan: Dolores River

III.A. Reduce negative interactions between nonnative and endangered fishes

IV.A.1.a. Implement CDOW's stocking plan

### III. Study Background/Rationale and Hypotheses:

Tyus and Saunders (2001) ranked tributaries throughout the Upper Colorado River Basin according to their contributions or potential contributions to the recovery of the four endangered fish species of the Upper Colorado River Basin. Several of the most important of these are either covered by an existing Programmatic Biological Opinion (Colorado River PBO, U.S. Fish and Wildlife Service 1999) or management plans currently under development or planned (Yampa/Little Snake and Gunnison rivers). Of the remaining tributaries, the White and Dolores rivers are ranked by Tyus and Saunders as making the greatest contribution or potential contribution to recovery (Table 1).

Table 1. Relative contributions of tributaries and obstacles to endangered species recovery (adapted from Tyus and Saunders 2001).

| Tributary                             | Contributions to Recovery |                       |       | Rank <sup>b</sup> | Obstacles to Recovery                    |
|---------------------------------------|---------------------------|-----------------------|-------|-------------------|--|
|                                       | Direct                    | Indirect <sup>a</sup> | Total |                   |  |
| <b>Green River Subbasin</b>           |                           |                       |       |                   |  |
| Yampa River                           | 5                         | 14                    | 19    | 1*                | Nonnatives                               |
| Little Snake River                    | 3                         | 11                    | 14    | 5*                | Nonnatives                               |
| Tributary Green River <sup>c</sup>    | 4                         | 6                     | 10    | 6*                | Flow regulation, temperature, nonnatives |
| Duchesne River                        | 3                         | 6                     | 9     | 8                 | Flow depletion, nonnatives               |
| White River                           | 3                         | 12                    | 15    | 4                 | Barrier, nonnatives                      |
| Price River                           | 2                         | 5                     | 7     | 10                | Flow depletion                           |
| San Rafael River                      | 3                         | 5                     | 8     | 9                 | Flow depletion                           |
| <b>Colorado River subbasin</b>        |                           |                       |       |                   |  |
| Tributary Colorado River <sup>d</sup> | 4                         | 14                    | 18    | 2*                | Barriers                                 |
| Plateau Creek                         | 1                         | 6                     | 7     | 10                | Barriers                                 |
| Gunnison River                        | 4                         | 13                    | 17    | 3                 | Barriers, water quality                  |
| Dolores River                         | 1                         | 9                     | 10    | 6                 | Water quality(?)                         |
| <b>Lake Powell</b>                    |                           |                       |       |                   |  |
| Dirty Devil Arm                       | 1                         | 5                     | 6     | 12                | Little prospect of recovery              |
| Escalante Arm                         | 1                         | 5                     | 6     | 12                | Little prospect of recovery              |

<sup>a</sup> Weighted score based on 1 point for low, 2 points for medium, and 3 points for high values in each of 5 different flow/sediment attributes

<sup>b</sup> Ranked by total score (\* covered by an existing or imminent PBO or BO.)

<sup>c</sup> Upstream from Yampa River – covered by Flaming Gorge BO

<sup>d</sup> Upstream from Gunnison River – covered by Colorado River (“15-mile reach”) PBO

## White River

The White River originates on the White River Plateau in NW Colorado and flows in a westerly direction into Utah, where it joins the Green River near Ouray. In Utah, the White River flows entirely within the Uintah and Ouray Reservation of the Ute Indian Tribe. Tyus and Saunders (2001) ranked the White River 4<sup>th</sup> out of 13 tributaries evaluated for their contribution to recovery. Only the Yampa River, “tributary” Colorado River and Gunnison River ranked higher however, these streams are covered under existing or imminent biological opinions and are not included in this scope of work.

Since 1980, 435 adult Colorado pikeminnow have been captured in the White River upstream to rivermile (RM) 138 and 2 adult razorback sucker were captured near RM 18 (Tyus and Saunders 2001). In 1984, Taylor Draw Dam was completed east of Rangely, Colorado, at about RM 100. It creates Kenney Reservoir, the only significant impoundment in the White River Basin. However, with only 13,800 AF of storage capacity out of an annual average yield of 500,000 AF (Colorado River Water Conservation District 1998), its greatest impact is the barrier it presents to migrating Colorado pikeminnow, denying them access to 50 miles (32%) of their historic habitat in the White River. The reservoir also is a likely source of nonnative fishes that escape downstream into habitat occupied by Colorado pikeminnow, as well as razorback sucker inhabiting the Green River near its confluence with the White River. Nonnative fishes may compete with and/or prey upon these and other native species.

## Dolores River

Tyus and Saunders (2001) rank the Dolores River 6<sup>th</sup> in terms of its potential contribution to recovery. It ranks below the Little Snake River and is co-equal with the tributary Green River; however, these streams are covered under existing or imminent biological opinions and are not included in this scope of work.

The Dolores River flows out of the San Juan Mountains in SW Colorado into SE Utah, where it enters the Colorado River near Cisco, Utah. The basin encompasses about 4,600 square miles. Peak flows are highly variable with a 50-year high of 17,400 cfs (1958) and low of 1,260 cfs (1996). McPhee Dam, completed in 1984 on the Dolores River at RM 200 near the town of Dolores, Colorado, impounds about 381,000 AF (229,000 AF of active storage) for irrigation, municipal and industrial water supply, hydroelectric generation, recreation, fish and wildlife enhancement, and flood control (U.S. Bureau of Reclamation 2001). McPhee Dam and Reservoir attenuate peak flows and augment base flows. However, peak flows as low as 2,110 cfs (1981) were measured at Cisco prior to construction of McPhee Dam (U.S. Geological Survey 2001). The San Miguel River is the only significant tributary to the Dolores downstream from McPhee Dam; unregulated by dams and reservoirs, the San Miguel provides most of the water to the lower reaches of the Dolores during periods of low water.

Management plan(s) will be developed for these and possibly other tributaries to serve as the bases for the U.S. Fish and Wildlife Service (FWS) to render PBO(s), which will encompass both federal and non-federal existing and future water development projects in each of these tributary basins. Management plan(s) will quantify water depletions to be covered by the PBO(s), as well as those recovery actions designed to offset the impacts of depletions and assist in recovery of the endangered fish. Recovery actions will include provision for and protection of instream flows, habitat restoration and maintenance, nonnative fish control, stocking endangered fishes, and monitoring endangered fish populations and their habitats.

IV. Study Goals, Objectives, End Product:

A. Goal: The ultimate goal of the Tributary Management Plan(s) is to contribute to the recovery of endangered fishes while allowing depletions of water for existing and foreseeable future human needs to continue in accordance with state water law and interstate compacts.

B. Objectives:

1. Develop a framework to address issues raised by Recovery Program participants and others.
- 2.. Develop consumptive use (demand) projections for tributary basins describing the amount of water that is needed to meet current and foreseeable future human needs.
3. Describe when and how much water is needed to meet the seasonal flow needs of the endangered fishes under current and foreseeable future demand conditions.
4. Develop and implement actions to reduce/minimize impacts on native fishes due to the presence of competitive and predatory nonnative fishes.
5. Identify other management actions for the tributaries as may be necessary to facilitate recovery of the endangered fishes.
6. Develop a management plan that incorporates the above items in cooperation with local stakeholders, the states of Colorado and Utah, affected Tribes, federal agencies and others, as appropriate.
7. Develop and implement a formal agreement among appropriate parties to implement the management plan.

C. End Products:

1. Tributary report (Tyus and Saunders 2001)
2. White River flow recommendations (Modde et al. 2003, pending approval)
3. Consumptive use (demand) projections ca. 2050
4. Draft Tributary Management Plan/EA
5. Final Tributary Management Plan/EA
6. Biological Assessment
7. Formal agreement between the FWS, states of Colorado and Utah, Tribes, and others as appropriate to implement the Tributary Management Plan.
8. Programmatic Biological Opinion

V. Study area:

The geographic scope of depletions to be considered in the Tributary Management Plan(s) encompasses: 1) the White River and its tributaries from its headwaters downstream to its confluence with the Green River near Ouray, Utah; 2) the Dolores River and its tributaries from its headwaters downstream to its confluence with the Colorado River near Cisco, Utah; and 3) other tributary basins as deemed necessary and appropriate by the Recovery Program. Recovery actions may be implemented in the Middle Green River and the mainstem Colorado River in addition to or in lieu of similar actions in the tributaries themselves; these actions would benefit migratory populations of Colorado pikeminnow and razorback sucker that inhabit both the Green and White rivers or the Colorado and Dolores rivers.

VI. Study Methods/Approach

Overall direction for development of the Tributary Management Plan(s) will be provided by a workgroup, comprised of representatives from the States of Colorado and Utah, FWS, USBR, other federal agencies, as appropriate, environmental groups, water users, tribes and other stakeholders from the affected tributary basins.

VII. Task Description

1. Determine year-round instream flow needs of the endangered fishes in the White and Duchesne rivers (undergoing revision).
2. Identify tributary basins for which existing biological opinions are either lacking or do not adequately cover existing and foreseeable future depletions.
3. Estimate current and foreseeable future (ca. 2050) depletions from the White, Dolores, and/or other tributary river basins identified under Task 2 (separate SOW).

4. Identify and evaluate feasible water management alternatives to satisfy FWS flow recommendations while allowing for current and foreseeable future depletions; identify, evaluate and describe other site-specific recovery actions, as appropriate.
  - a. Work with CWCB, UDWR hydrologists and tribes to fully describe and evaluate the hydrologic impacts of water management options for tributaries.
5. Determine NEPA and ESA requirements of proposed action(s) under the management plan, as necessary, and initiate scoping.
6. Collect and analyze environmental data, evaluate and document beneficial and adverse impacts of implementing the elements of the management plan.
7. Prepare draft management plan; prepare draft EA for the plan.
8. Prepare final management plan; prepare final EA for the plan.
9. Develop/execute Cooperative Agreement to implement the management plan.
10. Public Involvement Activities: Implement public outreach activities to solicit scoping input to and comments on the management plan.
11. Technical Project Support and Coordination. Provide technical support and coordination related to the development of the Tributary Basin Management Plan:
  - a. Preparing/reviewing scopes of work related to the development and implementation of the Tributary Basin Management Plan(s)
  - b. Coordinating activities of PBO workgroup(s)
  - c. Coordinating public involvement activities
  - d. Responding to requests for information
  - e. Performing staff work for the PBO workgroup(s)
  - f. Writing, reviewing and/or synthesizing documents

VIII. FY-2004 Work

Task 3. Estimate future human water demands

Deliverables: Final demand projections ca. 2050  
 FY 2004 Budget: \$0 (Demands TBD by Colorado and Utah)

Task 10. Public Involvement Activities

Deliverables: Separate scope of work and annual report  
 FY 2004 Budget: \$0 (see scope of work for Project # PIP-12K)

Task 11. Technical Project Support and Coordination

Deliverables: Scope of work; annual work plan; annual report  
FY 2004 Budget: \$0 (see PD's Program Management scope of work)

FY 2005 Work

Task 4. Identify, evaluate and describe feasible water management alternatives

Deliverables: Annual report  
FY 2005 Budget: \$0 (Project # 19B & 71, PD's Program Management)

Task 5. NEPA scoping

Deliverables: Scope of work for NEPA compliance activities  
FY 2005 Budget: \$0 (funded under Task 10)

Task 6. Collect and analyze environmental data, evaluate and document impacts of implementing the management plan

Deliverables: TBD; annual report  
FY 2005 Budget: TBD (after NEPA scoping)

Task 7. Prepare draft Tributary Basin Management Plan/EA/BA

Deliverables: Draft Tributary Basin Management Plan/EA/BA  
FY 2005 Budget: \$0 (funded under Program Management)

Task 10. Public Involvement Activities

Deliverables: Separate scope of work and annual report  
FY 2005 Budget: \$0 (see scope of work for Project # PIP-12K)

Task 11. Technical Project Support and Coordination

Deliverables: Scope of work; annual work plan; annual report  
FY 2005 Budget: \$0 (see PD's Program Management scope of work)

IX. Budget Summary

|          | <u>FY 2004</u> | <u>FY 2005</u> | <u>TOTAL</u> | <u>COMMENTS</u>        |
|----------|----------------|----------------|--------------|------------------------|
| Task 1:  | –              | –              | –            | completed in FY 2003   |
| Task 2:  | –              | –              | –            | completed in FY 2003   |
| Task 3:  | \$0            | \$0            | \$0          | No funds programmed    |
| Task 4:  | \$0            | \$0            | \$0          | Projects # 19B & 71    |
| Task 5:  | –              | \$0            | \$0          | Program Management     |
| Task 6:  | –              | \$100,000      | \$100,000    | Separate SOW needed(?) |
| Task 7:  | –              | \$0            | \$0          | Program Management     |
| Task 8:  | –              | \$0            | \$0          | Program Management     |
| Task 9:  | –              | \$0            | \$0          | Program Management     |
| Task 10: | \$0            | \$0            | \$0          | Project # PIP-12K      |
| Task 11: | <u>\$0</u>     | <u>\$0</u>     | <u>\$0</u>   | Program Management     |
|          | \$0            | \$100,000      | \$120,000    |                        |

X. Reviewers:

FWS (Bob Muth, Angela Kantola, George Smith)  
 BR (Brent Uilenberg, Bob Norman)

XI. References

Colorado River Water Conservation District. 1998. Kenney Reservoir sediment assessment. Memo from David Merritt to Board of Directors. July 6, 1998. Available: [www.crwcd.org/news/reports/kensed.htm](http://www.crwcd.org/news/reports/kensed.htm)

Tyus, H.M. and J.F. Saunders. 2001. An evaluation of the role of tributary streams for recovery of endangered fishes in the Upper Colorado River Basin, with recommendations for future recovery actions. Final Report to Upper Colorado River Endangered Fish Recovery Program; Project No. 101. Univ. of Colorado, Boulder.

U.S. Bureau of Reclamation. 2001. Dolores Project: McPhee Dam & Reservoir statistics. Available: [dataweb.usbr.gov/dams/co82915.htm](http://dataweb.usbr.gov/dams/co82915.htm)

U.S. Fish and Wildlife Service. 1999. Final programmatic biological opinion for Bureau of Reclamation's operations and depletions, other depletions, and funding and implementation of Recovery Program actions in the Upper Colorado River above the confluence with the Gunnison River. Mountain -Prairie Region. Denver.

U.S. Geological Survey. 2001. NWIS Annual discharge and peak flow data for the Dolores River near Cisco, UT, 1951–2000 period of record. Available: [water.usgs.gov/ut/nwis/nwisman/?site\\_no=09180000&agency\\_cd=USGS](http://water.usgs.gov/ut/nwis/nwisman/?site_no=09180000&agency_cd=USGS)