

streams within the Bighorn Mountains were the most likely to provide substantial habitat for Yellowstone cutthroat trout historically. This watershed also supports warm-water prairie fish communities, and these streams have low potential for Yellowstone cutthroat trout restoration. Fish distribution and abundance data from MFISH (Table 6-68) illustrate the tendency for cold-water species to occupy higher elevation reaches and for warm-water species to be most abundant in the downstream portions of the watershed.

**Table 6-68: Distribution and abundance of fishes in the Little Bighorn River (data from MFISH).**

| <i>Begin Mile</i> | <i>End Mile</i> | <i>Species</i>     | <i>Abundance</i> | <i>Data Rating</i> |
|-------------------|-----------------|--------------------|------------------|--------------------|
| 0                 | 32              | Brassy minnow      | Unknown          | EFMSO              |
| 0                 | 31              | Brown trout        | Rare             | NSPJ               |
| 31                | 118             | Brown trout        | Common           | NSPJ               |
| 0                 | 31              | Channel catfish    | Common           | EFMSO              |
| 0                 | 31              | Common carp        | Unknown          | EFMSO              |
| 0                 | 32              | Fathead minnow     | Common           | EFMSO              |
| 0                 | 32              | Flathead chub      | Common           | EFMSO              |
| 0                 | 32              | Longnose dace      | Common           | EFMSO              |
| 0                 | 118             | Longnose sucker    | Common           | NSPJ               |
| 0                 | 32              | Mountain sucker    | Common           | EFMSO              |
| 31                | 118             | Mountain whitefish | Common           | NSPJ               |
| 31                | 118             | Rainbow trout      | Common           | NSPJ               |
| 0                 | 32              | River carpsucker   | Rare             | EFMSO              |
| 0                 | 32              | Shorthead redhorse | Abundant         | EFMSO              |
| 0                 | 31              | Smallmouth bass    | Common           | NSPJ               |
| 28                | 29              | Stonecat           | N/A              | EFSSO              |
| 0                 | 31              | White sucker       | Common           | EFMSO              |

A lack of fish survey data is a major constraint in developing a specific strategy for Yellowstone cutthroat trout in the Montana portions of the Little Bighorn watershed. Biologists from the USFWS and BIA began survey efforts in 2010. Subsequent iterations of this strategy will include their findings and recommendations.

## 7.0 Summary

Conservation of Yellowstone cutthroat trout in Montana will require an integrated approach that addresses the various threats to the species. The Agreement for cutthroat trout conservation establishes goals, objectives, and priorities for cutthroat trout conservation (MCTSC 2007), and this strategy provides a framework for meeting these goals and objectives

The available information on waters within the historic range of Yellowstone cutthroat trout in Montana provides an initial screen in evaluating potential conservation needs. The identified needs relate to goals and objectives of the Agreement, and conservation priorities (Table 7-1). Review of the available information for each body of water or sub-watershed allowed generation of a list of potential conservation needs. This analysis provides the basis for prioritizing potential

projects following the framework detailed in the Agreement. Summary tables for each stream or sub-watershed described in Chapter 6.0 are in Appendix A.

**Table 7-1: Basis for prioritizing potential actions to meet goals and objectives of the Agreement.**

| <i><b>Potential Conservation Needs</b></i>                                                  | <i><b>Relation to Agreement and Conservation Planning</b></i>                                                                                                                              |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maintain, secure, and enhance existing conservation populations                             | The highest conservation priority is to maintain, secure, and enhance conservation populations                                                                                             |
| Identified opportunities to restore YCT in historic range                                   | Restoring YCT to stream where they have been extirpated is the 2 <sup>nd</sup> highest priority                                                                                            |
| Identified opportunities to establish YCT in historically fishless waters                   | This action is 3 <sup>rd</sup> highest priority if introductions would not harm other species                                                                                              |
| Identified opportunities to protect a fluvial life history strategy                         | Maintaining the diversity of life-history strategies is a goal of the Agreement.                                                                                                           |
| Potential opportunities to restore fluvial life history strategy                            | Maintaining the diversity of life-history strategies is a goal of the Agreement.                                                                                                           |
| Presence of nonnative salmonids                                                             | Nonnative salmonids pose a considerable threat to YCT, and removal or suppression is often consistent with the first and second priorities for YCT conservation                            |
| Potential need for barrier                                                                  | The agreement acknowledges isolating YCT from nonnative salmonids may be necessary to allow populations to persist.                                                                        |
| Identified need for survey due to a lack of fisheries data or the age of the available data | This category relates to two objectives of the Agreement, which entail continued survey to identify populations and monitoring to evaluate trends and status of YCT populations.           |
| Identified projects to restore habitat or otherwise improve conditions for YCT              | The Agreement includes habitat restoration among needed conservation actions to maintain conservation populations, or to increase the suitability of the habitat in restoring populations. |
| Subject of current or pending conservation actions                                          | This category provides an accounting of the number of projects completed or pending, and assists in determining if efforts to meet conservation goals and objectives are sufficient.       |

Reviews in Chapter 6.0 allow calculation of the number of potential conservation projects identified in the categories described in Table 7-1. This review identified 51 known or potential conservation populations, and maintaining these is consistent with the highest priority for Yellowstone cutthroat trout conservation in Montana. Most of these populations are in the Upper Yellowstone Subbasin, although most HUCs retain at least one conservation population. Review of the available information identified 41 opportunities to restore Yellowstone cutthroat trout within historically occupied streams, which is consistent with the second highest priority in cutthroat trout conservation. Establishing Yellowstone cutthroat trout populations in previously fishless water is the third highest priority, and 16 potential projects exist in Montana.

**Table 7-2: Summary of potential conservation actions per 4<sup>th</sup> code hydrologic unit. Column headings follow potential conservation needs listed in Table 7-1)**

| <i>HUC</i>         | <i>Maintain, Secure, and Enhance Conservation Populations</i> | <i>Restore within Historic Range</i> | <i>Establish or Protect in Previous-y Fishless Waters</i> | <i>Protect Fluvial Life-History Strategy</i> | <i>Restore Fluvial Life-History Strategy</i> | <i>Remove Non-native Fishes</i> | <i>Construct Barriers to Prevent Invasion by Non-natives</i> | <i>Survey Needed</i> | <i>Potential Habitat Restoration Projects Identified</i> | <i>Subject of Past or Current Conservation Actions</i> |
|--------------------|---------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------|---------------------------------|--------------------------------------------------------------|----------------------|----------------------------------------------------------|--------------------------------------------------------|
| 10070001           | 7                                                             | 3                                    |                                                           |                                              |                                              | 5                               | 5                                                            | 6                    | 1                                                        | 1                                                      |
| 10070002           | 28                                                            | 13                                   | 9                                                         | 15                                           | 18                                           | 31                              | 24                                                           | 41                   | 25                                                       | 23                                                     |
| 10070003           | 4                                                             |                                      |                                                           | 1                                            | 2                                            | 2                               |                                                              | 5                    | 4                                                        | 1                                                      |
| 10070004           |                                                               |                                      |                                                           |                                              |                                              |                                 |                                                              |                      |                                                          |                                                        |
| 10070005           | 3                                                             | 5                                    | 4                                                         |                                              |                                              | 6                               | 3                                                            | 7                    | 1                                                        | 3                                                      |
| 10070006           |                                                               | 10                                   | 1                                                         |                                              |                                              | 11                              | 1                                                            | 8                    |                                                          | 2                                                      |
| 10070007           |                                                               |                                      |                                                           |                                              |                                              |                                 |                                                              |                      |                                                          |                                                        |
| 10070008           | 2                                                             | 3                                    | 1                                                         |                                              |                                              | 5                               | 3                                                            | 2                    |                                                          | 1                                                      |
| 10080010           | 4                                                             | 3                                    | 1                                                         |                                              |                                              | 6                               | 4                                                            | 5                    | 4                                                        | 3                                                      |
| 10080014           | 1                                                             | 1                                    |                                                           |                                              |                                              | 1                               |                                                              | 1                    | 2                                                        | 2                                                      |
| 10080015           | 1                                                             | 3                                    |                                                           |                                              |                                              | 3                               | 3                                                            | 3                    | 3                                                        |                                                        |
| 10080016           |                                                               |                                      |                                                           |                                              |                                              |                                 |                                                              | 1                    |                                                          |                                                        |
| <b>Grand Total</b> | <b>51</b>                                                     | <b>41</b>                            | <b>16</b>                                                 | <b>16</b>                                    | <b>20</b>                                    | <b>70</b>                       | <b>43</b>                                                    | <b>79</b>            | <b>40</b>                                                | <b>36</b>                                              |

Protecting the diversity of life histories is among the goals of the Agreement, and numerous opportunities exist to protect or restore fluvial runs, with most being in the Upper Yellowstone Subbasin. Most of these potential projects would entail efforts to increase water use efficiency and obtain voluntary contributions from water rights holders to maintain sufficient stream flow during spawning, incubation, and drift. Related projects may include alterations to diversion structures or other features blocking fish passage to allow spawners access to streams. Likewise, installation of screens on diversions may be useful in preventing losses of adults or fry.

Nonnative species present a widespread constraint on remaining conservation populations and are abundant in streams where reestablishment of Yellowstone cutthroat trout is possible. The data review identified 70 cases where removal of nonnatives may be among actions needed to conserve or restore specific Yellowstone cutthroat trout populations (Table 7-2). The preferred approach to removal will need to be decided on a case-by-case basis. In some situations, mechanical removal using electrofishing in streams, or gill nets in lakes, may be the best option. In others, chemical removal may provide the most efficient means in meeting conservation goals. Factors to be considered in prioritizing waters for removal of nonnatives will include presence of a conservation population of Yellowstone cutthroat trout. Reestablishing a population in waters where they have been extirpated is a lower priority than securing existing populations. Other considerations include the amount of habitat available for a secured population and the feasibility of achieving full removal. Complex habitat, such as beaver dam complexes, makes mechanical and chemical removal more challenging.

As Yellowstone cutthroat trout populations do not typically fare well in sympatry with nonnative species, barrier construction to prevent invasion is among the potential conservation actions required to secure habitat for Yellowstone cutthroat trout. Review of stream narratives in Chapter 6.0 identified 43 scenarios where a barrier may be a preferred option. The cost of barriers varies with the type employed. For example, perched culverts are relatively inexpensive options. In contrast, stream-spanning concrete structures can cost more than \$400,000. Factors to consider in prioritizing a stream for a barrier includes the amount of protected habitat, the genetic status of the population being protected, and the potential for the barrier to have negative consequences in terms of limiting access to important habitat. Evaluation of the trade-offs between securing a population and limiting fish movement and gene flow must be at a major consideration with every potential barrier project.

The Agreement places continued sampling to identify remaining Yellowstone cutthroat trout populations, and monitoring to determine trends as key objectives. The stream narratives in Chapter 6.0 identified 79 streams or sub-watersheds where survey was warranted to meet the objectives of the agreement. These investigations will be incorporated into future iterations of this conservation strategy, and the findings will likely result in modification of appropriate conservation actions for waters in Montana.

Data reviews identified numerous potential habitat restoration projects for streams in the planning area. These included habitat restoration projects and streams where implementation of agricultural BMPs would benefit habitat and water quality. The number of streams with identifiable projects is likely to grow as conservation partners conduct additional field surveys. In addition, water quality planning efforts underway to meet water quality goals will also identify projects likely to benefit Yellowstone cutthroat trout.

Review of the available information for waters in the Yellowstone cutthroat trout's historic range in Montana found that agencies and landowners have been actively working towards meeting the goals and objectives of the Agreement, with 36 streams or sub-watersheds having completed, ongoing, or pending projects. The agreement calls for implementation of 10 projects per year to benefit Yellowstone cutthroat trout. The number of identified potential projects will likely grow in future iterations of this strategy, as conservation partners work towards meeting the goals and objectives of the Agreement.

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## 9.0 Appendix A

This appendix contains tables detailing findings of data reviews for individual streams or sub-watersheds addressed in 5.0 Conservation Schedule and Milestones.

**Table 9-1: Summary of potential conservation actions to maintain, restore, and enhance Yellowstone cutthroat trout in the Yellowstone Headwaters Subbasin (HUC 10070001).**

| <i>Stream</i>     | <i>Maintain, Secure, and Enhance Conservation Populations</i> | <i>Restore YCT within Historic Range</i> | <i>Establish or Protect in Previously Fishless Waters</i> | <i>Protect Fluvial Life-History Strategy</i> | <i>Restore Fluvial Life-History Strategy</i> | <i>Remove Non-native Fishes</i> | <i>Construct Barriers to Prevent Invasion by Nonnatives</i> | <i>Survey Needed</i> | <i>Potential Habitat Restoration Projects Identified</i> | <i>Subject of Past or Current Conservation Actions</i> |
|-------------------|---------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------|---------------------------------|-------------------------------------------------------------|----------------------|----------------------------------------------------------|--------------------------------------------------------|
| Soda Butte Creek  | ✓                                                             | ✓                                        |                                                           |                                              |                                              | ✓                               | ✓                                                           |                      | ✓                                                        | ✓                                                      |
| Pebble Creek      | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                               | ✓                                                           |                      |                                                          |                                                        |
| Slough Creek      | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                               | ✓                                                           |                      |                                                          |                                                        |
| Buffalo Creek     | ✓                                                             |                                          |                                                           |                                              |                                              |                                 |                                                             | ✓                    |                                                          |                                                        |
| Hellroaring Creek | ✓                                                             |                                          |                                                           |                                              |                                              |                                 |                                                             | ✓                    |                                                          |                                                        |
| Yellowstone River | ✓                                                             |                                          |                                                           |                                              |                                              |                                 |                                                             | ✓                    |                                                          |                                                        |
| Bear Creek        |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                               | ✓                                                           | ✓                    |                                                          |                                                        |
| Eagle Creek       |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                               | ✓                                                           | ✓                    |                                                          |                                                        |
| Reese Creek       | ✓                                                             |                                          |                                                           |                                              |                                              |                                 |                                                             | ✓                    |                                                          |                                                        |
| <b>Total</b>      | <b>7</b>                                                      | <b>3</b>                                 | <b>0</b>                                                  | <b>0</b>                                     | <b>0</b>                                     | <b>5</b>                        | <b>5</b>                                                    | <b>6</b>             | <b>1</b>                                                 | <b>1</b>                                               |

**Table 9-2: Summary of potential conservation actions to maintain, restore, and enhance Yellowstone cutthroat trout in the Upper Yellowstone Subbasin (HUC 10070002).**

| <i>Stream</i>      | <i>Maintain, Secure, and Enhance Conservation Populations</i> | <i>Restore YCT within Historic Range</i> | <i>Establish or Protect in Previously Fishless Waters</i> | <i>Protect Fluvial Life-History Strategy</i> | <i>Restore Fluvial Life-History Strategy</i> | <i>Remove Nonnative Fishes</i> | <i>Construct Barriers to Prevent Invasion by Nonnatives</i> | <i>Survey Needed</i> | <i>Potential Habitat Restoration Projects Identified</i> | <i>Subject of Past or Current Conservation Actions</i> |
|--------------------|---------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------|-------------------------------------------------------------|----------------------|----------------------------------------------------------|--------------------------------------------------------|
| Yellowstone River  | ✓                                                             |                                          |                                                           |                                              |                                              |                                |                                                             |                      | ✓                                                        | ✓                                                      |
| Beattie Gulch      |                                                               |                                          |                                                           |                                              | ✓                                            |                                |                                                             | ✓                    |                                                          |                                                        |
| Little Trail Creek | ✓                                                             |                                          |                                                           |                                              | ✓                                            |                                |                                                             | ✓                    |                                                          |                                                        |
| Bassett Creek      |                                                               | ✓                                        |                                                           |                                              | ✓                                            | ✓                              | ✓                                                           | ✓                    | ✓                                                        |                                                        |
| Mulherin Creek     | ✓                                                             | ✓                                        |                                                           | ✓                                            |                                              | ✓                              |                                                             | ✓                    |                                                          | ✓                                                      |
| Cedar Creek        |                                                               | ✓                                        |                                                           | ✓                                            |                                              | ✓                              | ✓                                                           |                      | ✓                                                        | ✓                                                      |
| Tom Miner Creek    | ✓                                                             |                                          |                                                           | ✓                                            |                                              | ✓                              | ✓                                                           |                      |                                                          |                                                        |
| Rock Creek         | ✓                                                             | ✓                                        |                                                           |                                              | ✓                                            |                                |                                                             |                      | ✓                                                        | ✓                                                      |
| Donahue Creek      | ✓                                                             |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Big Creek          | ✓                                                             | ✓                                        |                                                           | ✓                                            |                                              | ✓                              | ✓                                                           | ✓                    | ✓                                                        | ✓                                                      |
| Dry Creek          |                                                               | ✓                                        |                                                           |                                              | ✓                                            |                                |                                                             | ✓                    | ✓                                                        |                                                        |

| <i><b>Stream</b></i>                                        | <i><b>Maintain,<br/>Secure, and<br/>Enhance<br/>Conser-<br/>vation<br/>Populations</b></i> | <i><b>Restore<br/>YCT<br/>within<br/>Historic<br/>Range</b></i> | <i><b>Establish<br/>or Protect<br/>in<br/>Previously<br/>Fishless<br/>Waters</b></i> | <i><b>Protect<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</b></i> | <i><b>Restore<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</b></i> | <i><b>Remove<br/>Nonnative<br/>Fishes</b></i> | <i><b>Construct<br/>Barriers to<br/>Prevent<br/>Invasion by<br/>Nonnatives</b></i> | <i><b>Survey<br/>Needed</b></i> | <i><b>Potential<br/>Habitat<br/>Restoration<br/>Projects<br/>Identified</b></i> | <i><b>Subject<br/>of Past or<br/>Current<br/>Conser-<br/>vation<br/>Actions</b></i> |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Table 9-2 Continued                                         |                                                                                            |                                                                 |                                                                                      |                                                                      |                                                                      |                                               |                                                                                    |                                 |                                                                                 |                                                                                     |
| Sixmile Creek                                               | ✓                                                                                          |                                                                 |                                                                                      |                                                                      |                                                                      | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               | ✓                                                                                   |
| Emigrant Spring Creek                                       |                                                                                            |                                                                 |                                                                                      | ✓                                                                    |                                                                      |                                               |                                                                                    | ✓                               |                                                                                 | ✓                                                                                   |
| Fridley Creek                                               | ✓                                                                                          |                                                                 |                                                                                      | ✓                                                                    |                                                                      | ✓                                             | ✓                                                                                  | ✓                               |                                                                                 | ✓                                                                                   |
| Emigrant Creek                                              |                                                                                            | ✓                                                               |                                                                                      |                                                                      |                                                                      | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               |                                                                                     |
| Eightmile Creek                                             | ✓                                                                                          |                                                                 |                                                                                      | ✓                                                                    |                                                                      | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               |                                                                                     |
| Mill Creek                                                  | ✓                                                                                          |                                                                 |                                                                                      | ✓                                                                    |                                                                      | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               | ✓                                                                                   |
| Elbow Creek                                                 | ✓                                                                                          | ✓                                                               |                                                                                      | ✓                                                                    |                                                                      | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               |                                                                                     |
| Strawberry Creek                                            |                                                                                            | ✓                                                               |                                                                                      |                                                                      | ✓                                                                    |                                               |                                                                                    | ✓                               | ✓                                                                               |                                                                                     |
| Cascade Creek                                               |                                                                                            |                                                                 |                                                                                      |                                                                      |                                                                      | ✓                                             |                                                                                    | ✓                               |                                                                                 |                                                                                     |
| Trail Creek                                                 | ✓                                                                                          | ✓                                                               |                                                                                      |                                                                      |                                                                      | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               | ✓                                                                                   |
| Pine Creek                                                  | ✓                                                                                          | ✓                                                               |                                                                                      |                                                                      | ✓                                                                    | ✓                                             | ✓                                                                                  |                                 | ✓                                                                               |                                                                                     |
| Deep Creek                                                  | ✓                                                                                          |                                                                 |                                                                                      |                                                                      | ✓                                                                    | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               |                                                                                     |
| Nelson Spring Creek                                         |                                                                                            |                                                                 |                                                                                      | ✓                                                                    |                                                                      |                                               |                                                                                    | ✓                               |                                                                                 | ✓                                                                                   |
| McDonald Creek                                              |                                                                                            |                                                                 |                                                                                      | ✓                                                                    |                                                                      |                                               |                                                                                    | ✓                               |                                                                                 | ✓                                                                                   |
| Armstrong Spring Creek                                      |                                                                                            |                                                                 |                                                                                      | ✓                                                                    |                                                                      |                                               |                                                                                    | ✓                               |                                                                                 | ✓                                                                                   |
| Suce Creek                                                  | ✓                                                                                          |                                                                 |                                                                                      |                                                                      | ✓                                                                    | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               |                                                                                     |
| Billman Creek                                               | ✓                                                                                          |                                                                 |                                                                                      |                                                                      |                                                                      | ✓                                             |                                                                                    | ✓                               | ✓                                                                               |                                                                                     |
| Fleshman Creek                                              | ✓                                                                                          |                                                                 |                                                                                      |                                                                      | ✓                                                                    | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               | ✓                                                                                   |
| Mission Creek                                               | ✓                                                                                          |                                                                 |                                                                                      | ✓                                                                    |                                                                      | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               |                                                                                     |
| Work Creek                                                  | ✓                                                                                          |                                                                 |                                                                                      | ✓                                                                    |                                                                      |                                               |                                                                                    | ✓                               | ✓                                                                               |                                                                                     |
| Locke Creek                                                 | ✓                                                                                          |                                                                 |                                                                                      |                                                                      | ✓                                                                    |                                               | ✓                                                                                  | ✓                               | ✓                                                                               | ✓                                                                                   |
| Greeley/Peterson                                            | ✓                                                                                          |                                                                 |                                                                                      | ✓                                                                    |                                                                      | ✓                                             | ✓                                                                                  | ✓                               |                                                                                 |                                                                                     |
| Duck Creek                                                  | ✓                                                                                          |                                                                 | ✓                                                                                    |                                                                      | ✓                                                                    | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               | ✓                                                                                   |
| Big Timber Creek                                            | ✓                                                                                          | ✓                                                               |                                                                                      |                                                                      | ✓                                                                    | ✓                                             | ✓                                                                                  | ✓                               |                                                                                 |                                                                                     |
| Otter Creek                                                 | ✓                                                                                          |                                                                 |                                                                                      |                                                                      | ✓                                                                    | ✓                                             | ✓                                                                                  | ✓                               | ✓                                                                               |                                                                                     |
| Boulder River watershed above Hawley Falls                  |                                                                                            |                                                                 | ✓                                                                                    |                                                                      |                                                                      | ✓                                             |                                                                                    |                                 |                                                                                 | ✓                                                                                   |
| Boulder River between Natural Bridge Falls and Hawley Falls |                                                                                            |                                                                 | ✓                                                                                    |                                                                      |                                                                      | ✓                                             |                                                                                    |                                 |                                                                                 |                                                                                     |

Yellowstone Cutthroat Trout  
Conservation Strategy for Montana  
August 5, 2013

| <b>Stream</b>                         | <b>Maintain,<br/>Secure, and<br/>Enhance<br/>Conser-<br/>vation<br/>Populations</b> | <b>Restore<br/>YCT<br/>within<br/>Historic<br/>Range</b> | <b>Establish<br/>or Protect<br/>in<br/>Previously<br/>Fishless<br/>Waters</b> | <b>Protect<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</b> | <b>Restore<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</b> | <b>Remove<br/>Nonnative<br/>Fishes</b> | <b>Construct<br/>Barriers to<br/>Prevent<br/>Invasion by<br/>Nonnatives</b> | <b>Survey<br/>Needed</b> | <b>Potential<br/>Habitat<br/>Restoration<br/>Projects<br/>Identified</b> | <b>Subject<br/>of Past or<br/>Current<br/>Conser-<br/>vation<br/>Actions</b> |
|---------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Table 9-2 Continued                   |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                        |                                                                             |                          |                                                                          |                                                                              |
| Hawley<br>Creek                       |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                        |                                                                             | ✓                        |                                                                          |                                                                              |
| Bramble<br>Creek                      |                                                                                     |                                                          | ✓                                                                             |                                                               |                                                               |                                        |                                                                             |                          |                                                                          |                                                                              |
| Speculator<br>Creek                   |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                        |                                                                             | ✓                        |                                                                          |                                                                              |
| West Chippy<br>Creek                  |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                        |                                                                             | ✓                        |                                                                          |                                                                              |
| Great Falls<br>Creek                  |                                                                                     |                                                          | ✓                                                                             |                                                               |                                                               |                                        |                                                                             | ✓                        |                                                                          | ✓                                                                            |
| Falls Creek                           |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                        |                                                                             |                          |                                                                          |                                                                              |
| Froze-to-<br>Death<br>Creek           |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                        |                                                                             | ✓                        |                                                                          |                                                                              |
| Fourmile<br>and<br>Meatrack<br>creeks |                                                                                     |                                                          | ✓                                                                             |                                                               |                                                               | ✓                                      |                                                                             |                          |                                                                          | ✓                                                                            |
| West<br>Boulder<br>River<br>watershed |                                                                                     |                                                          | ✓                                                                             |                                                               |                                                               |                                        |                                                                             | ✓                        |                                                                          |                                                                              |
| Davis<br>Creek                        |                                                                                     |                                                          | ✓                                                                             |                                                               |                                                               | ✓                                      |                                                                             |                          |                                                                          | ✓                                                                            |
| East<br>Boulder<br>River              |                                                                                     |                                                          | ✓                                                                             |                                                               |                                                               |                                        |                                                                             |                          |                                                                          |                                                                              |
| Upper Deer<br>Creek                   | ✓                                                                                   |                                                          |                                                                               |                                                               | ✓                                                             | ✓                                      | ✓                                                                           |                          |                                                                          | ✓                                                                            |
| Lower Deer<br>Creek                   | ✓                                                                                   |                                                          |                                                                               |                                                               | ✓                                                             | ✓                                      | ✓                                                                           |                          |                                                                          | ✓                                                                            |
| Bridger<br>Creek                      |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                        |                                                                             | ✓                        |                                                                          |                                                                              |
| unmapped<br>spring<br>creeks          |                                                                                     |                                                          |                                                                               |                                                               | ✓                                                             |                                        |                                                                             |                          | ✓                                                                        | ✓                                                                            |
| <b>Total</b>                          | <b>27</b>                                                                           | <b>12</b>                                                | <b>9</b>                                                                      | <b>15</b>                                                     | <b>17</b>                                                     | <b>29</b>                              | <b>22</b>                                                                   | <b>39</b>                | <b>24</b>                                                                | <b>23</b>                                                                    |

**Table 9-3: Summary of potential conservation actions to maintain, restore, and enhance Yellowstone cutthroat trout in the Shields River watershed downstream of Chadbourne diversion (HUC 10070003).**

| <i>Stream</i>       | <i>Maintain,<br/>Secure, and<br/>Enhance<br/>Conser-<br/>vation<br/>Populations</i> | <i>Restore<br/>YCT<br/>within<br/>Historic<br/>Range</i> | <i>Establish<br/>or Protect<br/>in<br/>Previously<br/>Fishless<br/>Waters</i> | <i>Protect<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</i> | <i>Restore<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</i> | <i>Remove<br/>Non-<br/>native<br/>Fishes</i> | <i>Construct<br/>Barriers to<br/>Prevent<br/>Invasion by<br/>Nonnatives</i> | <i>Survey<br/>Needed</i> | <i>Potential<br/>Habitat<br/>Restoration<br/>Projects<br/>Identified</i> | <i>Subject<br/>of Past<br/>or<br/>Current<br/>Conser-<br/>vation<br/>Actions</i> |
|---------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Shields<br>River    | ✓                                                                                   |                                                          |                                                                               | ✓                                                             |                                                               |                                              |                                                                             |                          | ✓                                                                        |                                                                                  |
| Bangtail<br>Creek   | ✓                                                                                   |                                                          |                                                                               |                                                               |                                                               | ✓                                            |                                                                             |                          | ✓                                                                        |                                                                                  |
| Willow<br>Creek     | ✓                                                                                   |                                                          |                                                                               |                                                               | ✓                                                             | ✓                                            |                                                                             | ✓                        | ✓                                                                        |                                                                                  |
| Falls Creek         |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                              |                                                                             | ✓                        |                                                                          |                                                                                  |
| Chicken<br>Creek    | ✓                                                                                   |                                                          |                                                                               |                                                               | ✓                                                             |                                              |                                                                             | ✓                        | ✓                                                                        | ✓                                                                                |
| Adair<br>Creek      |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                              |                                                                             | ✓                        |                                                                          |                                                                                  |
| Crazy Head<br>Creek |                                                                                     |                                                          |                                                                               |                                                               |                                                               |                                              |                                                                             | ✓                        |                                                                          |                                                                                  |
| <b>Total</b>        | <b>3</b>                                                                            | <b>0</b>                                                 | <b>0</b>                                                                      | <b>1</b>                                                      | <b>1</b>                                                      | <b>2</b>                                     | <b>0</b>                                                                    | <b>4</b>                 | <b>3</b>                                                                 | <b>0</b>                                                                         |

**Table 9-4: Summary of potential conservation needs to maintain, restore, and enhance Yellowstone cutthroat trout in the Stillwater River Subbasin (HUC 10070005).**

| <i>Stream</i>                       | <i>Maintain, Secure, and Enhance Conservation Populations</i> | <i>Restore YCT within Historic Range</i> | <i>Establish or Protect in Previously Fishless Waters</i> | <i>Protect Fluvial Life-History Strategy</i> | <i>Restore Fluvial Life-History Strategy</i> | <i>Remove Nonnative Fishes</i> | <i>Construct Barriers to Prevent Invasion by Nonnatives</i> | <i>Survey Needed</i> | <i>Potential Habitat Restoration Projects Identified</i> | <i>Subject of Past or Current Conservation Actions</i> |
|-------------------------------------|---------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------|-------------------------------------------------------------|----------------------|----------------------------------------------------------|--------------------------------------------------------|
| Goose Creek                         |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          | ✓                                                      |
| Woodbine Creek                      | ✓                                                             |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Little Rocky Creek                  | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                              | ✓                                                           | ✓                    |                                                          |                                                        |
| Bad Canyon Trout Creek              | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          | ✓                                                      |
| Iron Creek                          |                                                               | ✓                                        | ✓                                                         |                                              |                                              | ✓                              | ✓                                                           |                      |                                                          |                                                        |
| Picket Pin Creek                    |                                                               |                                          | ✓                                                         |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Castle, Meyer, and Lodgepole creeks |                                                               | ✓                                        | ✓                                                         |                                              |                                              | ✓                              | ✓                                                           | ✓                    |                                                          |                                                        |
| East Rosebud Creek                  |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             |                      |                                                          |                                                        |
| West Rosebud Creek                  |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             |                      |                                                          |                                                        |
| Fiddler Creek                       |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          |                                                        |
| Fishtail Creek                      |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             |                      |                                                          |                                                        |
| East Fishtail Creek                 |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| West Fishtail Creek                 |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Island Lake                         |                                                               | ✓                                        |                                                           |                                              |                                              |                                |                                                             |                      | ✓                                                        | ✓                                                      |
| <b>Total</b>                        | <b>3</b>                                                      | <b>5</b>                                 | <b>4</b>                                                  | <b>0</b>                                     | <b>0</b>                                     | <b>6</b>                       | <b>3</b>                                                    | <b>7</b>             | <b>1</b>                                                 | <b>3</b>                                               |

**Table 9-5: Summary of potential conservation needs to maintain, restore, and enhance Yellowstone cutthroat trout in the Clarks Fork of the Yellowstone Subbasin (HUC 10070006).**

| <i>Stream</i>           | <i>Maintain, Secure, and Enhance Conservation Populations</i> | <i>Restore YCT within Historic Range</i> | <i>Establish or Protect in Previously Fishless Waters</i> | <i>Protect Fluvial Life-History Strategy</i> | <i>Restore Fluvial Life-History Strategy</i> | <i>Remove Nonnative Fishes</i> | <i>Construct Barriers to Prevent Invasion by Nonnatives</i> | <i>Survey Needed</i> | <i>Potential Habitat Restoration Projects Identified</i> | <i>Subject of Past or Current Conservation Actions</i> |
|-------------------------|---------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------|-------------------------------------------------------------|----------------------|----------------------------------------------------------|--------------------------------------------------------|
| Line Creek              |                                                               |                                          | ✓                                                         |                                              |                                              |                                |                                                             |                      |                                                          |                                                        |
| Bluewater Creek         |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Lake Fork Rock Creek    |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          |                                                        |
| West Fork Rock Creek    |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          |                                                        |
| Clear Creek             |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             | ✓                    |                                                          |                                                        |
| Volney Creek            |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| West Red Lodge Creek    | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                              |                                                             | ✓                    |                                                          |                                                        |
| Barlow Creek            |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Hogan Creek             |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          |                                                        |
| East Red Lodge Creek    |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          |                                                        |
| Cole and Power creeks   |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             | ✓                    |                                                          |                                                        |
| Thiel Creek             |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              | ✓                                                           |                      |                                                          | ✓                                                      |
| Harney Creek            |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          |                                                        |
| Willow Creek            |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             | ✓                    |                                                          |                                                        |
| Spring Creek            |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Brush Fork Willow Creek |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      |                                                          | ✓                                                      |
| <b>Total</b>            | <b>1</b>                                                      | <b>10</b>                                | <b>1</b>                                                  | <b>0</b>                                     | <b>0</b>                                     | <b>11</b>                      | <b>1</b>                                                    | <b>8</b>             | <b>0</b>                                                 | <b>2</b>                                               |

**Table 9-6: Summary of potential conservation needs to maintain, restore, and enhance Yellowstone cutthroat trout in the Pryor Creek Subbasin (HUC 10070008).**

| <i><b>Stream</b></i>        | <i><b>Maintain,<br/>Secure, and<br/>Enhance<br/>Conservation<br/>Populations</b></i> | <i><b>Restore<br/>YCT<br/>within<br/>Historic<br/>Range</b></i> | <i><b>Establish<br/>or Protect<br/>in<br/>Previously<br/>Fishless<br/>Waters</b></i> | <i><b>Protect<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</b></i> | <i><b>Restore<br/>Fluvial<br/>Life-<br/>History<br/>Strategy</b></i> | <i><b>Remove<br/>Nonnative<br/>Fishes</b></i> | <i><b>Construct<br/>Barriers to<br/>Prevent<br/>Invasion by<br/>Nonnatives</b></i> | <i><b>Survey<br/>Needed</b></i> | <i><b>Potential<br/>Habitat<br/>Restoration<br/>Projects<br/>Identified</b></i> | <i><b>Subject of<br/>Past or<br/>Current<br/>Conservation<br/>Actions</b></i> |
|-----------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Pryor<br>Creek<br>East Fork |                                                                                      | ✓                                                               |                                                                                      |                                                                      |                                                                      | ✓                                             | ✓                                                                                  | ✓                               |                                                                                 |                                                                               |
| Pryor<br>Creek<br>East      |                                                                                      |                                                                 |                                                                                      |                                                                      |                                                                      |                                               |                                                                                    | ✓                               |                                                                                 |                                                                               |
| Pryor<br>Creek<br>Shively   |                                                                                      | ✓                                                               |                                                                                      |                                                                      |                                                                      | ✓                                             | ✓                                                                                  |                                 |                                                                                 |                                                                               |
| Creek                       | ✓                                                                                    | ✓                                                               |                                                                                      |                                                                      |                                                                      | ✓                                             |                                                                                    |                                 |                                                                                 |                                                                               |
| Hay<br>Creek                | ✓                                                                                    |                                                                 |                                                                                      |                                                                      |                                                                      | ✓                                             |                                                                                    |                                 |                                                                                 |                                                                               |
| Lost<br>Creek               |                                                                                      |                                                                 | ✓                                                                                    |                                                                      |                                                                      | ✓                                             | ✓                                                                                  |                                 |                                                                                 | ✓                                                                             |
| <b>Total</b>                | <b>2</b>                                                                             | <b>3</b>                                                        | <b>1</b>                                                                             | <b>0</b>                                                             | <b>0</b>                                                             | <b>5</b>                                      | <b>3</b>                                                                           | <b>2</b>                        | <b>0</b>                                                                        | <b>1</b>                                                                      |

**Table 9-7: Summary of potential conservation needs to maintain, restore, and enhance Yellowstone cutthroat trout in the Bighorn Lake Subbasin (HUC 10080015).**

| <i>Stream</i>         | <i>Maintain, Secure, and Enhance Conservation Populations</i> | <i>Restore YCT within Historic Range</i> | <i>Establish or Protect in Previously Fishless Waters</i> | <i>Protect Fluvial Life-History Strategy</i> | <i>Restore Fluvial Life-History Strategy</i> | <i>Remove Nonnative Fishes</i> | <i>Construct Barriers to Prevent Invasion by Nonnatives</i> | <i>Survey Needed</i> | <i>Potential Habitat Restoration Projects Identified</i> | <i>Subject of Past or Current Conservation Actions</i> |
|-----------------------|---------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------|-------------------------------------------------------------|----------------------|----------------------------------------------------------|--------------------------------------------------------|
| Dry Head Creek        | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                              |                                                             | ✓                    | ✓                                                        | ✓                                                      |
| Hoodoo Creek          |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              | ✓                                                           |                      | ✓                                                        |                                                        |
| Pitchfork Creek       |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    | ✓                                                        |                                                        |
| Spring Creek          |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      | ✓                                                        |                                                        |
| Black Canyon Creek    | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                              | ✓                                                           | ✓                    |                                                          |                                                        |
| Big Bull Elk Creek    | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                              | ✓                                                           |                      |                                                          |                                                        |
| Little Bull Elk Creek |                                                               |                                          | ✓                                                         |                                              |                                              |                                |                                                             | ✓                    |                                                          | ✓                                                      |
| Porcupine Creek       |                                                               | ✓                                        |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| Crooked Creek         | ✓                                                             |                                          |                                                           |                                              |                                              | ✓                              | ✓                                                           |                      |                                                          | ✓                                                      |
| <b>Total</b>          | <b>4</b>                                                      | <b>3</b>                                 | <b>1</b>                                                  | <b>0</b>                                     | <b>0</b>                                     | <b>6</b>                       | <b>4</b>                                                    | <b>5</b>             | <b>4</b>                                                 | <b>3</b>                                               |

**Table 9-8: Summary of potential conservation needs to maintain, restore, and enhance Yellowstone cutthroat trout in the Shoshone HUC (10080014)**

| <i>Stream</i> | <i>Maintain, Secure, and Enhance Conservation Populations</i> | <i>Restore YCT within Historic Range</i> | <i>Establish or Protect in Previously Fishless Waters</i> | <i>Protect Fluvial Life-History Strategy</i> | <i>Restore Fluvial Life-History Strategy</i> | <i>Remove Nonnative Fishes</i> | <i>Construct Barriers to Prevent Invasion by Nonnatives</i> | <i>Survey Needed</i> | <i>Potential Habitat Restoration Projects Identified</i> | <i>Subject of Past or Current Conservation Actions</i> |
|---------------|---------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------|-------------------------------------------------------------|----------------------|----------------------------------------------------------|--------------------------------------------------------|
| Sage Creek    |                                                               | ✓                                        |                                                           |                                              |                                              | ✓                              |                                                             |                      | ✓                                                        | ✓                                                      |
| Piney Creek   | ✓                                                             |                                          |                                                           |                                              |                                              |                                |                                                             |                      | ✓                                                        | ✓                                                      |
| Bear Creek    |                                                               |                                          |                                                           |                                              |                                              |                                |                                                             | ✓                    |                                                          |                                                        |
| <b>Total</b>  | <b>1</b>                                                      | <b>1</b>                                 | <b>0</b>                                                  | <b>0</b>                                     | <b>0</b>                                     | <b>1</b>                       | <b>0</b>                                                    | <b>1</b>             | <b>2</b>                                                 | <b>2</b>                                               |