Range-Wide Status of Colorado River Cutthroat Trout (*Oncorhynchus clarkii pleuriticus*): 2005

Christine L. Hirsch
USDA Forest Service
Glenwood Springs, Colorado

Shannon E. Albeke
Colorado Division of Wildlife
Denver, Colorado

Thomas P. Nesler
Colorado Division of Wildlife
Fort Collins, Colorado

This status update was developed and completed under the oversight of a Colorado River cutthroat trout conservation team that, in addition to the primary authors, contributed information and editorial oversight necessary to the completion of this status report. Members of the conservation team included the individuals listed below.

Dirk Miller
Wyoming Game and Fish Department

Tom Pettengill
Utah Division of Wildlife Resources

Jay Thompson
U.S. Bureau of Land Management

Patty Schrader-Gelatt
U.S. Fish and Wildlife Service

Tom Nesler
Colorado Division of Wildlife

Christine Hirsch
U.S. Forest Service

March 2006

Acknowledgements

This status update was developed and completed under the oversight of the Colorado River Cutthroat Trout Conservation Team, who in addition to the primary authors and others, contributed information and editorial oversight necessary for completion of this status report. Members of the Conservation Team are representatives of the signatory entities to the range-wide conservation agreement for Colorado River cutthroat trout.

The authors and conservation team thank all the biologists (both working and retired) who took time from their busy schedules to assist in the compilation of this database. The administrators and supervisors who support and allowed their personnel to participate in this process also need to be thanked.

The authors specifically thank Dan Brauch, Colorado Division of Wildlife, for generous last minute assistance with additional data needs and analysis.

This effort would never have been completed without the leadership and guidance of Bruce May and support from the U.S. Forest Service. Bruce's experience with similar efforts on other cutthroat trout subspecies was critical to all phases of this exercise.

Shannon Albeke, Paul Burnett, Peggy Miller, Dennis Oberlie, Ashleah Rollings, and Scott Vuono were the main GIS and data entry staff during the workshops and this effort could not have been completed without their time and knowledge.

Geographic Management Unit coordinators Dan Kowalski, Dan Brauch, Dale Hepworth, Paul Birdsey, Mike Japhet, Christine Hirsch, Hilda Sexauer, and Kevin Rogers deserve thanks for coordinating the second set of workshops to complete the data entry.

We thank Bradley Shepard and Michael Young for providing external review of the last draft of the document.

Executive Summary

The distribution and abundance of Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*; CRCT) have declined from historical levels over their entire range. For this CRCT assessment we used existing information provided by 48 fisheries professionals applied through a consistent methodology to assess the extent of CRCT historical range, their current distribution, including genetic status, and evaluated the foreseeable risks to 285 populations designated as "conservation populations" by management agencies.

We estimated CRCT historically occupied about 21,386 miles of habitat in the western U.S. CRCT currently occupy about 3,022 miles of habitat in 51 of the 61 4th level HUC's historically occupied. Of the 3,022 currently occupied miles, 224 occur outside of our estimate of historical habitat. Thirteen percent of the historically occupied habitat is currently occupied. The 224 miles of occupied habitat outside estimated historical habitat would equal an addition 1% of the total historically occupied habitat. These streams are typically above historical barriers in stream segments not believed to have been historically occupied but still within the historical range.

Genetic testing has been completed across about 1,150 miles of habitat (38% of occupied habitats), but sample sizes were variable. CRCT with no evidence of genetic introgression currently occupy about 782 stream miles (26%) of occupied habitat. Another 68 miles of currently occupied habitats (2%) contained CRCT identified as part of a mixed stock where the CRCT were not introgressed even though hybridizing trout were present. We propose that even though genetic sampling was nonrandom because sampling likely occurred more frequently in CRCT populations which appeared non-introgressed, some of the habitats currently occupied by CRCT with no genetic testing likely support populations which are not introgressed. An additional 470 miles of occupied habitat were identified as containing genetically unaltered CRCT based on no record of stocking or by having no hybridizing species present. Most of the habitats currently occupied by CRCT (74% of currently occupied habitat) were on lands administrated by Federal agencies. Two-thirds of all occupied habitats occur on National Forests. An additional 23 miles were in designated National Parks and 209 miles were within Bureau of Land Management managed lands. Approximately 466 miles of occupied habitat on National Forest Lands were within designated wilderness.

A total of 285 separate CRCT populations currently occupying 1,796 miles of habitat were designated as "conservation populations" (59% of currently occupied habitat, 8% of historical). These conservation populations were spread throughout the historical range, occurring in 34 of the 51 hydrologic units historically occupied by CRCT. Two-thirds of these conservation populations were isolated from other populations, isolated populations occurred in 739 miles or 41% of occupied habitat; well-connected meta-populations occupied 280 miles or 16% of occupied habitat. Of the 285 designated conservation populations, 153 (54%) tested as genetically unaltered or were viewed as being potentially unaltered. More isolated populations were at higher risks due to temporal variability, population size, and isolation than meta-populations, but these isolated populations were generally at less risk from hybridization and disease than meta-populations.

The protocol used for this assessment was not designed to address lake populations. As of 2003, the CRCT Conservation Team was tracking 41 lakes containing conservation populations. When one of these lakes was connected to occupied stream habitat, its length was included in the current assessment. Eighteen of the 41 lakes are included as seven stream miles in this assessment. Other lakes with conservation populations were either not connected to a stream system or not connected to a known stream population of CRCT but are still believed to have important conservation value. There are additional lakes included in both the historical, currently occupied, and conservation population habitat totals which were not being previously tracked. The CRCT Conservation Team is currently working to revise the database to include lakes as polygons.

This assessment shows CRCT currently are well distributed across their historical range. The data suggest genetically unaltered CRCT occupy at least 26% and possibly up to 41% of currently occupied habitats. Two different conservation management strategies are needed and being implemented to conserve CRCT. One strategy concentrates on preventing introgression, disease and competition risks through isolation of CRCT, while the other concentrates on preserving meta-population function and multiple life-history strategies by connecting occupied habitats. Currently, most conservation populations are isolated although there are ongoing restoration efforts to create meta-populations.

Table of Contents

List of Tables

List of Figures

Introduction

Within the last 29 years, assessments have been conducted related to the status of Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*; CRCT) over part or all of their historical range (Behnke and Zarn 1976, Binns 1977, Behnke 1979, Behnke and Benson 1980, Martinez 1988, Oberholtzer 1990, Young 1995, Young et al. 1996). These assessments were either conducted over only a portion of CRCT historical range, involved a small number of experts with specific detailed knowledge of the assessment area, or were constrained by a lack of consistency in the sources of information and criteria used. In addition, the CRCT Conservation Team has been tracking the status of CRCT since 1999 (CRCT Task Force 2001, CRCT Conservation Team 2003). This report is meant to update these past assessments using a protocol consistently applied throughout the CRCT historical range. We assessed historically occupied range, current distribution, general abundance, genetic status, and risks for CRCT throughout their historical range. Fisheries professionals from Colorado, Utah, Wyoming, and New Mexico (state wildlife agencies, U.S. Fish and Wildlife Service, U.S. Forest Service, and Bureau of Land Management) provided the information for this assessment. State fisheries staffs identified and designated "conservation populations", but information from many different sources was used to assess risks and threats to these populations. The information for this status update was primarily compiled during 2004. This assessment was accomplished as a critical component of range-wide coordination for CRCT conservation under the guidance of the 2001 Conservation Agreement (CRCT Task Force 2001). This status update will be helpful in meeting the objectives of the range-wide conservation effort in a number of respects, and should be viewed as a "snap shot" for CRCT distribution, relative population health and a valuable benchmark for evaluating future changes. This assessment provides consistent information on the status of CRCT current through 2005 and is intended to be used as an information base by individual states and other agencies, working collaboratively, to assess, plan and prioritize their ongoing and future CRCT conservation efforts, and by the U.S. Fish and Wildlife Service (FWS) in relation to their responsibilities under the federal Endangered Species Act of 1973, as amended (ESA).

The three states where CRCT presently occur (Colorado, Utah, and Wyoming) have the primary responsibility under their respective state wildlife laws to manage and conserve CRCT. The U.S. Forest Service (FS), Bureau of Land Management (BLM), National Park Service (NPS), Tribal governments, and other federal land and resource management agencies play an essential role in this conservation effort because of their legal responsibility for ensuring species viability and for management of aquatic habitats on federal and Tribal lands. Through the petition process of ESA, the FWS concluded in a 90-day finding in April 2004 that a December 1999, citizen-based petition to list CRCT did not contain sufficient or substantial information to indicate a listing may be warranted (FR 69(76):21151-21158, 04/20/04). In March 1999, prior to this action, a cooperative conservation strategy and agreement was first signed by the Directors of the three State wildlife agencies and U.S. Fish and Wildlife Service through an initiative of the Colorado River Fish and Wildlife Council. A revised and updated strategy and conservation agreement, expanded to formally include the three State offices of the BLM, Regions 2 and 4 of the USFS, the NPS-Intermountain Region, Ute Indian Tribe, and the three State Trout Unlimited organizations was completed in April 2001. The above parties recognize the mutual benefits of collaboration to further the collective knowledge of this subspecies, implement conservation actions, and provide the best scientific information as the basis for CRCT conservation.

Analysis Area

The analysis area included the known historical range of CRCT within Colorado, New Mexico, Utah, and Wyoming. We relied primarily on Behnke (1992, 2002) to delineate the likely historical range (Figure 1). This area includes the mountainous portions of the Colorado River drainage within Wyoming, Utah and Colorado comprised by the Upper Colorado, Green, Yampa, White, Gunnison, San Juan, Dolores, Fremont, and Escalante river drainages. The portions of these drainages located within Arizona are believed to have never supported CRCT. Populations of this subspecies occurring outside designated historical range have not been recognized to date by fisheries experts within this cooperative program. The current range-wide conservation effort partitioned CRCT range into eight Geographic Management Units (GMU's). These watershed-based GMU's were designated to allow for more focused conservation planning and implementation at a finer scale of resolution.

Methods

An interstate and interagency working group of fishery biologists, managers, and GIS specialists representing the states of Colorado, Utah, Wyoming, BLM, and FS met December 16, 2003, in Denver, Colorado, to initiate a range-wide effort to update status information for CRCT. This group agreed the assessment would include: 1) estimating the historically occupied range; 2) determining current distribution and identifying specific population characteristics; 3) identifying conservation populations and assessing relative population health using a ranking system similar to that proposed by Rieman et al. (1993); and 4) evaluating expansion and restoration potential of conservation populations. The group recognized such an assessment would be based primarily on expert opinion supported by existing empirical data and in some cases, particularly when historically occupied range was assessed, the assessment would be more qualitative. Field data were used where available. The protocol summarized below is a modified version of the protocol used for the westslope (Shepard et al. 2003) and Yellowstone (May et al. 2003) cutthroat trout. Bonneville cutthroat trout (May et al. 2005) followed the modified protocol established for CRCT and a 2006 update to the Yellowstone cutthroat trout status assessment is planned using this protocol. Appendix A contains a detailed description of the protocol.

Geographic Information System

This assessment used the National Hydrography Dataset (NHD) as the base for the effort (see **http://nhd.usgs.gov/** for more information on NHD). We used the 1:24,000 scale of NHD as available. Some watershed areas required using the 1:100,000 scale. The USFS Natural Resource Information System (NRIS) provided ArcGIS tools that greatly assisted with this process. To increase continuity and consistency, only streams identified on the stream layer as being perennial had information entered into the database. We acknowledge intermittent and ephemeral streams may provide habitat used by CRCT during specific periods when sufficient flows occur; however this assessment did not include these streams. Consequently, we may have underestimated both historically and currently occupied habitats. We also acknowledge some perennial streams that historically and/or currently support CRCT will not be shown on the stream layer and therefore they will not be included in this assessment. It is anticipated these streams will be added in the future during subsequent efforts to improve NHD. However NHD is the best hydrography layer currently available and it is the national standard.

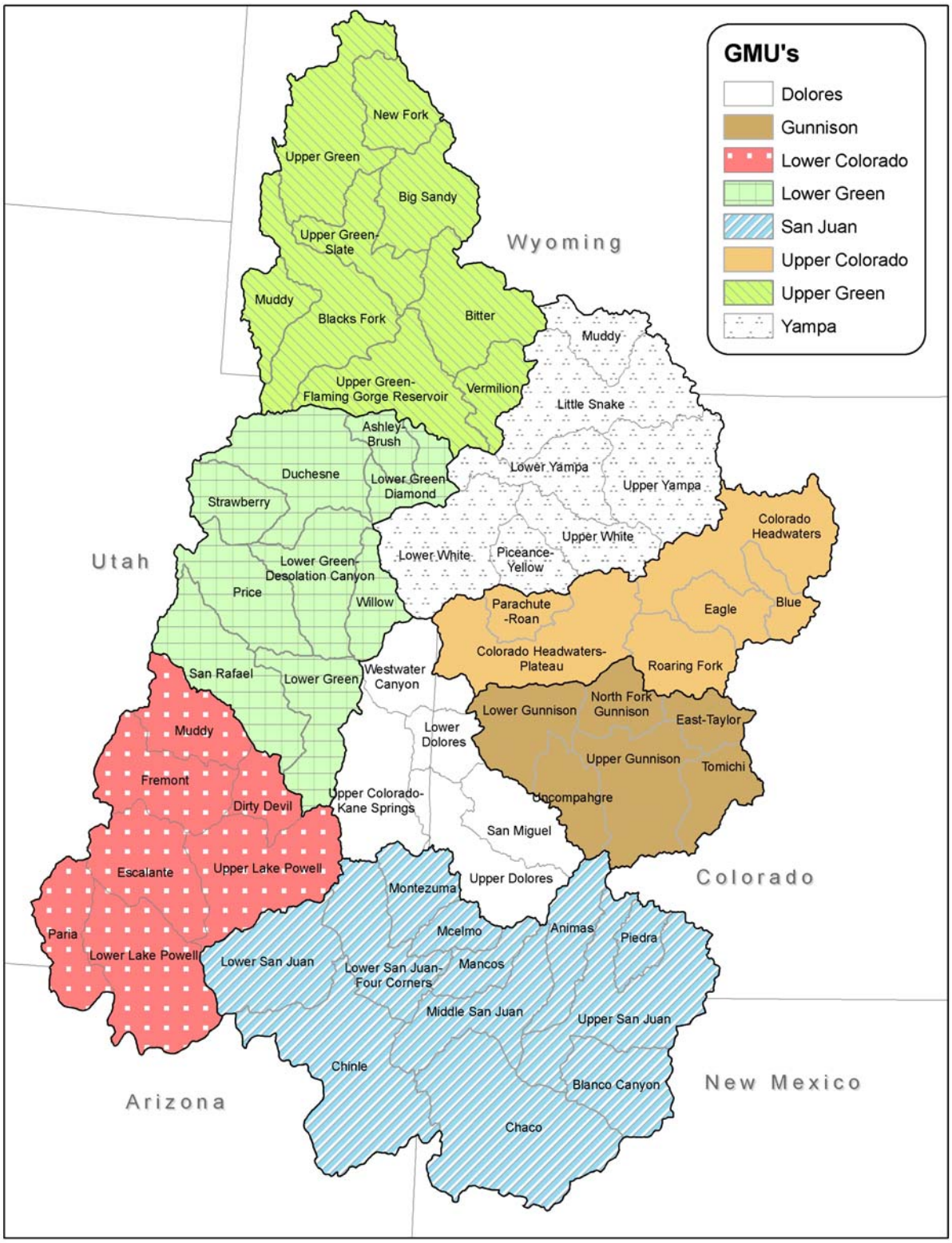


Figure 1. CRCT geographic management units based on second level hydrologic unit boundaries.

Data Quality Control and Assurance

This study ranked the reliability of information based on its source (Table 1). Information associated with judgment calls and anecdotal sources, in general, were viewed as being less reliable and/or accurate than information developed as part of detailed surveys and studies that has undergone substantial analysis and review.

In order to assure consistency and completeness, a specific work group (team) completed the assessment of a given 4th level hydrologic unit code (HUC, 8-digit EPA designation) before moving to another HUC. There were 61 4th level HUCs in basins that historically supported CRCT. During the assessment of each HUC, the teams employed a systematic approach by starting at the mouth of the largest stream and proceeding to its headwaters. Each tributary system beginning in a clockwise fashion and starting at the lower most portion of the main stream was completed using the same orderly process. The actual stream layers were attributed through a database with the specific information developed during the status update using fish biologists and a GIS-data entry person as a critical members of the team.

Table 1. Ranking of the relative reliability of data sources.

Information Source	Relative Degree of Reliability
Professional Judgment	Lower
Anecdotal Information	Lower
Letter	Lower
News Account	Lower
Data Files	Moderate
Agency Report	Moderate
Published Paper	Higher
Thesis or Dissertation	Higher

The assessment protocol was partitioned into four primary components for conducting this assessment. First, the historical range occupied by CRCT at the time of the first European exploration (approximately 1800) of the Northern Rocky Mountains was estimated. Second, the current distribution with density, genetic status and habitat information for CRCT was developed and displayed on a mapping segment basis. Third, conservation populations were identified and classified as either isolated or meta-populations (networked or connected populations – e.g., interbreeding populations) and their relative health was evaluated. Relative health was assessed based on three aspects: 1) influences associated with genetic introgression, 2) influences associated with disease, and 3) a general population health determination. Health determinations represented relative determinations indicating a higher or lower level of concern. The mapping and population health determinations were completed for all conservation populations including those associated with lakes (adfluvial) that are maintained by natural reproduction. CRCT populations supported entirely by annual or routine stocking were not included as part of this assessment. Exceptions would be those populations serving as a wild broods that require periodic stocking to bring in new genetic material as part of the brood maintenance plan. Genetic, disease and population risk assessments were done for each conservation population. Fourth and finally, the assessment included evaluation of the potential for restoration of

conservation populations within the historical boundary and for the expansion of existing conservation populations.

Barriers

Prior to delineating historically and currently occupied habitats, we identified all significant barriers to upstream fish movement. Barriers (either long-term geologic, natural short-term, or anthropogenic) that prevented or dramatically reduced upstream fish movement were considered "significant" and long term-geologic barriers were used to assess whether individual stream segments were likely historically occupied by CRCT, assess potential influences of genetic introgression or disease to existing CRCT populations, and determine whether existing subpopulations were connected with other subpopulations. The identification of barrier location and distinguishing characters was very important. During the effort to describe the historical distribution of the subspecies, we identified those barriers that represent long-term geologic features that may have influenced historical distributions. These barrier locations were located (as points in ArcGIS) on the population mapping segments. Before mapping current distribution, we identified other significant barriers (e.g., natural short-term and/or anthropogenic barriers), their locations (as points in ArcGIS), and other relevant features, including barrier type, blockage extent, and barrier significance. Only those barriers believed to have a significant influence on cutthroat distribution or population integrity (life history expression, spawning, competition and hybridization) were identified. Data sources for barriers were also identified. If the barrier extended over an extended distance (e.g., temperature or chemical barrier) the downstream point of the barrier was marked on the map.

Part 1 - Determining Historical Distribution

The historically occupied range of CRCT was assessed based on the believed distribution at the time Europeans first entered the Rocky Mountain West (approximately 1800). This assessment was done at a relatively coarse level. There was an initial effort to adjust the base stream layer by identifying the lower extremes of historical distribution based on the lowest probable elevation limits (6000 feet in elevation or 5500 feet on north-facing slopes). Fishery professionals familiar with each major drainage basin (4^{th} code HUC) defined historical distribution for the remaining stream mapping segments within each 4^{th} code HUC by identifying the historical range based on their personal knowledge of the area, known anecdotal information, known habitat restrictions, known geologic barriers, and historical fisheries data and reports. This information was used to edit CRCT historical range maps. CRCT were assumed to have occupied all stream segments within the adjusted base stream layer of their broad known historical distribution unless information or professional judgment indicated CRCT likely did not occupy specific mapping segments of stream.

Part 2 - Determining Current Distribution, Genetic Status, Density and Habitat Conditions

The lower and upper bounds of all stream segments presently occupied by naturally self-sustaining populations of CRCT were located and data and data sources associated with the individual characteristics of the occupied segments were identified. Each 4^{th} level HUC working group made initial determinations on occupied habitat based on viewing the map and referring to available information. When there was no upstream barrier or distribution survey available, professional judgment was used to determine upstream distribution and, less commonly, downstream distribution. Specific information associated with current occupancy was tracked on a stream segment basis. Barrier locations, fish stocking records, genetic information, cutthroat

trout population demographics, and information on habitat and nonnative fish were important in these determinations. Each identified segment must have all attributes in common. If one or more attributes changed, a new segment was created. Only naturally occurring, self-sustaining populations (i.e., no routine augmentation with hatchery fish) of CRCT were addressed in this status review.

Part 3 - Identification of Individual Conservation Populations and Application of Relative Health Evaluations for each Population

For this stage of assessment the focus changed from CRCT-occupied mapping segments to conservation populations and the factors that have the potential to influence the well-being of the identified populations. Determinations were made relative to which occupied mapping units were combined into a specific conservation population with conservation being the primary management objective. In general, stream segments and adjacent streams were combined into one conservation population if there were no complete barriers restricting movement between them, however exceptions were made at the discretion of the local biologist. Conservation populations were further catagorized based on connectedness into meta-populations or as isolated populations. To be considered connected in a meta-population, a total barrier could not be present within the meta-population's stream network. Both meta-populations and isolated populations were identified as conservation populations. Conservation populations were categorized as genetically unaltered (i.e., core conservation populations) or displaying unique life history traits and ecological characteristics in the presence of hybridization (i.e., conservation populations). Life history attributes of the population and status of the conservation population as a source or a sink were identified. A population was considered a "source" if individuals could move into another population, providing a source of gene flow to the receiving population. A population was considered a "sink" if it could receive individuals from another population. Information on conservation activities, land-use and fishery management were identified for each conservation population. *The level of impact or effectiveness of these activities was not described, listing merely means that these things occurred in the occupied watershed.*

Conservation Population Health Evaluations

Only conservation populations were evaluated for relative genetic and disease influences and general population health. It is important to note these evaluations did not and should not define inherent probability of persistence or exclusion but rather identified index conditions that put a population at greater or lesser risk based on certain attributes.

Genetic Stability Assessment A genetic stability index was made for each conservation population (e.g., networked or isolated) using an index ranking of 1 to 4 to indicate low to progressively higher levels of possible risk. The index should be viewed merely an indicator of possible or potential genetic influences.

Significant Disease Influence Assessment A significant disease influence assessment was made for each meta- (networked) or isolated population using a ranking of 1 to 5 to indicate low to progressively higher levels of risk associated with the possible or potential influence of significant diseases. Population isolation and security were important considerations but do not assure protection. The diseases of concern are those that cause severe and significant impacts to population health and include but are not limited to whirling disease, furunculosis, infectious pancreatic necrosis virus, etc. The level of influence should be viewed as an indicator of possible or potential disease influences.

Conservation Population General Health Assessment

A generalized population health assessment was completed for each meta- or isolated population using an index ranking that includes consideration of four factors: temporal variability relative to stochastic influences (based on habitat size), adult population size, environmental attributes affecting population production, and population connectivity based on Rieman et al. (1993). The ranking for temporal variability was derived as a cumulative length total of stream segments identified as being part of the conservation population. Population size of sexually mature CRCT (15 cm and larger) were derived from the density information associated with the stream segments identified for each conservation population. This size range was felt to reasonably reflect that component of a CRCT population that can be viewed as sexually active (e.g., approximating an effective population). Population production ranking was derived from stream segment information associated with habitat quality, presence of non-native fish, potential for disease and the level of land use interaction with the population. The degree of connectedness was based on migration of individuals, the presence of subpopulations and opportunity for gene flow between them, and the relative ease of movement between them. The index value for general population health is just a qualitative assessment of possible or potential health.

The population assessment identified source/sink relationships that may exist between headwater CRCT conservation populations and those conservation populations lower in the drainage, especially where barriers to upstream movement might exist. While headwater CRCT populations may include those isolated by impassible barriers to upstream fish movement (and thus could not be re-founded or receive external genetic material without human intervention), these headwater populations may be important sources for re-founding and augmenting lower populations. This was handled by a simple identifier indicating that a given population operates as a source. The most downstream population would automatically become a "sink" recipient.

Part 4 - Evaluation of Potential CRCT Population Restoration and Expansion Opportunities.

This evaluation was based on an initial range-wide review of stream segments not currently associated with conservation populations. The potential for restoration and/or expansion of CRCT populations was assessed during this evaluation. Similar to the mapping exercise associated with currently occupied stream segments, lower and upper bounds of all stream segments viewed as having the potential to support CRCT were identified and evaluated. Using the base hydrography layer within each 4th level HUC overlaid with current CRCT occupied habitat, conservation population and barrier locations, each team systematically identified and evaluated CRCT restoration and expansion potentials on a stream segment basis.

The assessment teams identified and grouped as many connected stream segments as possible. Locations of existing barriers, or potential sites where a barrier could be constructed, were an important component for locating downstream boundaries of potential restoration areas, as was 1) fish stocking and/or nonnative fish presence, 2) habitat quality attributes, and 3) significance of any fishery present. Each identified stream segment had all attributes in common or, if one or more attributes changed, a new segment was created. The relative complexity of removal (chemical and/or physical removals) of any existing fish within the potential restoration or expansion segment was also identified as a fourth variable.

A generalized restoration opportunity assessment for each potential restoration stream segment was performed by ranking the latter four variables identified above. The ranking for each

restoration variable was derived from the information and judgment of the working group doing the assessment. Ranking scores for each of the four variables are presented in Appendix A. The ranks assigned to each of the variables were combined into a rating of overall restoration potential for each stream segment. The four variables were weighted equally to derive the overall restoration ranking. The overall score was divided into logical rankings associated with restoration potential (High Restoration Potential = 4 to 6; Intermediate Restoration Potential = 7 to 9; Low Restoration Potential = 10 to 13; and, Very Low Restoration Potential = 14 to 16). If a complete barrier occurred in the lower portion of a segment, the ranking was elevated to the next higher restoration or expansion rank. The identification of one or more unknown conditions associated with the restoration variables resulted in labeling that segment as having unknown restoration potential.

Workshops, Assessment Teams, HUC's, GMU's and the Geo-database

A total of five workshops were held to obtain the information for this status update for Parts 1, 2, and 3 in 2004. Workshops were held in Delta, Durango, and Steamboat Springs, Colorado, and Price and Vernal, Utah. At each workshop a systematic application of the assessment protocol was undertaken (Appendix A). A total of 48 fisheries professionals from 7 state and federal agencies (Appendix B) provided the information used in this assessment. In addition to the fisheries professionals, 13 GIS and data management specialists (5 with a biology and/or fisheries background) also participated in these workshops to assist with data entry and display of status information (Appendix B). At each workshop consistency was maintained by having two individuals with specific knowledge of the protocols attend all five workshops. As a backup several of the GIS specialists attended more than one workshop thereby assisting in the maintenance of continuity. To the degree possible information on CRCT was verified and edited at each workshop. A second round of workshops was held during the spring of 2005 to complete Part 4 of the protocol, correct errors found during data validation, and add data collected during the summer of 2003. Data validation consisted of comparing the conservation population information in this database to the existing database maintained by the Colorado River cutthroat trout conservation team. Information stored in statewide databases was available in hard copy files or in computer databases was brought to the workshops by the participants to assist them in providing information of the status update. The CRCT Conservation Team has committed to annual updates of the database during which new information will be added and corrections will be made.

The fisheries professionals that completed this assessment had experience levels ranging from several months to several decades. Collectively, these fishery professionals had a combined total of 759 years of professional fisheries experience, of which 516 years were directly applicable to CRCT conservation and management. Many of the participants had Master of Science degrees (22), twenty had Bachelor of Science degrees, three had Bachelor of Arts degrees, one had a Master of Arts degree, and one had a Doctorate of Philosophy.

Results and Discussion

Initially 61 4th level HUC's within the Colorado River upstream of Lake Powell were included in this status update. A total of 51 HUC's were judged to contain stream segments defined as historical habitat. Ten HUC's were excluded from further analysis because there was a consensus that these HUC's were not historically (circa 1800) occupied by CRCT. The base NHD stream coverage included a variety of channels including perennial streams, ephemeral and intermittent channels, ditches, and canals. The status update attempted to refine the NHD layer by removing all ditches, canals, most ephemeral and intermittent channels and other habitats deemed as incapable of supporting CRCT. Ditches currently supporting CRCT were retained. A total of 136,933 stream miles were in the base NHD coverage excluding labeled canals and ditches after all stream miles below 6000 feet in elevation were excluded or below 5500 feet in elevation for north facing slopes.

Historical Range

As described in the methods section, the historical perspective for this status update was based on habitat believed to be inhabited when early European explorers entered western portions of the North American Continent (circa 1800 AD). A systematic review of the base elevation corrected NHD stream layer (136,933 miles) resulted in the removal of total of 115,547 miles (84%) of stream channel judged to be mislabeled canals and ditches, stream segments above complete barriers that would have precluded CRCT on or before 1800, and stream segments judged to have insufficient habitat necessary to support CRCT populations (e.g., intermittent or ephemeral channels). In general, streams currently capable of supporting trout were assumed to have been historically occupied if they were not above a historical barrier. Conversely, streams which cannot currently support trout were assumed not to have been historically occupied unless they were known to be degraded by such things as water withdrawals, channel alterations, human-caused barriers, or chemical contamination. At the completion of the systematic review, **21,386 miles of stream habitat were identified as having the potential of being historically (circa 1800) occupied by CRCT** (Figure 3). The estimated amount of historical range in each state was about 13,615 miles in Colorado (64%), 3,465 miles in Utah (16%), 4,185 miles in Wyoming (20%), and 121 miles (0.6%) in New Mexico (Figure 2). The historical range subdivided by GMU was 346 miles (2%) in Lower Colorado, 4,699 miles (22%) in Upper Colorado, 1,241 miles (6%) in Dolores, 2,211 miles (10%) in Lower Green, 4,383 miles (20%) in Upper Green, 3,398 miles (16%) in Gunnison, 2,046 miles (10%) in San Juan, and 3,064 miles (14%) in Yampa. It is important to note that a biologist knowledgeable of the Chuska Mountains (San Juan GMU, Chaco watershed) was not available during our workshops. The historical distribution in this area was based on generalized historical distribution presented in Behnke and Benson (1980) and Young et al. (1995) concurrently with best professional judgment based on site specific elevation and stream pattern.

Several 4th level HUC's, including Lower Green, Dirty Devil, Paria, Lower Lake Powell, Lower San Juan, Chinle, Blanco Canyon, McElmo, Upper Lake Powell, and Bitter, were excluded as historical habitats, even though previous assessments may have included some or parts of these basins within the historical range. These watersheds were excluded based on one or more of the

following: 1) habitat was judged to be unsuitable due to extreme conditions, 2) habitats where CRCT occurred would have been eliminated before 1800 and there was no way of re-founding the population, or 3) historical records indicated that specific streams were devoid of fish.

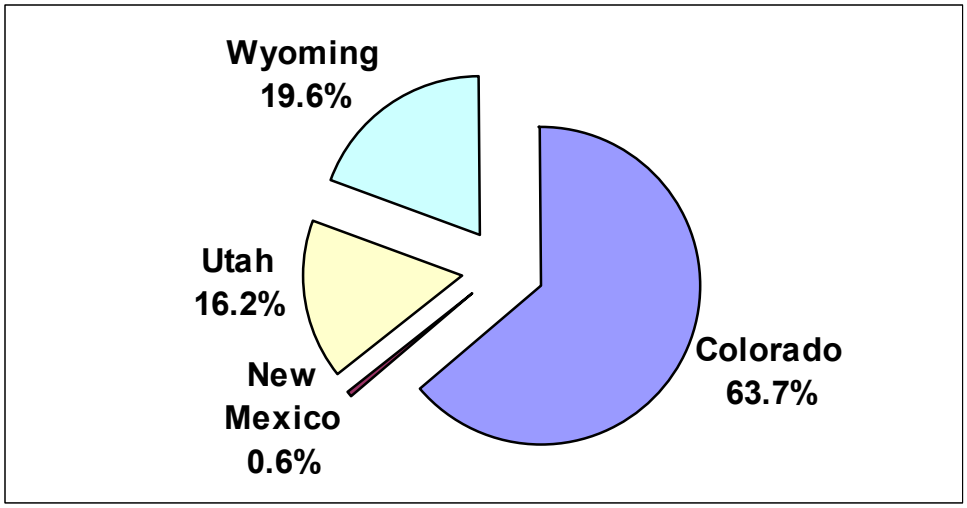


Figure 2. Percent of the 21,386 miles of historically occupied streams by state.

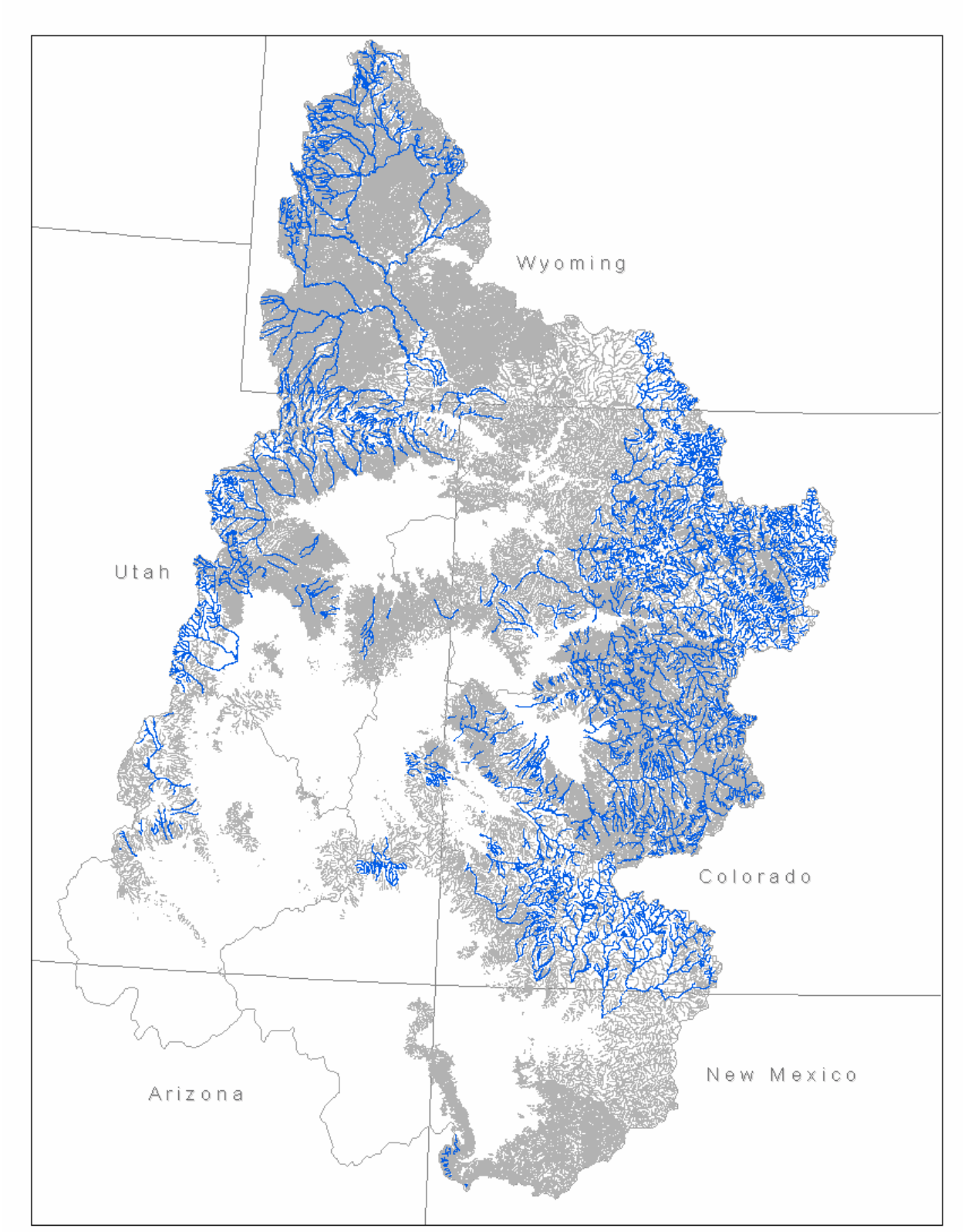


Figure 3. Streams included (blue) as part of the historical distribution and excluded (gray) from the stream layer for historically occupied watersheds.

Current Distribution

CRCT currently occupy about 3,022 miles of habitat (Figure 3). Of the 3,022 currently occupied miles, 224 occured outside historical habitats we delineated. Thirteen percent of historically occupied habitats we designated are currently occupied. The 224 miles of occupied habitat outside estimated historical habitat would equal an additional 1% of the total historically occupied habitat. These streams are typically above historical barriers in segments not believed to have been historically occupied but still within the historical range.

CRCT currently occupy about 1,359 miles in Colorado (45% of total currently occupied habitat; 10% of Colorado historical habitat), 1,111 miles in Utah (37% of total current; 32% of Utah historical), 552 miles in Wyoming (18% of total current; 13% of Wyoming historical), and are believed to be extirpated from New Mexico (Figure 4). The Lower Green GMU contained the largest amount of occupied habitat (791 stream miles). Followed by the Upper Green GMU (691 mi), Upper Colorado GMU (601 mi), Yampa GMU (404 mi), Gunnison GMU (292 mi), San Juan GMU (119 mi), Lower Colorado GMU (64 mi), and the Dolores GMU (60 mi), respectively. CRCT occupied habitat in 42 of the 51 fourth level HUC's determined to support historical habitat (Table 2). They are believed to be extirpated from the following 9 fourth level HUC's: Upper Colorado-Kane Springs, Upper Green-Slate, Big Sandy, Vermillion, Middle San Juan, Chaco, Mancos, Lower San Juan-Four Corners, and Montezuma.

Persistence (the amount of historical habitat still occupied) varied from 5 to 6 percent in the Dolores and San Juan GMUs, respectively, to 36 percent in the Lower Green River GMU. While the Lower Green River only contains 10% of the historical habitat, it has 26% of the currently occupied stream miles. Conversely, the San Juan, Dolores, and Gunnison GMUs all contain a lower percent of the occupied habitat compared to the percent of historical habitat they contain (Table 2).

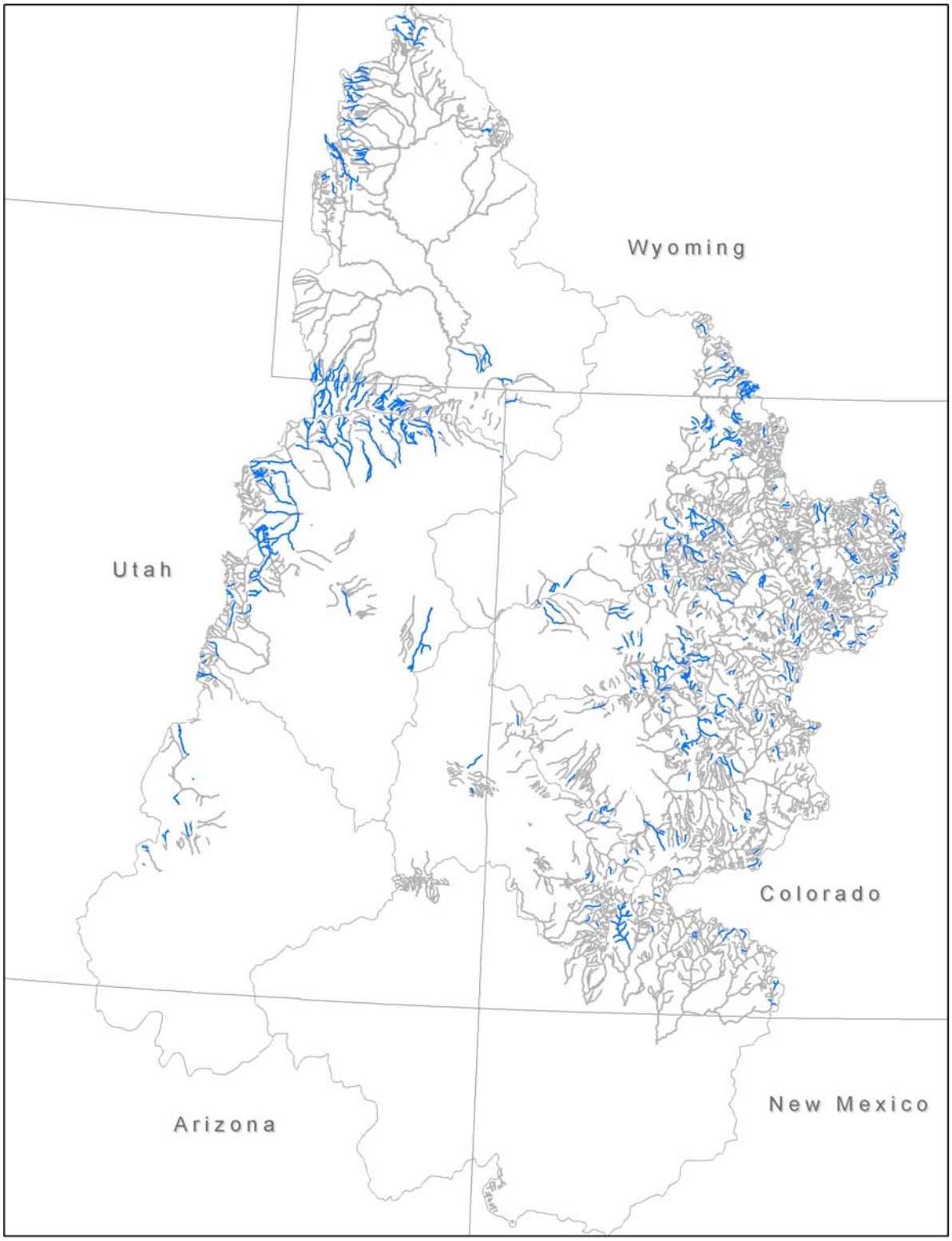


Figure 4. Currently occupied stream segments supporting CRCT (blue) overlaying the historically designated habitat (gray).

Table 2. Currently occupied CRCT habitat per hydrologic unit and percentage of historically-occupied habitat. All watersheds within each GMU are presented.

HUC code	Unit Name	Historical Miles (percent of total historical miles)	Currently Occupied Miles (percent of total currently occupied miles)	Percent of Unit Historical Habitat Currently Occupied
14010001	Colorado Headwaters	2,111 (9.9%)	221 (7.3%)	10.4%
14010002	Blue	456 (2.1%)	46 (1.5%)	10.0%
14010003	Eagle	624 (2.9%)	62 (2.1%)	9.9%
14010004	Roaring Fork	758 (3.5%)	75 (2.5%)	9.9%
14010005	Colorado Headwaters-Plateau	604 (2.8%)	150 (5.0%)	24.9%
14010006	Parachute-Roan	145 (0.7%)	47 (1.6%)	32.5%
1401	**Upper Colorado River GMU total**	**4,699 (22.0%)**	**600 (19.9%)**	**12.8%**
14020001	East-Taylor	546 (2.6%)	34 (1.1%)	6.2%
14020002	Upper Gunnison	1,257 (5.9%)	88 (2.9%)	7.0%
14020003	Tomichi	518 (2.4%)	13 (0.4%)	2.5%
14020004	North Fork Gunnison	479 (2.2%)	107 (3.5%)	22.2%
14020005	Lower Gunnison	371 (1.7%)	12 (0.4%)	3.2%
14020006	Uncompahgre	226 (1.1%)	39 (1.3%)	17.2%
1402	**Gunnison River GMU total**	**3,398 (15.9%)**	**292 (9.7%)**	**8.6%**
14030001	Westwater Canyon	24 (0.1%)	5 (0.2%)	21.3%
14030002	Upper Dolores	690 (3.2%)	16 (0.5%)	2.4%
14030003	San Miguel	314 (1.5%)	28 (0.9%)	8.8%
14030004	Lower Dolores	132 (0.6%)	10 (0.3%)	7.8%
14030005	Upper Colorado-Kane Springs	81 (0.4%)	0	0%
1403	**Dolores River GMU total**	**1,241 (5.8%)**	**59 (2.0%)**	**4.8%**
14040101	Upper Green	1,622 (7.6%)	284 (9.4%)	17.5%
14040102	New Fork	387 (1.8%)	9 (0.3%)	2.3%
14040103	Upper Green-Slate	70 (0.3%)	0	0%
14040104	Big Sandy	355 (1.7%)	0	0%
14040105	Bitter	0	0	n/a
14040106	Upper Green-Flaming Gorge Res.	707 (3.3%)	207 (6.8%)	29.3%
14040107	Blacks Fork	853 (4.0%)	157 (5.2%)	18.4%
14040108	Muddy	333 (1.6%)	34 (1.1%)	10.3%
14040109	Vermilion	56 (0.3%)	0	0%
1404	**Upper Green River GMU total**	**4,383 (20.5%)**	**691 (22.9%)**	**15.8%**
14050001	Upper Yampa	1,701 (8.0%)	135 (4.5%)	7.9%
14050002	Lower Yampa	40 (0.2%)	9 (0.3%)	23.1%
14050003	Little Snake	488 (2.3%)	153 (5.0%)	31.3%
14050004	Muddy	61 (0.3%)	9 (0.3%)	15.1%
14050005	Upper White	631 (3.0%)	75 (2.5%)	11.9%
14050006	Piceance-Yellow	62 (0.3%)	8 (0.3%)	12.2%
14050007	Lower White	81 (0.4%)	16 (0.5%)	19.7%
1405	**Yampa River GMU total**	**3,064 (14.3%)**	**404 (13.4%)**	**13.2%**
14060001	Lower Green-Diamond	26 (0.1%)	1 (0.0%)	3.5%
14060002	Ashley-Brush	158 (0.7%)	87 (2.9%)	55.1%
14060003	Duchesne	608 (2.8%)	288 (9.5%)	47.4%
14060004	Strawberry	402 (1.9%)	148 (4.9%)	36.8%
14060005	Lower Green-Desolation Canyon	152 (0.7%)	12 (0.4%)	8.1%
14060006	Willow	101 (0.5%)	72 (2.4%)	71.0%
14060007	Price	396 (1.9%)	139 (4.6%)	35.1%
14060008	Lower Green subbasin	0	0	n/a

HUC code	Unit Name	Historical Miles (percent of total historical miles)	Currently Occupied Miles (percent of total currently occupied miles)	Percent of Unit Historical Habitat Currently Occupied
14060009	San Rafael	367 (1.7%)	44 (1.5%)	11.9%
1406	**Lower Green River GMU total**	**2,211 (10.3%)**	**791 (26.2%)**	**35.8%**
14070001	Upper Lake Powell	0	0	n/a
14070002	Muddy	86 (0.4%)	14 (0.5%)	16.8%
14070003	Fremont	154 (0.7%)	26 (0.9%)	16.9%
14070004	Dirty Devil	0	0	n/a
14070005	Escalante	105 (0.5%)	24 (0.8%)	22.4%
14070006	Lower Lake Powell	0	0	n/a
14070007	Paria	0	0	n/a
1407	**Lower Colorado River GMU total**	**346 (1.6%)**	**64 (2.1%)**	**18.6%**
14080101	Upper San Juan	643 (3.0%)	20 (0.7%)	3.1%
14080102	Piedra	367 (1.7%)	18 (0.6%)	5.0%
14080103	Blanco Canyon	0	0	n/a
14080104	Animas	487 (2.3%)	81 (2.7%)	16.6%
14080105	Middle San Juan	203 (0.9%)	0	0%
14080106	Chaco	67 (0.3%)	0	0%
14080107	Mancos	111 (0.5%)	0	0%
14080201	Lower San Juan-Four Corners	147 (0.7%)	0	0%
14080202	Mcelmo	0	0	n/a
14080203	Montezuma	20 (0.1%)	0	0%
14080204	Chinle	0	0	n/a
14080205	Lower San Juan	0	0	n/a
1408	**San Juan River GMU total**	**2,046 (9.6%)**	**119 (3.9%)**	**5.8%**
	Grand total	**21,386 (100%)**	**3,022 (100%)**	**14.1%**

Although the intent of this assessment was to report current CRCT status, not to analyze patterns or causes, an interesting pattern emerged related to how well CRCT were able to persist in their historical habitats. We noticed that the 4th level watersheds (the smallest unit we analyzed) with the best CRCT persistence (highest percent of historical habitat currently occupied) tended to be watersheds which had lower amounts of historical habitat. These watersheds were comprised of mixed warm-water and cold-water streams in contrast to those comprised primarily of cold-water streams and rivers which had high amounts of historical habitat. To explore this pattern further, we calculated the density of historic habitat in each 4th level watershed and compared it to CRCT persistence (Table 3 and Figure 5). This pattern may be partly explained by the likelihood that non-native trout stocking would have occurred more in the "prime" trout habitat (high historic density) and less in "marginal" trout habitat (low historic density). Alternatively, introduced non-native trout may not have persisted as well in more marginal habitat. In addition, non-native trout would have been better able to invade the more well-connected habitats in the core areas than the more isolated areas in the marginal habitat. This is an area worthy of further study.

In many 4th level watersheds, restoration efforts improved the proportion of CRCT persistence when compared to historical habitats. For this assessment, data were only available for CRCT introductions and population expansions for conservation populations. These data are also presented in Table 3.

Table 3. Percent of historical habitat occupied in currently occupied CRCT watersheds and the number of refounded or expanded conservation populations, number of miles of occupied habitat outside the historical range, and historical habitat density. Watersheds with at least 15% of historical habitat currently occupied are in bold.

Name	# of refounded or expanded conservation populations	Occupied miles outside historical range	Percent of Historical Occupied	Historical Habitat Density (mi/mi^2)
Upper Colorado River Basin				
Colorado Headwaters	12	25	10%	0.72
Blue	0	7	10%	0.68
Eagle	1	11	10%	0.64
Roaring Fork	2	15	10%	0.52
Colorado Headwaters-Plateau	**0**	**10**	**25%**	**0.19**
Parachute-Roan	**1**	**0**	**33%**	**0.21**
Gunnison River Basin				
East-Taylor	0	1	6%	0.70
Upper Gunnison	4	19	7%	0.52
Tomichi	0	5	3%	0.47
North Fork Gunnison	**0**	**5**	**22%**	**0.49**
Lower Gunnison	0	0.2	3%	0.22
Uncompahgre	**0**	**0**	**17%**	**0.20**
Dolores River Basin				
Westwater Canyon	**0**	**0**	**21%**	**0.02**
Upper Dolores	0	0	2%	0.32
San Miguel	0	0	9%	0.20
Lower Dolores	0	0	8%	0.15
Upper Green River Basin				
Upper Green	**15**	**2**	**18%**	**0.55**
New Fork	0	0	2%	0.31
Upper Green-Flaming Gorge Res	**0**	**0**	**29%**	**0.29**
Blacks Fork	**7**	**0**	**18%**	**0.31**
Muddy	0	0	10%	0.34
Yampa River Basin				
Upper Yampa	4	0	8%	0.65
Lower Yampa	**0**	**0**	**23%**	**0.03**
Little Snake	**10**	**12**	**31%**	**0.16**
Muddy	**1**	**0**	**15%**	**0.06**
Upper White	2	0	12%	0.46
Piceance-Yellow	0	0	12%	0.07
Lower White	**0**	**0**	**20%**	**0.03**
Lower Green River Basin				
Lower Green-Diamond	2	1	4%	0.03
Ashley-Brush	**0**	**2**	**55%**	**0.24**
Duchesne	**0**	**5**	**47%**	**0.23**
Strawberry	**2**	**0.4**	**37%**	**0.34**
Lower Green-Desolation Canyon	0	0	8%	0.08
Willow	**0**	**61**	**71%**	**0.10**

Price	**1**	**14**	**35%**	**0.21**
San Rafael	2	7	12%	0.15
Lower Colorado River Basin				
Muddy	**0**	**0**	**17%**	**0.06**
Fremont	**8**	**1**	**17%**	**0.08**
Escalante	**2**	**0.4**	**22%**	**0.05**
San Juan River Basin				
Upper San Juan	0	7	3%	0.19
Piedra	0	0	5%	0.55
Animas	**2**	**15**	**17%**	**0.36**

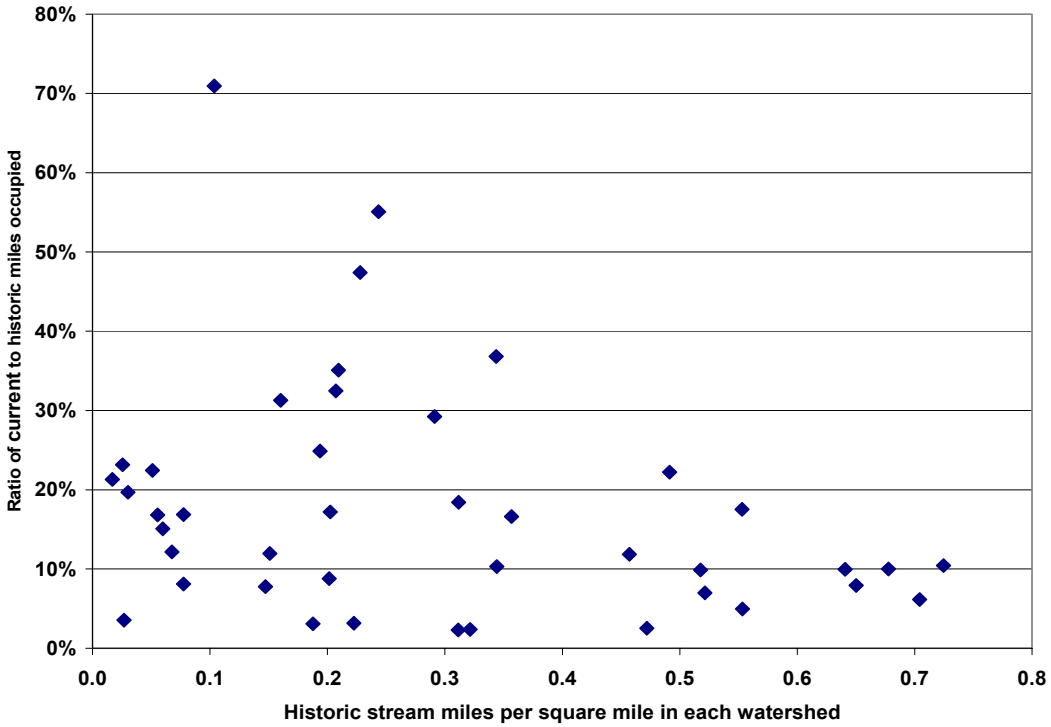


Figure 5. Graph displaying the relationship between the proportion of historical habitat currently occupied and the density of historical habitat in each occupied 4th level watershed.

Genetic Status

Genetic testing of CRCT across all of the currently occupied area has not been completed and existing tests were not conducted in a random fashion. Consequently, the available genetics information does not constitute a representative sample taken from the entire CRCT population. Instead, there was a tendency to sample fish from known, more accessible populations and from newly discovered populations that appeared to be typical of the CRCT phenotype. Genetic sampling has been conducted in over 1,150 miles of occupied habitats (38% of occupied habitats). Results of genetic sampling were extrapolated across the currently occupied segment from which the sample was taken, which may include one or more miles of occupied habitat. No evidence of introgression was found from samples covering about 782 miles (68% of tested area, 26% of occupied habitats, and 4% of historical habitats; Table 4; Figure 6). CRCT identified in 470 miles (16% of occupied habitats and 2% of historical habitats) were suspected of being genetically unaltered, based on the absence of introduced hybridizing species and the lack of records that identify stocking of hybridizing species, good meristic characteristics, or the population was adjacent to a pure population. CRCT in about 367 miles (12% of occupied habitats or 2% of historical habitat) were hybridized based on genetic testing. Another 1,334 miles of occupied habitat (44% of occupied habitats and 6% of historical habitats) were identified as having the potential of being hybridized due to the presence, or past stocking, of hybridizing nonnative species or subspecies (Table 4). Genetic results associated with each GMU are presented in Table 5.

To provide insight into the likely genetic status of CRCT within habitats classified as "Suspected Unaltered" and "Potentially Hybridized" we refer the reader to the recent westslope cutthroat (WCT) status review that was completed in February, 2003 (Shepard et al. 2003). For central Idaho where limited genetic testing has been conducted, the assessment team took a closer look at classification results for 10 separate 4th code HUC's where some genetic testing had been conducted, they compared the level of introgression within tested stream segments to the classifications for stream segments where no genetic testing had been done. Seven of these ten HUC's had the majority of the stream segments classified as "Potentially Hybridized". Of these seven, genetic testing in five HUC's found no evidence of introgression, while genetic testing in one HUC found 65% of tested stream length had no evidence of introgression and testing in another HUC found evidence of introgression in all tested samples. Conversely, some stream segments in one HUC that supported WCT classified as being primarily "Suspected Unaltered" tested as introgressed, while genetic testing in the other two HUC's that were predominated by streams classified as "Suspected Unaltered" found no evidence of introgression. We caution against drawing specific conclusions about genetic status of CRCT populations identified as suspected unaltered or potentially hybridized from a genetic perspective. The only definitive way of determining genetic status is through formal genetic testing.

Table 4. Genetic status for Colorado River cutthroat trout by stream length (miles) within their current range as of 2005.

Genetic status	Miles	% of occupied	% of historical
Tested; Unaltered (<1% introgressed)	782	26	3.7
Tested; ≥1% to ≤10% introgressed	218	7	1.0
Tested; >10% to ≤20% introgressed	83	3	0.4
Tested; >20% introgressed	67	2	0.3
Suspected Unaltered	470	16	2.2
Potentially Altered	1334	44	6.2
Mixed Stock; Altered and Unaltered	68	2	0.3
TOTAL	**3022**		**14.1**

Table 5. Stream miles currently occupied by Colorado River cutthroat trout by genetic status in each GMU.

	GMU			
Genetic status	**Upper Colorado**	**Lower Colorado**	**Dolores**	**Gunnison**
Tested;Unaltered (<1% introgressed)	90 (14.9%)	47 (72.7%)	5 (8.8%)	56 (19.2%)
Tested; ≥1% to ≤10% introgressed	49 (8.1%)	0	4 (6.7%)	22 (7.4%)
Tested; >10% to ≤20% introgressed	22 (3.6%)	0	4 (7.5%)	7 (2.5%)
Tested; >20% introgressed	14 (2.3%)	0	4 (6.9%)	18 (6.2%)
Suspected Unaltered	104 (17.2%)	6 (10.0%)	8 (13.4%)	43 (14.6%)
Potentially Altered	323 (53.8%)	11 (17.3%)	31 (52.8%)	146 (50.1%)
Mixed Stock; Altered and Unaltered	0	0	2 (3.8%)	0
Total	**600 (100%)**	**64 (100%)**	**59 (100%)**	**292 (100%)**

	GMU			
Genetic status	**Upper Green**	**Lower Green**	**San Juan**	**Yampa**
Tested;Unaltered (<1% introgressed)	152 (21.9%)	199 (25.2%)	29 (24.6%)	205 (50.7%)
Tested; ≥1% to ≤10% introgressed	92 (13.3%)	0	8 (7.0%)	43 (10.8%)
Tested; >10% to ≤20% introgressed	16 (2.3%)	12 (1.5%)	0	21 (5.1%)
Tested; >20% introgressed	7 (1.0%)	21 (2.6%)	0	4 (0.9%)
Suspected Unaltered	147 (21.3%)	102 (12.8%)	9 (7.2%)	52 (12.8%)
Potentially Altered	212 (30.7%)	458 (57.8%)	73 (61.2%)	80 (19.7%)
Mixed Stock; Altered and Unaltered	66 (9.6%)	0	0	0
Total	**691 (100%)**	**791 (100%)**	**119 (100%)**	**404 (100%)**

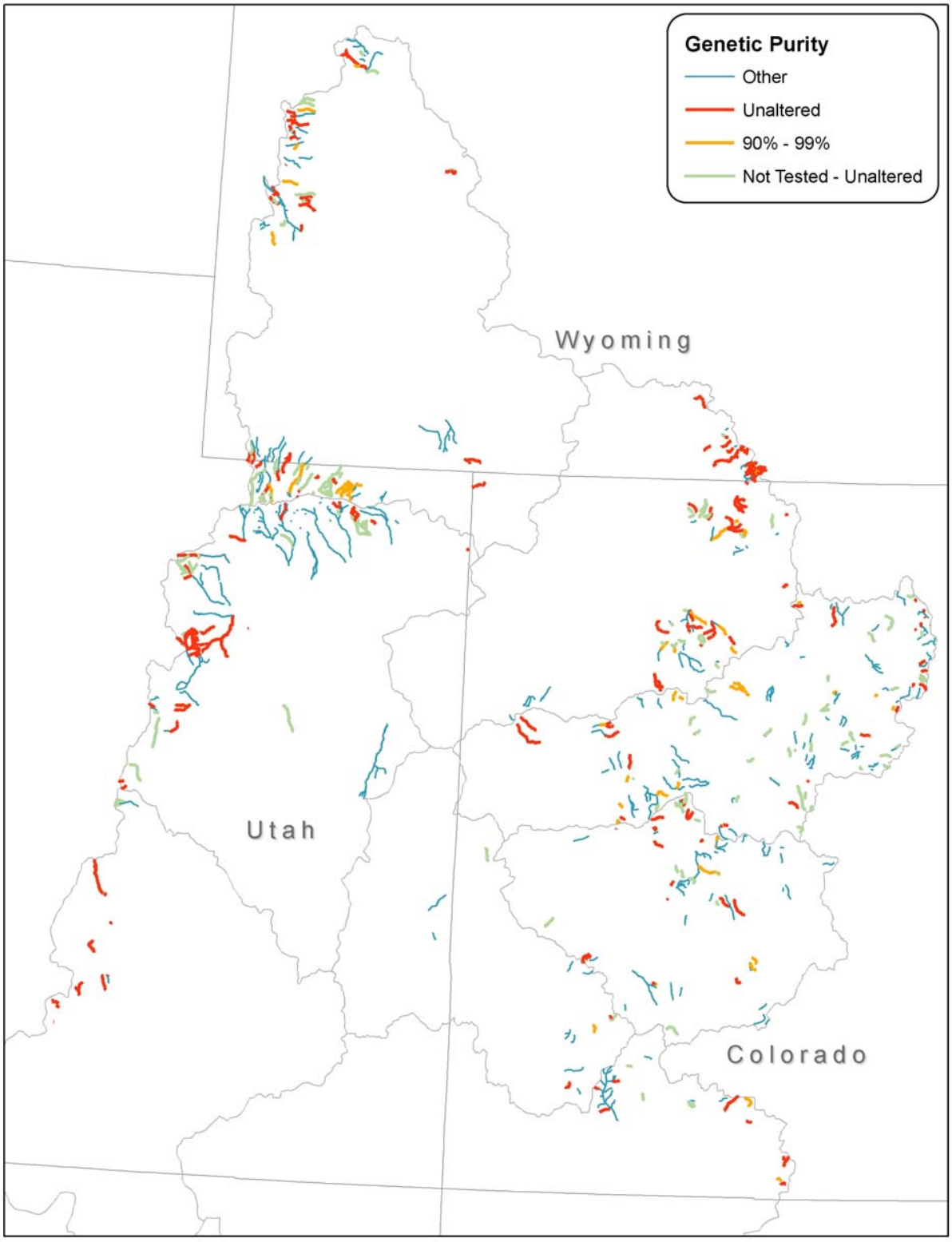


Figure 6. Genetic status of currently occupied CRCT stream segments.

Elevation

CRCT occupied elevations ranging from about 5,500 feet to over 12,000 feet. The elevation range of historical habitat was slightly larger (Figure 7). Fifty-nine percent of currently occupied habitat was between 7,500 and 9,500 feet. Only 48% of historical habitat occurred in that range. Cutthroat persistence (how much historical habitat is still occupied) ranged from 17% to 21% between 8,000 and 10,500 feet (Table 6).

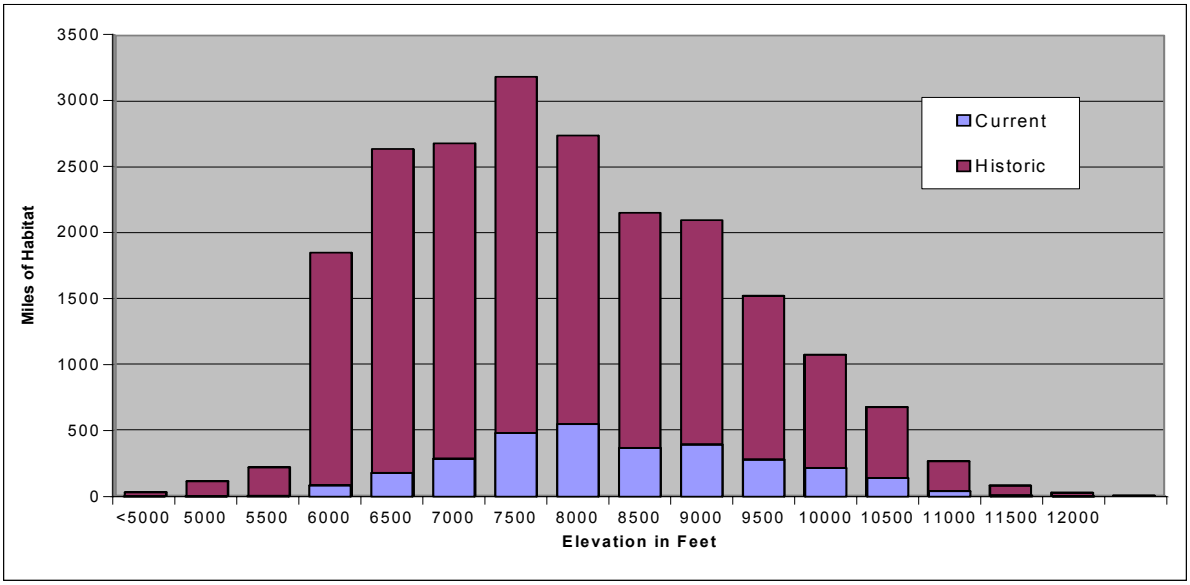


Figure 7. Histogram of elevation of historical and currently occupied habitat.

Table 6. Amount of historical and currently occupied habitat by elevation range and the percent of historical occupied by elevation.

Elevation (feet)	Miles occupied	Miles of historical	% of historical occupied
<5000	0.0	27.5	0.0%
5000	0.3	111.2	0.3%
5500	3.9	216.6	1.8%
6000	84.2	1848.2	4.6%
6500	178.1	2634.5	6.8%
7000	286.2	2678.0	10.7%
7500	479.9	3183.0	15.1%
8000	548.8	2737.2	20.1%
8500	367.6	2149.9	17.1%
9000	394.1	2095.3	18.8%
9500	278.9	1520.4	18.3%
10000	216.7	1072.0	20.2%
10500	139.7	673.8	20.7%
11000	39.7	262.5	15.1%
11500	7.8	78.0	10.0%
12000	1.5	24.0	6.4%
12500	0.0	0.7	0.0%

Colorado River Cutthroat Trout Densities

Densities of sexually mature CRCT (15 cm and larger) were based on number of adults per mile for each steam segment. Densities were summarized into density ranges by state (Table 7) and included all CRCT occupied streams regardless of genetic purity. A total of 813 miles of occupied habitat (27% of currently occupied habitat) supported populations identified within the 0 to 50 fish/mile range. Densities of 51-150 and 151-400 adult trout/mile of occupied habitat occurred in 18% and 19%, respectively, of total occupied habitat. Densities over 400 fish/mile occurred in 242 miles of CRCT habitat (8%). The remaining 858 occupied stream miles (28%) had unknown CRCT densities. CRCT densities also varied by GMU (Table 8)

Table 7. Currently-occupied stream miles in Colorado, Utah, and Wyoming and total percentage by density categories of sexually mature CRCT in the three states.

Density Range (fish/mile)	Colorado	Utah	Wyoming	Total
0 to 50	237 (17.4%)	435 (39.2%)	141 (25.5%)	813 (26.9%)
51 to 150	255 (18.8%)	156 (14.0%)	134 (24.3%)	545 (18.0%)
151 to 400	277 (20.3%)	147 (13.2%)	141 (25.5%)	564 (18.7%)
Over 400	58 (4.3%)	105 (9.5%)	78 (14.2%)	242 (8.0%)
Unknown	533 (39.2%)	268 (24.1%)	58 (10.4%)	858 (28.4%)
Total	**1,359 (100%)**	**1,111 (100%)**	**552 (100%)**	**3,022 (100%)**

Table 8. Currently occupied stream habitat (miles) in each of the eight GMU's by density categories of sexually mature CRCT.

Density Range (fish/mile)	Upper Colorado	Lower Colorado	Dolores	Gunnison
0 to 50	77 (12.8%)	19 (29.3%)	22 (36.2%)	51 (17.6%)
51 to 150	115 (19.2%)	19 (29.5%)	12 (19.9%)	39 (13.3%)
151 to 400	119 (19.8%)	6 (10.0%)	12 (20.3%)	32 (11.0%)
Over 400	15 (2.5%)	19 (29.5%)	0 (0.0%)	8 (2.6%)
Unknown	274 (45.7%)	1 (1.7%)	14 (23.6%)	162 (55.4%)
Total	**600 (100%)**	**64 (100%)**	**59 (100%)**	**292 (100%)**

Density Range (fish/mile)	Upper Green	Lower Green	San Juan	Yampa
0 to 50	108 (15.7%)	394 (49.7%)	60 (50.2%)	83 (20.4%)
51 to 150	122 (17.6%)	108 (13.7%)	22 (18.2%)	108 (26.8%)
151 to 400	190 (27.5%)	88 (11.1%)	19 (16.0%)	98 (24.2%)
Over 400	117 (16.9%)	31 (4.0%)	10 (8.4%)	42 (10.3%)
Unknown	154 (22.3%)	170 (21.5%)	9 (7.2%)	74 (18.2%)
Total	**691 (100%)**	**791 (100%)**	**119 (100%)**	**404 (100%)**

Habitat Quality

The evaluation of habitat quality took both natural characteristics (e.g., gradient and stream size) and human disturbance (e.g., sediment from roads or grazing) into account. The total amount of CRCT habitat viewed as excellent was approximately 384 miles (13% of currently occupied). Habitat amounts associated with good, fair, and poor conditions were 1414 (47%), 882 (29%), and 171 (6%), respectively. Only 171 (6%) miles of occupied habitat conditions were unknown. Habitat quality considerations by state and GMU are presented in Tables 9 and 10.

Table 9. Habitat quality ratings in currently occupied stream miles in each of the three states.

Habitat Quality	Colorado	Utah	Wyoming	Totals
Excellent	168 (12.4%)	166 (14.9%)	50 (9.1%)	384 (12.7%)
Good	287 (21.1%)	357 (32.2%)	238 (43.0%)	882 (29.2%)
Fair	726 (53.4%)	487 (43.9%)	201 (36.4%)	1,414 (46.8%)
Poor	66 (4.9%)	65 (5.8%)	40 (7.3%)	171 (5.7%)
Unknown	112 (8.2%)	36 (3.2%)	23 (4.2%)	171 (5.7%)
Total	**1,359 (100%)**	**1,111 (100%)**	**552 (100%)**	**3,022 (100%)**

Table 10. Currently occupied stream miles by habitat quality rating in each of the eight GMU's .

Habitat Quality	Upper Colorado	Lower Colorado	Dolores	Gunnison
Excellent	77 (12.9%)	13 (20.8%)	0 (0.0%)	26 (8.8%)
Good	142 (23.6%)	13 (20.3%)	33 (55.2%)	52 (17.9%)
Fair	264 (44.0%)	32 (49.2%)	27 (44.8%)	199 (68.1%)
Poor	35 (5.8%)	6 (9.6%)	0 (0.0%)	4 (1.4%)
Unknown	82 (13.7%)	0 (0.0%)	0 (0.0%)	11 (3.8%)
Total	**600 (100%)**	**64 (100%)**	**59 (100%)**	**292 (100%)**

Habitat Quality	Upper Green	Lower Green	San Juan	Yampa
Excellent	141 (20.3%)	20 (2.6%)	46 (38.4%)	61 (15.1%)
Good	218 (31.6%)	324 (40.9%)	8 (7.1%)	91 (22.4%)
Fair	269 (39.0%)	353 (44.6%)	65 (54.5%)	206 (51.0%)
Poor	39 (5.7%)	59 (7.4%)	0 (0.0%)	28 (6.9%)
Unknown	24 (3.4%)	36 (4.5%)	0 (0.0%)	18 (4.5%)
Total	**691 (100%)**	**791 (100%)**	**119 (100%)**	**404 (100%)**

Occupied Stream Width

The average width of occupied stream segments was assessed for all occupied habitat. Almost three-quarters of the occupied streams were less than 15 feet wide, with the highest percentage in the 5 to 10 foot range (Table 11). This pattern was fairly consistent across GMU's. The San Juan GMU overall had the largest streams with 30% of the occupied streams greater than 20 feet wide (Table 12).

Table 11. Stream width of currently occupied stream miles in each of the three states.

Stream Width	Colorado	Utah	Wyoming	Totals
< 5 feet	131 (9.6%)	184 (16.5%)	119 (21.6%)	434 (14.3%)
5 to 10 feet	633 (46.6%)	413 (37.2%)	235 (42.6%)	1,281 (42.4%)
10 to 15 feet	251 (18.5%)	156 (14.0%)	90 (16.2%)	497 (16.4%)
15 to 20 feet	121 (8.9%)	141 (12.7%)	36 (6.5%)	298 (9.9%)
20 to 25 feet	101 (7.5%)	107 (9.6%)	10 (1.9%)	218 (7.2%)
> 25 feet	0	41 (3.7%)	32 (5.8%)	73 (2.4%)
Unknown	122 (9.0%)	69 (6.2%)	30 (5.4%)	221 (7.3%)
Total	**1,359 (100%)**	**1,111 (100%)**	**552 (100%)**	**3,022 (100%)**

Table 12. Currently occupied stream miles by stream width in each of the eight GMU's .

Stream Width	Upper Colorado	Lower Colorado	Dolores	Gunnison
< 5 feet	60 (10.0%)	4 (6.8%)	11 (18.0%)	33 (11.2%)
5 to 10 feet	289 (48.2%)	29 (45.4%)	37 (61.5%)	125 (42.8%)
10 to 15 feet	93 (15.4%)	22 (34.6%)	4 (7.0%)	76 (26.0%)
15 to 20 feet	56 (9.4%)	1 (1.0%)	8 (13.5%)	16 (5.4%)
20 to 25 feet	19 (3.2%)	8 (12.3%)	0	31 (10.5%)
> 25 feet	0	0	0	0
Unknown	83 (13.8%)	0	0	12 (4.2%)
Total	**600 (100.0%)**	**64 (100.0%)**	**59 (100.0%)**	**292 (100.0%)**

Stream Width	Upper Green	Lower Green	San Juan	Yampa
< 5 feet	121 (17.5%)	152 (19.3%)	0	52 (12.9%)
5 to 10 feet	306 (44.3%)	248 (31.4%)	62 (52.5%)	185 (45.7%)
10 to 15 feet	106 (15.4%)	106 (13.4%)	4 (3.5%)	86 (21.2%)
15 to 20 feet	74 (10.7%)	90 (11.3%)	16 (13.4%)	38 (9.5%)
20 to 25 feet	20 (3.0%)	89 (11.2%)	36 (30.7%)	15 (3.7%)
> 25 feet	34 (4.9%)	37 (4.7%)	0	1 (0.4%)
Unknown	30 (4.3%)	69 (8.7%)	0	27 (6.6%)
Total	**691 (100%)**	**791 (100%)**	**119 (100%)**	**404 (100%)**

Stocking and Presence of Non-Native Species

Within the currently occupied CRCT habitat approximately 1,362 miles (45%) have no record of non-native fish stocking. The remaining 1,660 miles (55%) of occupied habitat have at least one record of stocking of non-native fish. Non-native stocking by state and GMU are presented in Tables 13 and 14.

Table 13. Currently-occupied CRCT stream habitat (miles) by state for which records of stocking with non-native salmonids has not (no record) or has (records exist) occurred.

Record of Stocking	Colorado	Utah	Wyoming	Totals
No record of non-native stocking	591 (43.5%)	519 (46.7%)	252 (45.7%)	1,362 (45.1%)
Record of non-native stocking	768 (56.5%)	592 (53.3%)	300 (54.3%)	1,660 (54.9%)
Total	**1,359 (100%)**	**1,111 (100%)**	**552 (100%)**	**3,022 (100%)**

Table 14. Non-native stocking records for currently occupied stream habitat (miles) in the eight GMU's.

Record of Stocking	Upper Colorado	Lower Colorado	Dolores	Gunnison
No record of non-native stocking	273 (45.4%)	37 (57.3%)	24 (40.7%)	111 (38.1%)
Record of non-native stocking	328 (54.6%)	27 (42.7%)	35 (59.3%)	181 (61.9%)
Total	**600 (100%)**	**64 (100%)**	**59 (100%)**	**292 (100%)**

Record of Stocking	Upper Green	Lower Green	San Juan	Yampa
No record of non-native stocking	346 (50.1%)	325 (41.1%)	41 (34.4%)	204 (50.6%)
Record of non-native stocking	345 (49.9%)	466 (58.9%)	78 (65.6%)	200 (49.4%)
Total	**691 (100%)**	**791 (100%)**	**119 (100%)**	**404 (100%)**

Even more pertinent was the information associated with presence of non-native fish that were considered sympatric with CRCT. Within the currently occupied habitat there were 1,108 miles (37%) that were identified as having no non-native fish present. A total of 1,914 miles (63%) of occupied habitat were identified as having sympatric CRCT and non-native fish. Wyoming had the highest percent of occupied habitat without non-native trout (45%), followed by Colorado (39%) and Utah (29%, see Table 15). Within GMU's, the Yampa, Lower Colorado, and Upper Colorado GMU's had the lowest percentage of occupied miles where CRCT and non-native trout were sympatric all at around 50% (Table 16). The Gunnison and Lower Green GMU's had the highest percentage of occupied miles where CRCT and non-native trout were sympatric at over 70%.

In most areas, there are more miles of stream with non-native trout than there are miles with records of stocking, implying that there has been either invasion or unrecorded stocking in significant parts of the occupied range. In Utah, 519 miles of occupied habitat (47%) do not

have any stocking records associated with them; however, only 327 miles (29%) remain free of non-native trout. At the GMU scale, the Gunnison, Upper Green, and Lower Green show large increases between the miles of stream with stocking records and the miles of occupied habitat with non-native trout. The Yampa and Upper Colorado GMUs show slightly lower amounts of habitat with non-native trout present than the length of habitat stocked.

Table 15. Record of presence or absence of non-native trout sympatric with CRCT within the currently occupied CRCT habitat (stream miles) in the three states.

Presence or Absence of Non-Native Trout	Colorado	Utah	Wyoming	Totals
No record of non-native trout	533 (39.2%)	327 (29.4%)	247 (44.8%)	1,108 (36.7%)
Record of non-native trout	826 (60.8%)	784 (70.6%)	305 (55.2%)	1,914 (63.3%)
Total	**1,359 (100%)**	**1,111 (100%)**	**552 (100%)**	**3,022 (100%)**

Table 19. Record of presence or absence of non-native fish sympatric with CRCT within the currently occupied CRCT habitat (stream miles) in eight GMU's.

Presence or Absence of Non-Native Trout	Upper Colorado	Lower Colorado	Dolores	Gunnison
No record of non-native trout	282 (47.0%)	33 (51.2%)	21 (35.6%)	68 (23.1%)
Record of non-native trout	318 (53.0%)	31 (48.8%)	38 (64.4%)	224 (76.9%)
Total	**600 (100%)**	**64 (100%)**	**59 (100%)**	**292 (100%)**

Table 19 (cont.)

Presence or Absence of Non-Native Trout	Upper Green	Lower Green	San Juan	Yampa
No record of non-native trout	229 (33.1%)	217 (27.5%)	41 (34.9%)	216 (53.4%)
Record of non-native trout	463 (66.9%)	574 (72.5%)	78 (65.1%)	188 (46.6%)
Total	**691 (100 %)**	**791 (100%)**	**119 (100%)**	**404 (100%)**

CRCT Occurrence by Land Status

Of the 3,022 miles of habitats currently occupied by CRCT at the time of this assessment, 2,248 miles (74% of currently occupied habitat) were associated with land administrated by Federal agencies. Two-thirds of all occupied habitats occurred on National Forests (USFS). An additional 23 miles were in designated National Parks (NPS) and 209 miles were in Bureau of Land Management (BLM). Approximately 466 miles of occupied habitat on National Forest Lands were within designated wilderness. Approximately 774 miles occurred on land with other administrative designations including 98 miles associated with habitat on Ute Tribal lands (Table 17; Figure 8). Remaining habitat occurred on State (121 miles) and private (555 miles) lands. It is important to note that the legislative mandate associated with the NPS has a strong focus on preservation of natural environmental conditions. A similar focus would be associated with lands designated as wilderness. The legislative mandate for the USFS and the BLM on most lands outside of wilderness includes a multiple use resource theme that is much broader than that of the NPS. Included in the multiple use focus of the land use agencies is direction associated with the conservation of biodiversity and the protection of the environmental components such as soil and water. As such, the land use agencies have developed land use plans that provide necessary direction intended to keep the multiple uses of these lands consistent with conservation of biodiversity and protection of basic environmental conditions and processes, including special protection for cutthroat trout (e.g., stream buffers or road location and density restrictions).

Table 17. Miles of habitat occupied within the various land ownership boundaries associated with CRCT by GMU.

GMU	NPS	FS-Wilderness	FS-non Wilderness	BLM	Tribal	State	PVT
Upper Colorado	22	111	278	70	--	10	109
Lower Colorado	--	--	57	2	--	--	5
Dolores	--	2	40	1	--	5	12
Upper Green	--	90	393	78	--	23	109
Lower Green	1	94	336	12	98	69	180
Gunnison	--	105	136	18	--	1	31
San Juan	--	22	81	2	--	--	13
Yampa	--	42	229	25	--	13	95
Total	**23 (1%)**	**466 (15%)**	**1,550 (51%)**	**209 (7%)**	**98 (3%)**	**121 (4%)**	**555 (18%)**

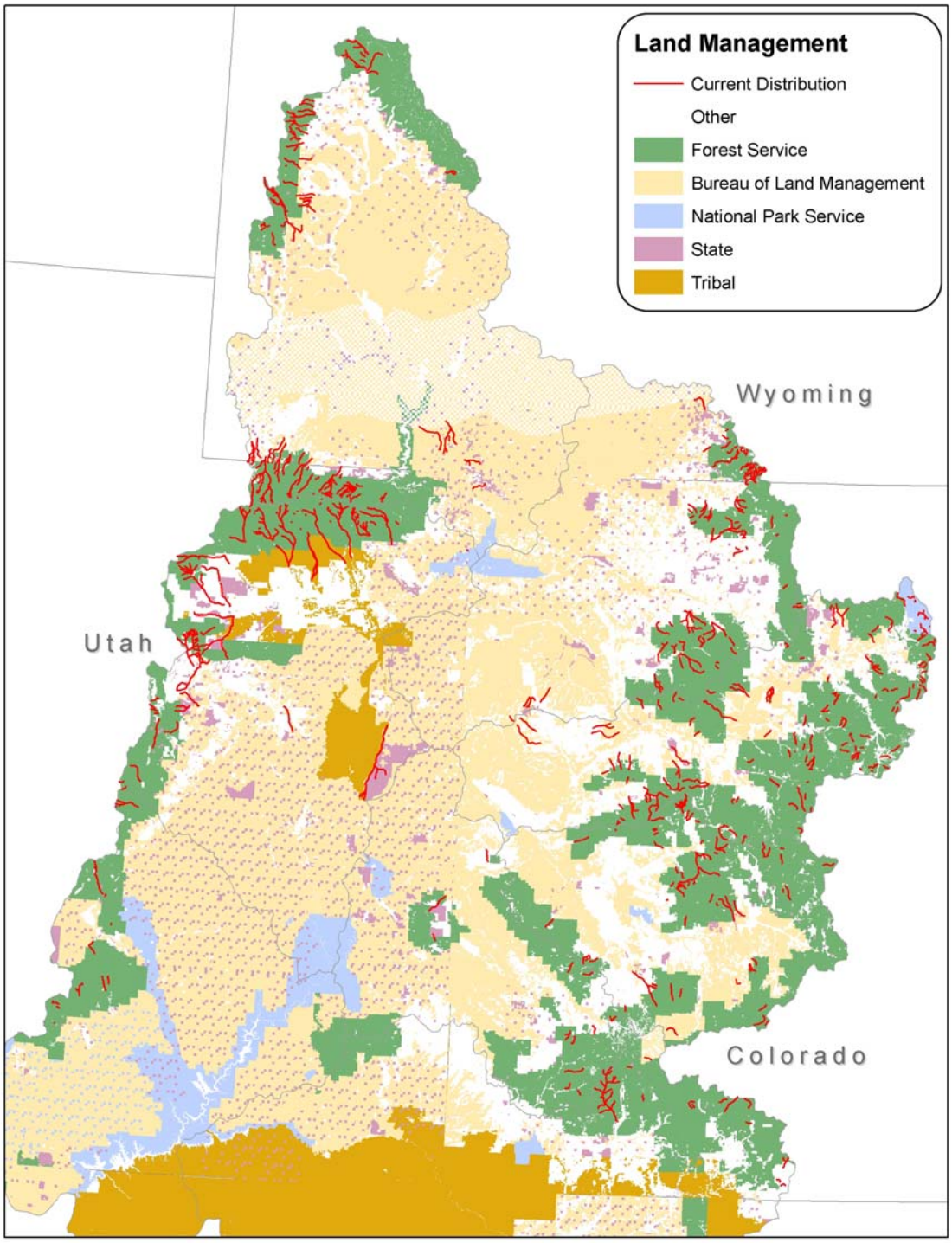


Figure 8. Currently occupied CRCT habitat associated with the primary agencies (USFS, BLM, NPS, State, and Tribal).

Conservation Populations

A total of 285 populations of CRCT occupying about 1,796 miles of habitat (59% of currently occupied habitats; 8% of historical range) were designated as conservation populations by State agencies (Figure 9). Forty populations occurring in 102 miles of habitat occur above historical barriers and therefore outside of our estimate of historical range. Conservation populations are known (genetic testing complete) or suspected to be at least 90 percent genetically pure or were otherwise determined to be important for CRCT conservation. The designated conservation populations were spread throughout the historical range, occurring in habitat within three States, in all eight GMU's, and in 34 of the 51 fourth level HUC's identified as being historically occupied by CRCT. Eight conservation populations occupied habitats that crossed state boundaries. Colorado had the greatest number of conservation populations and the most area occupied, but it also had the lowest percent of historical occupied and the shortest average population length (Table 18). Utah had the smallest number of conservation populations, but had the second most habitat occupied, the highest percent of historical occupied and longest average population length. Conservation populations were more densely concentrated within the northeast GMU's (Upper Green, Upper Colorado, and Yampa GMU's) of the historical range (Figure 10).

Table 18. Distribution of conservation populations across Colorado, Wyoming, and Utah. Eight populations cross state lines and are double counted in this table.

State	Number of conservation populations	Miles of stream occupied by conservation populations	Percent of State's historical habitat occupied	Average length of habitat occupied by population (range)
Colorado	145	709.2	5.2%	4.9
Utah	63	579.7	16.7%	9.2
Wyoming	85	507.3	12.1%	6.0
Total	**285***	**1796.2**	**8.4%**	**6.1**

* 8 populations cross state boundaries.

Individual conservation populations occupied stream lengths ranging from less than 0.1 miles to over 65 miles of occupied habitat (median = 3.7 miles, Table 19). The distribution of lengths of habitat occupied by conservation populations was skewed with most (61%) of the populations occupying 5 miles or less (Figure 11). Most of the GMU's had a similar median stream length occupied per conservation population of about three miles; the exceptions are the two Green River GMU's which had median values twice as high. In addition, although the Upper Colorado and the Upper Green GMU have similar numbers of conservation populations, the populations in the Upper Green River occupy more than twice as much habitat. A similar comparison can be made between the Gunnison and the Lower Green GMU's.

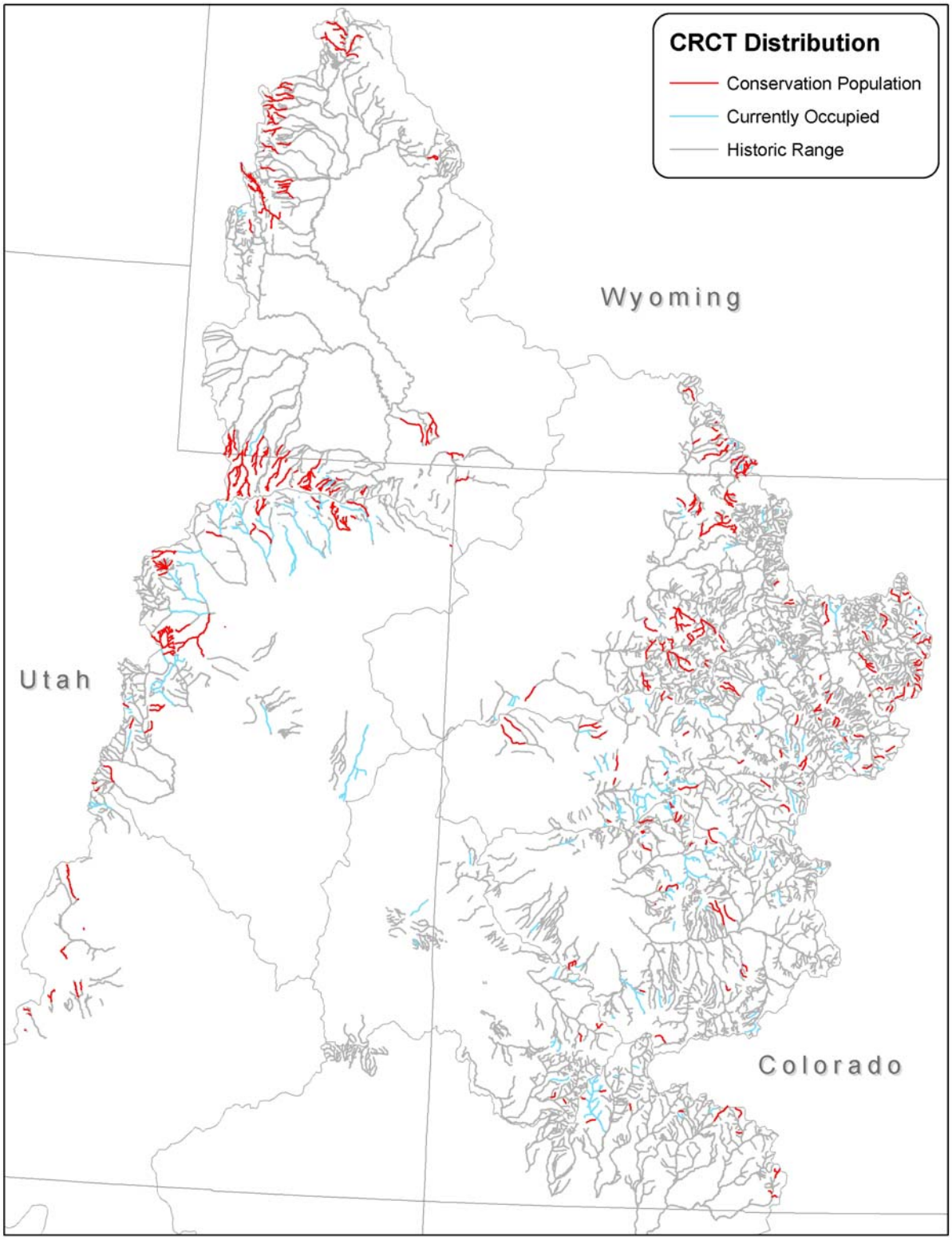


Figure 9. Map comparing historical range (gray) to stream section currently occupied by CRCT (light blue) and those stream sections occupied by conservation populations (red).

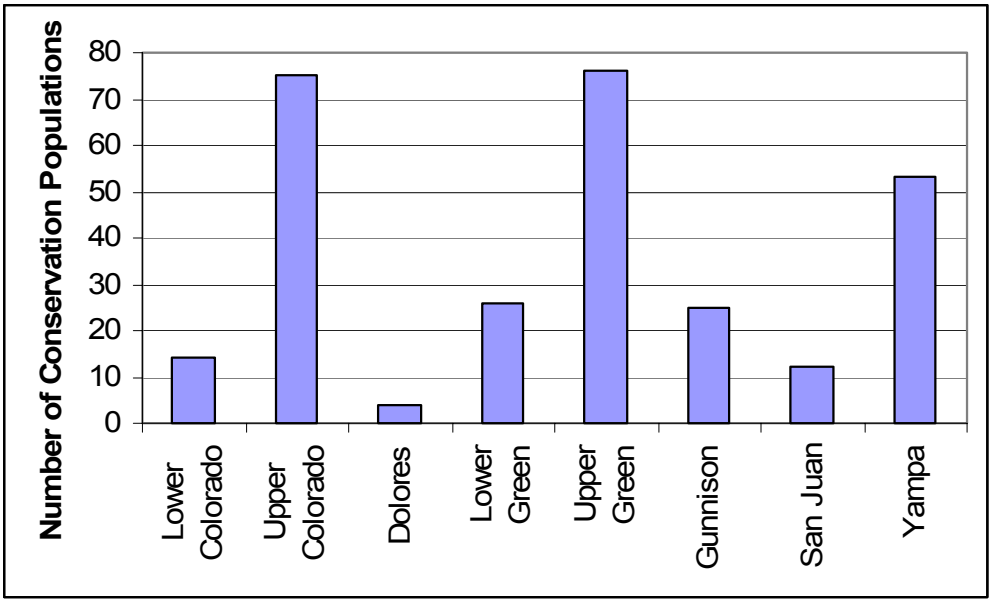


Figure 10. Number of conservation populations associated with each GMU.

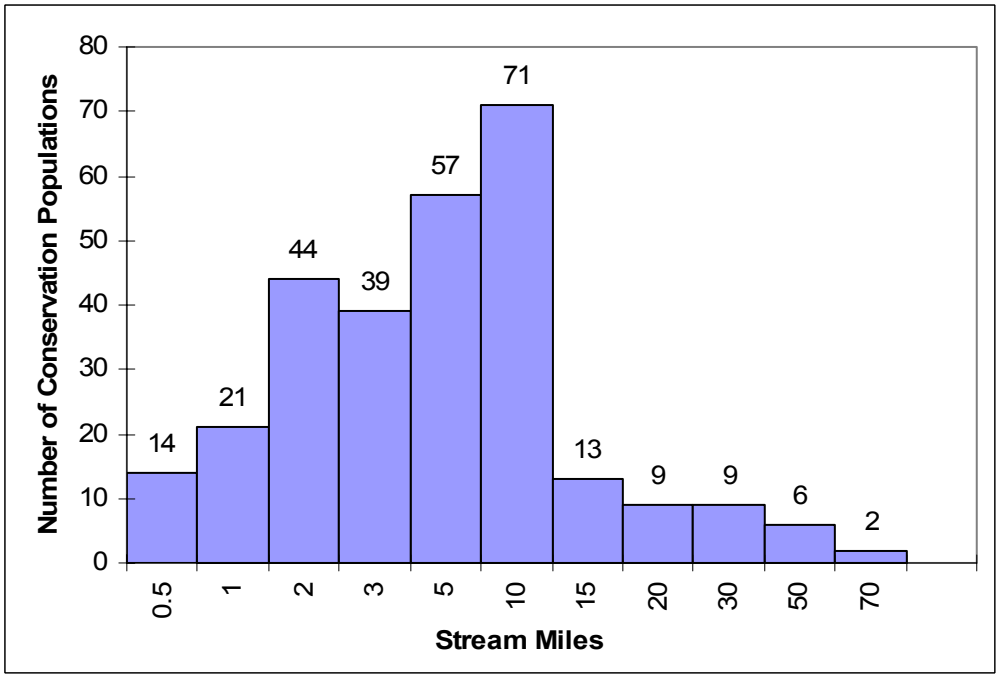


Figure 11. Frequencies of the number of miles occupied by designated conservation populations of Colorado River cutthroat trout throughout their range. Mileage bins are labeled with the top of the bin range such that those in bin "2" are those populations ranging in length from 1 to 2 miles.

Table 19. Descriptive statistics of amount of habitat occupied by conservation populations by GMU.

GMU name	Number of populations	Miles occupied	Percent of historical occupied	Median length occupied (mi)	Range	
					minimum	maximum
Lower Colorado	14	50	14%	2.9	0.33	13.5
Upper Colorado	75	302	6%	3.1	0.20	17.8
Dolores	4	14	1%	3.6	2.26	4.8
Lower Green	26	307	14%	6.9	0.41	59.4
Upper Green	76	650	15%	5.6	0.02	65.6
Gunnison	25	92	3%	3.3	0.14	12.2
San Juan	12	42	2%	2.6	0.85	8.6
Yampa	53	339	11%	3.4	0.46	37.5
Total	**285**	**1796**	**8%**	**3.7**	**0.02**	**65.6**

Most conservation populations (188 populations, 739 miles) existed as independent non-networked units (e.g., a single stream or stream segment) and were not connected to adjacent populations (Table 20). Seventy-two conservation populations (513 miles) existed with very little connectivity and seventeen conservation populations (265 miles) have a moderate degree of connectivity within the population provided by 2 to 5 tributary streams (Table 21). Only 8 populations (280 miles) were judged as having strong connectivity (i.e., associated with more than 5 streams and migratory forms present). Almost all of the strongly connected conservation populations are in Utah (270 of 280 occupied miles). Two of the three strongly connected conservation populations in Wyoming cross into Utah. There are no strongly connected conservation populations in Colorado.

Table 20. Number and miles of conservation populations of CRCT by degree of within population network or connectivity for the eight GMU's.

	Strong Network		Moderate Network		Weak Network		Non-Networked	
GMU	#	Miles	#	Miles	#	Miles	#	Miles
Upper Colorado	-	-	1	17.8	15	69.3	59	214.4
Lower Colorado	-	-	-	-	2	14.7	12	34.9
Dolores	-	-	-	-	-	-	4	14.3
Upper Green	4	144.5	7	85.0	33	249.2	32	171.6
Lower Green	3	134.6	1	30.2	7	74.0	15	68.6
Gunnison	-	-	1	4.2	5	32.7	19	55.4
San Juan	-	-	-	-	1	6.7	11	35.2
Yampa	1	0.6	7	127.5	9	65.9	36	144.9
Totals	**8**	**279.7**	**17**	**264.7**	**72**	**512.5**	**188**	**739.3**

Most conservation populations (60%) occur either with non-native trout or have a record of stocking (Table 21). The percentage of conservation populations occurring with non-native trout or with a record of stocking is similar between states: 57% in Colorado, 68% in Utah, and 61% in Wyoming. The distribution of conservation populations and occurrence of non-natives or stocking by GMU is displayed in Table 21.

Table 21. Distribution of conservation populations by GMU and the occurrence of non-native trout or stocking records.

GMU name	number of conservation populations	# with stocking and/or non-native trout (percent)	miles occupied by conservation populations	miles with stocking and/or non-native trout (percent)
Lower Colorado	14	6 (43%)	49.6	24.3 (49%)
Upper Colorado	75	43 (57%)	301.6	191.3 (63%)
Dolores	4	3 (75%)	14.3	8.2 (57%)
Lower Green	26	18 (69%)	307.3	197.8 (64%)
Upper Green	76	52 (68%)	650.3	478.9 (74%)
Gunnison	25	12 (48%)	92.3	59.8 (65%)
San Juan	12	5 (42%)	41.9	16.5 (39%)
Yampa	53	31 (58%)	338.9	238.4 (68%)

Life history characterizations expressed as resident, fluvial or ad-fluvial were tracked for each conservation population. A resident only life history was associated with 271 populations (95%). A resident and fluvial or a resident and adfluvial combination were identified in 2 (0.7%) and 7 (2.5%) conservation populations, respectively. Four populations were classified as purely ad-fluvial and one was purely fluvial. See Figure 12 for a breakdown of conservation populations by life history characteristics by length of habitat occupied.

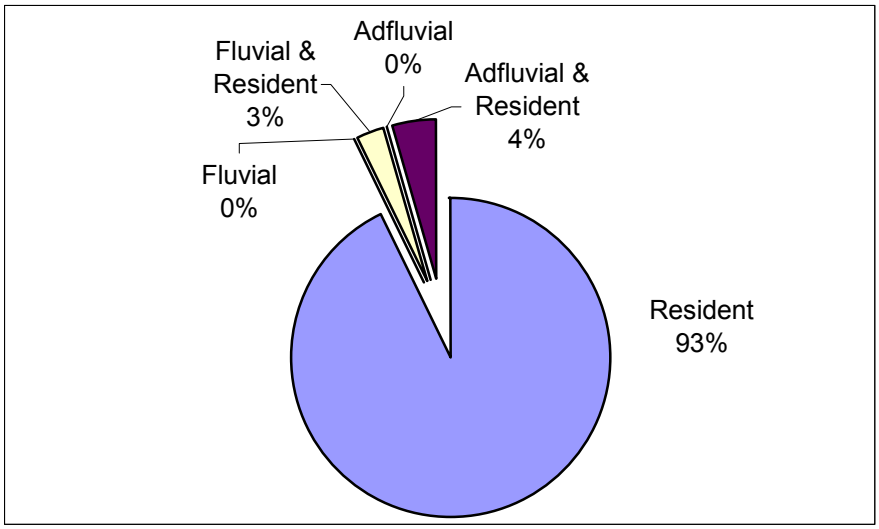


Figure 12. Percentage breakdown associated with the varying life history characterizations expressed in CRCT conservation populations. Percentage breakdown is based on miles of stream occupied.

Of the 285 conservation populations, 153 (54%) were identified as “core” conservation populations, defined as being at least 99% pure based on genetic testing (Figures 13 and 14). These core conservation populations occurred in 785 (44%) miles of habitat. Other conservation populations were known or suspected to be at least 90% pure and were put into functional categories. There were 53 conservation populations that occupied about 355 miles of habitat

(20%) that were identified as being likely to become part of the CRCT conservation focus and 634 miles of habitat (35%) that supported 77 populations that had unique life histories (e.g., fluvial or adfluvial behaviors). One population occupying about 16 miles (1%) of habitat was identified as having a known or probable ecological adaptation to extreme environmental conditions (e.g., temperature, alkalinity, pH, and/or sediment) and one population occupying about 6 miles was identified as having a predisposition for large size.

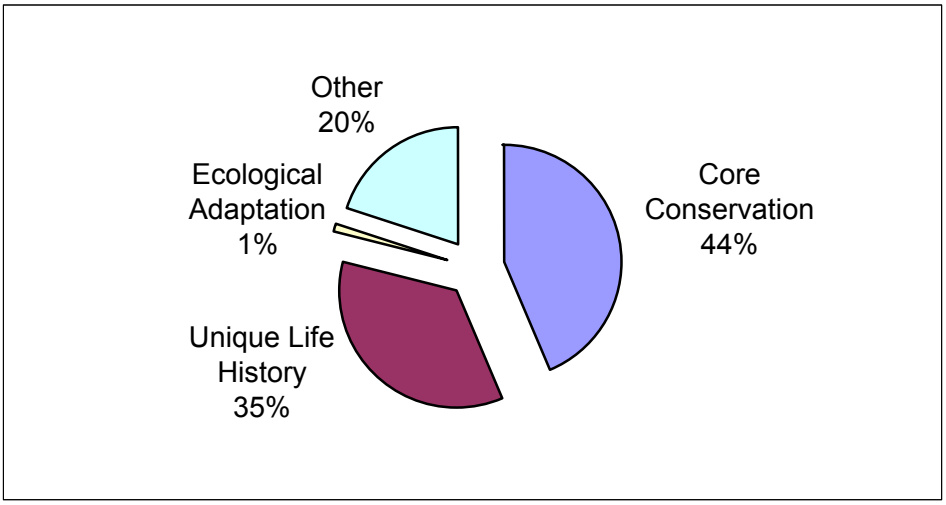


Figure 13. Percent breakdown for miles of habitat by conservation population qualifier for Colorado River cutthroat trout.

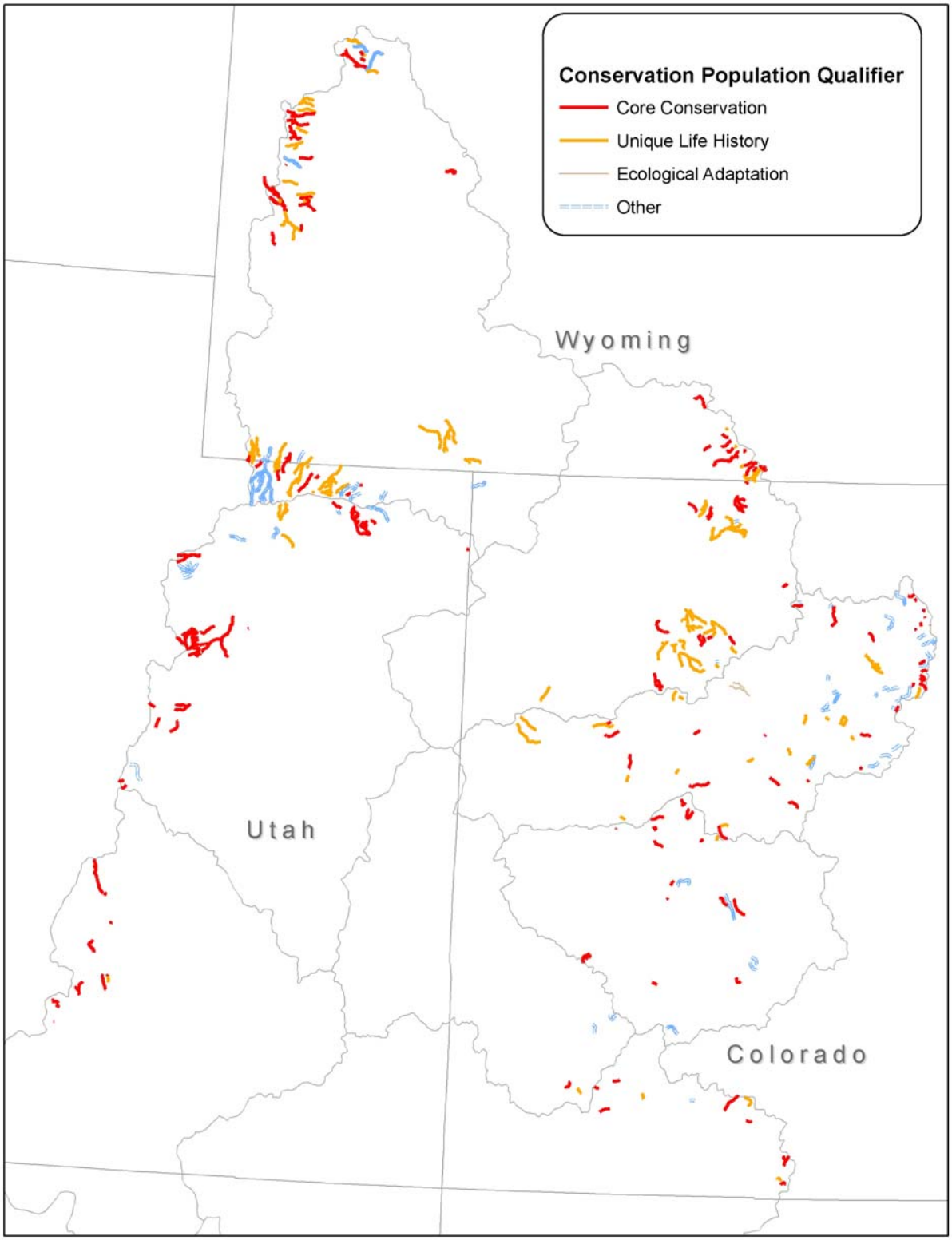


Figure 14. Designated conservation populations of CRCT and the reason for which they were designated throughout their range.

Almost half of the individual conservation populations are protected by a complete barrier (Table 22). Populations above a complete barrier had a much smaller average population length than those with no barrier or a partial barrier. Table 23 displays the barrier status of conservation populations in each GMU. Distributions range from almost all populations above a complete barrier in the Lower Colorado and San Juan to 62% of populations having no barrier in the Upper Green.

Table 22. Presence and effectiveness of barriers below conservation populations. Although there are only 285 conservation populations, there are 300 segments with barrier status. This occurs when a population contains one or more barriers within its range. This occurred in three GMU's: Upper Colorado, Upper Green, and Yampa.

Barrier Type	Number of conservation populations	% of total conservation populations	Total stream length occupied	% of total stream length occupied	Average population length
Complete	139	46%	610 miles	34%	4.4 miles
Partial	27	9%	200 miles	11%	7.4 miles
None	124	41%	950 miles	53%	7.7 miles
Unknown	10	3%	36 miles	2%	3.6 miles
TOTAL	**300**		**1796 miles**		**6.0 miles**

Table 23. Barrier effectiveness by GMU. Populations are segmented by partial barriers within the Upper Colorado, Upper Green, and Yampa GMU and therefore the count is higher than the number of populations.

	Barrier Type			
GMU	**Complete**	**Partial**	**None**	**Unknown**
Lower Colorado	13	0	1	0
Upper Colorado	38	15	22	6
Dolores	2	0	2	0
Lower Green	15	4	7	0
Upper Green	25	4	52	2
Gunnison	9	2	14	0
San Juan	11	0	0	1
Yampa	26	2	26	1

Genetic purity varied across conservation populations. Table 24 presents genetic status of conservation populations. All but 20 miles of streams with unaltered CRCT are considered conservation populations (see also Table 4). Eighty percent of streams with CRCT 90% to 99% pure are considered conservation populations. Streams less than 90% pure or suspected hybridized have also been included as conservation population when the designating state agency determined the population still had important conservation value. Streams with pure CRCT not included as conservation populations may be added as conservation populations in the future, or, in some cases represented lakes in which pure CRCT had been stocked for recreation.

Table 24. Miles of stream occupied by conservation population by genetic category. Streams with no genetic testing results available were assumed to be unaltered or hybridized based on stocking records.

GMU	Unaltered	90% - 99%	80% - 89%	< 80%	Not Tested - Unaltered	Not Tested - Hybridized	Co-existence	Total
Upper Colorado	89.6	34.5	0	5.4	56.3	115.8	0	**301.6**
Lower Colorado	46.6	0	0	0	0	3.0	0	**49.6**
Dolores	5.3	4.0	0	0	2.8	0	2.3	**14.3**
Upper Green	151.7	74.5	16.0	6.8	145.1	190.9	65.6	**650.4**
Lower Green	198.1	0	0	0	80.0	29.3	0	**307.3**
Gunnison	56.0	11.1	0	0	6.3	19.0	0	**92.3**
San Juan	29.3	7.9	0	0	2.8	1.9	0	**41.9**
Yampa	185.8	43.5	3.2	3.6	38.7	64.2	0	**338.9**
Genetic Category Totals	**762.3**	**175.4**	**19.2**	**15.7**	**331.9**	**424.0**	**67.8**	**1796.2**

Risks to Conservation Populations

This status update evaluated two types of risks associated with conservation populations: 1) risks associated with genetic contamination and 2) risks associated with catastrophic diseases.

Genetic Contamination Risks:
Risk of genetic contamination was evaluated by determining the proximity and accessibility of hybridizing species. A total of 150 conservation populations (53%) were ranked as being at no risk of genetic contamination due to the presence of a secure barrier preventing immigration of hybridizing species. Twenty eight (10%) and 84 (29%) populations were at either low to moderate risk, respectively. Twenty-three populations (8%) were rated as being at high genetic risk (Figure 15). Low genetic risk was defined as hybridizing species being greater than 10 km away from the population, moderate risk was defined as hybridizing species being within 10 km from the population, and high genetic risk was defined as hybridizing species being sympatric with the population. Genetic risks to the 285 CRCT conservation populations by population numbers and miles of habitat occupied also varied by GMU (Table 25). Degree of connectivity of conservation populations was evaluated against the degree of genetic risk (Table 26). Of the populations considered as having a low risk of genetic contamination 133 (75%) were identified as being non-networked independent or isolated entities (Figure 16). Only nine (5%) conservation populations viewed to be at low risk had either moderate or strongly networked within population connectivity. In general, populations having limited connectivity were at a lower level of genetic risk when compared to populations with greater degrees of connectivity and larger within population networks. Also, across levels of connectivity, the "no risk" populations (those protected by a barrier) were smaller than populations with higher levels of risk as seen is Figure 16 where the percentage of "no risk" populations is always greater than the percentage of "no risk" stream miles.

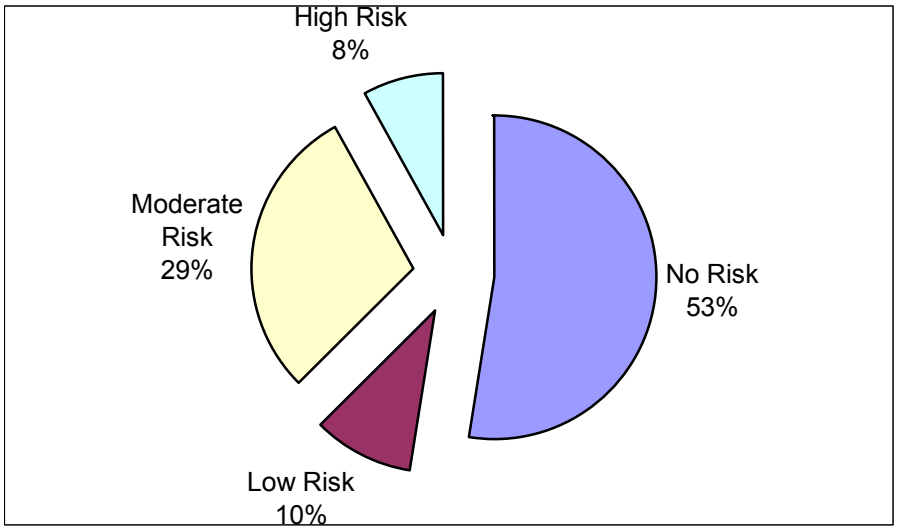


Figure 15. Relative risk of genetic contamination for the 285 CRCT conservation populations.

Table 25. Ranked risks associated with genetic contamination for the 285 conservation populations by GMU. Values reflect number of populations and miles occupied.

	Ranked Risk by Number of Populations				Ranked Risk by Miles Occupied			
GMU	No Risk	Low Risk	Mod. Risk	High Risk	No Risk	Low Risk	Mod. Risk	High Risk
Upper Colorado	53	4	18	--	186	11	105	--
Lower Colorado	13	--	--	1	47	--	--	3
Dolores	1	1	2	--	4	5	14	--
Upper Green	22	12	28	14	73	93	259	225
Lower Green	14	1	9	2	132	3	160	12
Gunnison	10	1	13	1	28	8	44	12
San Juan	11	--	1	--	36	--	6	--
Yampa	26	9	13	5	94	47	162	36
Totals	**150**	**28**	**84**	**23**	**598**	**164**	**745**	**289**

Table 26. Ranked risks associated with genetic contamination for the 285 conservation populations by degree of within population connectivity (networks). Values reflect number of populations and miles occupied.

	Ranked Risks by Number of Populations				Ranked Risks by Miles Occupied			
Within Population Connectivity	No Risk	Low Risk	Mod Risk	High Risk	No Risk	Low Risk	Mod Risk	High Risk
Population Isolated	117	16	43	12	376	62	213	88
Weakly Connected	29	7	29	7	155	44	241	73
Moderately Connected	2	4	8	3	7	17	179	62
Strongly Connected	2	1	4	1	60	42	112	66
Totals	**150**	**28**	**84**	**23**	**598**	**164**	**745**	**289**

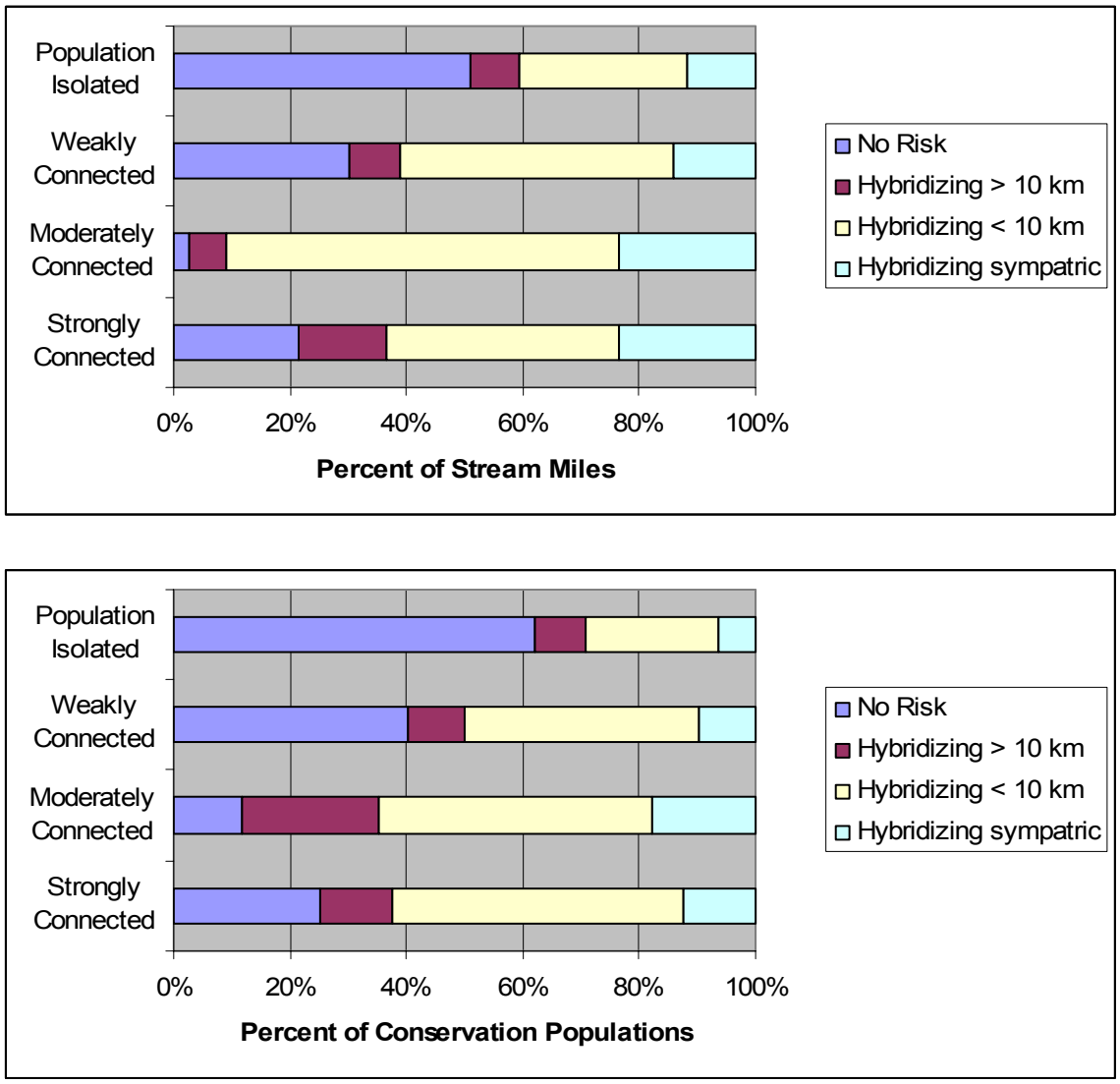


Figure 16. Genetic risk for percent of stream miles and percent of conservation populations. Data is grouped by connectedness, showing a more explicit relationship. CRCT conservation populations are ranked into four risk groups from no risk of hybridization to sympatric hybridization. The other risk groups were associated with hybridizing fish being further away or closer than 10 km.

Catastrophic Disease Risk:
Catastrophic disease risk was assessed based on proximity and accessibility of disease causing pathogens. The diseases of concern are those that cause severe and significant impacts to population health and include but are not limited to whirling disease, furunculosis, infectious pancreatic necrosis virus, etc.

One hundred seventy-nine populations (63%) were judged to have very limited risk from disease because disease and pathogens are not known to exist in the watershed or a barrier provides complete blockage to upstream fish movement. Seventy populations (25%) are at minimal disease risk because they are either farther than 10 kilometers from significant diseases or pathogens or they are protected by a barrier, but the barrier may be at risk of failure. Twenty-seven populations (9%) were at moderate risk because disease or pathogens have been identified within 10 kilometers of the conservation population, but not within the same stream segment. Four populations (1.4%) are at high risk because disease or pathogens are sympatric with the cutthroat population. Five populations (1.8%) are known to be infected with a significant disease (Table 27).

Table 27. Ranked risks associated with catastrophic diseases for the 285 conservation populations by GMU. Values reflect number of populations and miles occupied.

	Ranked Risks by Number of Populations					Ranked Risks by Miles Occupied				
GMU	Limited Risk	Min. Risk	Mod. Risk	High Risk	Infected	Limited Risk	Min. Risk	Mod. Risk	High Risk	Infected
Upper Colorado	48	19	6	1	1	173	77	37	8	7
Lower Colorado	9	2	1	--	2	24	8	3	--	15
Dolores	1	2	1	--	--	2	8	4	--	--
Upper Green	50	19	6	1	--	345	220	44	42	--
Lower Green	23	3	--	--	--	270	37	--	--	--
Gunnison	11	8	6	--	--	37	46	9	--	--
San Juan	8	4	--	--	--	30	12	--	--	--
Yampa	29	13	7	2	2	130	133	52	1	23
Totals	**179**	**70**	**27**	**4**	**5**	**1010**	**541**	**149**	**51**	**45**

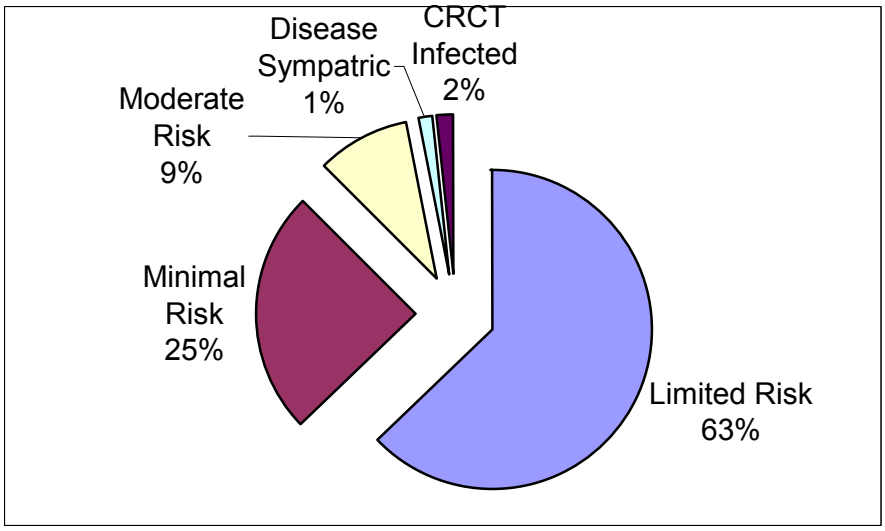
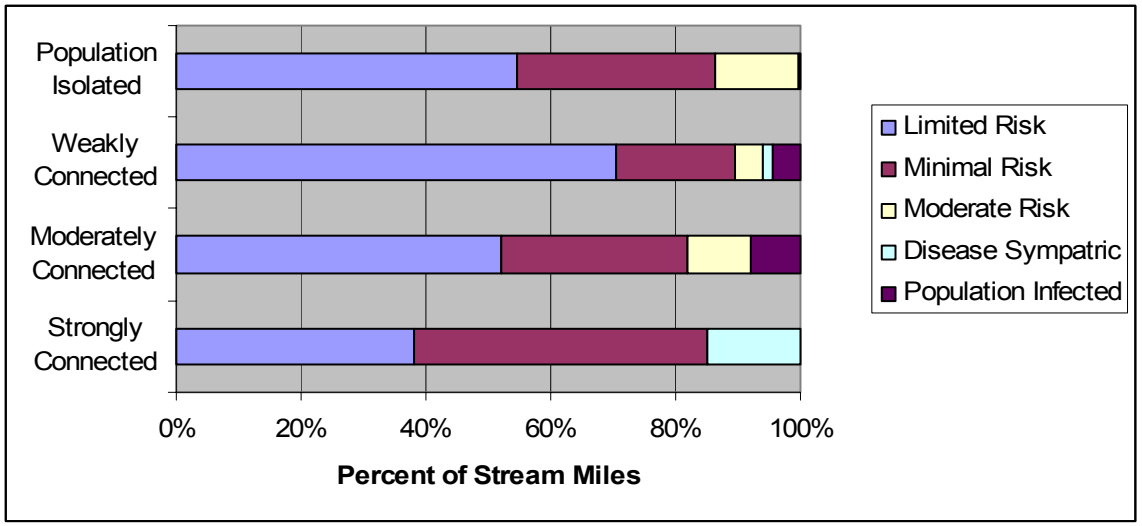


Figure 17. Relative risk of catastrophic disease for the 285 CRCT conservation populations.

Degree of connectivity of conservation population was evaluated against the degree of catastrophic disease risk (Table 27; Figure 17). Of the 179 populations considered as having a limited risk of catastrophic disease 66% were identified as being non-networked independent or isolated entities (Table 28). In general, populations having limited connectivity were at somewhat lower levels of risk from catastrophic diseases when compared to populations with greater degrees of within population connectivity and larger networks (Figure 18).

Table 28. Ranked risks associated with catastrophic diseases for the 285 conservation populations by degree of within population connectivity (networks). Values reflect number of populations and miles occupied.

	Ranked Risk by Number of Populations					Ranked Risk by Miles Occupied				
Within Population Connectivity	Limited Risk	Min. Risk	Mod. Risk	High Risk	Infected	Limited Risk	Min. Risk	Mod. Risk	High Risk	Infected
Population Isolated	118	48	21	-	1	404	234	99	-	2
Weakly Connected	51	13	2	3	3	362	97	23	9	22
Moderately Connected	7	5	4	-	1	138	79	27	-	21
Strongly Connected	3	4	-	1	-	107	131	-	42	-
Totals	**179**	**70**	**27**	**4**	**5**	**1011**	**541**	**149**	**51**	**45**



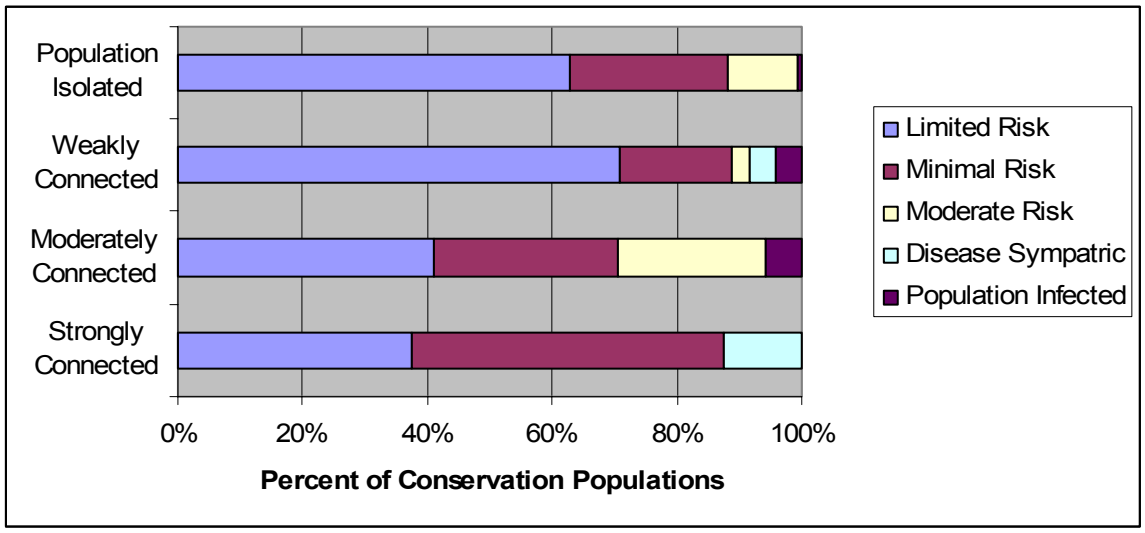


Figure 18. Disease Risk for percent of stream miles and percent of conservation populations. Data is grouped by connectedness, showing a more explicit relationship. CRCT conservation populations are ranked into five risk groups from limited disease risk to infected populations.

General Population Health

A generalized population health evaluation based on four indicators of health was completed for each conservation population. Components of the health evaluation included: 1. **Temporal variability** associated the amount of occupied habitat as an indicator of patch size and resiliency; 2. **Population size** of adults as an estimator of effective population size; 3. **Population demographics** (growth and survival) estimator based on habitat quality, presence of non-native fish and disease, and consideration of land use influences; and, 4. **Degree of within population connection**. These indicators of relative health were analyzed individually and as a composite based on a weighted formula. Table 29 provides a review of each of the health indicators by number of conservation populations and by miles of habitat occupied by conservation populations. It is important to note that individual health indicators and the composite of these indicators are merely a relative indicator of general health much like a physician's general exam or health screening.

Temporal variability information contained in Table 29 indicates the majority (196) of conservation populations (69%) occupied habitats that were less than 6 miles in length. Twenty-five percent of the populations (72) occupied between 6 and 19 miles of habitat. There were 17 populations that had either high (2 populations, at least 50 miles) or moderately high (15 populations, 20 to 49 miles) ratings for the amount of habitat occupied.

Population size information presented in Table 29 indicates twelve percent of the populations had at least 2,000 adults. Roughly one-third of the populations had between 500 and 2,000 adults and another third had 50 to 500 adults. About one quarter of the populations had adult population estimates of fewer than 50 fish.

Production potential (growth and survival): There were no conservation populations with a production potential demographics rating of low. Most of the conservation populations (89%) were judged to have a moderately high health condition related to quality factors associated with production potential. Twenty-nine populations (10%) were judged to have moderately low production potential. Three populations (1%) were judged to have high population potential. Habitat quality, presence of non-native trout species, presence or proximity of catastrophic diseases, land uses, and recovery actions were included in this metric.

Population connectivity: Assessment of within population connectivity or networks indicated that a substantial majority of populations (66%, 188 populations) exist as non-networked (i.e., single streams) entities. There were 72 weakly connected populations (25%) in which adult straying into the population is possible. Seventeen populations were considered moderately connected, having migratory forms present but only occasional genetic exchange possible. Eight populations were considered strongly connected, with migratory forms present and open migration corridors.

Table 29. Population health ratings associated with the 285 conservation populations by number of populations and miles of stream occupied for the various health indictors and the composite of these indicators.

	Ranked Health Scores by **Number of Populations**					Ranked Health by **Miles** Occupied			
Rank Scores	High	Mod-High	Mod-Low	Low		High	Mod-High	Mod-Low	Low
Temporal Variability-Stream Length	2	15	72	196		125	435	718	519
Population Size-Mature Adults	33	82	99	71		610	669	315	202
Production Potential-Quality Factors	3	253	29	0		6	1368	422	0
Levels of Within Population Connectivity	8	17	72	188		280	265	513	739
Composite Rating	**4**	**81**	**151**	**49**		**186**	**952**	**556**	**102**

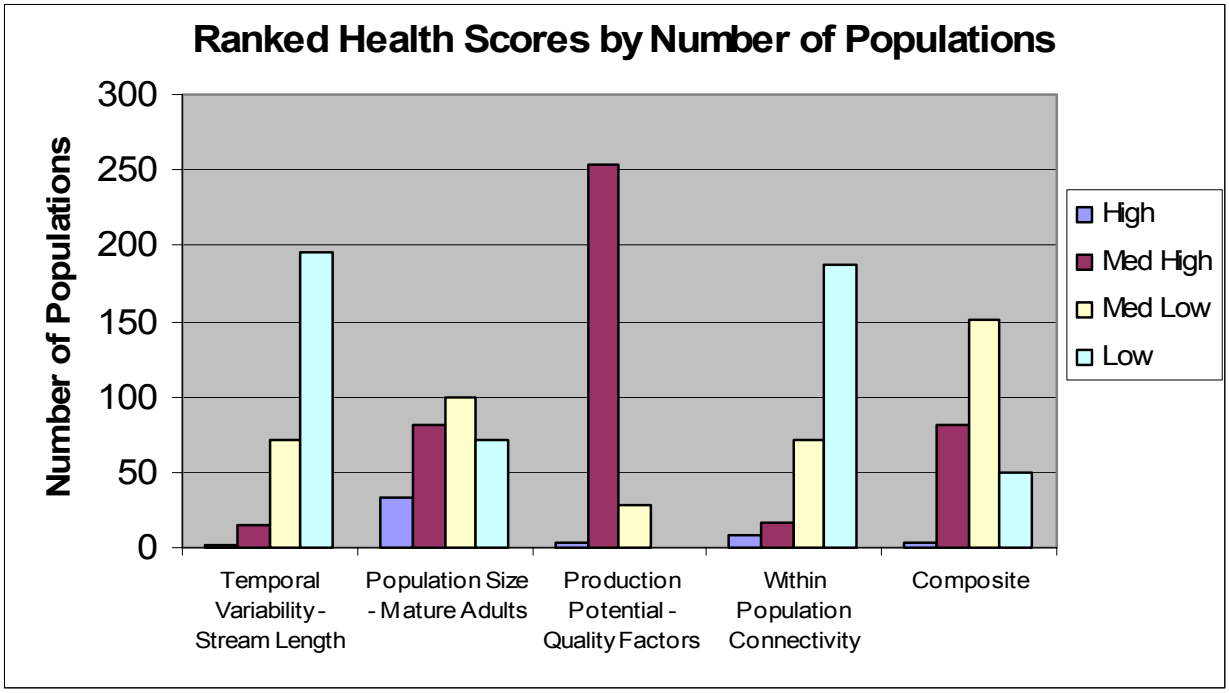
Composite scores of general population health for the 285 conservation populations (Table 30; Figure 19) allowed for a more balanced or tempered review of general health conditions associated with CRCT conservation populations. Only 4 conservation populations (less than 2%) were judged to have a high degree of general health (Figure 18). Eighty-one CRCT conservation populations (28%) were judged to have a moderately high degree of general health. Of the remaining populations, 151 (53%) were judged to have a moderately low level of general health and 49 (17%) had a low level of general health. Seventy percent of the conservation populations had a low to moderately low composite health determination. The small population sizes and isolated condition of Colorado River cutthroat trout conservation populations appear to be the factors most contributing to their general persistence risks. However, this reduces the population's risk of genetic or disease contamination. The influence of within population connectivity on general population health was more obvious than the relationships associated with genetic or disease risks (Table 31), indicating that general CRCT population health was positively influenced by expanded within population connectivity associated with larger networks (Figures 20 and 21). Again, it is important to note that individual health indicators and the composite ratings of these indicators do not represent existing problems, but summarize risk factors relating to overall population health.

Table 30. Population health composite rating associated with the 285 conservation populations by number of populations and miles of stream occupied for the various GMU's.

	Ranked Health Scores by Number of Populations (%)					Ranked Health by Miles Occupied			
Rank Scores	High 1	Mod-High 2	Mod-Low 3	Low 4		High 1	Mod-High 2	Mod-Low 3	Low 4
Upper Colorado (75)	0	12 (16%)	48 (64%)	15 (20%)		0	98 (32%)	163 (54%)	41 (14%)
Lower Colorado (14)	0	3 (21%)	9 (64%)	2 (14%)		0	25 (51%)	23 (46%)	1.3 (3%)
Dolores (4)	0	0	3 (75%)	1 (25%)		0	0	9.5 (66%)	4.8 (34%)
Upper Green (76)	2 (3%)	32 (42%)	35 (46%)	7 (9%)		98 (15%)	397 (61%)	137 (21%)	18 (3%)
Lower Green (26)	2 (8%)	10 (38%)	12 (46%)	2 (8%)		88 (29%)	156 (51%)	61 (20%)	2.6 (1%)
Gunnison (25)	0	5 (20%)	13 (52%)	7 (28%)		0	31 (34%)	49 (54%)	11 (12%)
San Juan (12)	0	3 (25%)	9 (75%)	0		0	21 (50%)	21 (50%)	0
Yampa (53)	0	16 (30%)	22 (42%)	15 (28%)		0	223 (66%)	92 (27%)	23 (7%)
Totals	**4**	**81**	**151**	**49**		**186**	**952**	**556**	**102**

Table 31. Population health associated with the composite health scores for the 285 conservation populations by level of connectivity. Values reflect number of populations and miles occupied for the health composite rating.

	Ranked Health by Number of Populations by Composite Rating					Ranked Health by Miles Occupied by Composite Rating			
Composite Rating	High 1	Mod-High 2	Mod-Low 3	Low 4		High 1	Mod-High 2	Mod-Low 3	Low 4
Connectivity									
Population Strongly Connected	4	4	0	0		186	94	0	0
Population Moderately Connected	0	15	2	0		0	257	8	0
Population Weakly Connected	0	29	39	4		0	311	182	19
Populations Independent	0	33	110	45		0	290	366	83
Totals	**4**	**81**	**151**	**49**		**186**	**952**	**556**	**102**



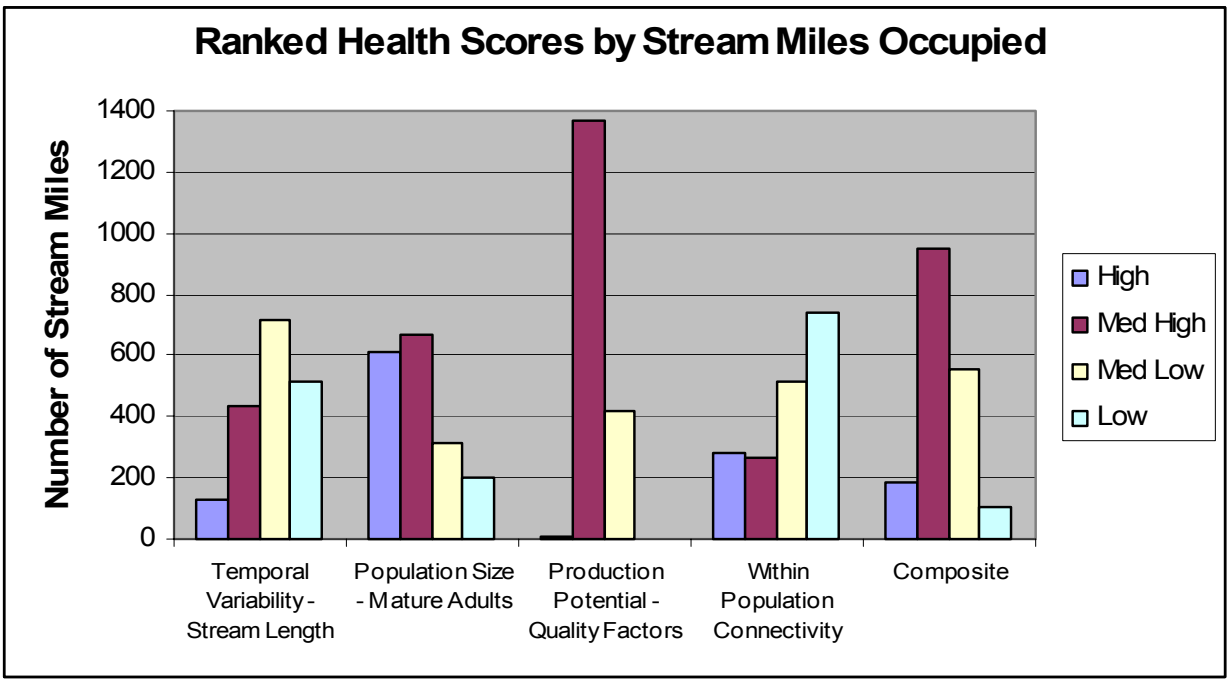
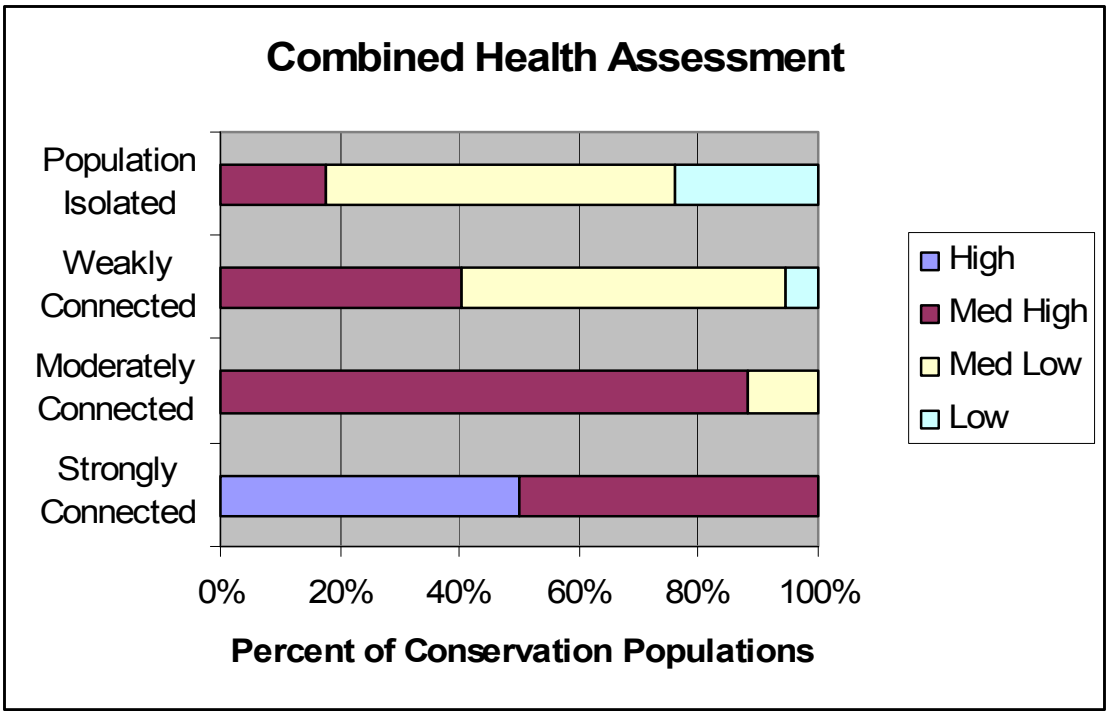


Figure 19. Ranked health scores by number of populations (top) and stream miles occupied (bottom). CRCT conservation populations are ranked into low to high levels of health.



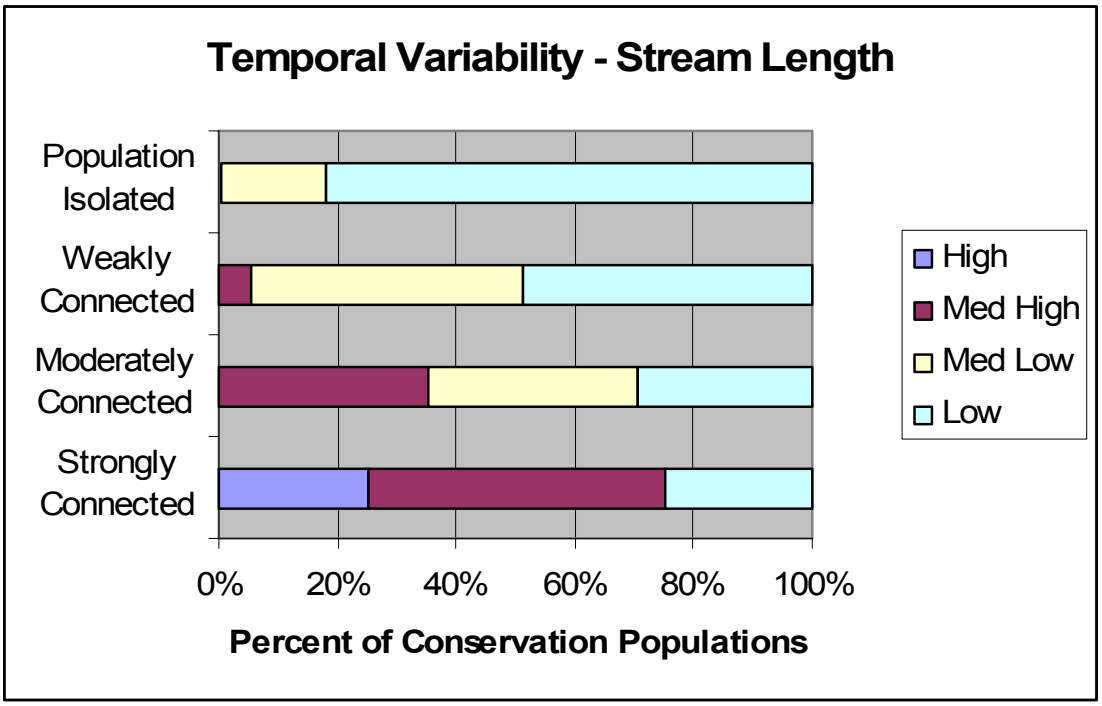
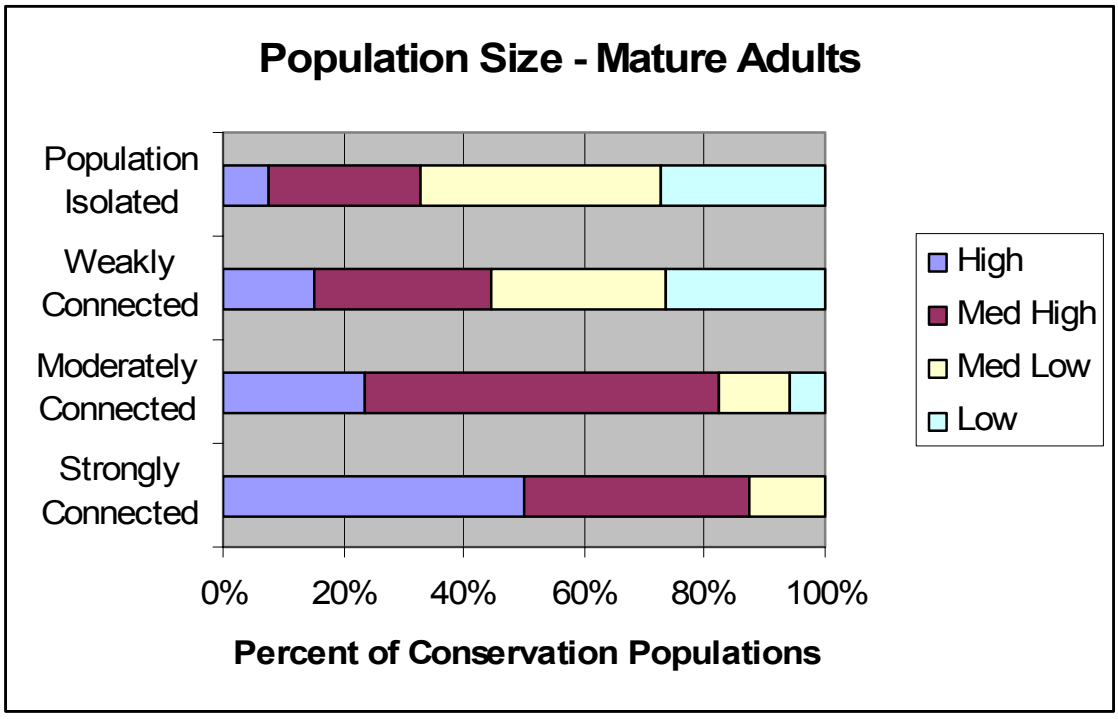


Figure 20. Ranked health scores for percent of conservation populations. Data is grouped by connectedness, showing a more explicit relationship. CRCT conservation populations are ranked into low to high levels of health.



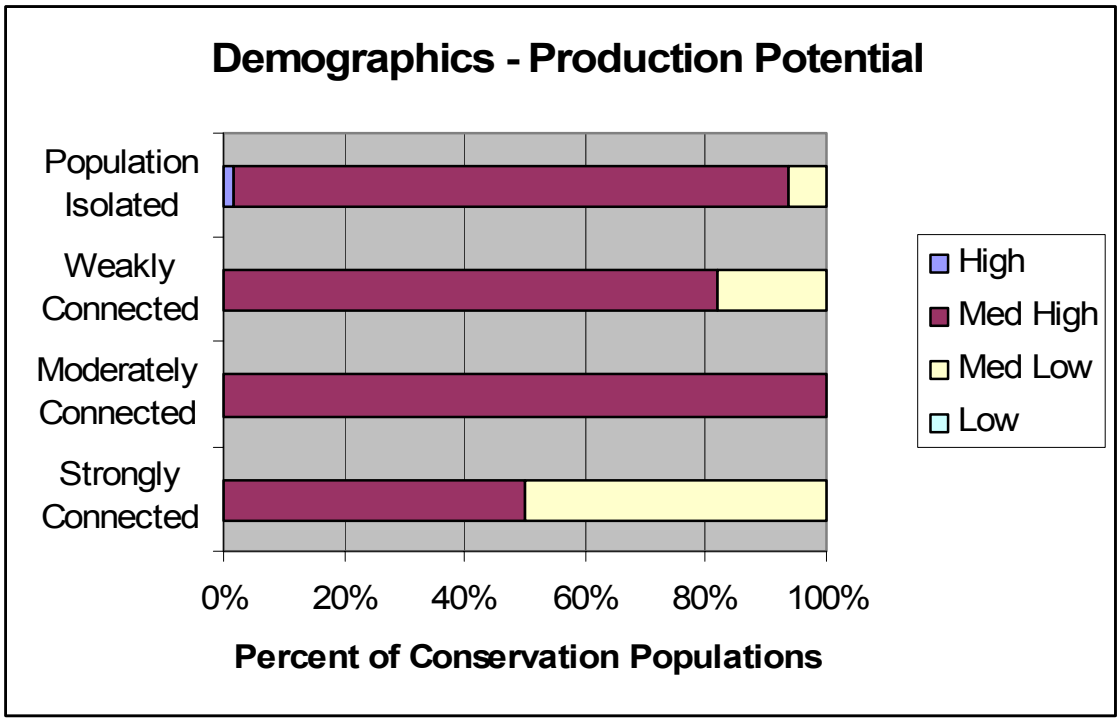


Figure 21. Ranked health scores for percent of conservation populations. Data is grouped by connectedness, showing a more explicit relationship. CRCT conservation populations are ranked into low to high levels of health.

Restoration Activities Implemented for Conservation Populations

Restoration, conservation, and management activities that had been implemented to conserve designated conservation populations were evaluated for the 285 conservation populations (Table 32). The majority of populations (72%) had one or more conservation actions (e.g., activities or projects) implemented to improve conditions. For 28% of the conservation populations no specific conservation actions were identified. During this status update there was no attempt to address the significance of the conservation actions, either on a specific CRCT population or with regard to conservation in general. Relative significance will have to be addressed in subsequent assessments conducted by the coordinated conservation effort. Common activities include special fishing regulations (49%), barrier construction (18%), refounding a pure population (19%), land-use mitigation or protections (21%), and removal of competing or hybridizing species by chemical means (12%) or physical means (14%).

Land Uses Associated with Conservation Populations

Similar to the approach associated with conservation actions, land uses and human activities associated with the 285 CRCT conservation populations were identified (Table 33). **No attempt was made to address significance of these activities, either on a specific CRCT population or with regard to conservation in general.** The relative significance of these activities may be addressed in subsequent assessments. The majority of populations (99%) had one or more land uses or human activities (e.g., angling, roads, recreation, etc) occurring within the influence zone of the population. Only four (1.4%) of the populations were judged as having no land use activities within the population influence zone. Common land use activities include angling (71%), livestock grazing (68%), non-angling recreation (73%), roads (42%), and timber harvest (24%).

Table 32. Number and percentage of CRCT conservation populations (285) that have had various types of conservation, restoration, and management actions implemented to conserve them as of 2005. Each population can have multiple actions.

Conservation Action	Count	Percent of Total
Special Angling Regulations	140	49%
Land-use mitigation direction and requirements (e.g., Forest Plan direction, regulation, permit req., coordination stipulations, etc)	60	21%
Re-founding pure population	54	19%
Barrier construction	51	18%
Physical removal of competing/hybridizing species	41	14%
Chemical removal of competing/hybridizing species	35	12%
Population covered by special protective mgt emphasis (e.g., National Park, wilderness, special management area, conservation easement, etc.)	32	11%
Population Restoration/Expansion	24	8%
Water lease/In-stream flow enhancement	20	7%
Riparian fencing	17	6%
Bank stabilization	12	4%
Pool development	10	4%
Channel restoration	9	3%
In-stream cover habitat	8	3%
Spawning habitat enhancement	8	3%
Riparian restoration	7	3%
Public outreach efforts at site (Interpretative site)	6	2%
Diversion modification	5	2%
Culvert replacement	4	1%
Barrier removal	3	1%
Grade control	3	1%
Installation of fish screens to prevent loss	3	1%
Woody debris placement	3	1%
Fish ladders to provide access	1	<1%
Increase irrigation efficiency	1	<1%
Other	32	11%
None	80	28%

Table 33. Number and percentage (of the 285 conservation populations evaluated) of designated CRCT conservation populations where various land uses were identified. Each population can have multiple activities present.

Land Use Activity	Count	Percent of Total
Recreation (non-angling)	207	73%
Angling	202	71%
Range (Livestock grazing)	195	68%
Roads	120	42%
Timber Harvest	67	24%
De-watering	45	16%
Fish Stocking (e.g., non-native fish)	12	4%
Mining	12	4%
Hydroelectric, water storage and/or flood control	3	1%
Other	36	13%
None	4	1%
Unknown	3	1%

Restoration and Expansion Analysis

Restoration and expansion opportunities were assessed in unoccupied historical habitat. For this exercise, currently occupied habitats were not considered. About 18,000 miles of historical habitat (86%) were identified as not currently occupied by conservation populations of CRCT (Figure 21). The assessment subsequently focused on these stream segments for their restoration/expansion potential. In order to objectively evaluate the restoration or expansion potential within this unoccupied area it was deemed important to determine how much of the historical habitat was currently incapable of supporting CRCT due to significant environmental changes. The working groups reviewed the unoccupied stream sections and made judgments on current suitability and determined that 4,749 miles of this habitat (26%) is unsuitable based on current habitat limitations (e.g., excessive temperatures, significantly reduced stream flows, channel alteration, etc.) or because they were judged to be associated with recreational fisheries of such importance to make consideration of their use in CRCT conservation unrealistic at this time. The remaining stream miles (13,253) of suitable habitat were carried through the assessment and rated in relation to the potential for restoration or expansion of CRCT conservation populations (Table 34). From 10 to 43 percent of the unoccupied habitat was considered unsuitable in each of the GMUs (Table 34).

There were four general attributes deemed of particular importance to the potential success of restoration or expansion in these suitable habitats. The first attribute related to past stocking and presence of non-native fish, especially other trout species that would

compete or genetically contaminate CRCT. The second attribute addressed the relative quality of the habitat. The third attribute dealt with a consideration of the significance of any existing fishery within the suitable stream segments. The fourth attribute addressed the relative complexity of removal of any non-native fish present within the stream segments. These attributes were assessed individually and in combination. There was also consideration given to the presence of barriers that could provide security from competing and/or contaminating species of fish.

Table 34. Potential restoration and expansion opportunity assessment base information by GMU (miles and percentages).

GMU	Historical habitat not occupied by CRCT – miles	Historical CRCT habitat no longer suitable for CRCT – miles (% of GMU)	Unoccupied historical CRCT habitat that is suitable for CRCT restoration – miles (% of GMU)
Upper Colorado	3999	400 (10%)	3599 (90%)
Lower Colorado	268	129 (48%)	138 (52%)
Dolores	1170	441 (38%)	729 (62%)
Upper Green	3595	1545 (43%)	2050 (57%)
Lower Green	1309	573 (44%)	737 (56%)
Gunnison	3065	504 (16%)	2561 (84%)
San Juan	1854	639 (34%)	1215 (66%)
Yampa	2744	519 (19%)	2224 (81%)
Totals	**18,002**	**4,749 (26%)**	**13,253 (74%)**

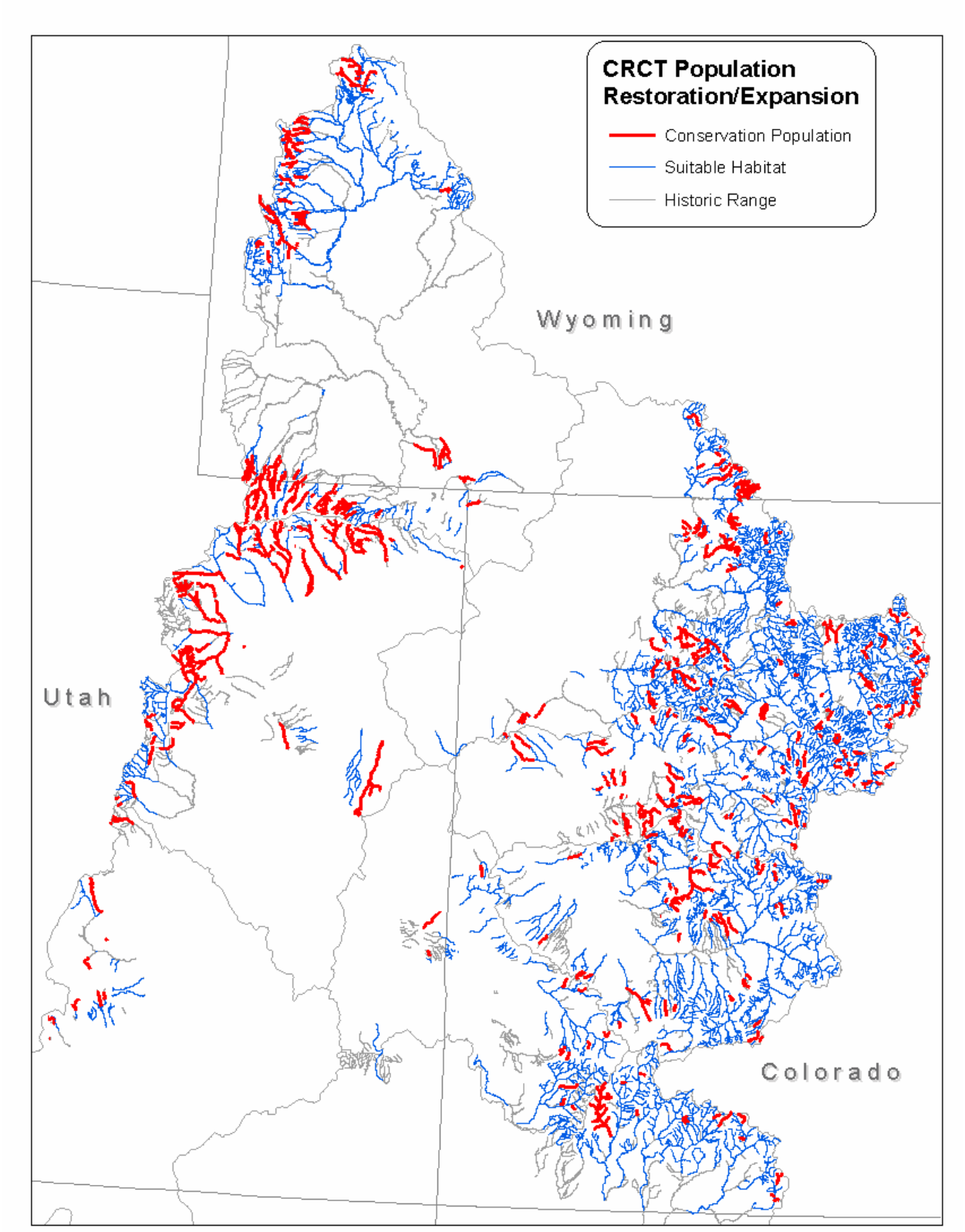


Figure 22. Map displaying all historical habitat, habitat occupied by conservation populations (red) and habitat suitable for restoration and expansion (blue). Grey lines are either unsuitable or currently occupied by a CRCT population not considered a conservation population.

Past Stocking and Presence of Non-native Trout

Of the 13,253 miles identified as potentially suitable habitat, 389 miles (3%) had no record of non-native fish stocking or they were judged to be barren of fish. Another 224 miles (2%) of stream either had a record of stocking or they contained only CRCT that were not included within the conservation populations. Three thousand seven hundred ten miles (28%) had records indicating that non-native trout were present in low numbers. Another 6,053 miles (46%) had non-native trout in high numbers and in the remaining 2,877 miles (22%) of suitable habitat it was unknown whether non-native trout were present (Tables 35 and 36).

Table 35. Non-native trout stocking or presence in habitat suitable for CRCT expansion or reclamation.

Record of Stocking and Presence or Non-Native Trout	Miles of Suitable Historical Habitat (percent of total)
No record of Stocking--Segment is Barren	389 (3%)
Record of Stocking and/or Segment has only CRCT – Not Included as Conservation Population	224 (2%)
Record of Stocking and Segment has Non-native Trout in Low Numbers	3710 (28%)
Record of Stocking and Segment has Non-native Trout in High Numbers	6053 (46%)
Unknown Presence of Non-native Trout	2877 (22%)
Total	**13,253**

Table 36. Non-native trout stocking or presence in suitable habitat by GMU.

Non-native presence	Upper Colorado	Lower Colorado	Dolores	Gunnison
Barren	39 (1.1%)	0	34 (4.7%)	3 (0.1%)
CRCT only	100 (2.8%)	0	0	4 (0.2%)
Few non-natives	636 (17.7%)	4 (2.7%)	470 (64.5%)	979 (38.2%)
Many non-natives	1,665 (46.3%)	135 (97.3%)	109 (15.0%)	675 (26.4%)
Unknown	1,159 (32.2%)	0	115 (15.7%)	900 (35.1%)
Total	**3,599 (100%)**	**138 (100%)**	**729 (100%)**	**2,561 (100%)**

Non-native presence	Upper Green	Lower Green	San Juan	Yampa
Barren	92 (4.5%)	31 (4.2%)	103 (8.5%)	87 (3.9%)
CRCT only	9 (0.5%)	18 (2.4%)	52 (4.3%)	41 (1.8%)
Few non-natives	332 (16.2%)	187 (25.4%)	900 (74.1%)	202 (9.1%)
Many non-natives	1,552 (75.7%)	498 (67.6%)	61 (5.0%)	1,359 (61.1%)
Unknown	66 (3.2%)	3 (0.4%)	99 (8.2%)	536 (24.1%)
Total	**2,050 (100%)**	**737 (100%)**	**1,215 (100%)**	**2,224 (100 %)**

Quality Considerations of Habitat Associated with Restoration and Expansion of CRCT

Of the 13,253 miles of suitable but unoccupied habitat, 998 miles (8%) had habitat quality rated as excellent. Another 5,355 miles (40%) had habitat quality rated as good. About 3,441 miles (26%) had habitat rated as fair. Nine hundred eleven miles (7%) had habitat quality rated as poor and 2,548 miles (36%) of suitable habitat had unknown quality (Tables 37 and 38).

Table 37. Information relative to habitat quality of suitable habitat (miles) being considered for conservation population restoration or expansion.

Habitat Quality	Miles of Suitable Historical Habitat
Excellent Habitat Quality	998 (8%)
Good Habitat Quality	5,355 (40%)
Fair Habitat Quality	3,441 (26%)
Poor Habitat Quality	911 (7%)
Unknown Habitat Quality	2,548 (19%)
Total	**13,253**

Table 38. Habitat quality by GMU in suitable habitat considered for CRCT restoration.

Habitat Quality	Upper Colorado	Lower Colorado	Dolores	Gunnison
Excellent	506 (14.1%)	21 (15.1%)	29 (4.0%)	162 (6.3%)
Good	1,350 (37.5%)	40 (28.6%)	285 (39.1%)	702 (27.4%)
Fair	595 (16.5%)	56 (40.7%)	303 (41.5%)	673 (26.3%)
Poor	135 (3.7%)	22 (15.7%)	9 (1.3%)	189 (7.4%)
Unknown	1,013 (28.2%)	0	103 (14.1%)	834 (32.6%)
Total	**3,599 (100%)**	**138 (100%)**	**729 (100%)**	**2,561 (100%)**

Habitat Quality	Upper Green	Lower Green	San Juan	Yampa
Excellent	38 (1.8%)	20 (2.7%)	157 (12.9%)	64 (2.9%)
Good	663 (32.3%)	438 (59.5%)	562 (46.3%)	1,315 (59.1%)
Fair	978 (47.7%)	169 (22.9%)	334 (27.5%)	333 (15.0%)
Poor	321 (15.7%)	107 (14.5%)	57 (4.7%)	71 (3.2%)
Unknown	50 (2.4%)	3 (0.4%)	105 (8.6%)	440 (19.8%)
Total	**2,050 (100%)**	**737 (100%)**	**1,215 (100%)**	**2,224 (100%)**

Significance of Recreational Fisheries Associated with Restoration and Expansion of CRCT

Of the 13,253 miles of suitable but unoccupied habitat, 584 miles (4%) were judged to have no fishery present. Another 5,133 miles (39%) had fisheries of minor significance. Three thousand five hundred sixty miles (27%) had fisheries rated as of moderate significance. Another 1,625 miles (12%) had fisheries rated as major significance and 2,350 miles (34%) had unknown fisheries significance (Tables 39 and 40).

Table 39. Information relative to significance of fisheries associated with current recreational fisheries (miles) being considered for conservation population restoration or expansion.

Significance of Fisheries	Miles of Suitable Historical Habitat
No fisheries Present	584 (4%)
Fisheries of Minor Significance	5,133 (39%)
Fisheries of Moderate Significance	3,560 (27%)
Fisheries of Major Significance	1,625 (12%)
Unknown Fisheries Significance	2,350 (18%)
Total	**13,253**

Table 40. Information relative to significance of fisheries associated with current recreational fisheries (miles) being considered for conservation population restoration or expansion by GMU.

Fishery Significance	Upper Colorado	Lower Colorado	Dolores	Gunnison
No fishery	67 (1.8%)	0	20 (2.7%)	186 (7.3%)
Minor	1,549 (43.0%)	66 (47.9%)	268 (36.7%)	944 (36.9%)
Moderate	686 (19.1%)	12 (9.0%)	256 (35.1%)	518 (20.2%)
Major	398 (11.1%)	60 (43.2%)	84 (11.5%)	149 (5.8%)
Unknown	899 (25.0%)	0	103 (14.1%)	764 (29.8%)
Total	**3,599 (100%)**	**138 (100%)**	**729 (100%)**	**2,561 (100%)**

Fishery Significance	Upper Green	Lower Green	San Juan	Yampa
No fishery	92 (4.5%)	31 (4.2%)	81 (6.7%)	109 (4.9%)
Minor	417 (20.4%)	165 (22.3%)	773 (63.6%)	952 (42.8%)
Moderate	1,124 (54.8%)	189 (25.7%)	225 (18.5%)	550 (24.7%)
Major	365 (17.8%)	349 (47.4%)	24 (2.0%)	197 (8.8%)
Unknown	52 (2.5%)	3 (0.4%)	112 (9.2%)	417 (18.8%)
Total	**2,050 (100%)**	**737 (100%)**	**1,215 (100%)**	**2,224 (100%)**

Considerations Associated with the Complexity of Removal of Non-Native Trout

Of the 13,253 miles of suitable but unoccupied habitat, 232 miles (2%) had no fish present. Another 837 miles (6%) were judged to have minor complexity of fish removal. About 3,277 miles (25%) had moderate complexity of fish removal. Another 6,211 miles (47%) were judged to have major complexity of fish removal and 2,695 miles (20%) had unknown complexity of fish removal (Tables 41 and 42).

Table 41. Information relative to complexity of non-native trout removal associated with suitable habitat (miles) being considered for conservation population restoration or expansion.

Complexity of non-native removal	Miles of Suitable Historical Habitat
No fish Present	232 (2%)
Minor Complexity of Fish Removal	837 (6%)
Moderate Complexity of Fish Removal	3,277 (25%)
Major Complexity of Fish Removal	6,211 (47%)
Unknown Complexity of Fish Removal	2,695 (20%)
Total	**13,253**

Table 42. Information relative to complexity of non-native trout removal associated with suitable habitat (miles) being considered for conservation population restoration or expansion by GMU.

Removal complexity	Upper Colorado	Lower Colorado	Dolores	Gunnison
No fish present	16 (0.4%)	0	4 (0.6%)	3 (0.1%)
Minor	369 (10.3%)	6 (4.0%)	30 (4.1%)	247 (9.6%)
Moderate	1,007 (28.0%)	37 (27.0%)	213 (29.2%)	490 (19.1%)
Major	1,112 (30.9%)	96 (69.1%)	373 (51.1%)	929 (36.3%)
Unknown	1,095 (30.4%)	0	109 (15.0%)	893 (34.9%)
Total	**3,599 (100%)**	**138 (100%)**	**729 (100%)**	**2,561 (100%)**

Removal complexity	Upper Green	Lower Green	San Juan	Yampa
No fish present	74 (3.6%)	31 (4.2%)	76 (6.3%)	29 (1.3%)
Minor	120 (5.8%)	16 (2.1%)	7 (0.6%)	43 (2.0%)
Moderate	284 (13.8%)	232 (31.5%)	93 (7.7%)	921 (41.4%)
Major	1,570 (76.6%)	455 (61.8%)	927 (76.3%)	750 (33.7%)
Unknown	3 (0.1%)	3 (0.4%)	112 (9.2%)	481 (21.6%)
Total	**2,050 (100%)**	**737 (100%)**	**1,215 (100%)**	**2,224 (100%)**

Combined Rating of Restoration and Expansion Rankings of CRCT

Of the 13,253 miles of suitable but unoccupied habitat, only 176 miles (1%) were judged to have high potential for CRCT restoration or expansion. Another 406 miles (3%) had intermediate restoration or expansion potential. About 7,540 miles (57%) were rated has having a low potential for restoration or expansion. And 1,978 miles (15%) were rated as very low for CRCT restoration or expansion. The remaining 3,151 miles (24%) had unknown potential for restoration or expansion due to one or more missing pieces of information (Table 43). Table 44 displays the combined restoration ratings by GMU.

Table 43. Information relative to significance of fisheries associated with suitable habitat (miles) being considered for conservation population restoration or expansion.

Combined CRCT Restoration or Expansion Rating	Miles of Suitable Historical Habitat
High Overall Potential	176 (1%)
Intermediate Potential	406 (3%)
Low Potential	7,541 (57%)
Very Low Potential	1,978 (15%)
Unknown Potential	3,151 (24%)
Total	13,253

Table 44. Restoration potential (miles of habitat) by GMU for CRCT.

Restoration Potential	Upper Colorado	Lower Colorado	Dolores	Gunnison
High	3 (0.1%)	0	4 (0.6%)	0
Intermediate	240 (6.7%)	0	30 (4.2%)	32 (1.3%)
Low	1,713 (47.6%)	86 (61.7%)	496 (68.1%)	1,515 (59.1%)
Very Low	390 (10.8%)	53 (38.3%)	84 (11.5%)	19 (0.7%)
Unknown	1,254 (34.8%)	0	115 (15.7%)	995 (38.8%)
Total	**3,599 (100%)**	**138 (100%)**	**729 (100%)**	**2,561 (100%)**

Restoration Potential	Upper Green	Lower Green	San Juan	Yampa
High	75 (3.6%)	31 (4.2%)	62 (5.1%)	2 (0.1%)
Intermediate	17 (0.8%)	0	30 (2.4%)	57 (2.6%)
Low	1,017 (49.6%)	356 (48.3%)	988 (81.3%)	1,371 (61.6%)
Very Low	865 (42.2%)	347 (47.1%)	24 (2.0%)	196 (8.8%)
Unknown	75 (3.7%)	3 (0.4%)	112 (9.2%)	598 (26.9%)
Total	**2,050 (100%)**	**737 (100%)**	**1,215 (100%)**	**2,224 (100%)**

Conclusions

Historical Perspective

No quantitative estimates of Colorado River cutthroat trout historical abundance were available prior to this status assessment effort. Previous historical distribution was often defined as all of the colder waters of the upper basin (e.g., Behnke and Benson 1980). Behnke (1979) originally estimated that Colorado River cutthroat trout were reduced to less than 1% of their historical range, and all populations were believed to be at least slightly hybridized. Since that time, many new populations of CRCT have been discovered and Dr. Behnke did not reiterate this estimate in his 1992 update of the 1979 monograph. Other status assessments focused on current distribution (e.g., Young et al. 1996).

To account for the various changes that influence historical CRCT distribution, this status update used a systematic approach to provide an estimation of the amount of stream habitat that was historically occupied. The NHD stream layer (primarily at the 1:24,000 scale) was used as the basis for the assessment. This status update also anchored the historical perspective to a more definitive point in time (circa 1800). It was felt that a perspective closely associated with the movement into and subsequent settlement of the Colorado River Basin by early European settlers provided a reasonable point of reference of comparison with present conditions. Our estimates suggest approximately 21,386 miles of streams located within 51 4th level HUC's, were occupied by CRCT before European settlement. The 21,386 miles of historically occupied habitat is in stark contrast to the nearly 136,900 miles of stream contained in the 1:24,000 NHD hydrography layer associated with the watersheds of the Colorado River Basin. About 115,550 miles of streams were excluded from the NHD coverage as being historically occupied due to a number of factors including passage barriers (e.g., physical, temperature, etc.), artificial channels (e.g., ditches and canals) and inadequate habitat (e.g., minimal flows, excessive gradients, intermittent or ephemeral flows, excessive temperatures, etc).

Our status update estimated that about 21,386 miles of habitat were historically occupied within the historical geographical boundary (Figure 1). Of our total, Colorado contained the most historical habitat (13,615 miles; 64% of total), Wyoming was believed to have 4,185 miles (20% of total), Utah contained 3,465 miles (16%) , and New Mexico had 121 miles (0.6%). It is important to note that a biologist knowledgeable of the Chuska Mountains area (Chaco watershed) was not available during our workshops. The historical distribution in this area was based on generalized historical distribution presented in Behnke and Benson (1980) and Young et al. (1995) concurrently with best professional judgment based on site specific elevation and stream pattern.

Our status update attempted to deal with sources of variation by applying a standard protocol in a uniform manner. We used the NHD stream layer at the 1:24,000 scale in most cases and because the maps were geo-referenced the actual calculation of miles was completed with GIS capabilities. We also anchored to a specific point in time (circa 1800). We believe these and other improvements allowed for a relatively precise determination of the historical perspective. Because of these improvements we believe that our estimate of historical habitat occupied by CRCT provides a solid basis for determining the current status of the subspecies.

Current Distribution and Conservation Populations

Over the last three decades there have been numerous attempts to define the nature of contemporary CRCT distribution (Binns 1977, Behnke 1979, Behnke and Benson 1980, Martinez 1988, Oberholtzer 1990, Behnke 1992, Young 1995, Young et al. 1996, CRCT Task Force 2001, Behnke 2002). These attempts have varied due to the point in time the assessment was completed, the amount and quality of the information from which the assessment was derived, and scope of the respective assessment. These previous assessments defined the current status by identifying the number of populations and sometimes the extent of occupied habitat known to exist at the time of the respective assessment. The more detailed early efforts were conducted by State employees and focused on a limited portion of the range within one state (e.g., Binns 1977, Martinez 1988, Oberholtzer 1990). Binns (1977) found 12 streams in Wyoming he considered pure, and 40 total streams occupied, including hybridized populations. For comparison, this status assessment identified 85 conservation populations in Wyoming. Oberholtzer (1990) identified 17 occupied streams in the Little Snake River within Wyoming. Martinez (1988) focused on Northwest Colorado. She identified 96 occupied streams, 59 of which would be considered conservation populations based on genetics (meristic counts). Young et al. (1996) identified 318 populations across the full range of CRCT, 83 were considered pure (26%). He also found that 45% of existing populations were sympatric with non-natives and only 27% were protected by barriers. An interagency CRCT conservation team was established in 1999 to focus on CRCT conservation. As state and federal agencies within the range of CRCT focused on CRCT, many more populations were discovered and some were expanded or refounded. This is demonstrated in Table 45 which is a compilation from 3 past conservation team reports (CRCT Conservation Team 2003).

Our status update provided a further refinement of status information based on information provided by 48 professional fishery biologists having specific knowledge of CRCT. This recent information update identified 3,022 miles of occupied stream habitat in 42 4th level HUC's. Of the 3,022 currently occupied miles, 224 occurred outside of historical habitats we delineated. Thirteen percent of the historically occupied habitats we designated are currently occupied. The 224 miles of occupied habitat outside estimated historical habitat would equal an additional 1% of the total historically occupied habitat. These streams are typically above historical barriers in stream segments not believed to have been historically occupied but still within the historical range.

Following a systematic review of the occupied habitat, 285 conservation populations were identified which had been previously identified by State wildlife agencies. These populations included 153 judged to be "core conservation populations" based on genetic testing (less than 1% introgressed) and information indicating no record of non-native stocking and no contaminating species being present and 132 additional conservation populations having other attributes viewed as important to CRCT conservation. In total these 285 conservation populations occupied 1,796 miles (8.4% of historical habitat) of habitat.

Table 45. Numbers and miles/acres of CRCT conservation populations in Colorado, Utah and Wyoming known to exist on July 1, 1998; March 30, 2001; and July 16, 2003, from CRCT Conservation Team documents.

Geographic Management Units	Existing CRCT Stream Populations						Existing CRCT Lake Populations					
	1998		2001		2003		1998		2001		2003	
	#	Miles	#	Miles	#	Miles	#	Acres	#	Acres	#	Acres
State of Colorado-Total	87	230.3+	125	319.7 +	144	405.3+	9	496.4	28	672.1	27	367.2
Colorado	47	107.1	76	159.6+	76	189.9+	7	171.4	19	234.0	19	234.0
Dolores	3	2.5+	4	9.0	4	9.0	0	0	0	0	0	0
Gunnison	3	10.0+	11	47.5	21	83.8	0	0	3	78.1	2	75.1
San Juan	12	37.5	11	31.6	13	35.6	0	0	1	18.0	0	0
White	4	11.0	4	11.0	4	11.0	1	287	2	291.0	1	4
Yampa	18	64.0	19	61.0	26	76+	1	38	3	51.0	5	54.1
State of Utah-Total	8	36.0+	35	177.05	56	272.5	0	0	6	110.6	10	164
Northeastern	4	30.0	20	121.6	23	147.6	0	0	4	106.9	5	142.9
Southeastern	2	6.0+	7	32.2	22	80.0	0	0	0	0	0	0
Southern	2	0+	8	23.25	11	44.9	0	0	2	3.7	5	21.1
State of Wyoming-Total	66	258.0	70	279.3	86	331.8	3	104.5	3	104.5	4	592.5
Black's Fork/Eastside	9	42.4	10	43.4	17	69.9	0	0	0	0	1	488
East Fork	2	11.0	1	11.0	1	11.0	1	28	1	28.0	1	28
Little Snake	32	90.9	36	97.2	38	98.7	0	0	0	0	0	0
Upper Green	3	17.3	3	17.3	3	17.3	1	5.5	1	5.5	1	5.5
Westside	20	96.4	20	110.4	27	134.9	1	71	1	71.0	1	71
Grand Total	161	524.3+	227	776.05+	286	1,009.5+	12	600.9	37	887.2	41	1,123.7

+ = mileage or acreage information is incomplete

It is important to note there was a significant difference in how populations were identified in the various status assessments. Previous assessments identified populations based on the occupied stream (e.g., Little Vasquez Creek, Abrams Creek, or U M Creek) without determining whether the streams were in the same drainage basin and connected either directly or indirectly. In early assessments, a few occupied streams across the range were identified. As additional inventories were completed, other streams within occupied drainages were found to contain CRCT and were subsequently referred to as populations (e.g., Bunker Creek, Poose Creek, East Fork Williams Fork), even though they were tributary to the same stream (e.g., East Fork Williams Fork). Caution should be used when comparing the number of CRCT populations identified in the various status assessments. Because most early assessments linked CRCT populations to specific streams there would be a tendency to over estimate the number of actual populations. Our assessment applied a systematic approach focused on teasing out CRCT populations based on connectivity. We identified a number of populations (97) that consisted of multiple connected streams or stream segments that made up population networks. We also identified a substantial number of populations (188) which were non-networked, or isolated. Table 46 provides a comparison between the stream data presented in Table 45 and the current assessment. An attempt was made to count the number of individual streams in each population, but it should be noted some of these streams were unnamed and may not have been recognized as a stream population previously.

Table 46. Numbers and miles/acres of CRCT Conservation populations known to exist on July 16, 2003, and June 30, 2005, by Basin GMU.

Geographic Management Units	**Existing CRCT Populations***				
	2003		**2005**		
	# of Stream Populations	Miles	# of Streams**	# of Populations	Miles
Lower Colorado	11	45	14	14	50
Upper Colorado	76	190	78	75	302
Dolores	7	19	4	4	14
Lower Green	28	150	85	26	307
Upper Green	62	300	138	76	650
Gunnison	21	84	25	25	92
San Juan	13	36	12	12	42
Yampa	68	186	79	53	339
Grand Total	**286**	**1010**	**435**	**285**	**1796**

*In 2003, each stream was considered to be a population, while in 2005 all connected streams were considered a single population.

**Stream numbers include all individual stream tributaries containing CRCT.

The protocol used for this assessment was not designed to address lake populations. As of 2003, the CRCT Conservation Team was tracking 41 lakes containing conservation populations (Table 45). When one of these lakes was connected to occupied stream habitat, its length was included in the current assessment. Eighteen of the 41 lakes are included as seven stream miles in this assessment. Other lakes with conservation populations were either not connected to a stream system or not connected to a known stream population of CRCT but are still believed to have important conservation value. There are additional lakes also included in both the historical, currently occupied, and occupied by conservation population totals which were not being separately tracked. The CRCT Conservation Team is currently working to revise the database to include lakes as polygons.

This status update evaluated several important characteristics associated with conservation populations. The first characteristic was the relative risk to each population associated with genetic contamination, either as an initial influence or as a continuation of influences. A majority of conservation populations (63%) were rated as having a low to moderately-low risk of genetic contamination. Thirty-seven percent of the populations were considered to be a moderately-high to high risk. The second characteristic was associated with the risks associated with catastrophic diseases (e.g., whirling disease), either as an initial influence or as a continuation of influences. The majority of conservation populations (87%) were identified as having limited or minimal level of risk from disease. Eleven percent of the populations were rated as segments having a moderate to high risk from catastrophic diseases and 2% were identified as already being inflected. This status update also made a determination of general population health based on the interaction of four important variables (i.e., amount of habitat occupied as a surrogate for temporal variability, population size of reproductive CRCT, demographic interaction of habitat quality, presence of competing species, disease risk and within population connectedness). Eighty-five CRCT populations (30%) were rated as having either high general health (4 populations) or moderately high general health (81 populations). One hundred fifty-one populations (53%) were rated as having moderately low general health and 49 populations (17%) were rated as having low general health.

A majority of conservation populations (72%) had been influenced by one or more conservation activities or projects (e.g., habitat enhancement, population enhancement, special fishing regulations, or improved land use coordination). All but 4 conservation populations were associated with land uses occurring within their respective watersheds. There were three populations with unknown land uses. As was pointed out in the methods section and in the protocol, no level of significance was attached to either the value or significance of influence associated with the conservation actions or land uses identified.

Conservation Population Restoration and Expansion Potential

This status update included an effort to explore opportunities for conservation restoration or expansion. We reviewed the component of the historically occupied habitat not currently supporting CRCT. To our knowledge this was a first systematic approach taken to assess restoration or expansion potentials. While the approach applied can be viewed as cursory, it did generate many pieces of important information. About 18,000 miles (86%) of historical habitat

are not currently occupied by CRCT. Of this total, 4,749 miles (26%) were judged to be unsuitable for restoration due to habitat changes associated with reduced stream flows, elevated temperatures, significant channel alterations and other important habitat considerations or were judged to be associated with recreational fisheries of such importance to make consideration of their use for CRCT conservation unrealistic at this time. In total, 13,253 miles (62%) of historical habitat were evaluated for their potential to contribute to future CRCT conservation by passing them through a screen of four important considerations (i.e., presence of non-native trout, habitat quality, significance of any fishery, and relative complexity of removal of undesirable fish). For a relatively high proportion of these suitable miles (approximately 1/4) not all of the considerations could be addressed and therefore we were unable to complete the restoration and expansion evaluation. Of the remaining suitable miles, 176 were judged as having a high potential, 406 miles had intermediate potential, 7,541 miles had low potential, and 1,978 miles had very low potential.

We are certain the findings of this assessment represent a marked improvement in information associated with CRCT status. Our basic assessment approach was strengthened by the knowledge and expertise of 48 professional fishery biologists. Collectively, this group had a combined total of 759 years of fishery experience, 516 of which were specific to cutthroat trout management or conservation. Use of geo-referenced database (i.e., ArcGIS 9.0) was applied by 13 capable GIS and data management specialists. The information developed in this CRCT status update represents the best scientific information available to assist in the conservation and management of CRCT. This assessment will serve as a baseline for measuring future conservation progress. In addition, this information will be used for prioritizing CRCT conservation efforts and assist in conservation planning by the states, tribes, and others with CRCT management responsibility. Updating this database with data from a well-designed field-monitoring program could serve as a barometer to monitor the status of CRCT over time.

References

Behnke, R. J. 1979. Monograph of the native trouts of the genus *Salmo* of western North America. USDA Forest Service, Rocky Mountain Region, Lakewood, Colorado.

Behnke, R. J. 1992. Native trout of western North America. American Fisheries Society, Monograph 6.

Behnke, R. J. 2002. Trout and salmon of North America. The Free Press. 359 pp.

Behnke, R.J., and D.E. Benson. 1980. Endangered and threatened fishes of the Upper Colorado River Basin. Cooperative Extension Service, Colorado State University, Fort Collins. Bulletin 503A.

Behnke, R.J., and M. Zarn. 1976. Biology and management of threatened and endangered western trouts. USDA Forest Service, Rocky Mountain Forest and Range Experimental Station, Fort Collins. General Technical Report RM-28.

Binns, N.A. 1977. Present status of indigenous populations of cutthroat trout, *Salmo clarki*, in southwest Wyoming. Wyoming Game and Fish Department, Cheyenne. Fisheries Technical Bulletin No. 2.

CRCT Conservation Team. 2003. Colorado River cutthroat management activities and accomplishment report: 1999-2003. CRCT Conservation Team document. 51pp.

CRCT Task Force. 2001. Conservation agreement and strategy for Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) in the States of Colorado, Utah, and Wyoming. Colorado Division of Wildlife, Fort Collins. 87p.

Martinez, A.M. 1988. Identification and status of Colorado River cutthroat trout in Colorado. American Fisheries Society Symposium 4:81-89.

May, B.E., and S.E. Albeke. 2005. Range-wide status of Bonneville cutthroat trout (*Oncorhynchus clarki utah*): 2004. Printed Agency Report. 139 pp.

May, B., W. Urie and B. Shepard. 2003. Range-wide status of Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*): 2001. Printed Agency Report. 200 pp.

Oberholtzer, M. 1990. Current status of Colorado River cutthroat trout in the Little Snake River enclave. Fish Division, Wyoming Game and Fish Department, Cheyenne. Project 5090-28-8501.

Rieman, B., D. Lee, J. McIntyre, K. Overton, and R. Thurow. 1993. Consideration of extinction risks for salmonids. FHR Currents, Fish Habitat Relationships, Technical Bulletin 14 December. USDA Forest Service, Boise, Idaho.

Shepard, B.B., B.E. May, and W. Urie. 2003. Status of westslope cutthroat trout (*Oncorhynchus clarki lewisi*) in the United States. Printed Agency Report. 94 pp.

Young, M.K. 1995. Colorado River cutthroat trout. M.K. Young, technical editor. Pages 16-23. In: A conservation assessment for inland cutthroat trout. USDA Forest Service, Rocky Mountain Forest and Range Experimental Station, Fort Collins. General Technical Report RM-GTR-256.

Young, M.K., R.N. Schmal, T.W. Kohley, and V.G. Leonard. 1996. Conservation status of Colorado River cutthroat trout. General Technical Report RM-GTR-282. Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and Range Experimental Station. 32p.

Appendix A. Assessment Protocol

The range-wide assessment for CRCT included: 1) estimating range that was historically occupied; 2) determining current distribution and identifying specific attributes associated with current distribution; 3) identifying the various conservation populations and assessing relative population health using a ranking system approach similar to that proposed by Rieman et al. (1993); and 4) evaluating the potential for further expansion and restoration of conservation populations. The group recognized that such an assessment would be based primarily on expert opinion supported more or less by existing empirical data and in some cases, particularly when historically occupied range was assessed, the assessment would be more qualitative. However, where field data were available these data were used and referenced. The protocol detailed below represents a modified version of the protocols developed for the westslope (Shepard et al. 2003), Yellowstone (May et al. 2003), and Bonneville (May et al. 2005) cutthroat trout subspecies.

Geographic Information System

This assessment used the National Hydrography Dataset (NHD) as the base for the effort (see **http://nhd.usgs.gov/** for more information on NHD). We used the 1:24,000 scale of NHD as available. Some watershed areas required using the 1:100,000 scale. **An effort will be made to correct the information to as it becomes available.** The USFS Natural Resource Information System (NRIS) provided ArcGIS tools that greatly assisted with this process. An event creation tool, developed the NRIS team, was used to geo-reference CRCT population segments. The tool uses a "point–and-click" user interface to reference these population segments against the NHD stream network. To increase continuity and consistency, only streams identified on the stream layer as being perennial had information entered into the database. We recognize that intermittent and ephemeral streams may provide habitat that is used by CRCT during specific periods when sufficient flows occur. We also fully anticipate that some perennial streams that support CRCT will not be shown on the stream layer and therefore they will not be included in this assessment. It is anticipated that these streams will be added in the future during subsequent efforts to improve NHD.

Data Quality Control and Assurance

When constructing the dataset, identification of the source of information and linking the sources to an anticipated reliability was conducted. This assessment identified sources of information entered into the database as a means for providing a relative determination of reliability and accuracy. Data Source Tables were created to track how the information was derived (Table 1). Information associated with judgment calls and anecdotal sources, in general, may be viewed as being less reliable and/or accurate than information developed as part of detailed surveys and studies that has undergone substantial analysis and review.

In the logistics of data generation, entering the data and ensuring data entry accuracy was handled by making the effort a "real time" exercise. In order to assure consistency and completeness a specific work group (team) completed the assessment of a given 4th level hydrologic unit code (HUC, 8-digit EPA designation) before moving to another HUC. There were 60 4th level HUCs within the historical range of CRCT. During the completion of the

assessment for each HUC, the teams were asked to employ a systematic approach starting with the main stream from mouth and proceeding to the headwaters of that stream. Then each tributary system beginning in a clockwise fashion and starting at the lower most portion of the main stream was completed using the same orderly process. The use of 4th level HUCs was for accounting purposes only. The actual stream layers, either as cutthroat mapping segments or when used to identify discrete populations, were attributed through a database with the specific information developed during the status update using fishery biologists and a GIS-data entry person as a critical members of the team.

Table 1. Example look-up table for data sources with a relative index for information reliability and accuracy.

Information 'Source	Relative Degree of Reliability
Professional Judgment	Lower
Anecdotal Information	Lower
Letter	Lower
News Account	Lower
Data Files	Moderate
Agency Report	Moderate
Published Paper	Higher
Thesis or Dissertation	Higher

The assessment protocol was partitioned into four primary components for conducting this assessment. First, the historical range that was occupied by CRCT at the time of the first European exploration (approximately 1800) of the Northern Rocky Mountains was estimated. Second, the current distribution with density, genetic status and habitat information for CRCT was developed and displayed on a mapping segment basis. Third, conservation populations were identified, either as isolated and meta-populations (networked or connected populations – e.g., interbreeding populations) and relative health was evaluated for each population identified. Relative health was assessed based on three aspects: 1) influences associated with genetic introgression, 2) influences associated with disease, and 3) a general population health determination. Health determinations represented relative determinations indicating a higher or lower level of concern. The mapping and population health determinations were completed for all conservation populations including those associated with lakes (adfluvial) that are maintained by natural reproduction. **The actual location of lakes will not be shown on the initial maps but can be added at a later date**. CRCT populations supported entirely by annual or routine stocking were not included as part of this assessment. Exceptions would be those populations serving as a wild broods that require periodic stocking to bring in new genetic material as part of the brood maintenance plan. Genetic, disease and population risk assessments will be done for each conservation population. Fourth and finally, the assessment included evaluation of the potential for restoration of conservation populations within the historical boundary and for the expansion of existing conservation populations.

Definition of Terms

Definitions of terms used for this protocol are provided in italics as they are first used.

Population mapping unit (segment) *– each stream, or occupied segment of stream, will be treated as a separate population (stock) mapping unit or segment and connectivity between these segments will determine whether these segments function in terms of an isolated population or as a "metapopulation (connected)".*

Conservation Populations – *those cutthroat populations existing in a genetically unaltered condition (core conservation populations with genetic analysis indicating greater than 99% purity) and/or populations having unique ecological, genetic and behavioral attribute of significance that maybe genetically introgressed (See Cutthroat Trout Management: A Position Paper – Genetic Considerations Associated with Cutthroat Trout Management). Conservation populations may exist as isolated populations or networks of subpopulations.*

Meta-population *– infers that interbreeding between subpopulations (population mapping segments) can occur within a few generations (3-15 years). Also referred to as a connected or networked population.*

Sub-Population – *A discrete component of a meta-population or networked population. Usually associated with individual streams and/or stream segments.*

Isolated Population *– populations that occupy isolated habitat fragments and these populations exist independently from connected groups of subpopulations.*

Genetic Risk *– risk of initial or on-going genetic introgression (hybridization) with introduced species or subspecies.*

Population Risk *– risk of deterministic or stochastic declines in a population that could lead to a reduced probability of viability for that population. Linked to temporal, population size, production considerations and degree of isolation.*

Significant Disease (Pathogens) Risk – *Those diseases and the associated pathogens that have the potential to cause significant detrimental influences on population health. Including but not limited to the following: whirling disease, furunculosis, infectious pancreatic necrosis virus, etc.*

Competing Species *– Those species that compete with cutthroat trout for food and space. Can be salmonid and non-salmonid. Generally, non-natives that have been introduced within cutthroat trout habitats. Certain competing species (i.e., brown trout) are predatory on cutthroat trout. Introduced rainbow and brook trout can be viewed as both a competitive and hybridizing species.*

Hybridizing Species *– Those species or subspecies of trout that readily hybridize with cutthroat trout, primarily introduced rainbow trout. Can also include subspecies of cutthroat trout that have been introduced to habitats outside of their respective historical range.*

Barriers

Barrier identification was the first action taken in parts 1 and 2 of the assessment. Barriers to fish movement (either long-term geologic, natural short-term, or anthropogenic barriers) were used to assess whether individual stream segments were likely historically occupied by CRCT, assess potential influences of genetic introgression or disease to existing CRCT populations, and determine whether existing subpopulations were connected with other subpopulations. The identification of barrier location and distinguishing characters was very important. During the effort to describe the historical distribution of the subspecies, we identified those barriers that represent long-term geologic features that may have influenced historical distributions. These barrier locations were located (as points in ArcGIS) on the population mapping segments. Before mapping current distribution, we identified other significant barriers (e.g., natural short-term and/or anthropogenic barriers), their locations (as points in ArcGIS), and other relevant features, including barrier type (Table 2), blockage extent (Table 3), and barrier significance (Table 4). Only those barriers believed to have a significant influence on cutthroat distribution or population integrity (life history expression, spawning, competition and hybridization) were identified. Data sources for barriers were also identified (Table 5). If the barrier extended over an extended distance (e.g., temperature or chemical barrier) the downstream point of the barrier was marked on the map.

Table 2. Types of barriers to upstream fish movement (Check the one that best applies to each barrier)..

Code	Barrier Type
1	Water diversion
2	Fish culture facility/research facility
3	Temperature
4	Bedrock
5	Culvert
6	Debris
7	Insufficient flow
8	Manmade Dam
9	Manmade temporary restoration barrier
10	Pollution
11	Beaver dams
12	Velocity barrier
13	Waterfall
14	Unknown

Table 3. Extent of blockage caused by barriers (Check the one that best applies).

Code	Blockage Extent
1	Complete
2	Partial
3	Unknown

Table 4. Barrier significance (Check all that apply for each barrier).

Code	Barrier Significance
1	Prevents or limits introgression
2	Prevents ingress of competing species
3	Temporary, but presently prevents introgression or ingress of competing species
4	Confines population to small area of usable habitat
5	Limits or precludes opportunity for population re-founding
6	Limits expression of life history characteristics
7	Unknown

Table 5. Information sources associated with barrier (Check one that best applies).

Code	Barrier Information Source
1	Judgment - Anecdotal and/or extrapolated information from other streams
2	Judgment - Ocular Reconnaissance
3	Minor Sampling
4	Major Sampling

Determining Historical Distribution

The historically occupied range of CRCT was assessed based on the believed distribution at the time Europeans first entered the Rocky Mountain West (approximately 1800). This assessment was done at a relatively coarse level. There was an initial effort to adjust the base stream layer by identifying the lower extremes of historical distribution based on the lowest probable elevation limits (6000 feet in elevation or 5500 feet on north-facing slopes). Fishery professionals familiar with each major drainage basin (4^{th} code HUC) defined historical distribution for the remaining stream mapping segments within each 4^{th} code HUC by identifying the historical range based on their personal knowledge of the area, known anecdotal information, known habitat restrictions, known geologic barriers, and historical fisheries data and reports. This information was used to edit CRCT historical range maps. CRCT were assumed to have occupied all stream segments within the adjusted base stream layer of their broad known historical distribution unless information or professional judgment indicated CRCT likely did not occupy specific mapping segments of stream.

Determining Current Distribution, Genetic Status, Densities and Habitat Conditions

The lower and upper bounds of all stream segments presently occupied by naturally self-sustaining populations of CRCT were located and data and data sources associated with the individual characteristics of the occupied segments were identified. Each 4^{th} level HUC working group made initial determinations on occupied habitat based on viewing the map and referring to available information. Specific information associated with current occupancy was tracked on a stream segment basis. Barrier locations were important in these determinations, as was the information associated with Tables 8 to 18. Each identified stream segment must have all

attributes in common. If one or more attributes changed, a new segment was created. Table 8 identifies fish stocking associated with the occupied stream segments. Genetic information and status was identified for each CRCT mapping unit in Tables 9 and 10. For Table 9, the category determination was based on information from the largest sample and/or the most recent sample. Only naturally occurring, self-sustaining populations (i.e., no routine augmentation with hatchery fish) of CRCT were addressed in this status review. Relative density based on a projected number per mile of sexually mature adults (set at 15 cm and larger) for each CRCT mapping segment was also identified (Tables 11 and 12). It was assumed that both trend and detailed population sampling could be supported by a level of statistical review (Table 12). The information in Table 12 was used to provide specific density values for Table 11. Habitat information was identified for each CRCT mapping unit (Table 14 and 15). Tables 17 and 18 related presence of non native fish sympatric with CRCT in the mapping segment.

Table 8. Fish stocking associated with the occupied stream segment (Check all that apply).

Code	Fish Stocking Status
1	No Record of fish stocking
2	Record of rainbow stocking
3	Record of brown trout stocking
4	Record of brook trout stocking
5	Record of Lake trout stocking
6	Record of fine-spotted YCT stocking
7	Record of large –spotted YCT stocking
8	Record of CRCT stocking
9	Record of other cutthroat trout subspecies being stocked. Specify:
10	Other non-native fish stocked. Specify:

Table 9. Genetic status of CRCT within a mapping segment (Check one that best applies).

Code	Genetic Status
1	Genetically unaltered (>99.0%) as a result of introduced species interaction– tested via electrophoresis or DNA
2	Introgressed (hybridized) with introduced species – tested and found to be 90% to 99% CRCT genetic material in individual fish throughout population
3	Introgressed (hybridized) with introduced species – tested and found to be 80% to 89% CRCT genetic material in individual fish throughout the population
4	Introgressed (hybridized) with introduced species– tested and found to be less than 80% CRCT genetic material in individual fish throughout population
5	Not Tested -- Suspected unaltered with no record of stocking or contaminating species present
6	Not Tested -- Potentially hybridized with records of introduced hybridizing species being stocked or occurring in stream
7	Hybridized and Pure populations co-exist (sympatric) in stream (use only if reproductive isolation is suspected and/or testing has been completed)

Table 10. Specify the specific information associated with genetic sampling and analysis. More than one entry can be made for a mapping segment. (Add the specific genetic information in this table)**(<u>This Table will not be specifically included in status update as a separate entity)</u>**

Sample Number	Collection Date	Collection ID	Number of Fish Sampled	Analysis Date	Analysis Code	% CRCT

Analysis Code	Genetic Analysis
1	Allozymes
2	PINES
3	Microsatellites
4	DNA

Table 11. Population density (numbers per mile) of sexually mature adults (15 cm and larger) within the mapping segment (Check the <u>one</u> that best applies).

Code	Mapping Segment Standing
1	0 to 50 fish per mile (Specific density within this range if available_____)
2	50 to 150 fish per mile (Specific density within this range if available_____)
3	151 to 400 fish per mile (Specific density within this range if available_____)
4	Over 400 fish per mile (Specific density within this range if available_____)
5	Unknown

Table 12. **(This Table is for informational purposes to support Table 11)** Population estimates of CRCT 15 cm and larger) expressed as number per mile (Complete with specific sample information that applies).

Sample ID	Sample Date	Estimated fish/mile	Coefficient of Variation %	95% Confidence Interval	Estimate Type Code

Code	Population Estimate Type
	3 pass removal
	2 pass removal
	1 pass removal
	Mark-recapture
	Single pass removal

Table 13. Source of population density information (Check one that best applies).

Code	Source of CRCT density information
1	Judgment-extrapolated information from other areas
2	Judgment - Ocular Reconnaissance
3	Spot Sampling
4	Trend Sampling
5	Detailed Population Sampling
6	Unknown

Table 14. Relative quality of occupied habitat (Check one that best applies). Refer to Box B (pages 26-29) for desired habitat reference conditions.

Code	Habitat Quality Determination
1	Excellent habitat quality (e.g., ample pool environment, low sediment levels, optimal temperatures, quality riparian habitat, etc.)
2	Good habitat quality (may have some habitat attributes that are slightly less than ideal)
3	Fair habitat quality (has a greater number of attributes that are less than ideal)
4	Poor habitat quality (most habitat attributes reflect inferior conditions
5	Unknown

Table 15. Relative of width of occupied stream segment (Check one that best applies).

Code	Average width of occupied stream segment
1	< 5 feet
2	5 to 10 feet
3	10 to 15 feet
4	15 to 20 feet
5	20 to 25 feet
6	Over 25 feet
7	Unknown

Table 16. Source of habitat quality and stream width information Check **one** that best applies).

Code	Source of habitat information
1	Judgment-extrapolated information from other streams
2	Judgment - Ocular Reconnaissance
3	Spot Habitat Sampling
4	Trend Habitat Sampling
5	Detailed Habitat Sampling

Table 17. Presence of non native fish sympatric with CRCT in the mapping segment (Check all that apply).

Code	Presence of Non-Native Fish
1	No non-native fish present
2	Rainbow trout
3	Brown trout
4	Brook trout
5	Lake trout
6	Fine-spotted YCT
7	Large-spotted YCT
8	Other cutthroat trout subspecies. Specify:
9	Other trout. Specify:
10	Other fish. Specify:
11	Unknown

Table 18. Source information associated with presence of non-native fish (Check one that best applies).

Code	Source of non-native fish information
1	Judgment-information extrapolated from other streams
2	Judgment -- Ocular Reconnaissance
3	Spot Sampling
4	Trend Sampling
5	Detailed Sampling
6	Unknown

Identification of Individual Conservation Populations and Application of Relative Health Evaluations for each Population

For this stage of assessment the focus changed from CRCT occupied mapping segments to conservation populations and the factors that have the potential to influence the well-being of the identified populations. Determinations were made relative to which occupied mapping units were combined into a specific conservation population with conservation being the primary management objective. Conservation populations were further sub-divided based on connectedness into meta-populations or as isolated populations (Table 19). To be considered connected in a meta-population, a total barrier cannot be present within the meta-population's stream network. Both meta-populations and isolated populations were identified as conservation populations. Conservation populations were categorized as genetically unaltered (i.e., core conservation populations) or displaying unique life history traits and ecological characteristics in the presence of hybridization (i.e., conservation populations) (Table 20). Life history attributes of the population (Table 21) and status of the conservation population as a source or a sink (Table 22) were identified. Information on conservation activities, land-use and fishery management were identified for each conservation population (Tables 23 and 24). No degree of significance was (or should be) attributed to the conservation activities or the land uses that were identified as being associated with each conservation population. The significance of the conservation activities and/or land uses to each specific conservation population will have to be addressed in subsequent specific assessments.

Table 19. Degree of connectedness associated with the conservation population (Check one that best applies).

Code	Degree of Connectedness
1	Strongly connected. Migratory forms (fluvial/ad-fluvial) must be present and migration corridors must be open (significant connectivity). Occupied habitat consists of numerous (> 5) individual streams w/ sub-populations.
2	Moderately connected. Migratory forms are present but connection periodically disrupted. Genetic exchange limited at times. Occupied habitat consists of a few (4-5) individual streams w/ sub-populations.
3	Weakly connected. Questionable whether migratory forms exist within connected habitat; however possible infrequent straying of adults within occupied connected habitat. Occupied habitats consists of 3 to 4 streams w/ sub-populations.
4	Population not networked or connected. Population functions as an isolated entity with no interaction with other populations or sub-populations. Passage barrier may be present.

Table 20. Conservation Population Qualifier (Check one that best applies)

Code	Conservation Population Qualifier
1	Core Conservation Population (must be genetically unaltered – greater than 99% CRCT genes)
2	Known or Probable Unique Life History (fluvial, ad-fluvial, or resident) May include populations that represent the last, best CRCT population within a given watershed or drainage basin.
3	Known or Probable Ecological Adaptation to extreme environmental condition (e.g. temperature, alkalinity, pH, sediment)
4	Known or Probable Predisposition for large size or unique coloration
5	Other – Population occupies habitat that is likely to become part of the CRCT conservation focus

Table 21. Life history attributes associated with the conservation population (Check all that apply).

Code	Life History Attributes
1	Resident Life History (e.g. Resides in one stream or a network of smaller streams for entire life)
2	Fluvial Life History (e.g. Resides primarily in a larger stream or river but migrates to other streams to spawn)
3	Ad-fluvial Life History (e.g. Resides primarily in a lake environment but migrates to riverine environments to spawn)

Table 22. Is the population a source of a sink (Check one that best applies)

Code	Is Conservation Population a Source or Sink
1	Conservation population is a source to other populations downstream
2	Conservation population is a sink from upstream population sources.
3	Not Applicable

Table 23. Conservation activities associated with the conservation population (Check all that apply).

Code	Conservation Actions
1	Water lease/In-stream flow enhancement
2	Channel restoration
3	Bank stabilization
4	Riparian restoration
5	Diversion modification
6	Barrier removal
7	Barrier construction
8	Culvert replacement
9	Installation of fish screens to prevent loss
10	Fish ladders to provide access
11	Spawning habitat enhancement
12	Woody debris placement
13	Pool development
14	Increase irrigation efficiency
15	Grade control
16	In-stream cover habitat
17	Re-founding pure population
18	Riparian fencing
19	Physical removal of competing/hybridizing species
20	Chemical removal of competing/hybridizing species
21	Public outreach efforts at site (Interpretative site)
22	Population Restoration/Expansion
23	Special Angling Regulations
24	Land-use mitigation direction and requirements (e.g., Forest Plan direction, regulation, permit req., coordination stipulations, etc.)
25	Population covered by special protective mgt emphasis (e.g., Nat'l Park, wilderness, special mgt area, conservation easement, etc.
26	Other:
27	None:

Table 24. Land-use and fishery management activities associated with conservation population (Check all that apply).

Code	Activity
1	Timber Harvest
2	Range (Livestock grazing)
3	Mining
4	Recreation (non-angling)
5	Angling
6	Roads
7	De-watering
8	Fish Stocking (e.g., non-native fish)
9	Hydroelectric, water storage and/or flood control
10	Other
11	Unknown
12	None

Conservation Population Health Evaluations

Only conservation populations were evaluated for relative genetic and disease influences and general population health. It is important to note that these evaluations did not and should not define inherent probability of persistence or exclusion but rather identified index conditions that put a population at greater or lesser risk based on certain attributes.

Genetic Stability Assessment A genetic stability index was made for each conservation population (e.g., Network- or isolate) using a index ranking of 1 to 4 to indicate low to progressively higher levels of possible risk (Table 25). The index was not and should not be viewed as an absolute but rather as an indicator of possible or potential genetic influences.

Table 25. Genetic index ranking (Check one that best applies).

Rank	Risk Characterization
1	Introduced hybridizing species **cannot interact** with existing CRCT population. **Barrier provides complete blockage to upstream fish movement**.
2	Introduced hybridizing species are in same stream and/or drainage **further than 10 km** from CRCT population, but not in same stream segment as CRCT, **or within 10 km where existing barriers exist, but may be at risk of failure.**
3	Introduced hybridizing species are in same stream and/or drainage **within 10 km of CRCT population and no barriers exist** between introduced species and CRCT population. However, introduced hybridizing species have not yet been found in same stream segment as CRCT population.
4	Introduced hybridizing species are **sympatric** with CRCT in same stream segment.

Significant Disease Influence Assessment A significant disease influence assessment was made for each meta- (networked) or isolate population using a ranking of 1 to 5 to indicate low to progressively higher levels of risk associated with the possible or potential influence of significant diseases (Table 26). Population isolation and security were important considerations but were not viewed as absolutes. The diseases of concern are those that cause severe and significant impacts to population health and include but are not limited to whirling disease, furunculosis, infectious pancreatic necrosis virus, etc. The assessment was completed and/or reviewed by fish health professional. The level of influence was not and should not be viewed as an absolute but rather as an indicator of possible or potential disease influences.

Table 26. Significant diseases risk influence index (Check one that best applies).

Rank	Risk Characterization
1	Significant diseases and the pathogens that cause these diseases **have very limited opportunity to interact** with existing CRCT population. Significant disease and pathogens are not known to exist stream or watershed associated with CRCT population. **Barrier provides complete blockage to upstream fish movement**. Stocking of fish from other sources does not occur.
2	Significant diseases and/or pathogens have been introduced and/or identified in same stream and/or drainage **further than 10 km** from CRCT population, but not in same stream segment as CRCT, **or within 10 km where existing barriers exist, but may be at risk of failure.** Stocking of fish from others source areas requires fish health screening and pathogen free clearance.
3	Significant diseases and/or pathogens have been introduced and/or have been identified in same stream and/or drainage **within 10 km of CRCT population and no barriers exist** between disease and/or pathogens and diseased fish species and the CRCT population. However, diseases and/or pathogens have not yet been found in same stream segment as CRCT population.
4	Significant disease and/or pathogens and disease carrying species are **sympatric** with CRCT in same stream segment but CRCT have not tested positive.
5	CRCT population is known to be positive for significant disease and/or pathogens are present. CRCT population has a history of impacts from significant diseases. Environmental and/or biological conditions may have intensified disease impact.

Conservation Population General Health Assessment

A generalized population health assessment was completed for each meta- or isolate population using an index ranking that includes consideration of four factors (See attachment A). General population health was indexed from low to high by using a 1 to 4 ranking system based on four variables identified by Rieman et al. (1993) (Table 27). The ranking for temporal variability was derived as a cumulative length total of stream segments identified as being part of the conservation population. Population size of CRCT that are sexually mature (15 cm and larger) were derived from the density information associated with the stream segments identified for each conservation population (Tables 11). This size range was felt to reasonably reflect that component of a CRCT population that can be viewed as sexually active (e.g. approximating an effective population). Population production ranking was derived from stream segment

Table 27. Ranks of various types of risk to conservation populations. Individual variable rankings to be generated from the information associated with currently occupied habitat data and specific conservation population information.

Variable	Description	Rank	Criteria
Temporal Variability – **Influence of stochastic catastrophic events on a whole population**	Habitat Quantity -- Stream length occupied will be used to index temporal variability. Assumption is that larger habitat patch sizes will be less likely to be in synchrony with regard to stochastic events and, to a degree, with deterministic influences. Ranking for temporal variability will be derived as a cumulative total of stream segments identified as being part of the conservation population.	1	At least 50 miles of occupied habitat
		2	20 to 49 miles of occupied habitat
		3	6 to 19 miles of occupied habitat
		4	< 6 miles of occupied habitat
Population Size – Associated with the potentially sexually reproductive component of the CRCT population.	Defined as the number of fish greater than 15 cm (refer to density determinations and/or specific population survey information … Tables 11 and 12). Population size will be derived from expanding the density information associated with the stream segments identified for each conservation population and adjusting the total to reflect the amount of occupied habitat. Although it is recognized that a 15 cm cutoff in low elevation streams will not exclude all immature fish, most CRCT conservaton populations are restricted to high elevations where the cutoff will yield a conservative estimate of sexually mature fish. .	1	> 2,000 Adults
		2	500 – 2,000 Adults
		3	50 – 500 Adults
		4	< 50 Adults
Population Production (Growth/ Survival) **-** **Influence of deterministic demographic factors on whole population** **See Box C (pages 30-32)**	Factors that influence population production include habitat quality, disease, competition, and predation. Important considerations include land-use influence on habitat that could be influencing a population's potential. As important would be the application of enhancement actions targeted to improve population condition.	1	Greater than 50% of habitat in excellent condition; No non-native competitive species present. No catastrophic diseases present; No land uses identified; Substantial enhancement (>5 enhancement types) efforts have been undertaken.
		2	Greater than 50% of habitat in good and excellent condition; Non-native competitive species maybe present; Catastrophic diseases present in close proximity; One to two land uses associated with population; Three to 5 enhancement efforts have been undertaken

Variable	Description	Rank	Criteria
		3	Greater than 50% of habitat in fair, good and excellent condition; Non-native competitive species may be present; Catastrophic diseases present in close proximity; Three to four land uses associated with population; One or two enhancement efforts have been undertaken
		4	Greater than 50% of habitat in poor condition Population associated with poor quality habitat; Non-native competitive species maybe present; Catastrophic diseases sympatric with population; Greater than 5 land uses associated with population; No enhancement .
Population Connectivity	Relates to how isolated or connected is the conservation population from other conservation populations or sub-populations? Select from information in Table 19.	1	Strongly connected. Migratory forms must be present and migration corridors must be open (connected)
		2	Moderately connected. Migratory forms are present, but connection with migratory populations disrupted at a frequency that allows only occasional genetic exchange.
		3	Weakly connected. Questionable whether migratory form exists within connected habitat; however, possible infrequent straying of adults into area occupied by population
		4	Population not connected. Population is isolated from any other population segment, usually due to a barrier, but possibly due to lack of movement.

information associated with habitat quality, presence of non-native fish, potential for disease and the level of land use interaction with the population (See Box C). The degree of connectedness was taken from Table 19. These four main factors were weighted to derive a final index as follows: Temporal Variability = 0.7; Population Size = 1.2; Population Productivity (Growth/Survival) = 1.6; and Isolation = 0.5. The index value for general population health was not and should not be viewed as an absolute but rather as an indicator of possible or potential health.

The population assessment identified source/sink relationships that may exist between headwater CRCT conservation populations and those conservation populations lower in the drainage, especially where barriers to upstream movement might exist. While headwater CRCT populations may include those isolated by impassible barriers to upstream fish movement (and thus could not be re-founded or receive external genetic material without human intervention), these headwater populations may be important sources for re-founding and augmenting lower populations. This was handled by a simple identifier indicating that a given population operates as a source. The most downstream population would automatically become a "sink" recipient.

Evaluation of Potential CRCT Population Restoration and Expansion Opportunities.

This evaluation was based on an initial range-wide review of stream segments not currently associated with conservation populations. This mapping exercise facilitated assessment of potential restoration and/or expansion opportunities. Similar to the mapping exercise associated with currently occupied stream segments, lower and upper bounds of all stream segments viewed as having the potential to support CRCT were identified and evaluated. Using the base hydrography layer within each 4th level HUC overlaid with current CRCT occupied habitat, conservation population and barrier locations, each team systematically identified and evaluated CRCT restoration and expansion potentials on a stream segment basis.

The information for these segments can be treated as a block of segments or can be developed for each NHD segment. The assessment teams identified segments as large as possible. The specific information was tracked on a stream segment basis. Again, considering barrier locations was important as was the information associated with Tables 28 to 31. Each identified stream segment had all attributes in common or, if one or more attributes changed, a new segment was created. Fish stocking and/or fish presence (Table 28), habitat attribute (Table 29), significance of any fishery (Table 30), associated with the stream segment was identified. The relative complexity of removal (chemical and/or physical removals) of any existing fish within the potential restoration or expansion segment was also identified (Table 31).

Table 28. Fish stocking and/or presence of fish associated with the restoration or expansion stream segment. (Check the one that best applies)

Code	Non-native Fish Stocking and/or Presence Status
1	No Record of fish stocking and the segment is barren
2	Record of stocking and/or hybridized CRCT are the only trout present but they are not part of a conservation population.
3	Record of non-native trout stocking and/or the presence of non-native trout in low numbers. Includes all non-native trout: rainbow, brown, Brook, Lake, and other cutthroat. Hybridized CRCT may or may not be present.
4	Record of non-native trout stocking and/or the presence of non-native trout being present in high numbers. Includes all non-native trout: rainbow, brown, Brook Lake, and other cutthroat. Hybridized CRCT may or may not be present
5	Unknown presence or stocking record of non-native trout.

Table 29. Relative habitat quality of the potential restoration or expansion segment. (Check the one that best applies)

Code	Habitat Quality Determination
1	Excellent habitat quality (e.g., ample pool environment, low sediment levels, optimal temperatures, quality riparian habitat, etc.)
2	Good habitat quality (may have some habitat attributes that are slightly less than ideal)
3	Fair habitat quality (has a greater number of attributes that are less than ideal)
4	Poor habitat quality (most habitat attributes reflect inferior conditions)
5	Habitat Quality Unknown

Table 30. Relative significance of any fishery associated with the potential restoration or expansion segment. (Check the one that best applies)

Code	Relative Significance of a Fishery
1	No fishery present
2	Minor fishery (i.e., minimal use)
3	Moderate fishery
4	Major fishery (i.e., significant level of use)
5	Significance Unknown

Table 31. Relative complexity associated with removal of any fish associated with the potential restoration or expansion segment. (Check the one that best applies)

Code	Relative Complexity of Non-native Fish Removal=
1	No fish present
2	Minor complexity (e.g., simple drainage, few fish, low flows, simple habitats, etc.)
3	Moderate complexity
4	Major complexity (e.g., significant flows, multiple channels, many fish, complex habitats, etc.)
5	Unknown complexity

Table 32. Source information for the potential CRCT restoration or expansion segment. (Check the one that best applies)

Code	Description
1	Judgment-information extrapolated from other streams
2	Ocular Reconnaissance
3	Spot Sampling
4	Trend Sampling
5	Detailed Sampling
	Unknown

A generalized restoration opportunity assessment for each potential restoration stream segment was performed by rating the information contained in Tables 28 through Table 31. Restoration potentials were ranked using a 1 to 4 ranking system for each of the four variables identified above (Table 33). The ranking for each restoration variable was derived from the information and judgment of the working group doing the assessment. The ranks assigned to each of the variables were combined into a rating of overall restoration potential for each stream segment. The four variables were weighted equally to derive the overall restoration ranking. The overall score was divided into logical rankings associated with restoration potential (High Restoration Potential = 4 to 6; Intermediate Restoration Potential = 7 to 9; Low Restoration Potential = 10 to 13; and, Very Low Restoration Potential = 14 to 16). If a complete barrier occurred in the lower portion of a segment, the ranking was elevated to the next higher restoration or expansion rank. The identification of one or more unknown conditions associated with the restoration variables resulted in labeling that segment as having unknown restoration potential.

Table 33. Ranking of the various restoration potential factors for each stream segment.

Variable	Description	Rank	Criteria
Biological Considerations Associated with CRCT Restoration Opportunities	Specifically addresses the biological considerations associated the presence of other trout in potential restoration segments (Table 28).	1	No record of fish stocking and the segment is barren
		2	Hybridized CRCT are present in the absence of other trout and segment is not part of a conservation population.
		3	CRCT maybe present and there are non-native trout present in low numbers. Segment not part of conservation population.
		4	CRCT maybe present and there are non-native trout present in high numbers. Segment not part of conservation population
Habitat Considerations Associated with CRCT Restoration Opportunities	Specifically addresses habitat quality of potential restoration segments. See habitat quality ranking in Table 29	1	Excellent habitat quality
		2	Good habitat quality
		3	Fair habitat quality
		4	Poor habitat quality
Social and Political Considerations Associated with CRCT Restoration Opportunities	Specifically addresses the relative significance of an existing fishery (Table 30).	1	No fishery present.
		2	Minor fishery (i.e. minimal use)
		3	Moderate fishery
		4	Major fishery (i.e. significant use level)
Relative Complexity Considerations Associated with CRCT Restoration Opportunities	Specifically addresses the complexity of non-native trout or hybrid CRCT removals (chemical or physical) (Table 31).	1	No fish present
		2	Minor complexity.
		3	Moderate complexity.
		4	Major complexity.

Box C - Generalized Population Health Evaluations

As indicated in the status update protocol each conservation population will receive a generalized population health assessment (Table 27) based on four (4) variables identified by Rieman et.al. (1993). Each of these variables with be ranked based on information contained in the status update database. The variables are related to both deterministic (e.g. changes that are predictable) and/or stochastic (e.g. changes due to chance events) processes that could influence the well-being of a population of CRCT. It should be noted that this generalized health evaluation should not be viewed as an absolute but rather as a relative index of possible or potential health influences associated with the population.

Temporal Variability As used in this health evaluation, temporal variability is linked the population's ability to withstand stochastic influences to the occupied habitat. As such, the amount of occupied habitat becomes a significant indicator of how influential environmental (e.g. fire or drought) or hydrologic (e.g. flooding) events are likely to be to the population. The assumption is that increased habitat provides a greater opportunity for increased habitat complexity and a greater resistance to catastrophic events that could influence the entire population. To receive a low temporal risk ranking we are calling for at least 50 miles of occupied habitat to be present. On the other end of the scale, a very high temporal risk ranking would be associated with occupied habitat of less than 6 miles. The temporal risk ranking will be derived as a cumulative total of stream segments identified as being part of the specific conservation population.

Population Size Variability of Individuals Larger than 15 cm As used in this risk evaluation, this is the population size based on the number of individuals larger than 15 cm in the conservation population. This size threshold is viewed as a reasonable length associated with CRCT that would be sexually active (e.g. related to the effective population). The concept of effective population size plays an important role in the long-term conservation scenario of a population by being related to genetic drift, loss of genetic diversity and population inbreeding. Effective population size is also important in maintaining "critical population mass" needed for adjustments from migration and natural selective influences. A larger sexually active population size, in general, reflects conditions were all life stages are represented in the population. The population size will be derived from the density information associated with Tables 11 and 12. To receive a low adult population size risk ranking we are calling for an adult population size of greater than 2000 individuals. At the other end of the risk scale, a very high risk ranking would be associated with an adult population size of less than 50 adults.

Population Production (Growth/Survival) Variability Factors that influence population production include habitat quality, disease, competition and predation. Land uses that influence habitat quality as well as efforts to enhance habitat are also important. To a significant degree population production factors reflect deterministic processes. The development of a ranking for population production will include consideration of the database information associated with habitat condition, presence of competitive fish, presence of catastrophic disease, the nature of land uses associated with the conservation population and the number of conservation actions taken to improve conditions associated with the conservation population (Table A1). For the purposes of developing an initial ranked score associated with population production, the habitat quality, presence of disease, land uses and implementation of conservation actions will be weighted equally. The final population production score assigned to the conservation population will be increased by one level if non-native fish are sympatric with the population. The composite scores for population production variable ranking can range from 4 to 16 with a 4 being the best production ranking and 16 being the worst ranking. Partitioning of the initial ranked scores for population production follows: High Population Production = 4 to 6; Intermediate Population Production = 7 to 10; Low Population Production = 11 to 13; and, Very Low Population Production = 14 to 16. The final ranked score will reflect an adjustment to reflect the presence of non-native fish competition and predation. If non-native fish are sympatric with the conservation population, the ranked

score should be adjusted to the next higher population production level (i.e. Example: If the initial ranked score falls within the intermediate population production range (score or 7 to 10) and non-native fish are present; the final ranked score will automatically be changed to the low population production level. The final ranking will be inserted as the population production potential ranking in Table 27.

Population Connectivity Variable Populations of CRCT exist as either isolated populations or networks. Isolate populations operate as a discrete entity usually within a single stream. A population network (often referred to as a meta-population) consists of several local sub-populations operating with a level of movement and genetic exchange. Most often population networks represent several local sub-populations each occupying a specific component (e.g. specific streams) of a drainage network. In general, the diversity of local sub-populations and the nature of connectivity within the population network contribute to the stability of the population, especially in terms of how stochastic events might influence population performance through time. The basis for ranking population connectivity will be taken directly from the database (Table 19).

These four main factors will be weighted to derive a final index value using the following weighting criteria: Temporal Variability = 0.7; Population Size = 1.2; Population Productivity (Growth/Survival) = 1.6; and Isolation = 0.5. The individual factors and the final composite index scores represent only a relative indicator of population health. They should not be viewed as absolutes but rather as indicators of possible or potential health influences associated with each population.

Box C-Table 1. Ranks of the various types of population production factors

Variable	Description	Rank	Criteria
Habitat Quality –	Habitat Quantity – Derived from the occupied stream segment habitat quality information contained in the database (Table 14).	1	> 50% of occupied stream segment judged to have an excellent habitat rating.
		2	> 50% of occupied stream segments judged to have excellent and good habitat ratings.
		3	> 50% of occupied stream segments judged to have excellent, good and fair habitat ratings.
		4	> 50% of occupied stream segments judged to be in poor habitat condition.
Presence of catastrophic disease	Developed from the risk assessment associated with significant disease (Table 26).	1	Significant diseases not known to exist and/or complete barrier to fish migration present.
		2	Significant diseases not in close proximity and/or barriers at risk of failure.
		3	Disease in close proximity and no barrier exists.
		4	Disease sympatric with population and/or known to be infected.
Presence of land uses	Ranking gauged on the number of land uses associated with the conservation population. This variable is associated with the information contained in Table 24.	1	Population occurs within wilderness or land with management that precludes extractive or detrimental land uses.
		2	Population associated with on 1 to 2 land uses.
		3	Population associated with 3 to 4 land uses.
		4	Population associated with five (5) or more land uses.
Implementation of Conservation Actions	This variable is associated with the conservation actions identified in Table 23.	1	A substantial (>5 actions) number of conservation actions have been implemented.
		2	Three (3) to 5 conservation actions have been implemented.
		3	Only 1 to 2 conservation actions have been implemented.
		4	No conservation actions have been implemented.

Appendix B. Fisheries professionals who participated in the CRCT assessment workshops and their experience level.

Name	Affiliation	Position Title	Highest Degree	Years Experience	Years of Cutthroat Trout Mgt / Conservation Experience
Todd Allison	USDA Forest Service	Fishery Biologist	BS	6	3
Bill Atkinson	Colorado Division of Wildlife	Fishery Biologist	BS	7	4
Garn Bickell	Utah Division of Wildlife Resources	Fishery Biologist	BS	10	3
Dan Brauch	Colorado Division of Wildlife	Fishery Biologist	BS	14	8
Kevin Christopherson	Utah Division of Wildlife Resources	Fishery Biologist	MS	24	5
Paul Cowley	USDA Forest Service	Fishery Biologist	MS	18	18
Chad Crosby	Utah Division of Wildlife Resources	Fishery Biologist	MS	37	37
Alan Czenkusch	Colorado Division of Wildlife	Fishery Biologist	MA	22	15
Alan Dale	USDA Forest Service	Fishery Biologist	BS	6	5
Greg Eaglin	USDA Forest Service	Fishery Biologist	MS	12	10
Bill Elmblad	Colorado Division of Wildlife	Fishery Biologist	BS	25	6
Kathy Foster	USDA Forest Service	Fishery Biologist	BS	18	10
Tom Fresques	USDI Bureau of Land Management	Biologist	BA	14	6
Patty Gelatt	USDI Fish and Wildlife Service	Fishery Biologist	BS	20	2
Dave Gerhardt	USDA Forest Service	Fishery Biologist	MS	20	13
Greg Glasgow	USDA Forest Service	Fishery Biologist	BS	15	13

Name	Affiliation	Position Title	Highest Degree	Years Experience	Years of Cutthroat Trout Mgt / Conservation Experience
Alex Gouley	USDA Forest Service	Fishery Biologist	BS	5	5
Justin Hart	Utah Division of Wildlife Resources	Fishery Biologist	MS	2	2
Dale Hepworth	Utah Division of Wildlife Resources	Fishery Biologist	MS	31	26
Christine Hirsch	USDA Forest Service	Fishery Biologist	MS	14	4
Doug Homan	Colorado Division of Wildlife	Biologist	BS	29	22
Michael Hudson	Utah Division of Wildlife Resources	Fishery Biologist	MS	8	5
Chris James	USDA Forest Service	Fishery Biologist	BS	15	7
Mike Japhet	Colorado Division of Wildlife	Fishery Biologist	BA	28	25
Pam Jewkes	USDA Forest Service	Fishery Biologist	BA	3	1
Robert Keith	Wyoming Game and Fish	Fishery Biologist	MS	14	8
Chris Kennedy	USDI Fish and Wildlife Service	Fishery Biologist	BS	7	7
Dan Kowalski	Colorado Division of Wildlife	Fishery Biologist	MS	1	1
Mark Lacy	USDA Forest Service	Fishery Biologist	BS	24	22
Kirk Madariaua	Colorado Division of Wildlife	Biologist	BS	21	17
Bruce May	USDA Forest Service	Fishery Biologist	MS	34	31
Tom Mendenhall	USDI Bureau of Land Management	Fishery Biologist	BS	20	20

Name	Affiliation	Position Title	Highest Degree	Years Experience	Years of Cutthroat Trout Mgt / Conservation Experience
Dirk Miller	Wyoming Game and Fish	Asst. Fishery Mgt Coord.	MS	16	8
Kirk Mullins	Utah Division of Wildlife Resources	Biologist	BS	15	10
Joe Neal	USDA Forest Service	Fishery Biologist	BS	11	11
Tom Pettengill	Utah Division of Wildlife Resources	Fishery Biologist	MS	29	20
Dirk Renner	USDA Forest Service	Fishery Biologist	MS	8	1
John Riger	Colorado Division of Wildlife	Biologist		26	26
Kevin Rogers	Colorado Division of Wildlife	Fishery Biologist	PhD	14	8
Craig Schaugaard	Utah Division of Wildlife Resources	Fishery Biologist	MS	13	8
Hilda Sexauer	Wyoming Game and Fish	Fishery Biologist	MS	12	8
Brett Thompson	USDA Forest Service	Fishery Biologist	MS	4	4
Jay Thompson	USDI Bureau of Land Management	Fishery Biologist	MS	13	10
Paul Thompson	Utah Division of Wildlife Resources	Fishery Biologist	MS	12	12
Leisa Tooker	Utah Division of Wildlife Resources	Biologist	MS	4	2
Bill Wengert	Wyoming Game and Fish	Fishery Biologist	MS	31	14
Marc Wethington	New Mexico Game and Fish	Fishery Biologist	BS	14	
Jim Whelan	USDA Forest Service	Fishery Biologist	BS	13	13

Name	Affiliation	Position Title	Highest Degree	Years Experience	Years of Cutthroat Trout Mgt / Conservation Experience
Shannon Albeke	Colorado Division of Wildlife	Biologist-GIS	BA	5	1
Paul Burnett	USDA Forest Service	Biologist-GIS	MS	6	5
Douglas Diekman	USDI Bureau of Land Management	GIS Specialist			
Ken Holsinger	USDI Bureau of Land Management	Biologist-GIS	BA		
Pam Levitt	USDI Bureau of Land Management	GIS Specialist	AS	10	
Dave Mann	Utah Division of Wildlife Resources	GIS Specialist	MS	10	
Peggy Miller	Utah Division of Wildlife Resources	Biologist-GIS	MS	2	2
Kirk Nordyke	Wyoming Game and Fish	GIS Coordinator	MS	13	0
Dennis Oberlie	Wyoming Game and Fish	Biologist-GIS	BS	20	20
Ashleah Rollings	Colorado Division of Wildlife	GIS Specialist	BA	2	1
Dave Taylor	USDI Bureau of Land Management	GIS Specialist	AS	20	0
Joe Vieira	USDI Bureau of Land Management	GIS Specialist	MS	15	0
Scott Vuono	USDA Forest Service	GIS Specialist	BS	5	1

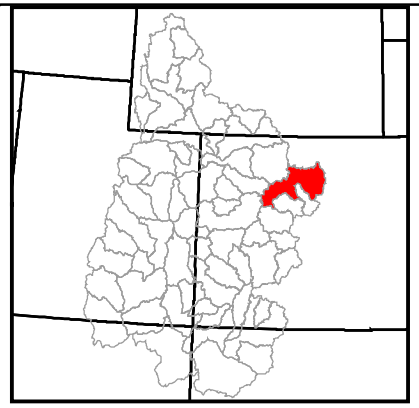
Appendix C. Maps and information collected for each CRCT Conservation Population.

Non-native fish species code look-up table.

Common Species Name	Species Code
No Non-Native fish present	None
Rainbow Trout	RBT
Brown Trout	BRN
Brook Trout	BRK
Lake Trout	LAK
Fine-spotted YCT	YCT
Large-spotted YCT	YCT
Other cutthroat species (specify in comments)	CUT
Other trout species (specify in comments	TRT
Other species (specify in comments)	FSH
Unknown	UNK

Upper Colorado GMU

Colorado Headwaters (14010001)



Barriers

- Complete
- Partial
- Unknown
- Historic Range
- NHD Hydrography
- 8-digit HUC

Colorado Headwaters

Upper White

Eagle

Blue

Roaring Fork

UC1-16
UC1-17
UC1-18
UC1-02
UC1-01
UC1-15
UC1-04
UC1-05
UC1-06
UC1-10
UC1-07
UC1-08
UC1-11
UC1-12
UC1-13
UC1-14
UC1-19
UC1-20
UC1-21
UC1-22
UC1-23
UC1-24
UC1-25
UC1-32
UC1-36
UC1-26
UC1-27
UC1-29
UC1-30
UC1-37
UC1-33
UC1-34

Milk Creek
Hill Creek
Antelope Creek
Rabbit Ears Creek
Troublesome Creek
East Fork Troublesome Creek
Coral Creek
Willow Creek
Gold Bar Trail Creek
Colorado River
Shadow Mountain Creek
Kinney Creek
Sheep Creek
Pass Creek
Red Dirt Creek
Deer Creek
Pinto Creek
Gore Creek
Muddy Creek
Strawberry Creek
Meadow Creek
Trail Creek
Beaver Creek
Tennile Creek
Little Muddy Creek
Crooked Creek
Keyser Creek
Lost Creek
Fraser River
Vasquez Creek
Jim Creek
Williams Fork
Piney River
Sheephorn Creek
Reed Creek
Elk Creek
Big Alkali Creek
Castle Creek
Cabin Creek
Derby Creek
North Fork Cedar Creek
Southside Creek
Eocene Creek
Red Dirt Creek
Prison Creek
Willow Creek
Horse Creek
Morris Creek
Deep Creek
French Creek
Grizzly Creek
Cottonwood Creek
Spruce Creek
Trail Creek
Sweetwater Creek
King Creek
Eocene Creek

14010001 Colorado Headwaters

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	***UC1-01***	*16.12*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Ecological Adaptation*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23250	Red Dirt Creek		14010001cd027	90% - 99%	Unknown	Good	10 to 15 feet	None
WC: 27359	West Fork Red Dirt Creek		14010001cd028	90% - 99%	Unknown	Good	10 to 15 feet	None
Conservation Population	***UC1-02***	*9.44*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 25595	Antelope Creek		14010001cd031	Unaltered	151 to 400 fish	Fair	5 to 10 feet	UNK
Conservation Population	***UC1-03***	*4.32*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23527	Kinney Creek		14010001cd008	Not Tested - Unaltered	0 to 50 fish	Fair	5 to 10 feet	None
Conservation Population	***UC1-04***	*17.81*	*Moderately Connect*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24054	Kelly Creek		14010001cd005	Not Tested - Hybridized	0 to 50 fish	Good	10 to 15 feet	BRK
WC: 24066	Cub Creek		14010001cd006	Not Tested - Hybridized	Unknown	Excellent	20 to 25 feet	BRK, FSH
WC: 23642	Little Muddy Creek		14010001cd007	Not Tested - Hybridized	50 to 150 fish	Good	5 to 10 feet	BRK
Conservation Population	***UC1-05***	*1.47*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22551	Ute Creek		14010001cd046	90% - 99%	50 to 150 fish	Good	Unknown	None
Conservation Population	***UC1-06***	*3.02*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23515	Kinney Creek		14010001cd004	Not Tested - Hybridized	Unknown	Good	5 to 10 feet	BRK
Conservation Population	***UC1-07***	*1.57*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 26725	Steelman Creek		14010001cd002	90% - 99%	151 to 400 fish	Excellent	15 to 20 feet	BRK
Conservation Population	***UC1-08***	*2.47*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23026	Bobtail Creek		14010001cd001	Unaltered	0 to 50 fish	Excellent	10 to 15 feet	BRK

14010001 Colorado Headwaters

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC1-09***	*1.09*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23503	Williams Fork	14010001cd003	Not Tested - Hybridized	151 to 400 fish	Good	10 to 15 feet	BRK, CUT

Conservation Population	***UC1-10***	*2.82*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 25482	Iron Creek	14010001cd025	Not Tested - Unaltered	0 to 50 fish	Fair	5 to 10 feet	None

Conservation Population	***UC1-11***	*6.84*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23571	Vasquez Creek	14010001cd024	Not Tested - Hybridized	0 to 50 fish	Good	15 to 20 feet	BRK

Conservation Population	***UC1-12***	*1.65*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24030	Little Vasquez Creek	14010001cd023	Unaltered	0 to 50 fish	Fair	5 to 10 feet	None

Conservation Population	***UC1-13***	*4.58*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 20367	Fraser River	14010001cd044	Not Tested - Hybridized	Unknown	Unknown	Unknown	UNK

Conservation Population	***UC1-14***	*3.78*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23242	Jim Creek	14010001cd022	Unaltered	0 to 50 fish	Fair	15 to 20 feet	BRK

Conservation Population	***UC1-15***	*6.74*	*Weakly Connected*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 27284	East Meadow Creek	14010001cd049	Not Tested - Unaltered	Unknown	Good	5 to 10 feet	BRK
WC: 27272	Meadow Creek	14010001cd050	Not Tested - Unaltered	Unknown	Unknown	Unknown	UNK

Conservation Population	***UC1-16***	*1.7*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 59	N. Unnamed Trib. to Muddy Creek	14010001cd030	90% - 99%	151 to 400 fish	Excellent	5 to 10 feet	None

14010001 Colorado Headwaters

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC1-17***	*3.99*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23038	Little Green Creek	14010001cd029	Unaltered	Over 400 fish	Excellent	5 to 10 feet	None

Conservation Population	***UC1-18***	*1.99*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22404	Carter Creek	14010001cd047	Not Tested - Hybridized	Unknown	Unknown	< 5 feet	UNK

Conservation Population	***UC1-19***	*7.39*	*Weakly Connected*	*Population is Infected*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 27323	North Fork Ranch Creek	14010001cd019	Unaltered	50 to 150 fish	Fair	10 to 15 feet	BRK
WC: 28123	Middle Fork Ranch Creek	14010001cd020	Not Tested - Unaltered	0 to 50 fish	Good	10 to 15 feet	BRK
WC: 27335	South Fork Ranch Creek	14010001cd021	Not Tested - Unaltered	0 to 50 fish	Fair	5 to 10 feet	BRK

Conservation Population	***UC1-20***	*4.07*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19403	Cabin Creek	14010001cd018	Not Tested - Hybridized	151 to 400 fish	Excellent	10 to 15 feet	None

Conservation Population	***UC1-21***	*3.02*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 25521	Hamilton Creek	14010001cd017	Unaltered	151 to 400 fish	Excellent	5 to 10 feet	None

Conservation Population	***UC1-22***	*3.72*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19023	Arapaho Creek	14010001cd015	Not Tested - Hybridized	0 to 50 fish	Good	15 to 20 feet	BRK

Conservation Population	***UC1-23***	*5.26*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19338	Buchanan Creek	14010001cd012	Not Tested - Hybridized	151 to 400 fish	Excellent	15 to 20 feet	None
WC: 22385	Thunderbolt Creek	14010001cd014	Not Tested - Hybridized	151 to 400 fish	Excellent	10 to 15 feet	None

Conservation Population	***UC1-24***	*2.89*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19338	Buchanan Creek	14010001cd013	Not Tested - Hybridized	Unknown	Good	20 to 25 feet	BRK, BRN

14010001 Colorado Headwaters

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	***UC1-25***	*3.63*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 26915	Roaring Fork Arapaho Creek		14010001cd011	Not Tested - Hybridized	50 to 150 fish	Excellent	10 to 15 feet	None
Conservation Population	***UC1-26***	*0.61*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 72897	Lake Nanita		14010001cd039	Unaltered	Over 400 fish	Excellent	10 to 15 feet	None
Conservation Population	***UC1-27***	*1.18*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 69	Ptarmigan Creek		14010001cd045	Unaltered	Unknown	Good	5 to 10 feet	None
Conservation Population	***UC1-29***	*0.19*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 20313	East Inlet		14010001cd040	Unaltered	Unknown	Poor	5 to 10 feet	None
Conservation Population	***UC1-30***	*1.56*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 21493	Paradise Creek		14010001cd038	Unaltered	Unknown	Good	15 to 20 feet	None
Conservation Population	***UC1-32***	*0.7*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23684	Columbine Creek		14010001cd043	Unaltered	50 to 150 fish	Good	< 5 feet	None
Conservation Population	***UC1-33***	*2.98*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 26674	Timber Creek		14010001cd036	Not Tested - Unaltered	Over 400 fish	Good	< 5 feet	None
WC: 26674	Timber Lake		14010001cd041	Unaltered	Unknown	Excellent	Unknown	None
Conservation Population	***UC1-34***	*7.7*	*Weakly Connected*	*Significant Disease Ris*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22961	Baker Gulch		14010001cd035	Not Tested - Hybridized	Unknown	Unknown	Unknown	BRK

14010001 Colorado Headwaters

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC1-36***	*8.39*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

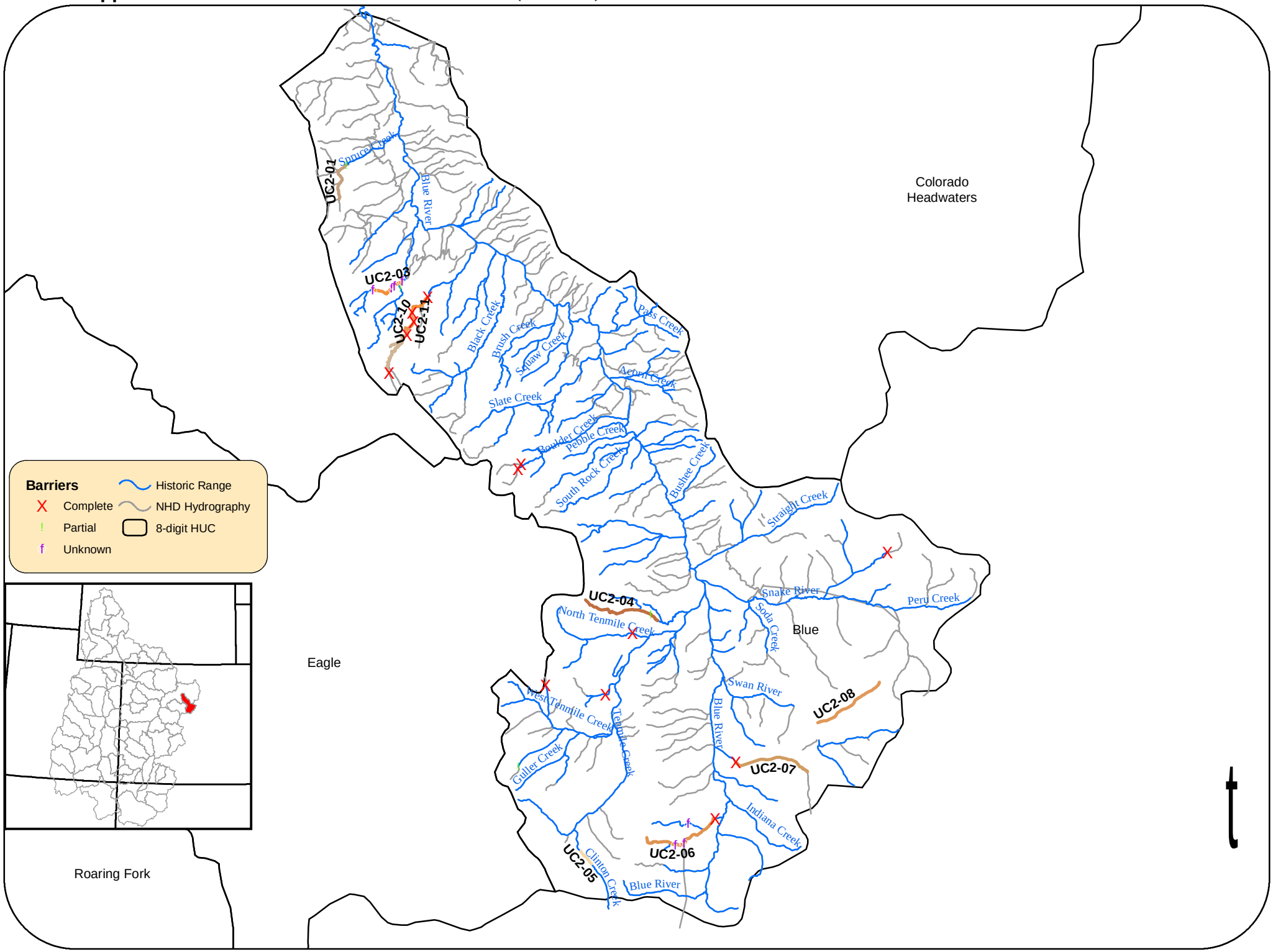
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 25660	Trail Creek	14010001cd010	Not Tested - Unaltered	151 to 400 fish	Fair	15 to 20 feet	None

Conservation Population	***UC1-37***	*0.86*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 21449	Onahu Creek	14010001cd056	Unaltered	Unknown	Good	5 to 10 feet	None

Upper Colorado GMU

Blue (14010002)



14010002 Blue

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC2-01***	*2.14*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22997	Spruce Creek		14010002cd022	Not Tested - Unaltered	50 to 150 fish	Excellent	< 5 feet	None
Conservation Population	***UC2-03***	*3.29*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23090	Cataract Creek		14010002cd001	Not Tested - Hybridized	Unknown	Excellent	15 to 20 feet	BRK
WC: 23177	Elliott Creek		14010002cd007	90% - 99%	Unknown	Excellent	5 to 10 feet	BRK
Conservation Population	***UC2-04***	*4.33*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 21155	Meadow Creek		14010002cd017	Not Tested - Unaltered	151 to 400 fish	Excellent	Unknown	BRK
WC: 21155	Meadow Creek		14010002cd018	Unaltered	151 to 400 fish	Excellent	5 to 10 feet	None
Conservation Population	***UC2-05***	*0.87*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19554	Clinton Reservoir		14010002cd005	Not Tested - Unaltered	Unknown	Unknown	Unknown	None
Conservation Population	***UC2-06***	*4.53*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22133	Spruce Creek		14010002cd020	Not Tested - Hybridized	151 to 400 fish	Excellent	10 to 15 feet	None
Conservation Population	***UC2-07***	*4.12*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24179	French Gulch		14010002cd008	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	None
Conservation Population	***UC2-08***	*3.94*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22260	North Fork Swan River		14010002cd023	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	None
WC: 22260	North Fork Swan River		14010002cd024	Not Tested - Hybridized	50 to 150 fish	Good	5 to 10 feet	BRK

14010002 Blue

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC2-09***	*3.53*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23090	Cataract Creek	14010002cd004	Not Tested - Hybridized	50 to 150 fish	Excellent	20 to 25 feet	None
WC: 129	Unnamed Trib. to Cataract Creek	14010002cd009	Not Tested - Hybridized	Unknown	Unknown	Unknown	UNK

Conservation Population	***UC2-10***	*1.02*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Source*	*Res*

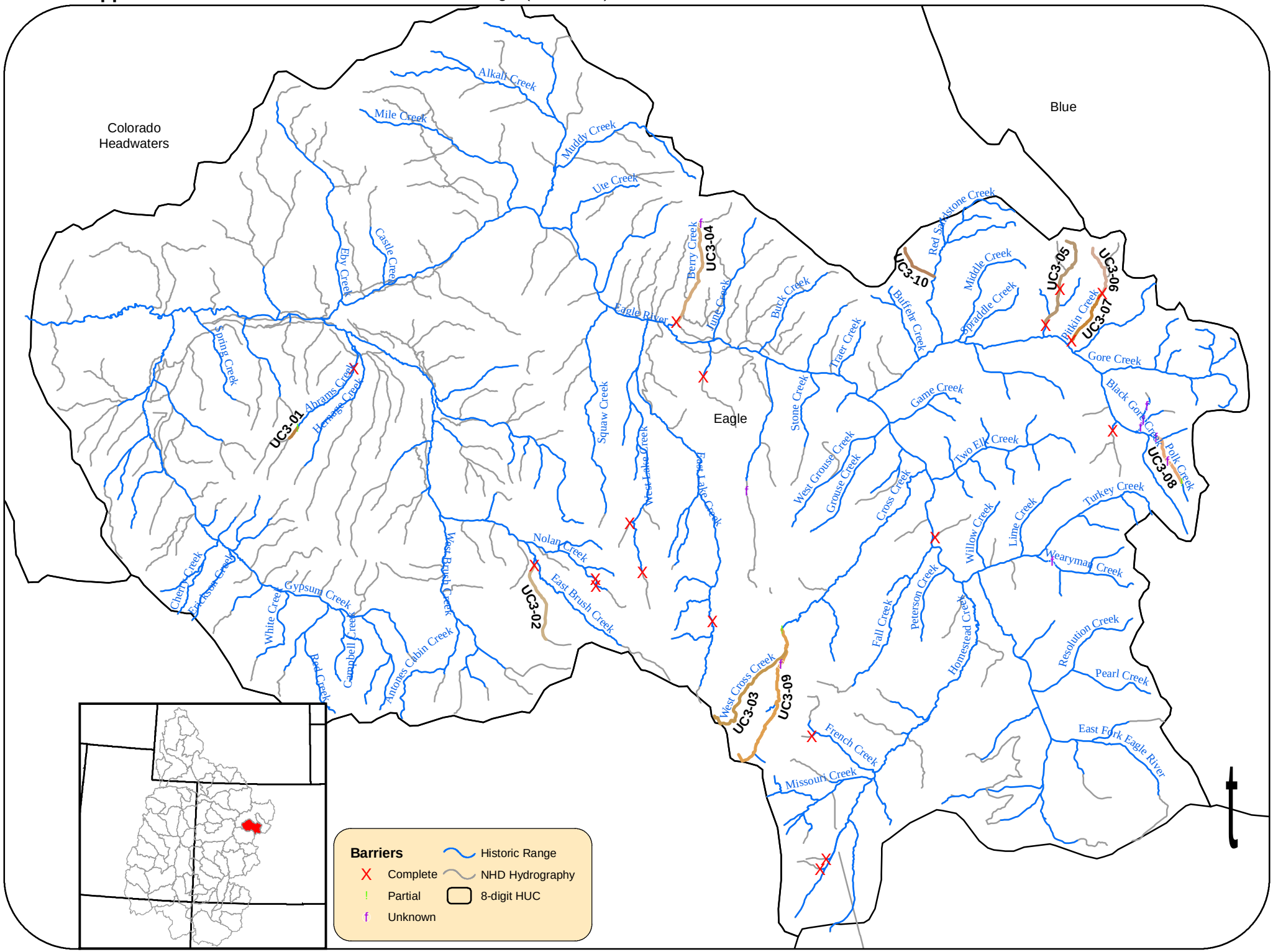
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23090	Cataract Creek	14010002cd003	Not Tested - Hybridized	Unknown	Excellent	15 to 20 feet	BRK

Conservation Population	***UC2-11***	*0.6*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23090	Cataract Creek	14010002cd002	Not Tested - Hybridized	Unknown	Excellent	15 to 20 feet	BRK

Upper Colorado GMU

Eagle (14010003)



14010003 Eagle

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC3-01***	*0.52*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23414	Abrams Creek	14010003cd021	Unaltered	151 to 400 fish	Fair	5 to 10 feet	None

Conservation Population	***UC3-02***	*3.18*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 27195	Hat Creek	14010003cd020	Not Tested - Unaltered	0 to 50 fish	Fair	10 to 15 feet	None

Conservation Population	***UC3-03***	*4.8*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 25406	West Cross Creek	14010003cd013	Not Tested - Hybridized	50 to 150 fish	Good	20 to 25 feet	None

Conservation Population	***UC3-04***	*4.26*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19162	Berry Creek	14010003cd001	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***UC3-05***	*4.03*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23806	Booth Creek	14010003cd002	Not Tested - Hybridized	50 to 150 fish	Fair	5 to 10 feet	CUT

Conservation Population	***UC3-06***	*2.02*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24389	Pitkin Creek	14010003cd004	Not Tested - Hybridized	Unknown	Good	5 to 10 feet	None

Conservation Population	***UC3-07***	*2.31*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24389	Pitkin Creek	14010003cd003	Not Tested - Hybridized	Unknown	Good	5 to 10 feet	None

Conservation Population	***UC3-08***	*2.11*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24391	Polk Creek	14010003cd007	Not Tested - Unaltered	50 to 150 fish	Fair	5 to 10 feet	None

14010003 Eagle

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC3-09***	*6.46*	*Weakly Connected*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

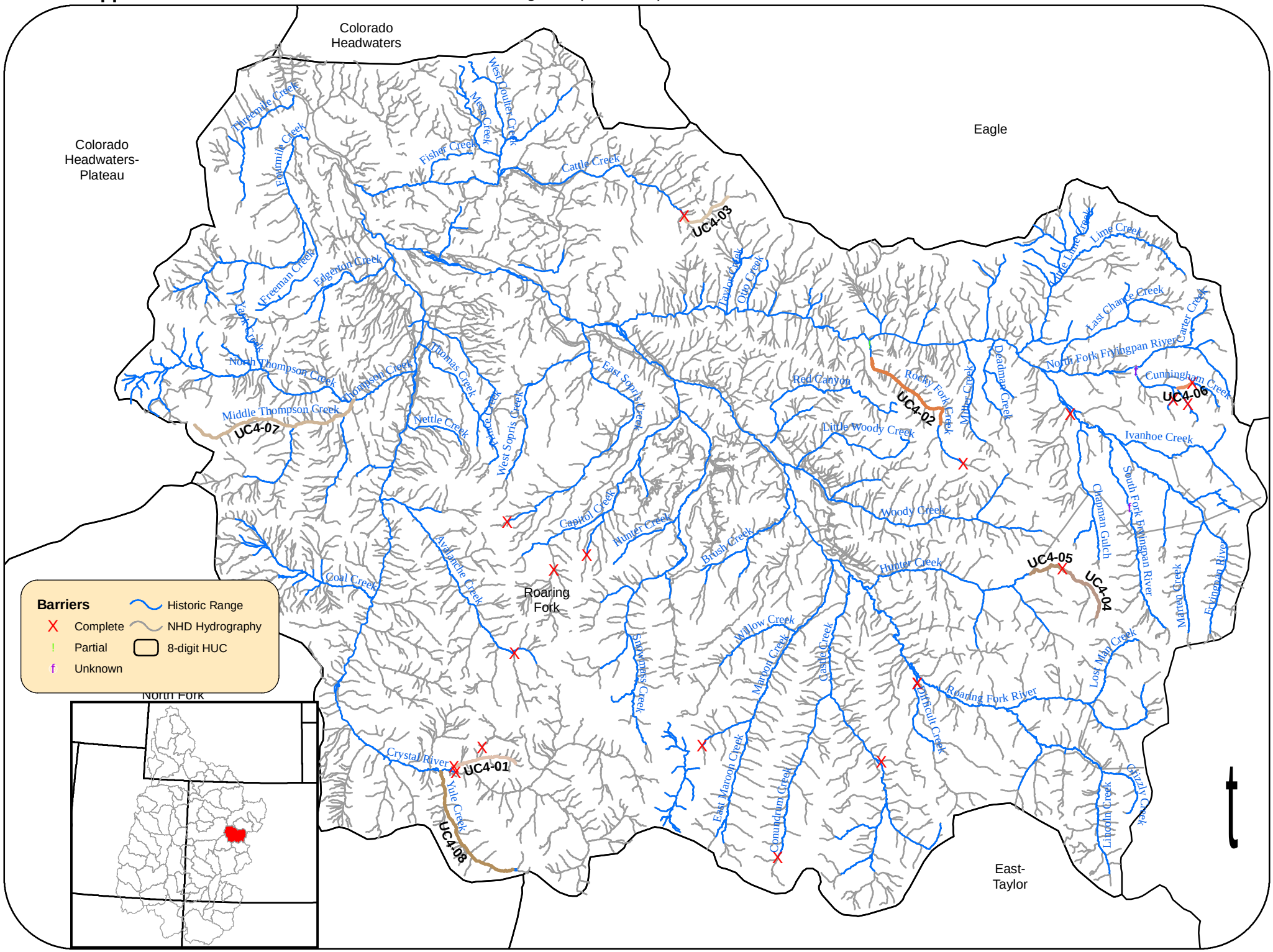
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23103	Blogett Lake	14010003cd010	Not Tested - Hybridized	50 to 150 fish	Good	20 to 25 feet	None

Conservation Population	***UC3-10***	*1.7*	*Weakly Connected*	*Moderate Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24149	Indian Creek	14010003cd023	Not Tested - Hybridized	Unknown	Fair	< 5 feet	BRN

Upper Colorado GMU

Roaring Fork (14010004)

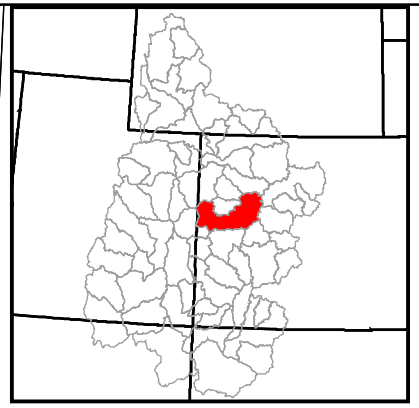


14010004 Roaring Fork

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC4-01***	*3.11*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 21030	Lost Trail Creek		14010004cd008	Unaltered	151 to 400 fish	Good	5 to 10 feet	None
Conservation Population	***UC4-02***	*5.36*	*Population Isolated*	*Moderate Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24454	Rocky Fork Creek		14010004cd002	< 80%	Unknown	Good	5 to 10 feet	YCT
Conservation Population	***UC4-03***	*2.79*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19491	Cattle Creek		14010004cd001	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	None
Conservation Population	***UC4-04***	*3.61*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23230	Hunter Creek		14010004cd005	Unaltered	Unknown	Good	5 to 10 feet	None
Conservation Population	***UC4-05***	*2.03*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23230	Hunter Creek		14010004cd004	Unaltered	Unknown	Good	5 to 10 feet	BRK
Conservation Population	***UC4-06***	*0.74*	*Population Isolated*	*Moderate Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23957	Cunningham Creek		14010004cd003	Unaltered	50 to 150 fish	Good	10 to 15 feet	None
Conservation Population	***UC4-07***	*8.86*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 54	Middle Thompson Creek		14010004cd080	Not Tested - Hybridized	151 to 400 fish	Good	5 to 10 feet	TRT
Conservation Population	***UC4-08***	*6.93*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 181	Yule Creek		14010004cd081	Not Tested - Hybridized	151 to 400 fish	Good	10 to 15 feet	BRK

Upper Colorado GMU

Colorado Headwaters - Plateau (14010005)



Barriers

- X Complete
- ! Partial
- f Unknown

Historic Range

NHD Hydrography

8-digit HUC

Upper White

Piceance-Yellow

Parachute-Roan

Colorado Headwaters-Plateau

Roaring Fork

North Fork Gunnison

Lower Gunnison

Westwater Canyon

UC5-01

UC5-02

UC5-03

UC5-04

UC5-05

UC5-06

UC5-07

UC5-08

Middle Rifle Creek

West Rifle Creek

Rifle Creek

East Rifle Creek

Beaver Creek

Cattle Creek

Battle Creek

Parachute Creek

Rapid Creek

Cottonwood Creek

Grove Creek

Plateau Creek

Buzzard Creek

Owens Creek

Deer Creek

Meadow Creek

Main Elk Creek

East Divide Creek

West Divide Creek

Baldy Creek

Garfield Creek

Canyon Creek

Potrum Creek

Elk Creek

Mamm Creek

Khadi Creek

Wilson Creek

Dunn Creek

Bair Creek

Cimbull Creek

Bull Creek

Gold Creek

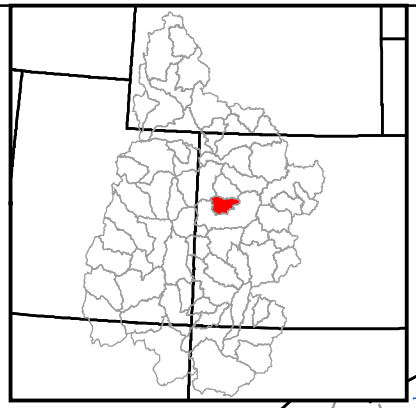
Salt Creek

14010005 Colorado Headwaters-Plateau

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UC5-01***	*0.69*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 28072	Mitchell Creek		14010005cd008	Unaltered	Unknown	Good	5 to 10 feet	None
Conservation Population	***UC5-02***	*2.21*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 28072	Mitchell Creek		14010005cd009	Not Tested - Unaltered	151 to 400 fish	Good	5 to 10 feet	None
Conservation Population	***UC5-03***	*2.17*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 28200	Ute Creek		14010005cd007	90% - 99%	151 to 400 fish	Good	5 to 10 feet	None
Conservation Population	***UC5-04***	*4.26*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19756	Corral Creek		14010005cd006	90% - 99%	151 to 400 fish	Fair	5 to 10 feet	None
Conservation Population	***UC5-05***	*2.02*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19746	Camp Creek		14010005cd010	Not Tested - Unaltered	0 to 50 fish	Good	< 5 feet	None
Conservation Population	***UC5-06***	*5.81*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19097	Beaver Creek		14010005cd011	Unaltered	151 to 400 fish	Good	5 to 10 feet	None
Conservation Population	***UC5-07***	*2.68*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19275	Brush Creek		14010005cd017	90% - 99%	Unknown	Good	5 to 10 feet	None
Conservation Population	***UC5-08***	*2.02*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 27791	East Fork Big Creek		14010005cd027	Unaltered	50 to 150 fish	Good	10 to 15 feet	None

Upper Colorado GMU

Parachute - Roan (14010006)



Barriers

- Complete
- Partial
- Unknown
- Historic Range
- NHD Hydrography
- 8-digit HUC

Lower White

Willow Creek

Clear Creek

Brush Creek

UC6-02

Curr Creek

UC6-01

Roan Creek

Kimball Creek

Parachute-Roan

West Fork Parachute Creek

Schutte Creek

Middle Fork Parachute Creek

UC6-04

UC6-03

Northwater Creek

Ben Good Creek

East Fork Parachute Creek

UC6-05

Parachute Creek

Roan Creek

Colorado Headwaters-Plateau

14010006 Parachute-Roan

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UC6-01**	14.36	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 21701	Roan Creek	14010006cd001	Unaltered	151 to 400 fish	Poor	5 to 10 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UC6-02**	8.65	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 19441	Carr Creek	14010006cd002	Unaltered	151 to 400 fish	Good	5 to 10 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UC6-03**	2.15	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Source	Res

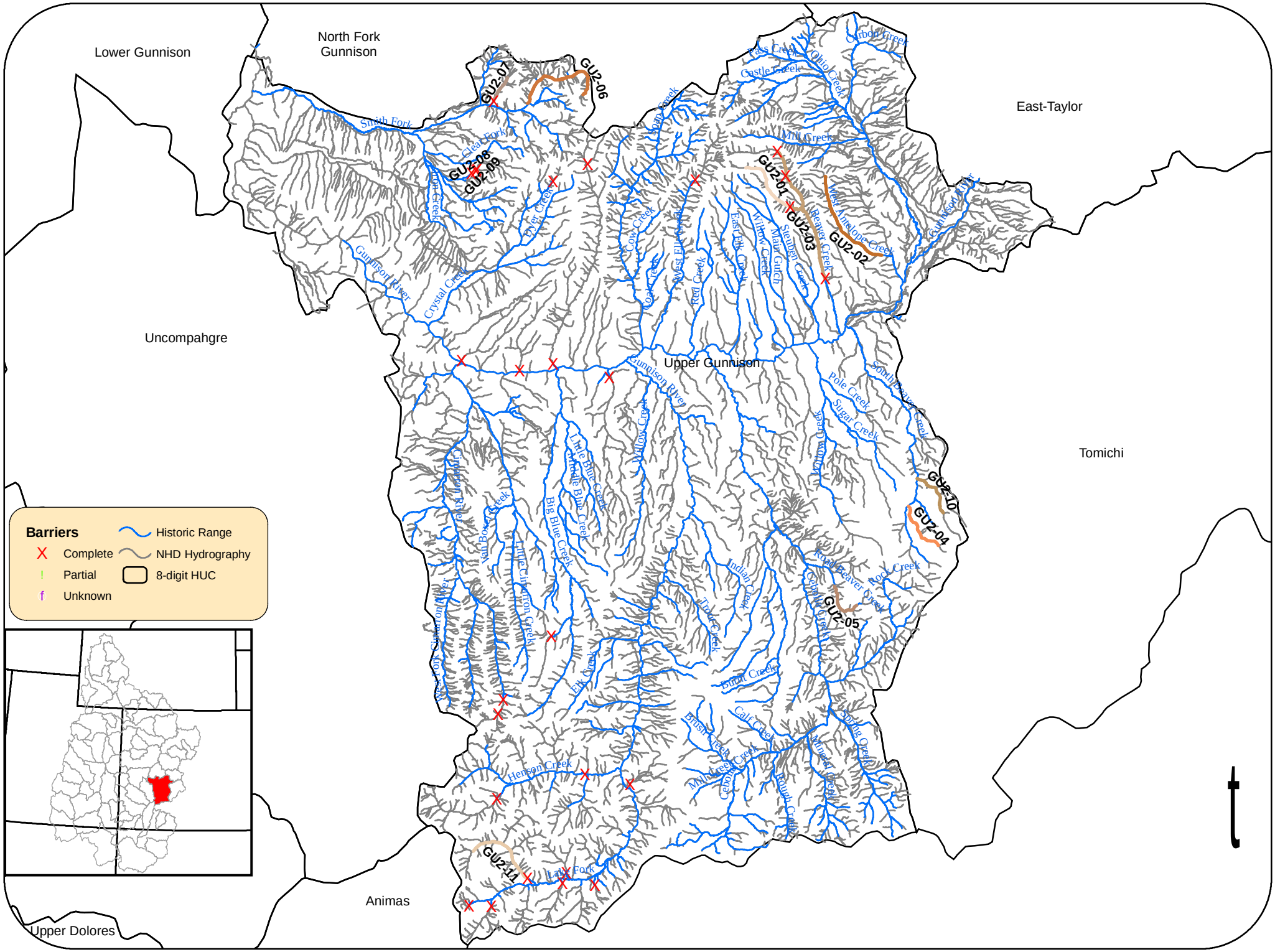
Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 21472	Middle Fork Parachute Creek	14010006cd003	Unaltered	0 to 50 fish	Poor	< 5 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UC6-04**	9.24	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Known or Probable Unique Life History	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 21383	Northwater Creek	14010006cd004	Unaltered	151 to 400 fish	Poor	5 to 10 feet	None
WC: 21472	Middle Fork Parachute Creek	14010006cd005	90% - 99%	151 to 400 fish	Fair	10 to 15 feet	None
WC: 21472	Middle Fork Parachute Creek	14010006cd008	Not Tested - Hybridized	Unknown	Fair	10 to 15 feet	BRN, RBT

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UC6-05**	6.3	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 21460	East Fork Parachute Creek	14010006cd006	Unaltered	0 to 50 fish	Good	5 to 10 feet	BRK


Gunnison GMU
Upper Gunnison (14020002)
Lower Gunnison
North Fork Gunnison
East-Taylor
Uncompahgre
Upper Gunnison
Tomichi
Animas
Upper Dolores
GU2-01
GU2-02
GU2-03
GU2-04
GU2-05
GU2-06
GU2-07
GU2-08
GU2-09
GU2-10
GU2-11
Barriers
Complete
Partial
Unknown
Historic Range
NHD Hydrography
8-digit HUC
Smith Fork
Crystal Creek
Gunnison River
Dyer Creek
Coal Creek
Willow Creek
Red Creek
East Elk Creek
Maxfield Gulch
Stephen Creek
Beaver Creek
West Antelope Creek
Mill Creek
Castle Creek
Ohio Creek
Carbon Creek
Southwest Creek
Pole Creek
Sugar Creek
Rock Creek
Indian Creek
Trout Creek
Butch Creek
Calf Creek
Bush Creek
Henson Creek
Lake Fork
Big Blue Creek
Middle Blue Creek
Little Cimarron River
Cimarron River
Van Bokkelen Creek
Little Cimarron Creek
Ellis Creek
Brush Creek
Cebolla Creek
Muddy Creek
Spring Creek
Roland Creek
Razor Creek
Tomichi Creek
Cochetopa Creek
Saguache Creek
Antelope Creek
Deadwood Creek
Grass Creek

14020002 Upper Gunnison

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**GU2-01**	5.02	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 44355	West Beaver Creek	14020002cd011	Unaltered	50 to 150 fish	Good	5 to 10 feet	BRK

Conservation Population	**GU2-02**	8.14	Population Isolated	Minimal Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 48016	West Antelope Creek	14020002cd014	Unaltered	0 to 50 fish	Good	< 5 feet	None

Conservation Population	**GU2-03**	12.2	Weakly Connected	Minimal Disease Risk	Hybridizing species are sympatric	Other	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 44355	West Beaver Creek	14020002cd012	Unaltered	50 to 150 fish	Good	10 to 15 feet	BRK
WC: 38237	Beaver Creek	14020002cd013	Not Tested - Hybridized	151 to 400 fish	Excellent	10 to 15 feet	BRK, RBT

Conservation Population	**GU2-04**	4.24	Moderately Connect	Limited Disease Risk	Hybridizing species < 10 km	Other	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 41810	Deer Beaver Creek	14020002cd015	90% - 99%	151 to 400 fish	Good	5 to 10 feet	None

Conservation Population	**GU2-05**	3.28	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 38182	Road Beaver Creek	14020002cd016	Unaltered	50 to 150 fish	Fair	< 5 feet	BRK

Conservation Population	**GU2-06**	7.91	Weakly Connected	Minimal Disease Risk	Hybridizing species > 10 km	Other	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 40535	North Smith Fork Gunnison River	14020002cd007	Not Tested - Hybridized	Unknown	Good	5 to 10 feet	UNK

Conservation Population	**GU2-07**	2.05	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 48771	Second Creek	14020002cd001	Unaltered	50 to 150 fish	Fair	< 5 feet	None

Conservation Population	**GU2-08**	0.39	Weakly Connected	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 45197	Doug Creek	14020002cd002	Unaltered	50 to 150 fish	Fair	< 5 feet	None

14020002 Upper Gunnison

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***GU2-09***	*0.14*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 45197	Doug Creek	14020002cd003	Unaltered	50 to 150 fish	Poor	< 5 feet	None

Conservation Population	***GU2-10***	*3.72*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

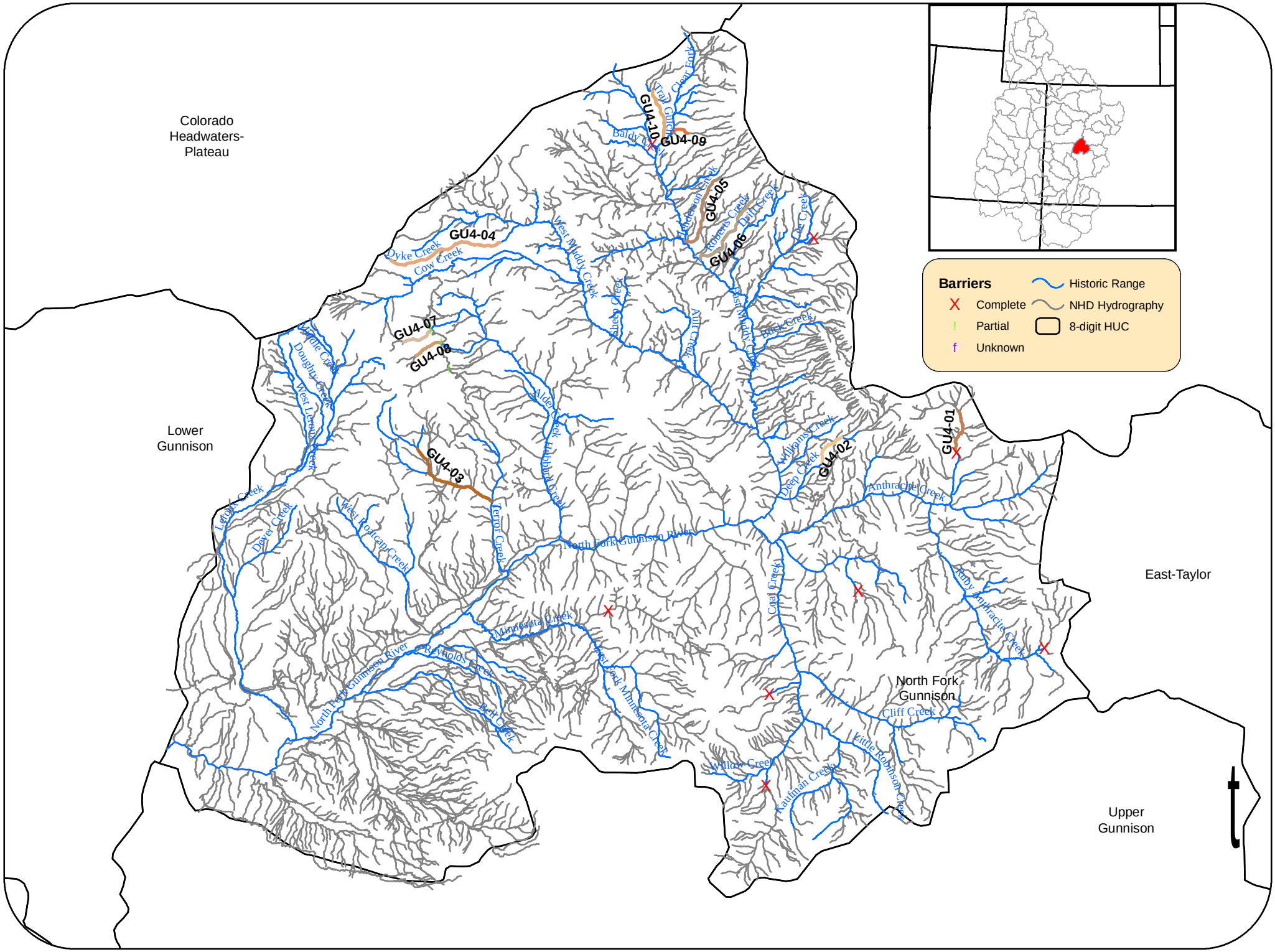
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 38251	East Fork South Beaver Creek	14020002cd017	90% - 99%	151 to 400 fish	Good	5 to 10 feet	None

Conservation Population	***GU2-11***	*6.27*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 48080	Lake Fork Gunnison River	14020002cd020	Not Tested - Unaltered	50 to 150 fish	Good	10 to 15 feet	BRK

Gunnison GMU

North Fork Gunnison (14020004)



14020004 North Fork Gunnison

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***GU4-01***	*2.13*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 38047	North Anthracite Creek	14020004cd023	90% - 99%	Unknown	Good	10 to 15 feet	YCT

Conservation Population	***GU4-02***	*1.68*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 39621	Deep Creek	14020004cd020	Unaltered	Unknown	Fair	5 to 10 feet	None

Conservation Population	***GU4-03***	*4.52*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 38519	Cunningham Creek	14020004cd001	Unaltered	151 to 400 fish	Good	5 to 10 feet	None
WC: 43606	West Fork Terror Creek	14020004cd002	Unaltered	151 to 400 fish	Fair	5 to 10 feet	None

Conservation Population	***GU4-04***	*5.63*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 39885	Dyke Creek	14020004cd006	Unaltered	151 to 400 fish	Good	5 to 10 feet	BRK

Conservation Population	***GU4-05***	*3.71*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 40600	Henderson Creek	14020004cd017	Unaltered	Unknown	Good	< 5 feet	UNK

Conservation Population	***GU4-06***	*3.98*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 44305	Roberts Creek	14020004cd018	Unaltered	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***GU4-07***	*1.47*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 49355	Main Hubbard Creek	14020004cd004	Unaltered	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***GU4-08***	*1.34*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 48620	Middle Hubbard Creek	14020004cd003	Unaltered	50 to 150 fish	Good	5 to 10 feet	None

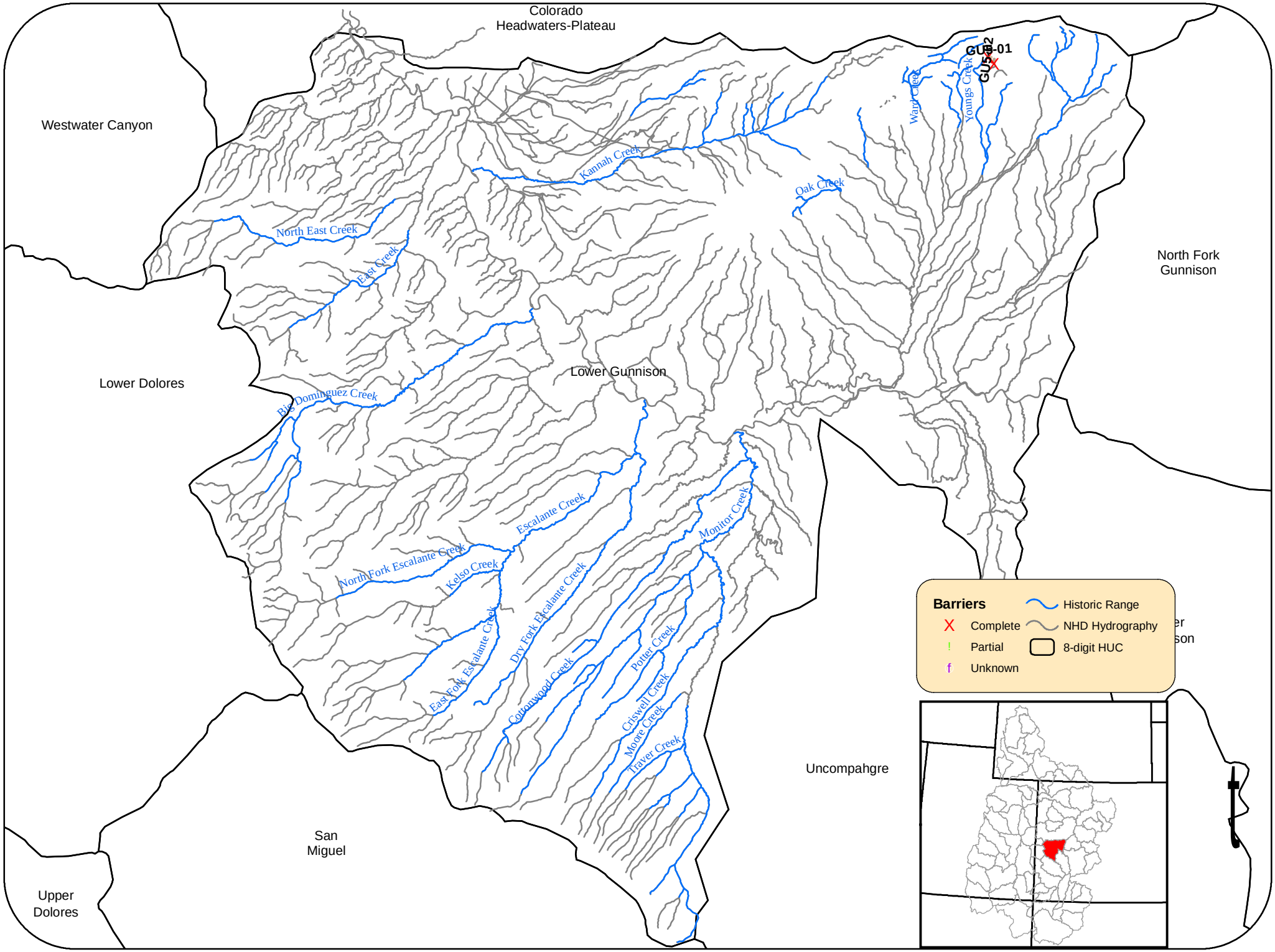
14020004 North Fork Gunnison

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***GU4-09***	*0.87*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 45870	Rock Creek	14020004cd008	Unaltered	0 to 50 fish	Good	5 to 10 feet	BRK

Conservation Population	***GU4-10***	*2.6*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 46199	Trail Gulch	14020004cd007	Unaltered	Unknown	Fair	5 to 10 feet	None


Gunnison GMU
Lower Gunnison (14020005)
Colorado Headwaters-Plateau
Westwater Canyon
Lower Dolores
Upper Dolores
San Miguel
Uncompahgre
North Fork Gunnison
Lower Gunnison
GU52-01
GU52
Ward Creek
Youngs Creek
Kannah Creek
Oak Creek
North East Creek
East Creek
Big Dominguez Creek
Escalante Creek
North Fork Escalante Creek
Kelso Creek
East Fork Escalante Creek
Dry Fork Escalante Creek
Cottonwood Creek
Monitor Creek
Potter Creek
Criswell Creek
Moore Creek
Traver Creek
Barriers
Complete
Partial
Unknown
Historic Range
NHD Hydrography
8-digit HUC

14020005 Lower Gunnison

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***GU5-01***	*0.18*	*Population Isolated*	*Moderate Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Ad-fluv*

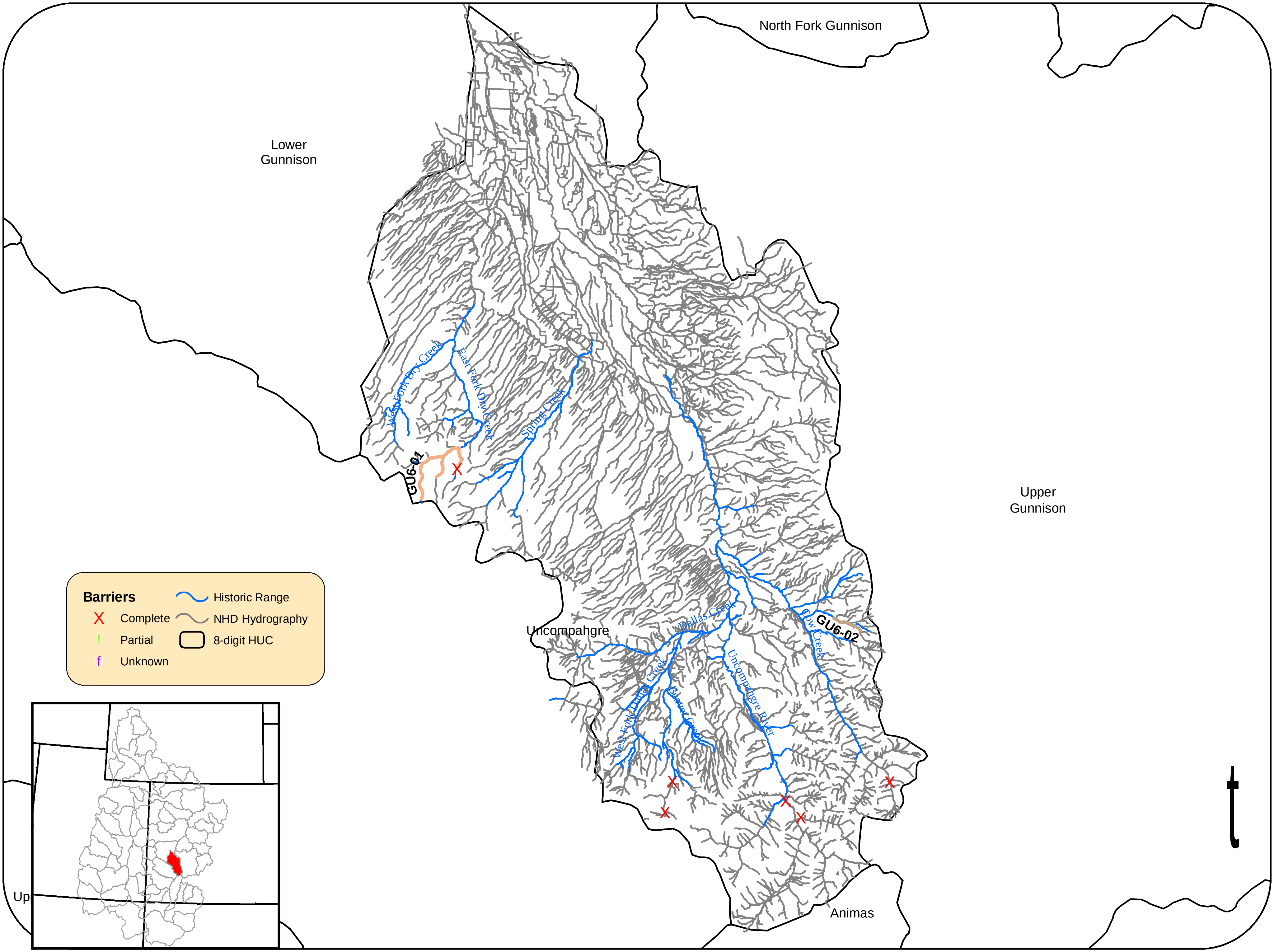
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 93346l	Youngs Creek Reservoir No. 3	14020005cd001	Unaltered	Unknown	Good	Unknown	None

Conservation Population	***GU5-02***	*0.25*	*Population Isolated*	*Moderate Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Ad-fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 93334l	Youngs Creek Reservoir No. 2	14020005cd002	Unaltered	Unknown	Good	Unknown	None

Gunnison GMU

Uncompahgre (14020006)



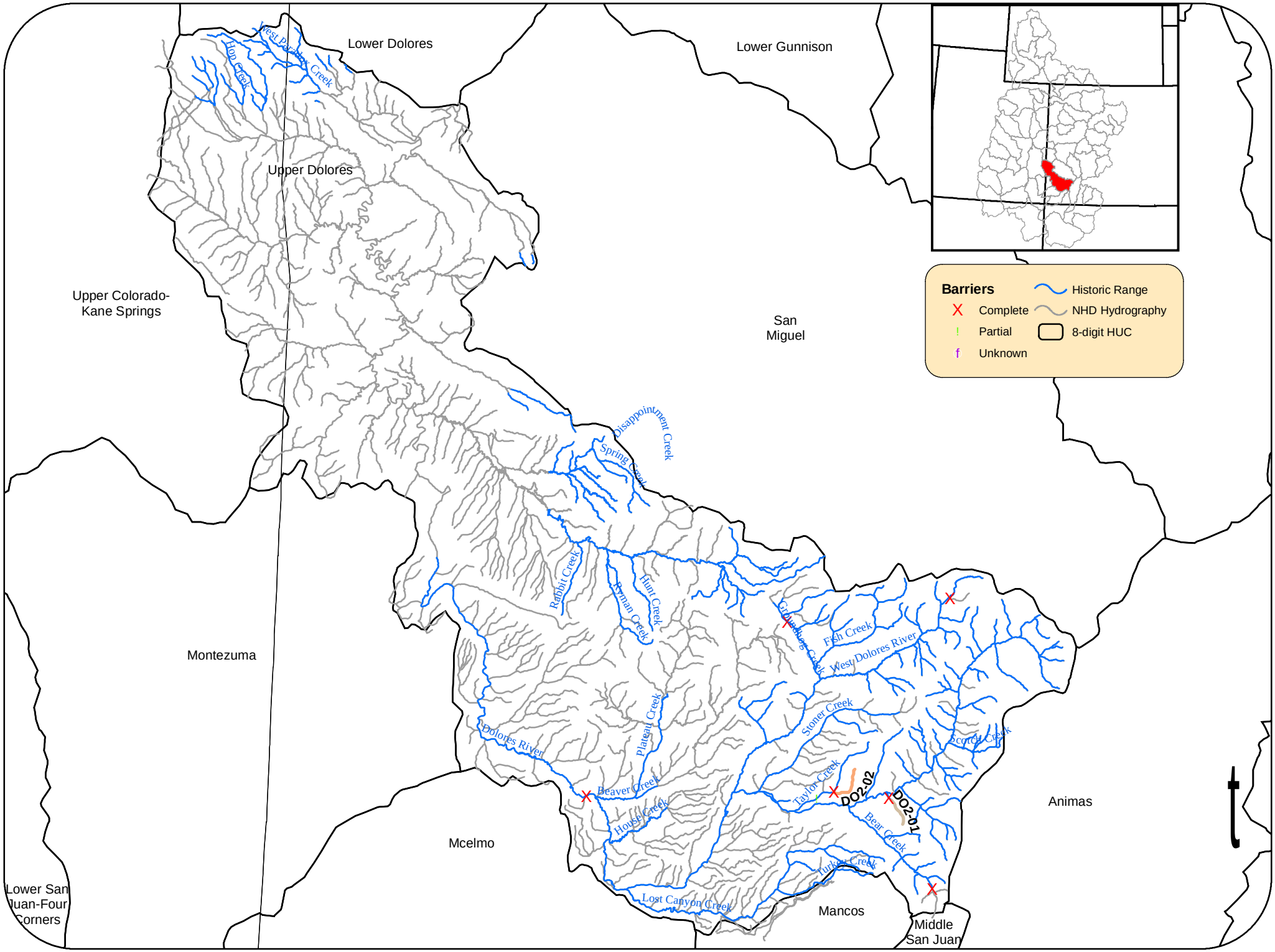
14020006 Uncompahgre

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***GU6-01***	*8.43*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 48618	East Fork Dry Creek	14020006cd001	Unaltered	0 to 50 fish	Good	5 to 10 feet	None
WC: 44521	Beaver Dams Creek	14020006cd002	Unaltered	0 to 50 fish	Good	< 5 feet	None
WC: 39702	Pryor Creek	14020006cd003	Unaltered	0 to 50 fish	Fair	< 5 feet	None

Conservation Population	***GU6-02***	*2.1*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 41791	Nate Creek	14020006cd004	Unaltered	50 to 150 fish	Fair	5 to 10 feet	None
WC: 41791	Nate Creek	14020006cd011	90% - 99%	0 to 50 fish	Fair	5 to 10 feet	None
WC: 41791	Nate Creek	14020006cd012	90% - 99%	0 to 50 fish	Poor	< 5 feet	None


Dolores GMU
Upper Dolores (14030002)
Lower Dolores
Lower Gunnison
Upper Dolores
Upper Colorado-
Kane Springs
San
Miguel
Montezuma
Mcelmo
Animas
Lower San
Juan-Four
Corners
Mancos
Middle
San Juan
Barriers
Complete
Partial
Unknown
Historic Range
NHD Hydrography
8-digit HUC
West Paradox Creek
Hop Creek
Disappointment Creek
Spring Creek
Rabbit Creek
Hunt Creek
Fish Creek
West Dolores River
Stoner Creek
Scotch Creek
Dolores River
Plateau Creek
Beaver Creek
House Creek
Taylor Creek
DO2-02
DO2-01
Bear Creek
Turkey Creek
Lost Canyon Creek

14030002 Upper Dolores

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***DO2-01***	*2.26*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

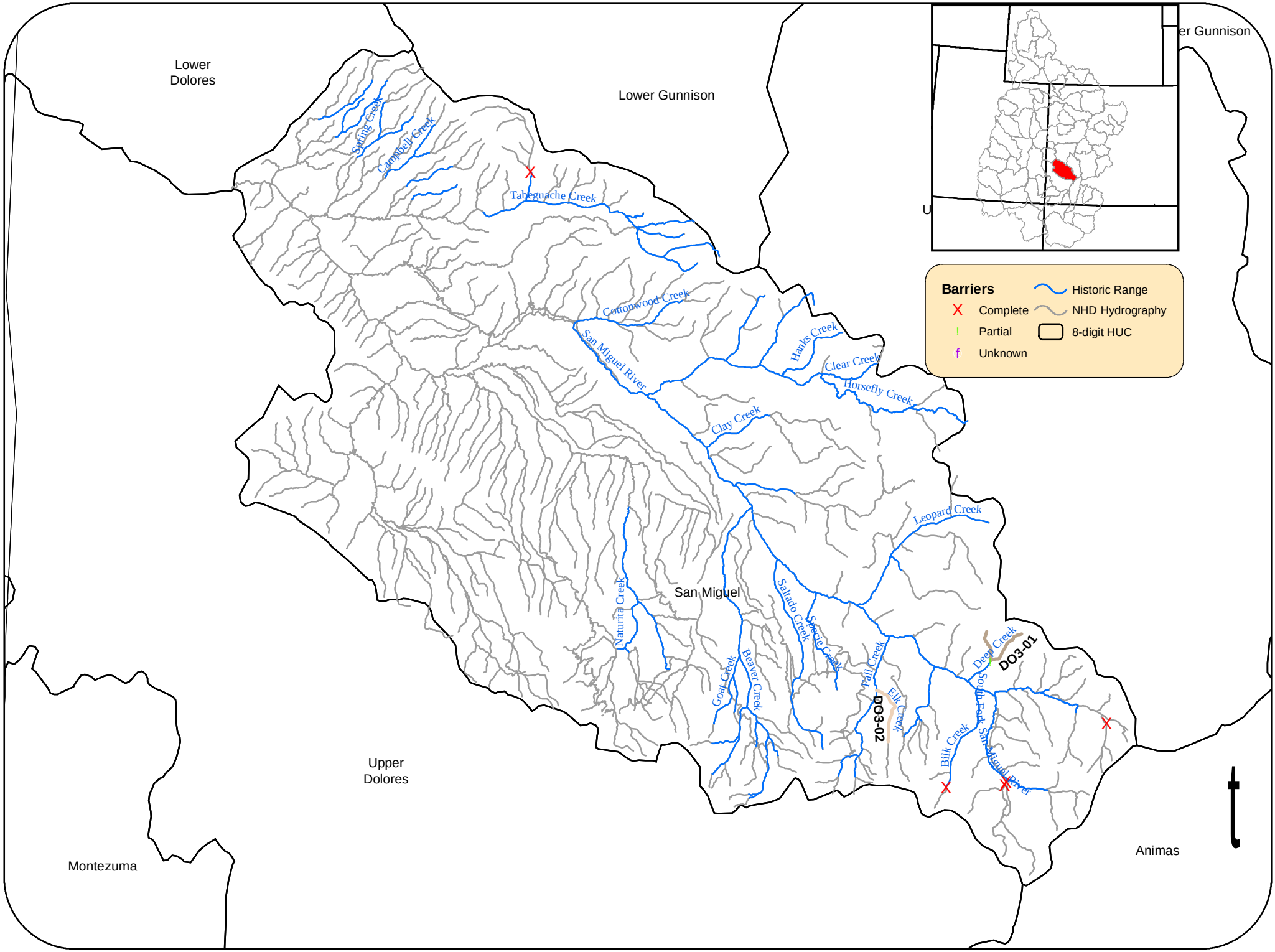
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 49723	Lado, Rio	14030002cd003	Co-existence	50 to 150 fish	Fair	< 5 feet	RBT

Conservation Population	***DO2-02***	*3.27*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 47767	Little Taylor Creek	14030002cd002	Unaltered	0 to 50 fish	Fair	< 5 feet	None

Dolores GMU

San Miguel (14030003)



14030003 San Miguel

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***DO3-01***	*4.81*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

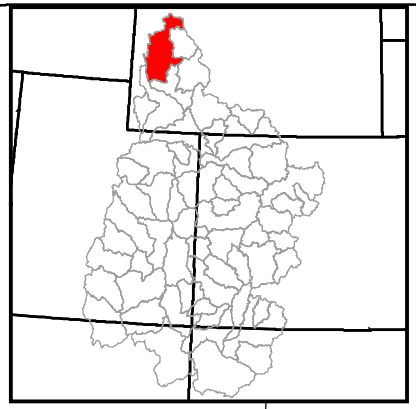
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 39671	Deep Creek	14030003cd001	Unaltered	Unknown	Good	5 to 10 feet	None
WC: 39671	Deep Creek	14030003cd002	Not Tested - Unaltered	Unknown	Good	5 to 10 feet	None

Conservation Population	***DO3-02***	*3.99*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 47298	Elk Creek	14030003cd007	90% - 99%	151 to 400 fish	Fair	5 to 10 feet	UNK

Upper Green GMU

Upper Green (14040101)



Barriers

- Complete
- Partial
- Unknown
- Historic Range
- NHD Hydrography
- 8-digit HUC

Upper Green

New Fork

Big Sandy

Upper Green-Slate

Blacks Fork

UG1-30, UG1-29, UG1-28, UG1-27, UG1-26, UG1-25, UG1-31, UG1-33, UG1-32, UG1-24, UG1-23, UG1-22, UG1-21, UG1-20, UG1-19, UG1-18, UG1-17, UG1-16, UG1-15, UG1-14, UG1-13, UG1-12, UG1-11, UG1-10, UG1-09, UG1-08, UG1-07, UG1-05, UG1-06, UG1-03, UG1-04, UG1-02, UG1-01, UG1-35, UG1-36, UG1-37, UG1-38, UG1-39, UG1-40, UG1-41, UG1-34

Roaring Fork, Green River, Willow Creek, Dry Piney Creek, Miller Creek, South Beaver Creek, Lead Creek, South Horse Creek, Horse Creek, Killpecker Creek, South Cottonwood Creek, Muddy Creek, Cottonwood Creek, Middle Piney Creek, North Piney Creek, South Piney Creek, Fontenelle Creek, Slate Creek, Muddy Creek, Slate Creek

14040101 Upper Green

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG1-01***	*0.02*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843250SE	Sawmill Creek	14040101cd021	Unaltered	0 to 50 fish	Fair	> 25 feet	None

Conservation Population	***UG1-02***	*4.76*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843245SE	Fogarty Creek	14040101cd020	Unaltered	50 to 150 fish	Fair	< 5 feet	None

Conservation Population	***UG1-03***	*5.73*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843284SE	South Beaver Creek	14040101cd022	Unaltered	Over 400 fish	Good	< 5 feet	None

Conservation Population	***UG1-04***	*2.77*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843283SE	Unnamed Tributary to South Beaver Creek	14040101cd023	Not Tested - Unaltered	50 to 150 fish	Fair	< 5 feet	None

Conservation Population	***UG1-05***	*0.96*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843282SE	Beaver Creek	14040101cd024	Not Tested - Unaltered	50 to 150 fish	Fair	< 5 feet	None

Conservation Population	***UG1-06***	*1.95*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843282SE	Beaver Creek	14040101cd025	Unaltered	151 to 400 fish	Fair	< 5 feet	None

Conservation Population	***UG1-07***	*4.85*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843281SE	Unnamed Tributary to Beaver Creek	14040101cd026	Unaltered	Over 400 fish	Good	5 to 10 feet	None

Conservation Population	***UG1-08***	*7.66*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843280SE	Spring Creek	14040101cd027	Not Tested - Unaltered	151 to 400 fish	Unknown	Unknown	None

14040101 Upper Green

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG1-09***	*7.48*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843285SE	Fish Creek		14040101cd028	90% - 99%	50 to 150 fish	Good	10 to 15 feet	BRK, YCT
WC: PE843285SE	Fish Creek		14040101cd029	90% - 99%	151 to 400 fish	Good	5 to 10 feet	BRK, YCT
Conservation Population	***UG1-10***	*0.4*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Source*	*Ad-fluv*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843410SE	North Piney Lake		14040101cd031	Unaltered	151 to 400 fish	Good	> 25 feet	None
Conservation Population	***UG1-11***	*10.44*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843375SE	North Piney Creek		14040101cd030	Not Tested - Hybridized	151 to 400 fish	Good	15 to 20 feet	BRK, YCT
Conservation Population	***UG1-12***	*5.62*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843430SE	Muddy Creek		14040101cd032	Co-existence	Unknown	Poor	< 5 feet	None
Conservation Population	***UG1-13***	*9.8*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844120SE	South Cottonwood Creek		14040101cd033	Co-existence	50 to 150 fish	Fair	15 to 20 feet	BRK, YCT
WC: PE844170SE	Bare Creek		14040101cd034	Not Tested - Hybridized	50 to 150 fish	Fair	10 to 15 feet	UNK
Conservation Population	***UG1-14***	*3.09*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844170SE	Bare Creek		14040101cd035	90% - 99%	50 to 150 fish	Fair	5 to 10 feet	BRK
Conservation Population	***UG1-15***	*13.21*	*Moderately Connect*	*Limited Disease Risk*	*Hybridizing species are sympatric*	*Core Conservation Population*	*Source*	*Res*
Ind. Pops.:	**Stream Name**		**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844020SE	North Cottonwood Creek		14040101cd036	Co-existence	0 to 50 fish	Fair	10 to 15 feet	BRK
WC: PE844060SE	Irene Creek		14040101cd037	Co-existence	0 to 50 fish	Poor	5 to 10 feet	BRK
WC: PE844070SE	Hardin Creek		14040101cd039	Co-existence	Unknown	Unknown	Unknown	BRK
WC: PE844080SE	Nylanden Creek		14040101cd041	Co-existence	Unknown	Unknown	Unknown	BRK
WC: 82	Sjhoberg Creek		14040101cd043	Not Tested - Unaltered	Unknown	Good	5 to 10 feet	UNK
WC: 82	Sjhoberg Creek		14040101cd044	Unaltered	151 to 400 fish	Fair	5 to 10 feet	None

14040101 Upper Green

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG1-16***	*0.41*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844060SE	Irene Creek	14040101cd038	Unaltered	0 to 50 fish	Poor	5 to 10 feet	BRK

Conservation Population	***UG1-17***	*2.53*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844070SE	Hardin Creek	14040101cd040	Unaltered	0 to 50 fish	Poor	< 5 feet	BRK

Conservation Population	***UG1-18***	*1.01*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844080SE	Nylanden Creek	14040101cd042	Unaltered	151 to 400 fish	Poor	< 5 feet	BRK

Conservation Population	***UG1-19***	*5.14*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844050SE	Maki Creek	14040101cd045	80% - 89%	50 to 150 fish	Unknown	Unknown	None

Conservation Population	***UG1-20***	*17.67*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 87	South Horse Creek	14040101cd046	Unaltered	Over 400 fish	Unknown	Unknown	UNK
WC: 87	South Horse Creek	14040101cd047	Unaltered	Over 400 fish	Poor	10 to 15 feet	None
WC: PE844280SE	Cow Creek	14040101cd048	Unaltered	0 to 50 fish	Fair	< 5 feet	None
WC: 150	Unnamed Tributary to South Horse Creek	14040101cd049	Unaltered	151 to 400 fish	Fair	< 5 feet	None

Conservation Population	***UG1-21***	*20.72*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE844300SE	North Horse Creek	14040101cd050	Co-existence	50 to 150 fish	Fair	> 25 feet	BRK, YCT
WC: PE844300SE	North Horse Creek	14040101cd051	Co-existence	50 to 150 fish	Fair	> 25 feet	BRK, YCT
WC: PE844300SE	South Fork North Horse Creek	14040101cd052	Not Tested - Hybridized	0 to 50 fish	Poor	< 5 feet	None
WC: PE844300SE	South Fork North Horse Creek	14040101cd053	Unaltered	50 to 150 fish	Poor	5 to 10 feet	None
WC: PE844300SE	North Horse Creek	14040101cd057	Unaltered	0 to 50 fish	Fair	5 to 10 feet	None
WC: 138	Unnamed Tributary #2 to North Horse Creek	14040101cd058	Unaltered	0 to 50 fish	Fair	< 5 feet	None
WC: 137	Unnamed Tributary #1 to North Horse Creek	14040101cd059	Unaltered	0 to 50 fish	Fair	< 5 feet	None

14040101 Upper Green

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-22**	7.89	Population Isolated	Limited Disease Risk	Hybridizing species < 10 km	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE844310SE	Lead Creek	14040101cd054	90% - 99%	50 to 150 fish	Good	5 to 10 feet	BRK

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-23**	6.71	Weakly Connected	Limited Disease Risk	Hybridizing species < 10 km	Known or Probable Unique Life History	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE844480SE	South Beaver Creek	14040101cd055	Not Tested - Unaltered	151 to 400 fish	Good	5 to 10 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-24**	5.75	Weakly Connected	Limited Disease Risk	Hybridizing species < 10 km	Known or Probable Unique Life History	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 08	Chall Creek	14040101cd056	Not Tested - Unaltered	151 to 400 fish	Fair	5 to 10 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-25**	18.76	Weakly Connected	Limited Disease Risk	Hybridizing species < 10 km	Core Conservation Population	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE845020SE	Rock Creek	14040101cd002	Unaltered	Over 400 fish	Good	10 to 15 feet	BRK, BRN, RBT
WC: PE845020SE	Rock Creek	14040101cd003	Unaltered	Over 400 fish	Good	5 to 10 feet	None
WC: PE845020SE	Rock Creek	14040101cd004	Unaltered	151 to 400 fish	Good	< 5 feet	None
WC: 79	S. Unnamed Trib. to Rock Creek	14040101cd005	Unaltered	50 to 150 fish	Good	< 5 feet	None
WC: PE845020SE	Rock Creek	14040101cd006	Unaltered	Over 400 fish	Good	5 to 10 feet	None
WC: 24	E. Unnamed Trib. to Rock Creek	14040101cd007	90% - 99%	50 to 150 fish	Good	< 5 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-26**	2.08	Population Isolated	Limited Disease Risk	Hybridizing species are sympatric	Core Conservation Population	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 146	Unnamed Tributary to Green River	14040101cd016	Co-existence	0 to 50 fish	Fair	< 5 feet	BRK

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-27**	1.05	Weakly Connected	Limited Disease Risk	Hybridizing species are sympatric	Known or Probable Unique Life History	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE845160SE	Klondike Creek	14040101cd008	Not Tested - Hybridized	0 to 50 fish	Fair	< 5 feet	BRK, BRN, RBT

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-28**	1.89	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE845160SE	Klondike Creek	14040101cd009	Not Tested - Unaltered	0 to 50 fish	Good	< 5 feet	None

14040101 Upper Green

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**UG1-29**	10.35	Weakly Connected	Limited Disease Risk	Hybridizing species < 10 km	Other	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE845180SE	Tosi Creek	14040101cd010	Not Tested - Hybridized	Unknown	Fair	10 to 15 feet	BRK, BRN, RBT

Conservation Population	**UG1-30**	8.98	Weakly Connected	Limited Disease Risk	Hybridizing species < 10 km	Known or Probable Unique Life History	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE845240SE	Tepee Creek	14040101cd011	Not Tested - Hybridized	151 to 400 fish	Fair	10 to 15 feet	BRK

Conservation Population	**UG1-31**	13.63	Weakly Connected	Limited Disease Risk	Hybridizing species < 10 km	Other	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE841031SE	Green River	14040101cd012	Not Tested - Hybridized	0 to 50 fish	Fair	5 to 10 feet	BRK, YCT

Conservation Population	**UG1-32**	2.72	Weakly Connected	Limited Disease Risk	Hybridizing species < 10 km	Known or Probable Unique Life History	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE844900SE	Jim Creek	14040101cd013	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	BRK

Conservation Population	**UG1-33**	2.61	Weakly Connected	Limited Disease Risk	No Risk of Hybridization	Known or Probable Unique Life History	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE844900SE	Jim Creek	14040101cd014	Not Tested - Unaltered	50 to 150 fish	Excellent	10 to 15 feet	BRK
WC: 77	S. Unnamed Trib. to Jim Creek	14040101cd015	Not Tested - Unaltered	50 to 150 fish	Excellent	5 to 10 feet	BRK

Conservation Population	**UG1-34**	5.72	Population Isolated	Limited Disease Risk	Hybridizing species < 10 km	Core Conservation Population	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 86	South Fork Fontenelle Creek	14040101cd001	90% - 99%	50 to 150 fish	Fair	< 5 feet	BRK, RBT

Conservation Population	**UG1-35**	25.85	Moderately Connect	Limited Disease Risk	Hybridizing species are sympatric	Known or Probable Unique Life History	Sink	Res, Fluv

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: PE843065SE	Rock Creek	14040101cd100	Unaltered	0 to 50 fish	Fair	5 to 10 feet	None
WC: PE843070L	Miller Creek	14040101cd103	Not Tested - Hybridized	Unknown	Fair	5 to 10 feet	BRK, RBT
WC: PE843095L	Little Fall Creek	14040101cd104	Not Tested - Unaltered	Unknown	Fair	5 to 10 feet	BRK
WC: PE843025L	La Barge Creek	14040101cd105	Co-existence	50 to 150 fish	Fair	> 25 feet	BRK, BRN, RBT
WC: PE843025L	La Barge Creek	14040101cd106	Not Tested - Hybridized	0 to 50 fish	Fair	10 to 15 feet	BRK, BRN, RBT

14040101 Upper Green

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG1-36***	*0.41*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843065SE	Rock Creek	14040101cd101	Unaltered	151 to 400 fish	Fair	< 5 feet	None

Conservation Population	***UG1-37***	*2.3*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843065SE	Rock Creek	14040101cd102	Unaltered	151 to 400 fish	Fair	< 5 feet	None

Conservation Population	***UG1-38***	*23.17*	*Moderately Connect*	*Limited Disease Risk*	*Hybridizing species are sympatric*	*Core Conservation Population*	*Source*	*Res, Fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843025L	La Barge Creek	14040101cd106	Not Tested - Hybridized	0 to 50 fish	Fair	10 to 15 feet	BRK, BRN, RBT
WC: PE843120L	Turkey Creek	14040101cd107	Co-existence	0 to 50 fish	Poor	< 5 feet	BRK, RBT
WC: PE843180L	Nameless Creek	14040101cd111	Co-existence	0 to 50 fish	Good	10 to 15 feet	BRK
WC: PE843210L	Trail Creek	14040101cd116	< 80%	0 to 50 fish	Poor	< 5 feet	BRK, CUT, RBT

Conservation Population	***UG1-39***	*9.53*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843155L	South La Barge Creek	14040101cd108	Co-existence	0 to 50 fish	Fair	15 to 20 feet	BRK, CUT
WC: PE843155L	South La Barge Creek	14040101cd109	Unaltered	151 to 400 fish	Good	10 to 15 feet	BRK
WC: 151	Unnamed Tributary to South LaBarge Creek	14040101cd110	Not Tested - Unaltered	Unknown	Good	< 5 feet	None

Conservation Population	***UG1-40***	*1.62*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843180L	Nameless Creek	14040101cd112	Co-existence	151 to 400 fish	Poor	< 5 feet	None

Conservation Population	***UG1-41***	*1.27*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

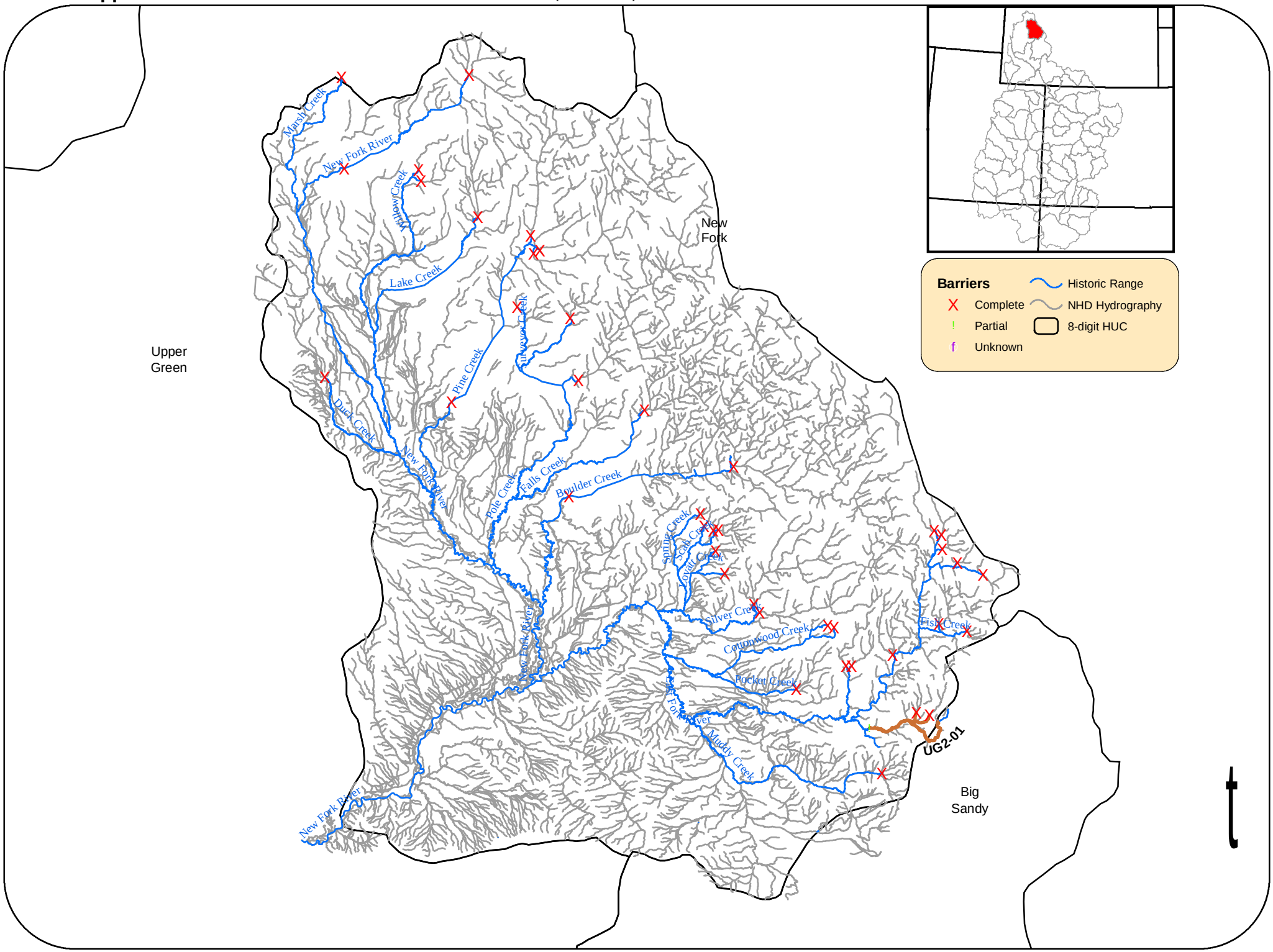
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843205L	Clear Creek	14040101cd115	Unaltered	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***UG1-42***	*4.71*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843200L	Spring Creek	14040101cd113	Unaltered	0 to 50 fish	Fair	5 to 10 feet	BRK
WC: PE843200L	Spring Creek	14040101cd114	Unaltered	151 to 400 fish	Good	5 to 10 feet	BRK

Upper Green GMU

New Fork (14040102)



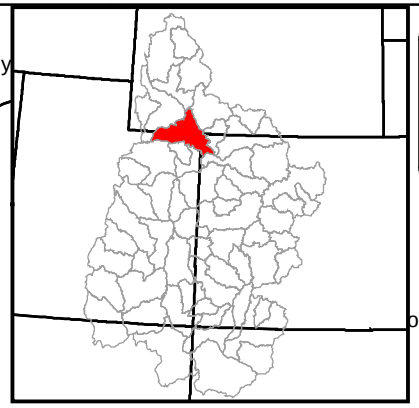
14040102 New Fork

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG2-01***	*8.93*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: PE843560SE	Irish Canyon Creek	14040102cd001	Unaltered	Over 400 fish	Good	10 to 15 feet	None
WC: PE8435780S	Beaver Creek	14040102cd002	Not Tested - Unaltered	Unknown	Good	< 5 feet	None
WC: PE843570SE	Willow Creek	14040102cd003	Not Tested - Unaltered	Over 400 fish	Good	5 to 10 feet	None
WC: PE843560SE	Irish Canyon Creek	14040102cd004	Unaltered	Over 400 fish	Good	5 to 10 feet	None

Upper Green GMU

Upper Green - Flaming Gorge Reservoir (14040106)



Barriers

- X Complete
- ! Partial
- f Unknown

Historic Range
NHD Hydrography
8-digit HUC

Muddy

ork

Bitter

Upper Green-
Flaming Gorge
Reservoir

Vermilion

Duchesne

Ashley-Brush

Lower
Green-
Diamond

Lower Yampa

Green River

Sage Creek

Currant Creek

Spring Creek

UG6-18

UG6-17

UG6-16

Henrys Fork

Burnt Fork

Birch Creek

Dollerson Creek

Louse Creek

Poison Creek

UG6-19

UG6-01

UG6-02

Beaver Creek

Middle Fork Beaver Creek

UG6-03

UG6-04

UG6-05

Thompson Creek

UG6-06

Lodgepole Creek

Birch Spring Draw

Sheep Creek

UG6-07

UG6-10

UG6-08

UG6-09

UG6-11

UG6-12

Weyman Creek

Carter Creek

Deep Creek

Elk Creek

UG6-15

Red Creek

Willow Creek

Beaver Creek

UG6-20

Cart Creek

Kettle Creek

Poliver Creek

Sears Creek

Crouse Creek

14040106 Upper Green-Flaming Gorge Reservoir

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG6-01***	*32.36*	*Strongly Connected*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICJ02001	S. Unnamed Trib. to Henrys Fork	14040106cd002	Not Tested - Hybridized	Over 400 fish	Excellent	10 to 15 feet	None
WC: IICJ01901lo	Grass Lake Outlet	14040106cd003	Not Tested - Hybridized	0 to 50 fish	Excellent	< 5 feet	None
WC: 162	W. Unnamed Trib. #2 to Henrys Fork	14040106cd004	Not Tested - Hybridized	Over 400 fish	Excellent	5 to 10 feet	None
WC: IICJ01701	W. Unnamed Trib. #1 to Henrys Fork	14040106cd005	Not Tested - Hybridized	151 to 400 fish	Excellent	< 5 feet	None
WC: IICJ01501lo	Sawmill Lake Outlet	14040106cd006	Not Tested - Hybridized	50 to 150 fish	Excellent	< 5 feet	BRK
WC: 163	W. Unnamed Trib. #3 to Henrys Fork	14040106cd007	Not Tested - Hybridized	151 to 400 fish	Excellent	< 5 feet	None
WC: IICJ06001	Joulious Creek	14040106cd008	Not Tested - Unaltered	151 to 400 fish	Excellent	5 to 10 feet	None
WC: IICJ06001	Joulious Creek	14040106cd009	Not Tested - Unaltered	Unknown	Excellent	5 to 10 feet	None
WC: IICJ05001	Dahlgreen Creek	14040106cd010	Not Tested - Unaltered	Over 400 fish	Excellent	5 to 10 feet	None
WC: IICJ05001	Dahlgreen Creek	14040106cd011	Not Tested - Unaltered	50 to 150 fish	Fair	5 to 10 feet	None
WC: IICJ01	Henrys Fork	14040106cd012	90% - 99%	Over 400 fish	Excellent	15 to 20 feet	YCT
WC: IICJ01	Henrys Fork	14040106cd016	Not Tested - Hybridized	Unknown	Excellent	5 to 10 feet	None

Conservation Population	***UG6-02***	*1.43*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICJ045B01	Spring Creek	14040106cd013	Not Tested - Unaltered	151 to 400 fish	Good	< 5 feet	None

Conservation Population	***UG6-03***	*10.14*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Not Applicable*	*Res, Ad-fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841130U	North Fork Beaver Creek	14040106cd014	Not Tested - Unaltered	50 to 150 fish	Excellent	15 to 20 feet	BRK
WC: GR841130U	Gilbert Lake (GR-150)	14040106cd015	Unaltered	Unknown	Excellent	< 5 feet	BRK

Conservation Population	***UG6-04***	*1.78*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICJ040B02	Middle Fork Beaver Creek	14040106cd017	Unaltered	50 to 150 fish	Excellent	20 to 25 feet	BRK

Conservation Population	***UG6-05***	*0.35*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res, Ad-fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 94l	Unnamed Lake #2	14040106cd018	Not Tested - Unaltered	Unknown	Excellent	5 to 10 feet	BRK

14040106 Upper Green-Flaming Gorge Reservoir

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG6-06***	*42.04*	*Strongly Connected*	*Significant Disease Ris*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 33lo	Fish Lake Outlet	14040106cd058	Not Tested - Unaltered	Unknown	Good	5 to 10 feet	BRK
WC: 139	Unnamed Tributary to Burnt Fork	14040106cd059	Unaltered	151 to 400 fish	Good	15 to 20 feet	BRK

Conservation Population	***UG6-07***	*6.33*	*Moderately Connect*	*Moderate Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICI05003	North Fork Sheep Creek	14040106cd047	90% - 99%	Unknown	Excellent	5 to 10 feet	BRK

Conservation Population	***UG6-08***	*1.23*	*Moderately Connect*	*Moderate Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICI02	Sheep Creek	14040106cd045	90% - 99%	151 to 400 fish	Excellent	5 to 10 feet	BRK, RBT

Conservation Population	***UG6-09***	*1.99*	*Moderately Connect*	*Moderate Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICI030A01	Daggett Lake Outlet	14040106cd032	90% - 99%	151 to 400 fish	Excellent	5 to 10 feet	BRK

Conservation Population	***UG6-10***	*8.81*	*Weakly Connected*	*Minimal Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICI05001	Middle Fork Sheep Creek	14040106cd049	90% - 99%	Unknown	Excellent	5 to 10 feet	BRK
WC: IICI05001	Middle Fork Sheep Creek	14040106cd050	90% - 99%	Unknown	Excellent	5 to 10 feet	BRK
WC: IICI05001	Middle Fork Sheep Creek	14040106cd051	90% - 99%	Unknown	Excellent	5 to 10 feet	BRK

Conservation Population	***UG6-11***	*4.93*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICI03001	South Fork Sheep Creek	14040106cd033	90% - 99%	151 to 400 fish	Excellent	5 to 10 feet	BRK
WC: IICI03001	South Fork Sheep Creek	14040106cd034	90% - 99%	50 to 150 fish	Excellent	5 to 10 feet	BRK
WC: IICI03001	South Fork Sheep Creek	14040106cd056	Not Tested - Hybridized	Unknown	Excellent	< 5 feet	BRK

Conservation Population	***UG6-12***	*5.5*	*Weakly Connected*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICH050A01	Weyman Creek	14040106cd039	Not Tested - Hybridized	Unknown	Excellent	< 5 feet	BRK
WC: 61	N. Unnamed Trib. to Sheep Creek	14040106cd046	90% - 99%	151 to 400 fish	Fair	< 5 feet	BRK

14040106 Upper Green-Flaming Gorge Reservoir

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG6-15***	*5.46*	*Weakly Connected*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICH03001	Elk Creek	14040106cd041	Not Tested - Hybridized	151 to 400 fish	Good	< 5 feet	BRK, RBT
WC: IICH03001	Elk Creek	14040106cd042	Not Tested - Hybridized	Over 400 fish	Excellent	< 5 feet	None
WC: IICH030A01	Little Elk Creek	14040106cd043	Not Tested - Hybridized	50 to 150 fish	Excellent	< 5 feet	None

Conservation Population	***UG6-16***	*9.95*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR845880S	Red Creek	14040106cd028	Unaltered	50 to 150 fish	Fair	< 5 feet	None
WC: GR845860S	Little Red Creek	14040106cd029	Unaltered	Over 400 fish	Good	< 5 feet	None
WC: GR845860S	Little Red Creek	14040106cd030	Unaltered	151 to 400 fish	Fair	< 5 feet	None
WC: GR845880S	Red Creek	14040106cd031	Unaltered	0 to 50 fish	Poor	5 to 10 feet	None
WC: GR845860S	Little Red Creek	14040106cd061	Unaltered	0 to 50 fish	Good	< 5 feet	None

Conservation Population	***UG6-17***	*15.98*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841200S	Currant Creek	14040106cd020	80% - 89%	151 to 400 fish	Good	5 to 10 feet	BRK, TRT
WC: GR841200S	Currant Creek	14040106cd021	80% - 89%	Unknown	Good	< 5 feet	BRK
WC: GR841200S	Currant Creek	14040106cd022	Not Tested - Hybridized	50 to 150 fish	Poor	5 to 10 feet	BRK, TRT

Conservation Population	***UG6-18***	*28.38*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841970S	Sage Creek	14040106cd023	Not Tested - Hybridized	0 to 50 fish	Fair	< 5 feet	None
WC: GR841975S	Trout Creek	14040106cd024	Not Tested - Hybridized	151 to 400 fish	Fair	5 to 10 feet	CUT
WC: GR841975S	Trout Creek	14040106cd025	Not Tested - Hybridized	Unknown	Poor	5 to 10 feet	CUT
WC: GR840976S	Gooseberry Creek	14040106cd026	Not Tested - Hybridized	0 to 50 fish	Poor	< 5 feet	CUT
WC: GR841970S	Sage Creek	14040106cd027	Not Tested - Hybridized	0 to 50 fish	Fair	5 to 10 feet	CUT
WC: GR841975S	Trout Creek	14040106cd062	Not Tested - Hybridized	0 to 50 fish	Fair	< 5 feet	None

Conservation Population	***UG6-19***	*4.4*	*Strongly Connected*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICJ01	Henrys Fork	14040106cd019	Not Tested - Hybridized	151 to 400 fish	Good	> 25 feet	None

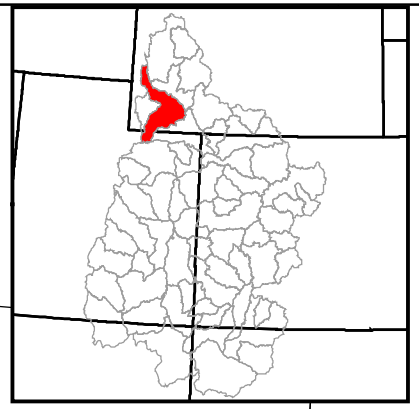
14040106 Upper Green-Flaming Gorge Reservoir

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG6-20***	*6.38*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19124	Beaver Creek	14040106cd001	Unaltered	151 to 400 fish	Good	5 to 10 feet	None

Upper Green GMU

Blacks Fork (14040107)



Barriers

- Complete
- Partial
- Unknown

- Historic Range
- NHD Hydrography
- 8-digit HUC

Upper Green

Big Sandy

Upper Green-Slate

Bitter

Muddy

Blacks Fork

Upper Green-Flaming Gorge Reservoir

Vermilion

Duchesne

West Fork Smiths Fork

Willow Creek

Hams Fork

Blacks Fork

Sage Creek

UG7-04

UG7-11

UG7-06

UG7-05

UG7-03

UG7-02

UG7-01

UG7-10

14040107 Blacks Fork

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG7-01***	*6.15*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICK020A01	Gilbert Creek	14040107cd001	Unaltered	0 to 50 fish	Good	5 to 10 feet	None
WC: IICK020A01	Gilbert Creek	14040107cd002	Unaltered	Unknown	Good	< 5 feet	None

Conservation Population	***UG7-02***	*21.13*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICK020B01	West Fork Smiths Fork	14040107cd003	Not Tested - Hybridized	Over 400 fish	Good	10 to 15 feet	None
WC: GR841915U	Archie Creek	14040107cd004	Not Tested - Unaltered	Over 400 fish	Good	5 to 10 feet	RBT
WC: IICK020B02	Steel Creek	14040107cd005	Not Tested - Unaltered	Over 400 fish	Good	< 5 feet	None
WC: IICK020B01	West Fork Smiths Fork	14040107cd031	Not Tested - Hybridized	151 to 400 fish	Good	20 to 25 feet	RBT

Conservation Population	***UG7-03***	*5.21*	*Weakly Connected*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICK020B01	West Fork Smiths Fork	14040107cd006	Unaltered	Over 400 fish	Good	10 to 15 feet	None
WC: 159	Unnamed Tributary to West Fork Smiths Fork	14040107cd007	Unaltered	Unknown	Excellent	< 5 feet	None

Conservation Population	***UG7-04***	*3.37*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICK03002	Little West Fork Blacks Fork	14040107cd008	Unaltered	Over 400 fish	Good	5 to 10 feet	None

14040107 Blacks Fork

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG7-05***	*65.6*	*Strongly Connected*	*Minimal Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Sink*	*Res, Ad-fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICK01	Blacks Fork	14040107cd009	Not Tested - Hybridized	Unknown	Good	5 to 10 feet	BRK
WC: IICK01	Blacks Fork	14040107cd010	Not Tested - Hybridized	Unknown	Good	> 25 feet	BRK
WC: IICK04001	East Fork Blacks Fork	14040107cd011	Not Tested - Hybridized	Unknown	Good	20 to 25 feet	BRK
WC: IICK040K01	Little East Fork	14040107cd012	90% - 99%	Over 400 fish	Excellent	10 to 15 feet	BRK
WC: IICK040K23	Unnamed Trib. #1 to Little East Fork	14040107cd013	Not Tested - Unaltered	Over 400 fish	Excellent	< 5 feet	None
WC: IICK040K20	Unnamed Trib. #2 to Little East Fork	14040107cd014	Not Tested - Hybridized	50 to 150 fish	Excellent	< 5 feet	None
WC: IICK040K15	Unnamed Trib. #3 to Little East Fork	14040107cd015	Not Tested - Unaltered	0 to 50 fish	Excellent	5 to 10 feet	None
WC: IICK040K13	Unnamed Trib. #4 to Little East Fork	14040107cd016	Not Tested - Unaltered	151 to 400 fish	Excellent	< 5 feet	None
WC: IICK040K11	Unnamed Trib. #5 to Little East Fork	14040107cd017	Not Tested - Unaltered	Unknown	Excellent	< 5 feet	None
WC: IICK050A01	Middle Fork Blacks Fork	14040107cd023	Not Tested - Hybridized	151 to 400 fish	Excellent	5 to 10 feet	BRK
WC: 98	Unnamed Trib. #1 to Middle Fork Blacks Fork	14040107cd024	Not Tested - Hybridized	Unknown	Excellent	< 5 feet	BRK
WC: 108	Unnamed Trib. #2 to Middle Fork Blacks Fork	14040107cd025	Not Tested - Hybridized	Unknown	Excellent	< 5 feet	BRK
WC: IICK050B01	Brush Creek	14040107cd026	Not Tested - Hybridized	Unknown	Excellent	5 to 10 feet	BRK
WC: IICK05001	West Fork Blacks Fork	14040107cd027	Not Tested - Unaltered	151 to 400 fish	Good	15 to 20 feet	BRK
WC: IICK050T01	Unnamed Trib. #3 to West Fork Blacks Fork	14040107cd028	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	BRK
WC: IICK050X01	Unnamed Trib. #2 to West Fork Blacks Fork	14040107cd029	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	None
WC: IICK050ZC0	Unnamed Trib. #1 to West Fork Blacks Fork	14040107cd030	Not Tested - Unaltered	0 to 50 fish	Good	10 to 15 feet	None

Conservation Population	***UG7-06***	*13.2*	*Moderately Connect*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICK04002	Unnamed Trib. #1 to East Fork Blacks Fork	14040107cd018	Unaltered	50 to 150 fish	Excellent	10 to 15 feet	None
WC: IICK04001	East Fork Blacks Fork	14040107cd019	Not Tested - Unaltered	151 to 400 fish	Excellent	10 to 15 feet	None
WC: IICK040X01	Unnamed Trib. #2 to East Fork Blacks Fork	14040107cd020	Not Tested - Unaltered	0 to 50 fish	Excellent	< 5 feet	None
WC: IICK040W0	Unnamed Trib. #3 to East Fork Blacks Fork	14040107cd021	Not Tested - Unaltered	50 to 150 fish	Excellent	5 to 10 feet	None
WC: IICK040R01	Unnamed Trib. #4 to East Fork Blacks Fork	14040107cd022	Not Tested - Unaltered	Unknown	Unknown	< 5 feet	None

14040107 Blacks Fork

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG7-07***	*5.86*	*Weakly Connected*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IICK020A01	Gilbert Creek	14040107cd033	Unaltered	0 to 50 fish	Good	5 to 10 feet	None
WC: 20	E. Unnamed Trib. to Gilbert Creek	14040107cd034	Unaltered	Unknown	Good	< 5 feet	None
WC: GR841930U	Little Gilbert Creek	14040107cd037	Unaltered	0 to 50 fish	Good	< 5 feet	None
WC: GR841931U	W. Unnamed Trib. to Gilbert Creek	14040107cd038	Unaltered	0 to 50 fish	Good	< 5 feet	None
WC: 145	Unnamed Tributary to Gilbert Creek	14040107cd047	Unaltered	0 to 50 fish	Good	< 5 feet	None

Conservation Population	***UG7-08***	*2.32*	*Weakly Connected*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841930U	Little Gilbert Creek	14040107cd036	Unaltered	0 to 50 fish	Good	< 5 feet	None

Conservation Population	***UG7-09***	*1.05*	*Weakly Connected*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841931U	W. Unnamed Trib. to Gilbert Creek	14040107cd035	Unaltered	0 to 50 fish	Good	< 5 feet	None

Conservation Population	***UG7-10***	*5.02*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Source*	*Res*

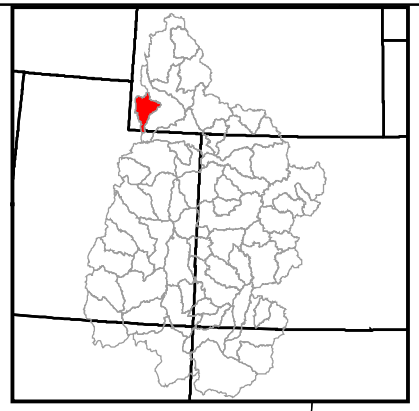
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841880U	Sage Creek	14040107cd032	< 80%	Over 400 fish	Good	5 to 10 feet	None

Conservation Population	***UG7-11***	*7.12*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841965U	Horse Creek	14040107cd040	Co-existence	151 to 400 fish	Good	5 to 10 feet	RBT
WC: 58	N. Unnamed Trib. to Horse Creek	14040107cd041	Not Tested - Unaltered	Unknown	Good	< 5 feet	None
WC: GR841965U	S. Unnamed Trib. to Horse Creek	14040107cd042	Not Tested - Unaltered	Unknown	Good	< 5 feet	None

Upper Green GMU

Muddy (14040108)



Barriers

- X Complete
- ! Partial
- f Unknown

Historic Range

NHD Hydrography

8-digit HUC

Muddy

Upper Green-Slate

Blacks Fork

Upper Green-Flaming Gorge Reservoir

Chicken Creek

Carter Creek

Sheep Creek

Little Muddy Creek

Little Muddy Creek

Albert Creek

Ryckman Creek

Shurtleff Creek

Clear Creek

Albert Creek

Muddy Creek

Clear Creek

Fish Creek

UG8-04

UG8-05

UG8-01

14040108 Muddy

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***UG8-01***	*3.77*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841865U	Van Tassel Creek	14040108cd001	Unaltered	Over 400 fish	Excellent	10 to 15 feet	None
WC: 157	Unnamed Tributary to Van Tassel Creek	14040108cd002	Unaltered	151 to 400 fish	Excellent	5 to 10 feet	None

Conservation Population	***UG8-02***	*3.7*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841865U	Van Tassel Creek	14040108cd003	Unaltered	Over 400 fish	Excellent	10 to 15 feet	None
WC: GR841865U	Van Tassel Creek	14040108cd004	Not Tested - Unaltered	151 to 400 fish	Fair	5 to 10 feet	None

Conservation Population	***UG8-04***	*18.29*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Sink*	*Res*

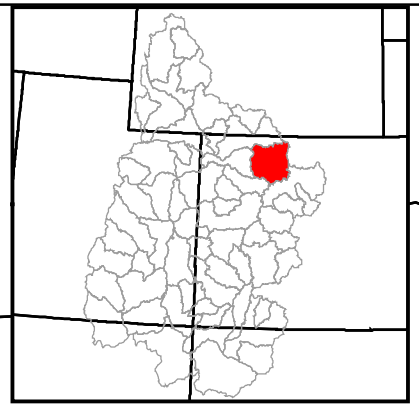
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841865U	Van Tassel Creek	14040108cd005	Not Tested - Unaltered	151 to 400 fish	Fair	5 to 10 feet	UNK
WC: 160	Unnamed Tributary to West Muddy Creek	14040108cd006	Not Tested - Unaltered	Over 400 fish	Good	< 5 feet	None
WC: 160	Unnamed Tributary to West Muddy Creek	14040108cd007	Unaltered	Unknown	Excellent	Unknown	None
WC: IICK010A01	West Muddy Creek	14040108cd008	Unaltered	151 to 400 fish	Good	5 to 10 feet	None
WC: IICK010A01	West Muddy Creek	14040108cd009	Not Tested - Hybridized	Unknown	Fair	Unknown	UNK

Conservation Population	***UG8-05***	*8.54*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR841840U	East Muddy Creek	14040108cd010	Not Tested - Hybridized	Unknown	Fair	5 to 10 feet	RBT
WC: 03	Beaver Dam Hollow	14040108cd011	Not Tested - Hybridized	Over 400 fish	Fair	< 5 feet	RBT

Yampa GMU

Upper Yampa (14050001)



Barriers

- Complete
- Partial
- Unknown
- Historic Range
- NHD Hydrography
- 8-digit HUC

Upper Yampa

Upper White

Colorado Headwaters

YW1-01
YW1-02
YW1-04
YW1-05
YW1-06
YW1-07
YW1-08
YW1-09
YW1-10

Little Cottonwood Creek
Fortification Creek
Little Bear Creek
Elkhead Creek
Dry Fork Elkhead Creek
Yampa River
Williams Fork
Badger Creek
Middle Creek
Deer Creek
Coyote Creek
Cyclone Creek
Willow Creek
Sage Creek
Dry Creek
Grassy Creek
Wolf Creek
Dow Creek
Fish Creek
Foidel Creek
Middle Creek
Trout Creek
Oak Creek
Day Creek
Green Creek
Sand Creek
Trout Creek
Bunker Creek
Sand Fork Williams Fork
Beal River
Wasson Creek
Bussy Creek
Lawsdn Creek
Wheeler Creek
Chimney Creek
Morrison Creek
Silver Creek
Sarvis Creek
Mill Creek
Red Creek
Willow Creek
Spring Creek
Hinman Creek
North Fork Elk Creek
Elk River
South Fork Elk River
Day Creek
Deep Creek
Elk River
Big Creek
Mad Creek
South Fork Mad Creek
Hot Spring Creek
Soda Creek
Spring Creek

14050001 Upper Yampa

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW1-01**	37.5	Moderately Connect	Limited Disease Risk	Hybridizing species < 10 km	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 23165	Elkhead Creek	14050001cd001	90% - 99%	50 to 150 fish	Poor	20 to 25 feet	FSH
WC: 20266	First Creek	14050001cd002	Unaltered	Over 400 fish	Good	10 to 15 feet	BRK, FSH
WC: 19035	Armstrong Creek	14050001cd003	Unaltered	151 to 400 fish	Good	5 to 10 feet	None
WC: 23165	Elkhead Creek	14050001cd004	Unaltered	151 to 400 fish	Fair	20 to 25 feet	None
WC: 19530	Circle Creek	14050001cd007	Unaltered	0 to 50 fish	Fair	5 to 10 feet	BRK
WC: 23165	Elkhead Creek	14050001cd008	Unaltered	50 to 150 fish	Fair	20 to 25 feet	FSH
WC: 20153	North Fork Elkhead Creek	14050001cd009	Not Tested - Hybridized	Unknown	Fair	10 to 15 feet	UNK

Conservation Population	**YW1-02**	1.68	Population Isolated	Limited Disease Risk	Hybridizing species > 10 km	Other	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 22397	Torso Creek	14050001cd006	90% - 99%	151 to 400 fish	Good	5 to 10 feet	None

Conservation Population	**YW1-04**	6.98	Moderately Connect	Minimal Disease Risk	Hybridizing species > 10 km	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 26395	Smith Creek	14050001cd012	90% - 99%	151 to 400 fish	Good	5 to 10 feet	None
WC: 62	N. Unnamed Trib. to Smith Creek	14050001cd032	Not Tested - Unaltered	Unknown	Unknown	Unknown	UNK
WC: 80	S. Unnamed Trib. to Smith Creek	14050001cd033	Not Tested - Unaltered	Unknown	Unknown	Unknown	UNK

Conservation Population	**YW1-05**	2.54	Population Isolated	Minimal Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 26074	Coyner Creek	14050001cd016	Unaltered	0 to 50 fish	Good	5 to 10 feet	None

Conservation Population	**YW1-06**	3.33	Population Isolated	Limited Disease Risk	Hybridizing species > 10 km	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 21054	Mandall Creek	14050001cd020	90% - 99%	50 to 150 fish	Good	5 to 10 feet	BRK

Conservation Population	**YW1-07**	3.85	Population Isolated	Moderate Disease Risk	Hybridizing species < 10 km	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 23557	Trout Creek	14050001cd021	Unaltered	50 to 150 fish	Excellent	10 to 15 feet	BRK

14050001 Upper Yampa

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW1-08***	*19.65*	*Moderately Connect*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19364	Bunker Creek	14050001cd022	90% - 99%	Over 400 fish	Good	Unknown	UNK
WC: 23418	Poose Creek	14050001cd024	Unaltered	Over 400 fish	Good	15 to 20 feet	BRK, RBT
WC: 23301	Rough Creek	14050001cd025	Unaltered	151 to 400 fish	Fair	Unknown	UNK
WC: 22816	East Fork Williams Fork	14050001cd038	Not Tested - Hybridized	Unknown	Good	15 to 20 feet	UNK

Conservation Population	***YW1-09***	*1.94*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

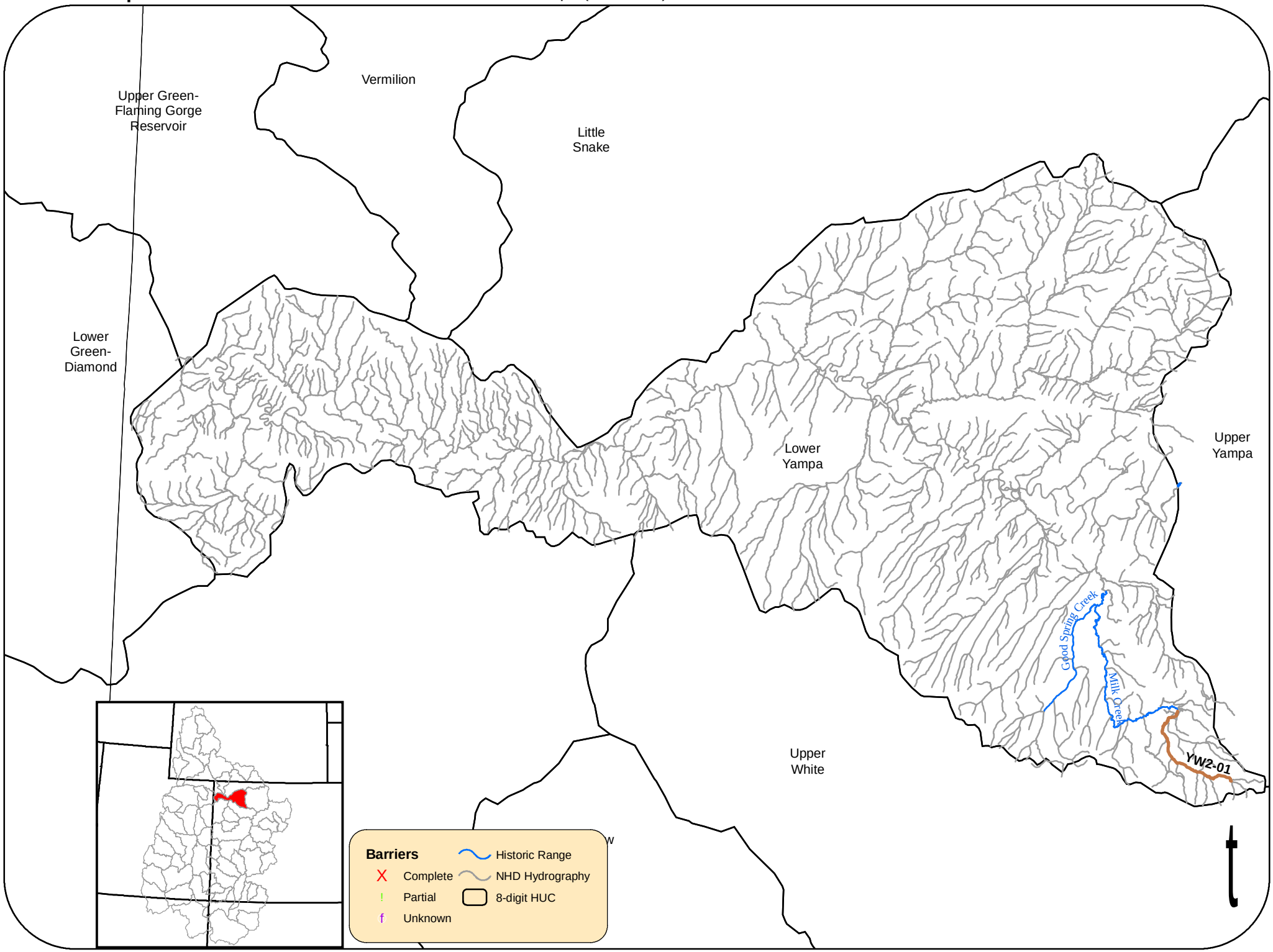
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23418	Poose Creek	14050001cd023	Unaltered	50 to 150 fish	Good	10 to 15 feet	None

Conservation Population	***YW1-10***	*35.51*	*Moderately Connect*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19150	Beaver Creek	14050001cd005	90% - 99%	151 to 400 fish	Good	5 to 10 feet	None
WC: 20759	Indian Run	14050001cd026	Unaltered	151 to 400 fish	Good	< 5 feet	None
WC: 19150	Beaver Creek	14050001cd027	Unaltered	50 to 150 fish	Fair	5 to 10 feet	None
WC: 23482	South Fork Williams Fork	14050001cd028	Unaltered	151 to 400 fish	Good	15 to 20 feet	None
WC: 27739	Pagoda Creek	14050001cd029	Unaltered	151 to 400 fish	Good	15 to 20 feet	None
WC: 22062	Slide Creek	14050001cd030	80% - 89%	151 to 400 fish	Good	5 to 10 feet	None
WC: 23482	South Fork Williams Fork	14050001cd035	Not Tested - Hybridized	Unknown	Fair	15 to 20 feet	UNK
WC: 21544	West Pine Creek	14050001cd036	Not Tested - Hybridized	Unknown	Fair	< 5 feet	None
WC: 19843	Cedar Creek	14050001cd037	Not Tested - Unaltered	Unknown	Unknown	Unknown	UNK

Yampa GMU

Lower Yampa (14050002)



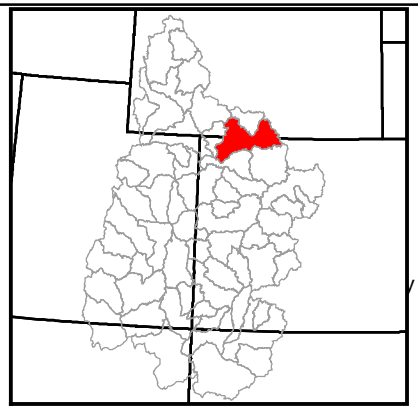
14050002 Lower Yampa

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW2-01***	*9.26*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24961	Milk Creek	14050002cd001	Unaltered	151 to 400 fish	Good	5 to 10 feet	None

Yampa GMU

Little Snake (14050003)



Barriers

- Complete
- Partial
- Unknown
- Historic Range
- NHD Hydrography
- 8-digit HUC

Fish Creek
Hill Creek
Little Savery Creek
North Fork Savery Creek
Hartt Creek
YW3-02
Savery Creek
YW3-03
YW3-04
YW3-05
Deep Creek
YW3-01
Big Sandstone Creek
Little Sandstone Creek
West Fork
Loco Creek
Negro Creek
Little Snake
YW3-06
YW3-07
YW3-20
YW3-34
YW3-12
YW3-11
YW3-09
YW3-08
Haggarty Creek
Baby Lake Creek
Battle Creek
YW3-13
YW3-14
YW3-19
YW3-18
YW3-17
YW3-22
YW3-25
YW3-24
YW3-23
YW3-26
YW3-27
YW3-16
Rooting Fork
Little Snake River
YW3-00
South Fork Little Snake River
Willow Creek
Oliver Creek
YW3-28
Slater Creek
Cataract Creek
YW3-31
YW3-32
YW3-30
YW3-29
Upper Yampa
Lower Yampa

14050003 Little Snake

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-00**	0.46	Weakly Connected	Significant Disease Ris	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res, Ad-fluv

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR871010C	Three Forks Ranch Creek	14050003cd011	Unaltered	0 to 50 fish	Fair	< 5 feet	None

Conservation Population	**YW3-01**	0.65	Population Isolated	Moderate Disease Risk	Hybridizing species < 10 km	Core Conservation Population	Not Applicable	Res, Ad-fluv

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 32	East Three Forks Ranch Creek	14050003cd012	Unaltered	0 to 50 fish	Good	< 5 feet	None
WC: GR872370C	Hall Canyon	14050003cd016	Unaltered	50 to 150 fish	Good	< 5 feet	RBT

Conservation Population	**YW3-02**	1.07	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872485C	Hatch Creek	14050003cd013	80% - 89%	0 to 50 fish	Fair	< 5 feet	None

Conservation Population	**YW3-03**	1.42	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872480C	Dirtyman Fork	14050003cd014	Not Tested - Unaltered	0 to 50 fish	Good	5 to 10 feet	None

Conservation Population	**YW3-04**	1.48	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872480C	Dirtyman Fork	14050003cd015	Unaltered	0 to 50 fish	Good	5 to 10 feet	None

Conservation Population	**YW3-05**	4.5	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872346C	Deep Creek	14050003cd017	Unaltered	Over 400 fish	Excellent	5 to 10 feet	None

Conservation Population	**YW3-06**	1.01	Population Isolated	Limited Disease Risk	Hybridizing species are sympatric	Known or Probable Unique Life History	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872330C	Big Sandstone Creek	14050003cd018	Not Tested - Hybridized	0 to 50 fish	Good	5 to 10 feet	BRK

Conservation Population	**YW3-07**	3.35	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872350C	Mill Creek	14050003cd019	Unaltered	50 to 150 fish	Fair	5 to 10 feet	None

14050003 Little Snake

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-08**	13.38	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872260C	Belvidere Ditch	14050003cd020	Unaltered	50 to 150 fish	Fair	5 to 10 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-09**	1.78	Population Isolated	Limited Disease Risk	Hybridizing species < 10 km	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872685C	Haggarty Creek	14050003cd021	Unaltered	50 to 150 fish	Excellent	10 to 15 feet	BRK

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-10**	1.93	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872685C	Haggarty Creek	14050003cd022	Unaltered	0 to 50 fish	Good	15 to 20 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-11**	0.65	Population Isolated	Limited Disease Risk	No Risk of Hybridization	Core Conservation Population	Source	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872687C	E. Unnamed Trib. to Haggarty Creek	14050003cd023	Unaltered	0 to 50 fish	Good	5 to 10 feet	None

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-12**	1.52	Population Isolated	Limited Disease Risk	Hybridizing species < 10 km	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872722C	Haskins Creek	14050003cd024	Unaltered	0 to 50 fish	Fair	5 to 10 feet	BRK

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-13**	1.93	Population Isolated	Population is Infected	Hybridizing species < 10 km	Known or Probable Unique Life History	Sink	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872800C	Roaring Fork	14050003cd026	Not Tested - Hybridized	0 to 50 fish	Fair	5 to 10 feet	BRK, RBT

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	**YW3-14**	3.62	Population Isolated	Moderate Disease Risk	Hybridizing species > 10 km	Core Conservation Population	Not Applicable	Res

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: GR872800C	Roaring Fork	14050003cd025	Unaltered	50 to 150 fish	Excellent	< 5 feet	BRK

14050003 Little Snake

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW3-16***	*20.84*	*Moderately Connect*	*Population is Infected*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872840C	North Fork Little Snake River	14050003cd027	Not Tested - Hybridized	0 to 50 fish	Excellent	15 to 20 feet	BRK, RBT
WC: GR872860C	West Branch North Fork Little Snake River	14050003cd028	< 80%	0 to 50 fish	Good	15 to 20 feet	None
WC: GR872840C	North Fork Little Snake River	14050003cd032	Not Tested - Hybridized	0 to 50 fish	Excellent	> 25 feet	RBT
WC: GR872840C	North Fork Little Snake River	14050003cd033	Unaltered	Over 400 fish	Excellent	15 to 20 feet	None
WC: GR872880C	Solomon Creek	14050003cd035	Unaltered	50 to 150 fish	Excellent	5 to 10 feet	None
WC: 43	Harrison Creek	14050003cd037	90% - 99%	50 to 150 fish	Good	5 to 10 feet	None
WC: GR872940C	Deadman Creek	14050003cd039	90% - 99%	50 to 150 fish	Good	10 to 15 feet	None
WC: 168	W. Unnamed Trib. to North Fork Little Snake River	14050003cd043	Unaltered	0 to 50 fish	Good	5 to 10 feet	None
WC: 149	Unnamed Tributary to Rose Creek	14050003cd046	Unaltered	50 to 150 fish	Excellent	5 to 10 feet	None
WC: 21854	Rose Creek	14050003cd047	Unaltered	0 to 50 fish	Excellent	5 to 10 feet	None

Conservation Population	***YW3-17***	*3.45*	*Moderately Connect*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872860C	West Branch North Fork Little Snake River	14050003cd029	Unaltered	151 to 400 fish	Good	10 to 15 feet	None

Conservation Population	***YW3-18***	*1.21*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872860C	West Branch North Fork Little Snake River	14050003cd030	Unaltered	50 to 150 fish	Fair	10 to 15 feet	None

Conservation Population	***YW3-19***	*3.12*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872860C	West Branch North Fork Little Snake River	14050003cd031	Unaltered	50 to 150 fish	Excellent	10 to 15 feet	None

Conservation Population	***YW3-22***	*0.81*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872880C	Solomon Creek	14050003cd036	Unaltered	0 to 50 fish	Poor	< 5 feet	None

Conservation Population	***YW3-23***	*0.55*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 43	Harrison Creek	14050003cd038	90% - 99%	0 to 50 fish	Fair	< 5 feet	None

14050003 Little Snake

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW3-24***	*0.66*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872940C	Deadman Creek	14050003cd040	90% - 99%	0 to 50 fish	Good	5 to 10 feet	None

Conservation Population	***YW3-25***	*0.85*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872940C	Deadman Creek	14050003cd041	Unaltered	0 to 50 fish	Good	10 to 15 feet	None

Conservation Population	***YW3-26***	*1.4*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 168	W. Unnamed Trib. to North Fork Little Snake River	14050003cd044	Unaltered	0 to 50 fish	Excellent	5 to 10 feet	None

Conservation Population	***YW3-27***	*3.47*	*Moderately Connect*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR872840C	North Fork Little Snake River	14050003cd034	Unaltered	50 to 150 fish	Excellent	5 to 10 feet	None
WC: 23	E. Unnamed Trib. to North Fork Little Snake River	14050003cd045	Unaltered	50 to 150 fish	Good	< 5 feet	None

Conservation Population	***YW3-28***	*20.8*	*Weakly Connected*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 20802	Johnson Creek	14050003cd006	Unaltered	50 to 150 fish	Fair	5 to 10 feet	FSH
WC: 24092	Oliver Creek	14050003cd007	Unaltered	0 to 50 fish	Poor	5 to 10 feet	FSH
WC: 23470	South Fork Little Snake River	14050003cd008	Unaltered	0 to 50 fish	Poor	5 to 10 feet	FSH
WC: 23470	South Fork Little Snake River	14050003cd009	Unaltered	0 to 50 fish	Fair	5 to 10 feet	None
WC: 21082	Lopez Creek	14050003cd010	Unaltered	0 to 50 fish	Fair	< 5 feet	None
WC: 23470	South Fork Little Snake River	14050003cd048	Unaltered	0 to 50 fish	Poor	10 to 15 feet	FSH

Conservation Population	***YW3-29***	*8.55*	*Weakly Connected*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23286	South Fork Slater Creek	14050003cd004	Unaltered	50 to 150 fish	Good	10 to 15 feet	BRK
WC: 21123	S. Fk. Slater Creek, W. Prong	14050003cd005	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	BRK

14050003 Little Snake

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW3-30***	*5.9*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 27032	Roaring Fork Slater Creek	14050003cd003	Not Tested - Unaltered	50 to 150 fish	Good	10 to 15 feet	None

Conservation Population	***YW3-31***	*5.7*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22959	Cataract Creek	14050003cd001	Not Tested - Unaltered	151 to 400 fish	Excellent	5 to 10 feet	None

Conservation Population	***YW3-32***	*4.89*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

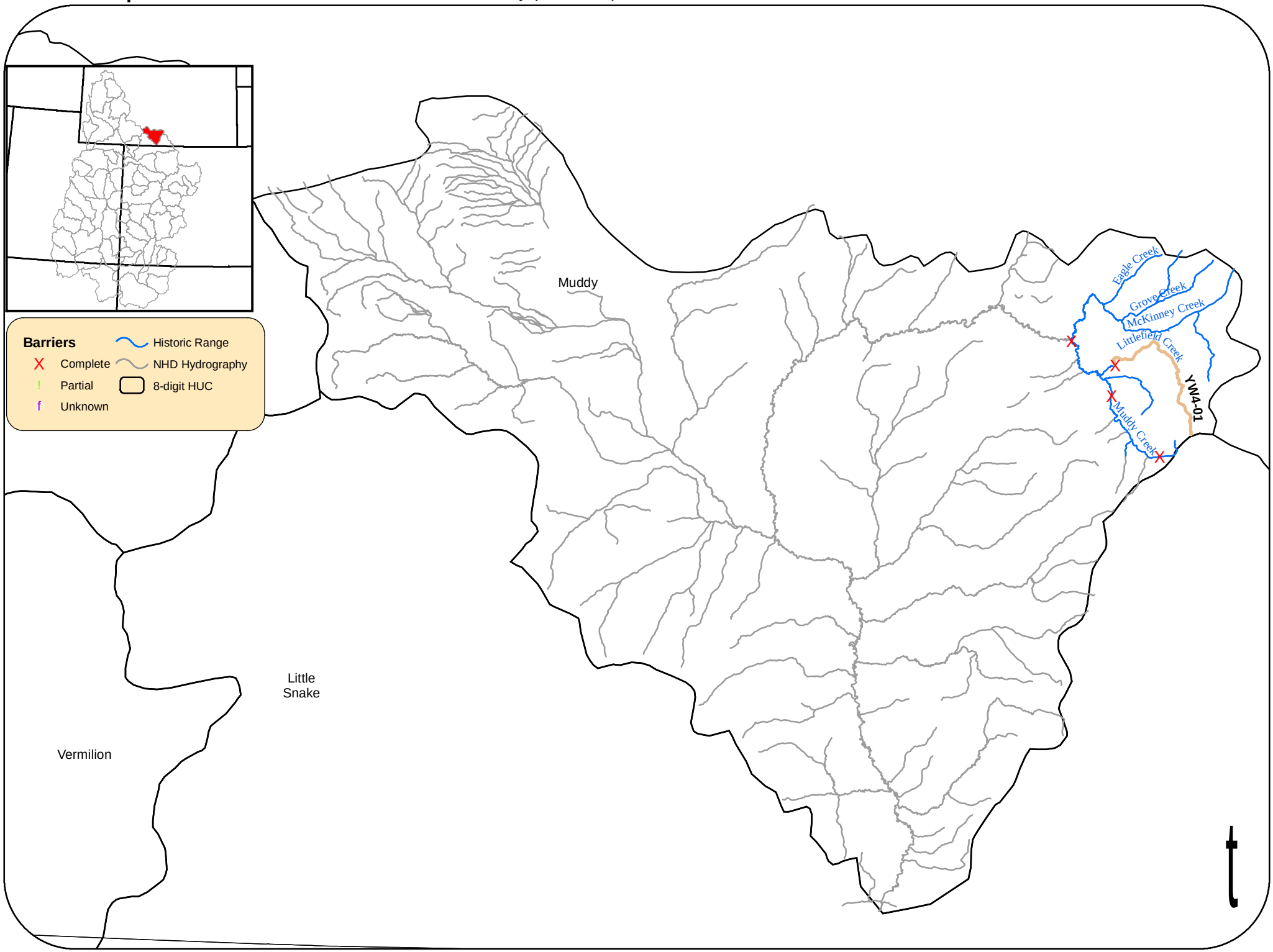
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22854	Willow Creek	14050003cd002	Unaltered	0 to 50 fish	Fair	5 to 10 feet	BRK, FSH

Conservation Population	***YW3-34***	*0.64*	*Strongly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 02	Alisha Creek	14050003cd049	Unaltered	151 to 400 fish	Good	5 to 10 feet	None

Yampa GMU

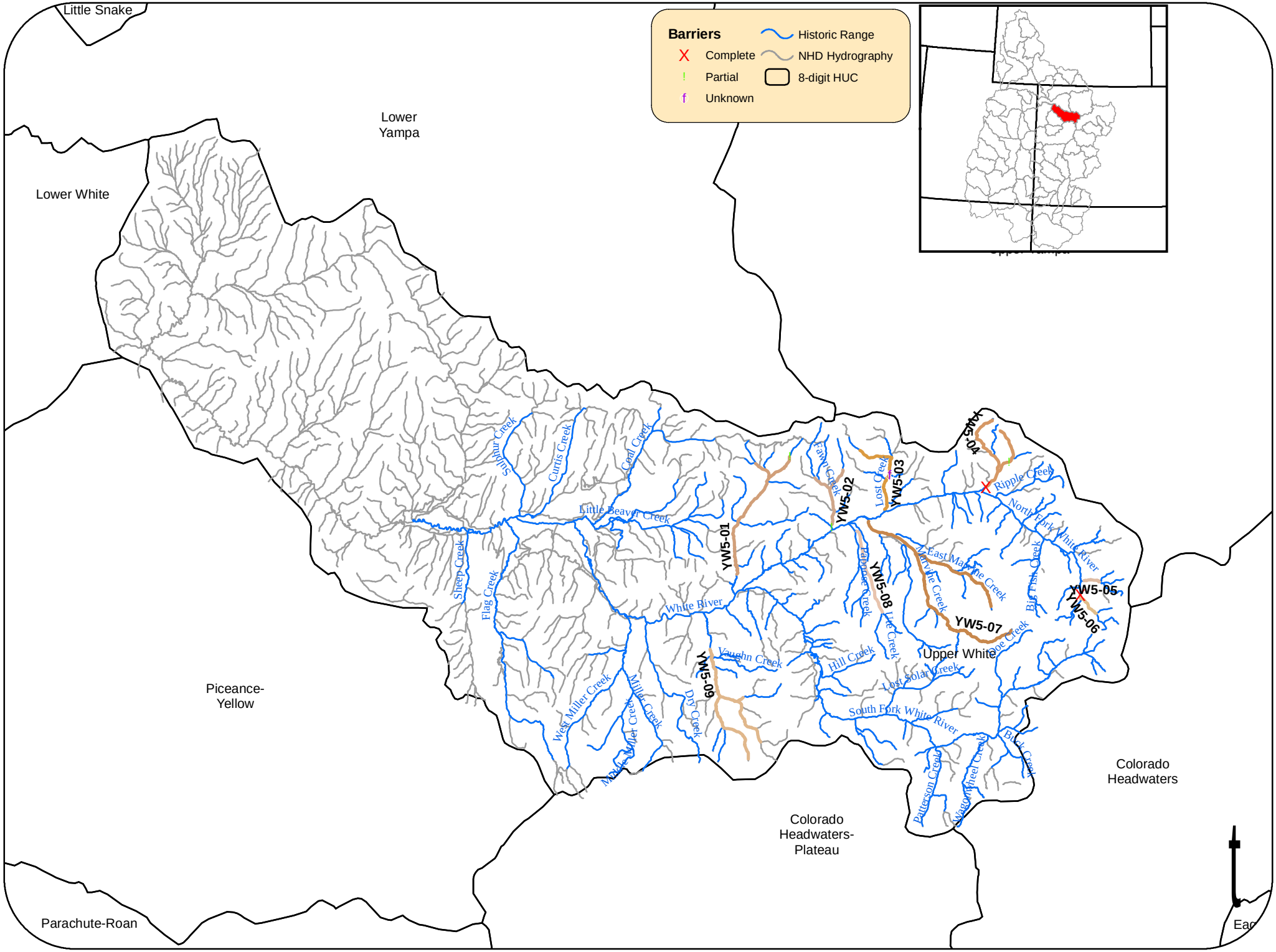
Muddy (14050004)



14050004 Muddy

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW4-01***	*9.18*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: GR871240C	Littlefield Creek	14050004cd001	Unaltered	0 to 50 fish	Good	5 to 10 feet	None


Yampa GMU
Upper White (14050005)
Barriers
Complete
Partial
Unknown
Historic Range
NHD Hydrography
8-digit HUC
Little Snake
Lower Yampa
Lower White
Piceance-Yellow
Parachute-Roan
Colorado Headwaters-Plateau
Colorado Headwaters
Upper White
YW5-01
YW5-02
YW5-03
YW5-04
YW5-05
YW5-06
YW5-07
YW5-08
YW5-09
Sulphur Creek
Curtis Creek
Coal Creek
Little Beaver Creek
Sheep Creek
Flag Creek
White River
Vaughn Creek
West Miller Creek
Miller Creek
Dry Creek
Pawnee Creek
Lost Creek
Ripple Creek
North Fork White River
Tepee Creek
Lee Creek
Marvine Creek
East Marvine Creek
Big Fish Creek
Hill Creek
Lost Solar Creek
South Fork White River
Patterson Creek
Wagonwheel Creek
Buck Creek

14050005 Upper White

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	***YW5-01***	*10.87*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24935	Big Beaver Creek	14050005cd004	Not Tested - Hybridized	Unknown	Fair	10 to 15 feet	RBT
WC: 24935	Big Beaver Creek	14050005cd005	90% - 99%	151 to 400 fish	Good	5 to 10 feet	None
WC: 19522	Allen Creek	14050005cd006	Not Tested - Unaltered	Unknown	Good	< 5 feet	None

Conservation Population	***YW5-02***	*5.18*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 20254	Fawn Creek	14050005cd001	90% - 99%	151 to 400 fish	Excellent	10 to 15 feet	None
WC: 20254	Fawn Creek	14050005cd002	Not Tested - Unaltered	Unknown	Excellent	5 to 10 feet	None
WC: 27892	West Fork Fawn Creek	14050005cd003	Not Tested - Unaltered	Unknown	Excellent	5 to 10 feet	None

Conservation Population	***YW5-03***	*5.96*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species > 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24959	Lost Creek	14050005cd010	Not Tested - Hybridized	Unknown	Excellent	10 to 15 feet	BRK, RBT
WC: 24959	Lost Creek	14050005cd011	Not Tested - Unaltered	151 to 400 fish	Fair	5 to 10 feet	None
WC: 27967	Hahn Creek	14050005cd012	Not Tested - Unaltered	Over 400 fish	Good	< 5 feet	None

Conservation Population	***YW5-04***	*9.32*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22044	Snell Creek	14050005cd013	Unaltered	50 to 150 fish	Excellent	5 to 10 feet	BRK
WC: 22044	Snell Creek	14050005cd014	Not Tested - Unaltered	151 to 400 fish	Good	5 to 10 feet	BRK, RBT
WC: 22044	Snell Creek	14050005cd015	Not Tested - Unaltered	Over 400 fish	Good	5 to 10 feet	None
WC: 22044	Snell Creek	14050005cd016	Not Tested - Unaltered	Unknown	Good	< 5 feet	None

Conservation Population	***YW5-05***	*1.07*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Not Applicable*	*Res, Ad-fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 24721	Little Trappers Lake	14050005cd017	< 80%	Unknown	Good	5 to 10 feet	BRK

Conservation Population	***YW5-06***	*1.76*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22741	North Fork White River	14050005cd018	Not Tested - Unaltered	Unknown	Good	5 to 10 feet	None

14050005 Upper White

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW5-07***	*21.09*	*Weakly Connected*	*Moderate Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 23278	Marvine Creek	14050005cd019	Not Tested - Hybridized	Unknown	Good	10 to 15 feet	BRK, RBT
WC: 21105	East Marvine Creek	14050005cd020	Not Tested - Hybridized	Unknown	Good	5 to 10 feet	BRK, RBT

Conservation Population	***YW5-08***	*5.61*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

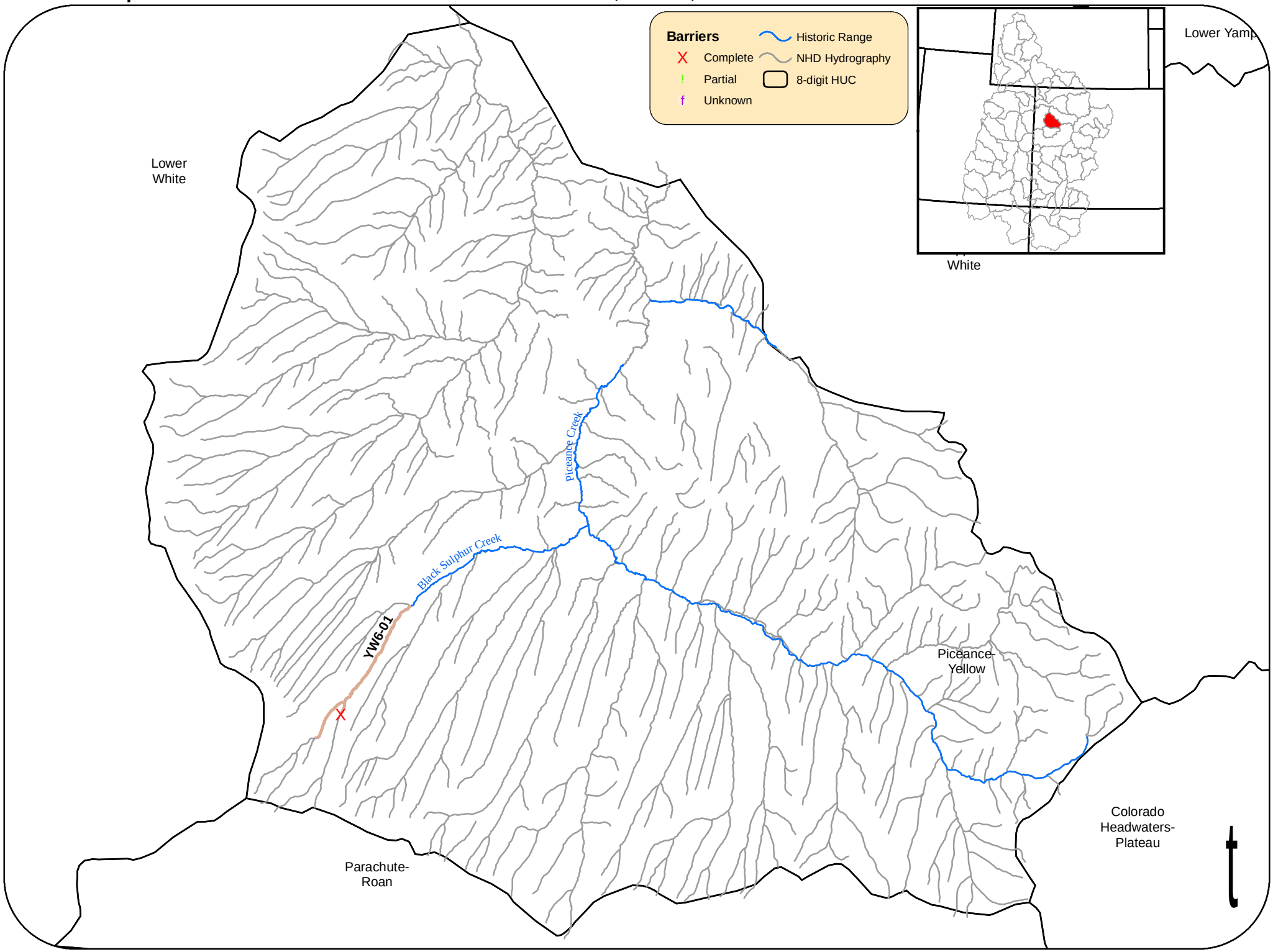
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 22563	Ute Creek	14050005cd021	Not Tested - Hybridized	Unknown	Good	5 to 10 feet	BRK, RBT

Conservation Population	***YW5-09***	*13.91*	*Population Isolated*	*Moderate Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 28111	West Fork North Elk Creek	14050005cd007	Unaltered	50 to 150 fish	Poor	5 to 10 feet	BRK
WC: 20139	North Elk Creek	14050005cd008	Unaltered	151 to 400 fish	Good	10 to 15 feet	BRK
WC: 28109	East Fork North Elk Creek	14050005cd009	Unaltered	0 to 50 fish	Good	< 5 feet	BRK

Yampa GMU

Piceance - Yellow (14050006)



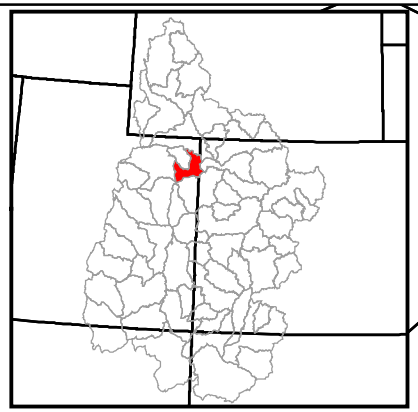
14050006 Piceance-Yellow

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***YW6-01***	*7.58*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 19213	Black Sulphur Creek	14050006cd001	Not Tested - Hybridized	50 to 150 fish	Fair	5 to 10 feet	None
WC: 25266	Canyon Creek	14050006cd002	Not Tested - Hybridized	50 to 150 fish	Fair	< 5 feet	None

Lower Green GMU

Lower Green - Diamond (14060001)



Barriers

- X Complete
- ! Partial
- f Unknown

Historic Range

NHD Hydrography

8-digit HUC

Ashley-Brush

Upper Green-Flaming Gorge Reservoir

Jones Hole Creek

LG1-01

Duchesne

Lower Yampa

Lower Green-Diamond

Lower White

Lower Green-Desolation Canyon

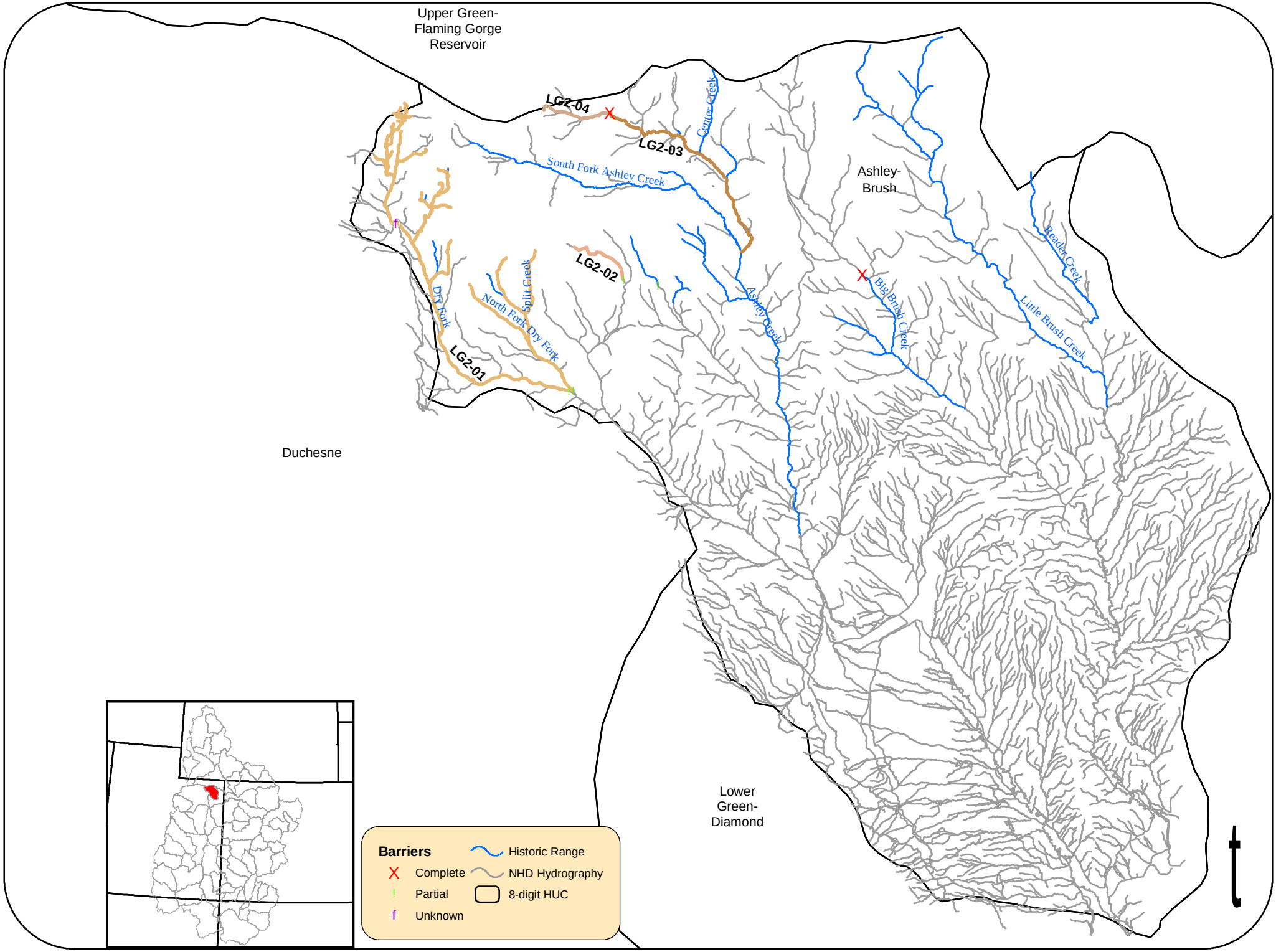
14060001 Lower Green-Diamond

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG1-01***	*0.9*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBM03001	Ely Creek	14060001cd001	Unaltered	151 to 400 fish	Fair	< 5 feet	None

Lower Green GMU

Ashley - Brush (14060002)



14060002 Ashley-Brush

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG2-01***	*46.57*	*Strongly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBH01002	Dry Fork	14060002cd001	Not Tested - Unaltered	0 to 50 fish	Poor	10 to 15 feet	BRK
WC: IIBH01002	Dry Fork	14060002cd003	Not Tested - Unaltered	0 to 50 fish	Good	10 to 15 feet	BRK
WC: IIBH01002	Dry Fork	14060002cd006	Unaltered	0 to 50 fish	Good	10 to 15 feet	BRK
WC: IIBH01002	Dry Fork	14060002cd007	Unaltered	0 to 50 fish	Excellent	5 to 10 feet	BRK
WC: 72	Reynolds Creek	14060002cd008	Unaltered	0 to 50 fish	Excellent	5 to 10 feet	BRK
WC: 124	Unnamed Trib. #5 to Dry Fork	14060002cd009	Unaltered	0 to 50 fish	Good	5 to 10 feet	BRK
WC: IIBH01002	Dry Fork	14060002cd010	Unaltered	0 to 50 fish	Good	5 to 10 feet	BRK
WC: 120	Unnamed Trib. #4 to Dry Fork	14060002cd012	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 115	Unnamed Trib. #3 to Dry Fork	14060002cd013	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 106	Unnamed Trib. #2 to Dry Fork	14060002cd014	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 96	Unnamed Trib. #1 to Dry Fork	14060002cd015	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 126	Unnamed Trib. #6 to Dry Fork	14060002cd016	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 127	Unnamed Trib. #7 to Dry Fork	14060002cd017	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 155	Unnamed Tributary to Trib. #7 to Dry Fork	14060002cd018	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 91l	Twin Lakes	14060002cd019	Unaltered	0 to 50 fish	Good	< 5 feet	BRK
WC: 91l	Twin Lakes	14060002cd020	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 17li	E. Twin Lakes Inlet	14060002cd021	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 56li	N. Twin Lakes Inlet	14060002cd022	Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: IIBH010D01	Corral Park	14060002cd023	Not Tested - Unaltered	0 to 50 fish	Fair	< 5 feet	BRK, RBT
WC: IIBH010C01	Split Creek	14060002cd024	Not Tested - Unaltered	0 to 50 fish	Good	5 to 10 feet	BRK
WC: IIBH010C01	North Fork Dry Fork	14060002cd026	Not Tested - Unaltered	0 to 50 fish	Fair	< 5 feet	BRK
WC: 135	Unnamed Trib. to Split Creek	14060002cd027	Not Tested - Unaltered	0 to 50 fish	Fair	< 5 feet	BRK

Conservation Population	***LG2-02***	*2.74*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species > 10 km*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 84	South Brownie Creek	14060002cd028	Unaltered	151 to 400 fish	Fair	10 to 15 feet	None

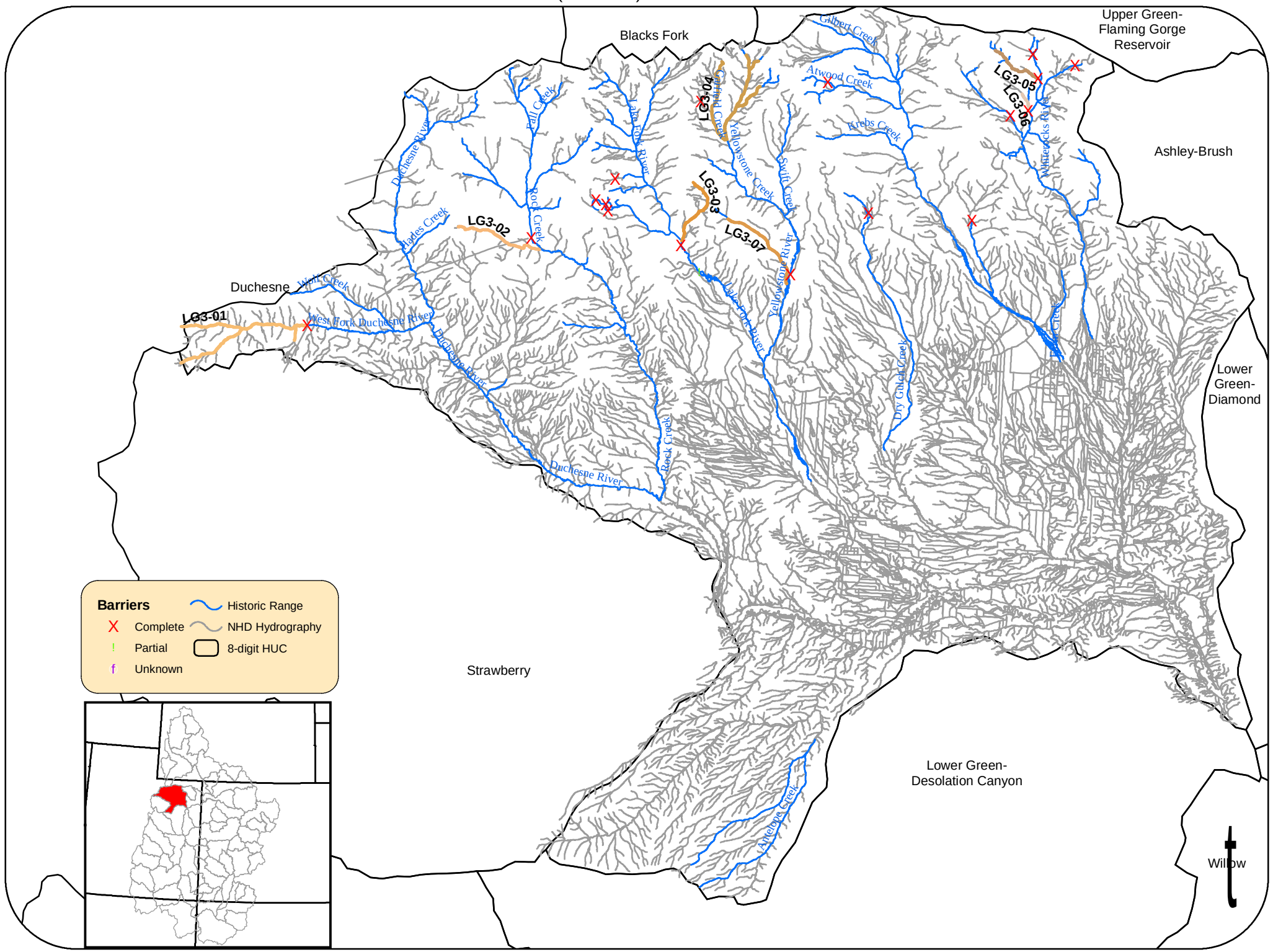
Conservation Population	***LG2-03***	*9.43*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBH07001	North Fork Ashley Creek	14060002cd032	Not Tested - Hybridized	50 to 150 fish	Good	20 to 25 feet	RBT
WC: IIBH07001	North Fork Ashley Creek	14060002cd033	Not Tested - Hybridized	50 to 150 fish	Good	20 to 25 feet	RBT
WC: IIBH07001	North Fork Ashley Creek	14060002cd034	Not Tested - Hybridized	50 to 150 fish	Good	10 to 15 feet	RBT

14060002 Ashley-Brush

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG2-04***	*2.88*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species are sympatric*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBH07001	North Fork Ashley Creek	14060002cd035	Not Tested - Hybridized	0 to 50 fish	Good	5 to 10 feet	BRK, RBT


Lower Green GMU
Duchesne (14060003)
Blacks Fork
Upper Green-Flaming Gorge Reservoir
Ashley-Brush
Lower Green-Diamond
Strawberry
Lower Green-Desolation Canyon
Willow
Duchesne
LG3-01
LG3-02
LG3-03
LG3-04
LG3-05
LG3-06
LG3-07
Gilbert Creek
Atwood Creek
Krebs Creek
Whiterocks River
Swift Creek
Yellowstone River
Yellowstone Creek
Garfield Creek
Fall Creek
Rock Creek
Duchesne River
Hades Creek
Uinta River
Dry Gulch Creek
Lake Fork River
Antelope Creek
Wolf Creek
West Fork Duchesne River
Barriers
Complete
Partial
Unknown
Historic Range
NHD Hydrography
8-digit HUC

14060003 Duchesne

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG3-01***	*17.64*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 173	W. Unnamed Trib. to West Fork Duchesne River	14060003cd001	Unaltered	151 to 400 fish	Good	20 to 25 feet	None
WC: IIBE150F01	Vat Creek	14060003cd002	Not Tested - Unaltered	0 to 50 fish	Poor	< 5 feet	None
WC: IIBE150I01	Little West Fork	14060003cd003	Not Tested - Unaltered	0 to 50 fish	Poor	5 to 10 feet	None

Conservation Population	***LG3-02***	*7.06*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE100G01	South Fork Rock Creek	14060003cd006	Unaltered	50 to 150 fish	Good	10 to 15 feet	BRK

Conservation Population	***LG3-03***	*6.1*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE020C01	Fish Creek	14060003cd022	Not Tested - Hybridized	0 to 50 fish	Good	10 to 15 feet	BRK, YCT

Conservation Population	***LG3-04***	*18.12*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE020B04	Garfield Creek	14060003cd029	Not Tested - Hybridized	151 to 400 fish	Good	15 to 20 feet	BRK, YCT
WC: IIBE020B04	Yellowstone Creek	14060003cd030	Unaltered	50 to 150 fish	Good	10 to 15 feet	BRK, YCT
WC: 27	E. Unnamed Trib. to Yellowstone Creek	14060003cd031	Not Tested - Hybridized	0 to 50 fish	Fair	< 5 feet	BRK, YCT
WC: IIBE020B05	Milk Creek	14060003cd032	Not Tested - Hybridized	50 to 150 fish	Good	10 to 15 feet	BRK, YCT

Conservation Population	***LG3-05***	*4.51*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE010C06	Reader Lakes Outlet	14060003cd059	Unaltered	0 to 50 fish	Good	5 to 10 feet	BRK
WC: IIBE010C06	Reader Lakes Outlet	14060003cd060	Unaltered	0 to 50 fish	Good	5 to 10 feet	BRK

Conservation Population	***LG3-06***	*1.45*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Not Applicable*	*Res*

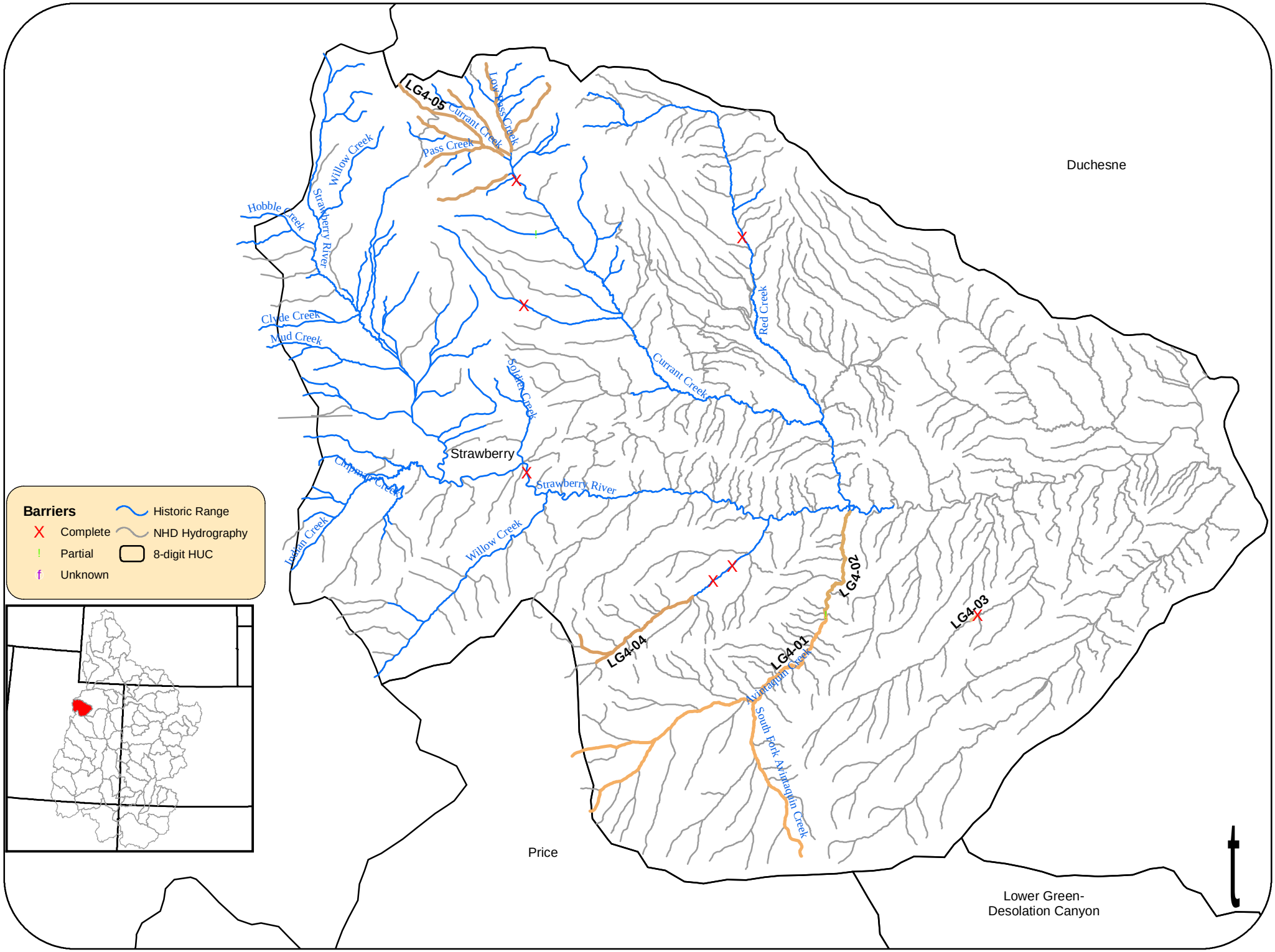
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 174	W. Unnamed Trib. To Whiterocks River	14060003cd056	Not Tested - Unaltered	151 to 400 fish	Good	5 to 10 feet	None

Conservation Population	***LG3-07***	*7.5*	*Population Isolated*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE020B01	Hells Canyon	14060003cd025	Not Tested - Unaltered	0 to 50 fish	Fair	< 5 feet	None

Lower Green GMU

Strawberry (14060004)



14060004 Strawberry

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG4-01***	*30.15*	*Moderately Connect*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE060G02	West Fork Avintaquin Creek	14060004cd003	Unaltered	0 to 50 fish	Fair	10 to 15 feet	BRN
WC: IIBE060G04	South Fork Avintaquin Creek	14060004cd004	Unaltered	0 to 50 fish	Poor	5 to 10 feet	None
WC: IIBE060G02	West Fork Avintaquin Creek	14060004cd005	Unaltered	0 to 50 fish	Fair	5 to 10 feet	BRN
WC: IIBE060G07	Mill Hollow	14060004cd006	Unaltered	151 to 400 fish	Poor	5 to 10 feet	None

Conservation Population	***LG4-02***	*6.68*	*Weakly Connected*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Core Conservation Population*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE060G01	Avintaquin Creek	14060004cd002	Unaltered	0 to 50 fish	Fair	10 to 15 feet	BRN

Conservation Population	***LG4-03***	*0.4*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Ad-fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE060C01	Lake Canyon Lake	14060004cd001	Unaltered	Unknown	Unknown	Unknown	BRK, RBT

Conservation Population	***LG4-04***	*7.93*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

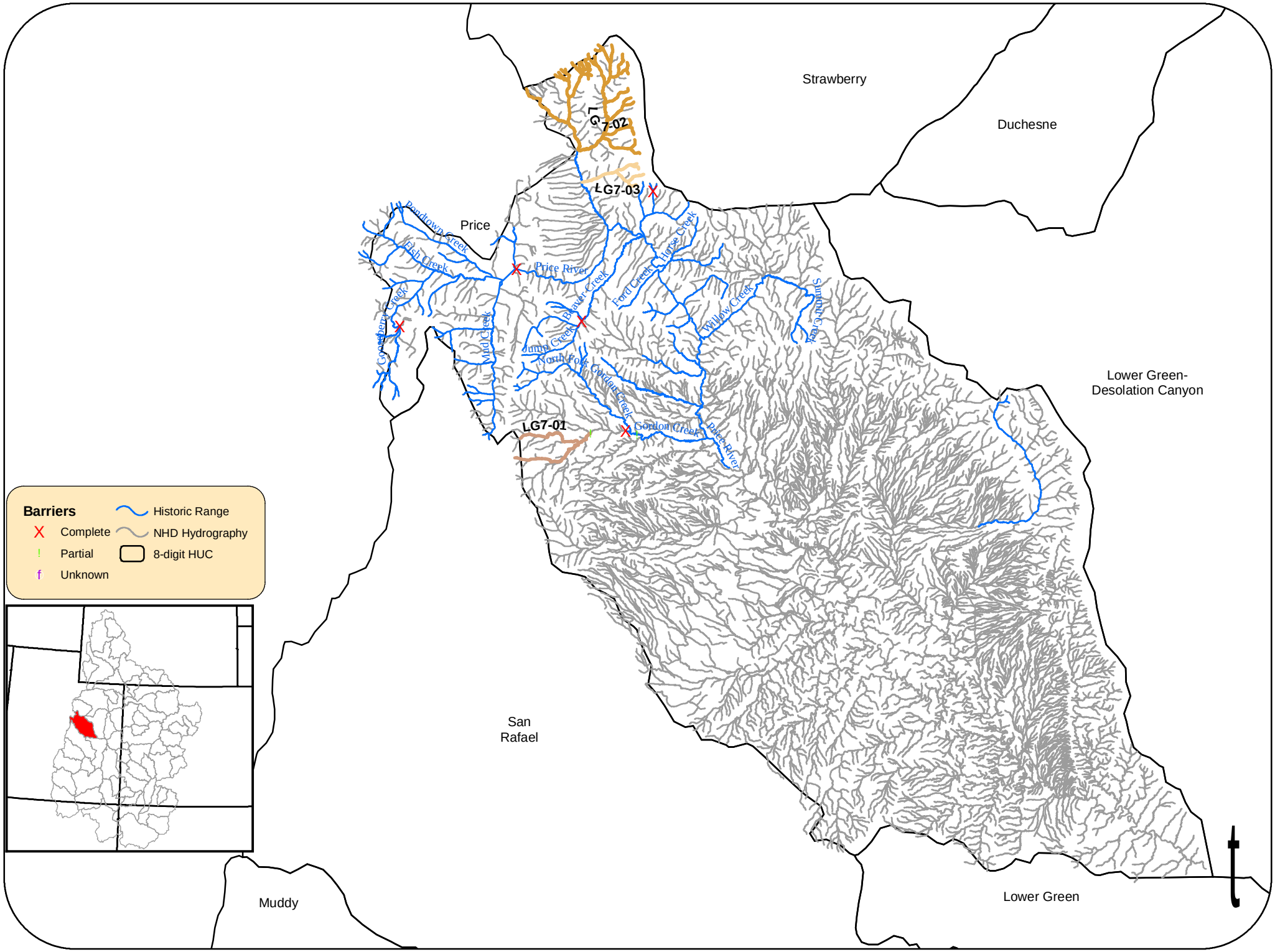
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE060H01	Timber Canyon	14060004cd007	Unaltered	151 to 400 fish	Fair	5 to 10 feet	BRN
WC: IIBE060H01	Timber Canyon	14060004cd008	Unaltered	0 to 50 fish	Poor	< 5 feet	None
WC: 81	Shotgun Draw	14060004cd009	Unaltered	0 to 50 fish	Poor	< 5 feet	None

Conservation Population	***LG4-05***	*28.58*	*Strongly Connected*	*Minimal Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIBE060F01	Racetrack Creek	14060004cd013	Unaltered	151 to 400 fish	Fair	< 5 feet	BRK
WC: IIBE060F01	Pass Creek	14060004cd014	Not Tested - Unaltered	0 to 50 fish	Fair	5 to 10 feet	None
WC: IIBE060F01	South Fork Currant Creek	14060004cd015	Not Tested - Unaltered	0 to 50 fish	Fair	5 to 10 feet	None
WC: IIBE060F01	Currant Creek	14060004cd016	Not Tested - Unaltered	50 to 150 fish	Fair	5 to 10 feet	None
WC: IIBE060F01	Right Fork Currant Creek	14060004cd017	Unaltered	Over 400 fish	Fair	10 to 15 feet	None
WC: IIBE060F01J	Low Pass Creek	14060004cd018	Not Tested - Unaltered	0 to 50 fish	Fair	5 to 10 feet	None
WC: 47	Jones Cabin Creek	14060004cd019	Not Tested - Unaltered	0 to 50 fish	Fair	< 5 feet	None

Lower Green GMU

Price (14060007)



14060007 Price

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG7-01***	*13.78*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAK100B02	Second Water Canyon	14060007cd001	Unaltered	Unknown	Good	5 to 10 feet	TRT
WC: IIAK100B01	First Water Canyon	14060007cd002	Unaltered	Unknown	Good	5 to 10 feet	TRT

14060007 Price

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG7-02***	*59.35*	*Strongly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAK190B01	Left Fork White River	14060007cd006	Unaltered	Unknown	Fair	5 to 10 feet	None
WC: IIAK190B01	Middle Fork White River	14060007cd007	Unaltered	Unknown	Fair	5 to 10 feet	None
WC: 64	N. Unnamed Trib. to Watch Canyon	14060007cd008	Unaltered	Unknown	Unknown	Unknown	None
WC: 172	W. Unnamed Trib. to Watch Canyon	14060007cd009	Not Tested - Unaltered	Unknown	Unknown	Unknown	None
WC: 158	Unnamed Tributary to W. Trib. to Watch Canyon	14060007cd010	Not Tested - Unaltered	Unknown	Unknown	Unknown	None
WC: 177	Watch Canyon	14060007cd011	Not Tested - Unaltered	Unknown	Unknown	Unknown	None
WC: 99	Unnamed Trib. #1 to Middle Fork White River	14060007cd012	Unaltered	Unknown	Unknown	Unknown	None
WC: 154	Unnamed Tributary to Trib. #1 to Middle Fork White River	14060007cd013	Unaltered	Unknown	Unknown	Unknown	None
WC: 109	Unnamed Trib. #2 to Middle Fork White River	14060007cd014	Unaltered	Unknown	Unknown	Unknown	None
WC: 117	Unnamed Trib. #3 to Middle Fork White River	14060007cd016	Unaltered	Unknown	Unknown	Unknown	None
WC: 122	Unnamed Trib. #4 to Middle Fork White River	14060007cd017	Unaltered	Unknown	Unknown	Unknown	None
WC: 103	Unnamed Trib. #1 to Trib. #4 to Middle Fork White River	14060007cd018	Unaltered	Unknown	Unknown	Unknown	None
WC: 112	Unnamed Trib. #2 to Trib. #4 to Middle Fork White River	14060007cd019	Unaltered	Unknown	Unknown	Unknown	None
WC: IIAK190A01	Unnamed Trib. #2 to Right Fork White River	14060007cd020	Unaltered	50 to 150 fish	Fair	5 to 10 feet	None
WC: 102	Unnamed Trib. #1 to Right Fork White River	14060007cd021	Unaltered	Unknown	Unknown	Unknown	None
WC: 102	Unnamed Trib. #1 to Right Fork White River	14060007cd022	Unaltered	Unknown	Unknown	Unknown	None
WC: IIAK190A01	Unnamed Trib. #2 to Right Fork White River	14060007cd023	Unaltered	Unknown	Unknown	Unknown	None
WC: IIAK190A01	Right Fork White River	14060007cd024	Unaltered	Unknown	Unknown	Unknown	None
WC: 118	Unnamed Trib. #3 to Right Fork White River	14060007cd025	Unaltered	Unknown	Unknown	Unknown	None
WC: 118	Unnamed Trib. #3 to Right Fork White River	14060007cd026	Unaltered	Unknown	Unknown	Unknown	None
WC: 105	Unnamed Trib. #2 to Trib. #3 to Right Fork White River	14060007cd027	Unaltered	Unknown	Unknown	Unknown	None
WC: IIAK190A03	Trail Canyon	14060007cd028	Unaltered	Unknown	Unknown	> 25 feet	None
WC: 102	Unnamed Trib. #1 to Right Fork White River	14060007cd029	Unaltered	Unknown	Unknown	Unknown	None
WC: 102	Unnamed Trib. #1 to Right Fork White River	14060007cd030	Unaltered	Unknown	Unknown	Unknown	None
WC: IIAK190A02	Trail Hollow	14060007cd031	Unaltered	50 to 150 fish	Good	Unknown	None
WC: 153	Unnamed Tributary to Trail Hollow	14060007cd032	Unaltered	Unknown	Good	Unknown	None
WC: IIAK190A01	Johnson Fork	14060007cd033	Unaltered	151 to 400 fish	Fair	Unknown	None
WC: IIAK190A01	Johnson Fork	14060007cd034	Unaltered	Unknown	Fair	Unknown	None

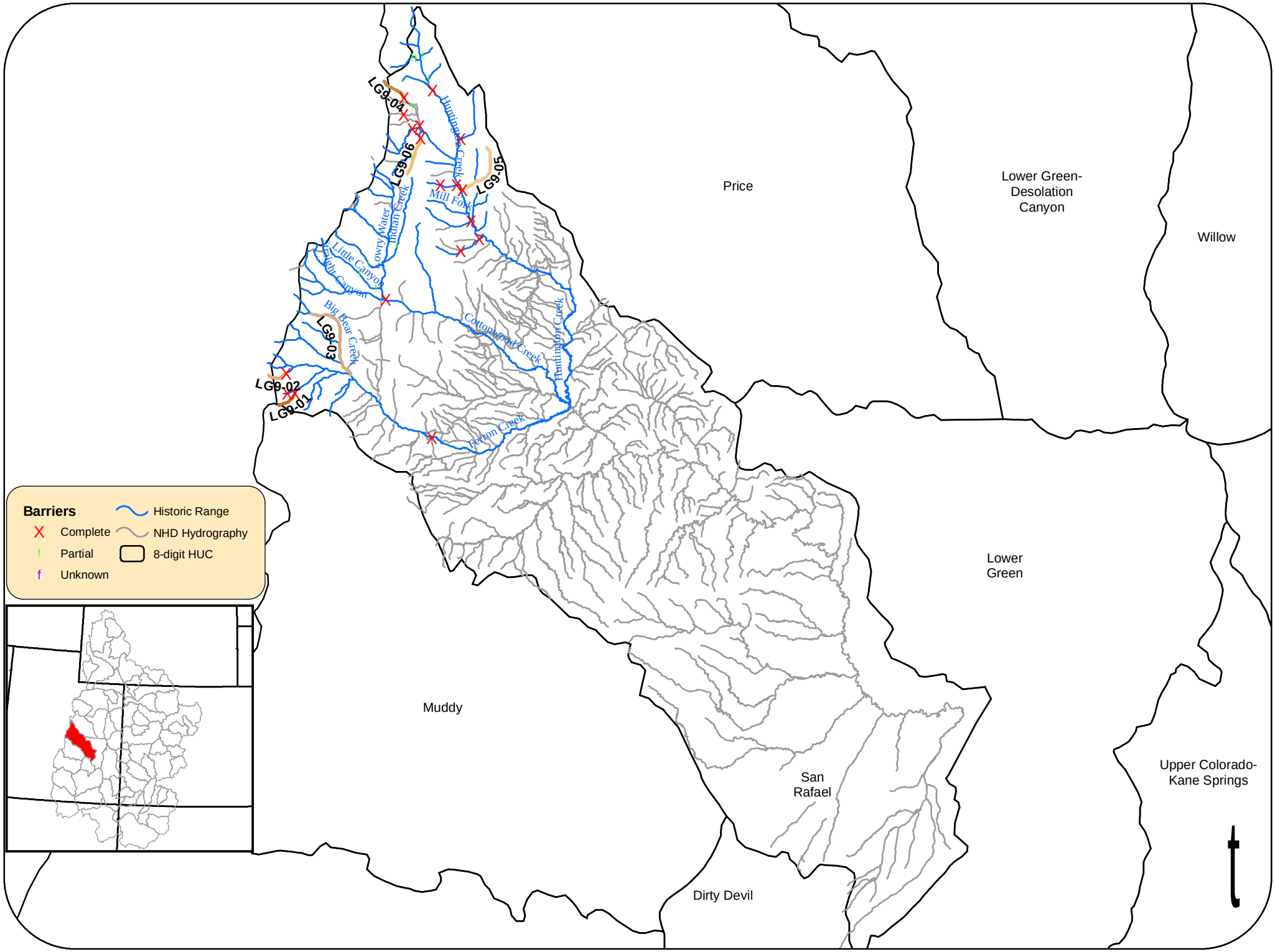
14060007 Price

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG7-03***	*8.97*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAK190C01	Tabbyune Creek	14060007cd036	Unaltered	151 to 400 fish	Fair	5 to 10 feet	None
WC: 63	N. Unnamed Trib. to Tabbyune Creek	14060007cd037	Unaltered	Unknown	Fair	Unknown	None
WC: 26	E. Unnamed Trib. to Tabbyune Creek	14060007cd038	Unaltered	Unknown	Unknown	Unknown	None
WC: 144	Unnamed Tributary to E. trib. to Tabbyune Creek	14060007cd039	Unaltered	Unknown	Unknown	Unknown	None

Lower Green GMU

San Rafael (14060009)



14060009 San Rafael

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LG9-01***	*2.22*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAI120I010	Indian Creek	14060009cd001	Unaltered	Unknown	Good	5 to 10 feet	None

Conservation Population	***LG9-02***	*2.11*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAI120J01	Duck Fork	14060009cd002	Unaltered	Unknown	Good	10 to 15 feet	TRT

Conservation Population	***LG9-03***	*9.02*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Other*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAI120G01	Big Bear Creek	14060009cd003	Not Tested - Unaltered	0 to 50 fish	Fair	10 to 15 feet	None

Conservation Population	***LG9-04***	*2.81*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAI130M06	Left Fork Huntington Creek	14060009cd008	Unaltered	0 to 50 fish	Good	5 to 10 feet	TRT

Conservation Population	***LG9-05***	*6.19*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

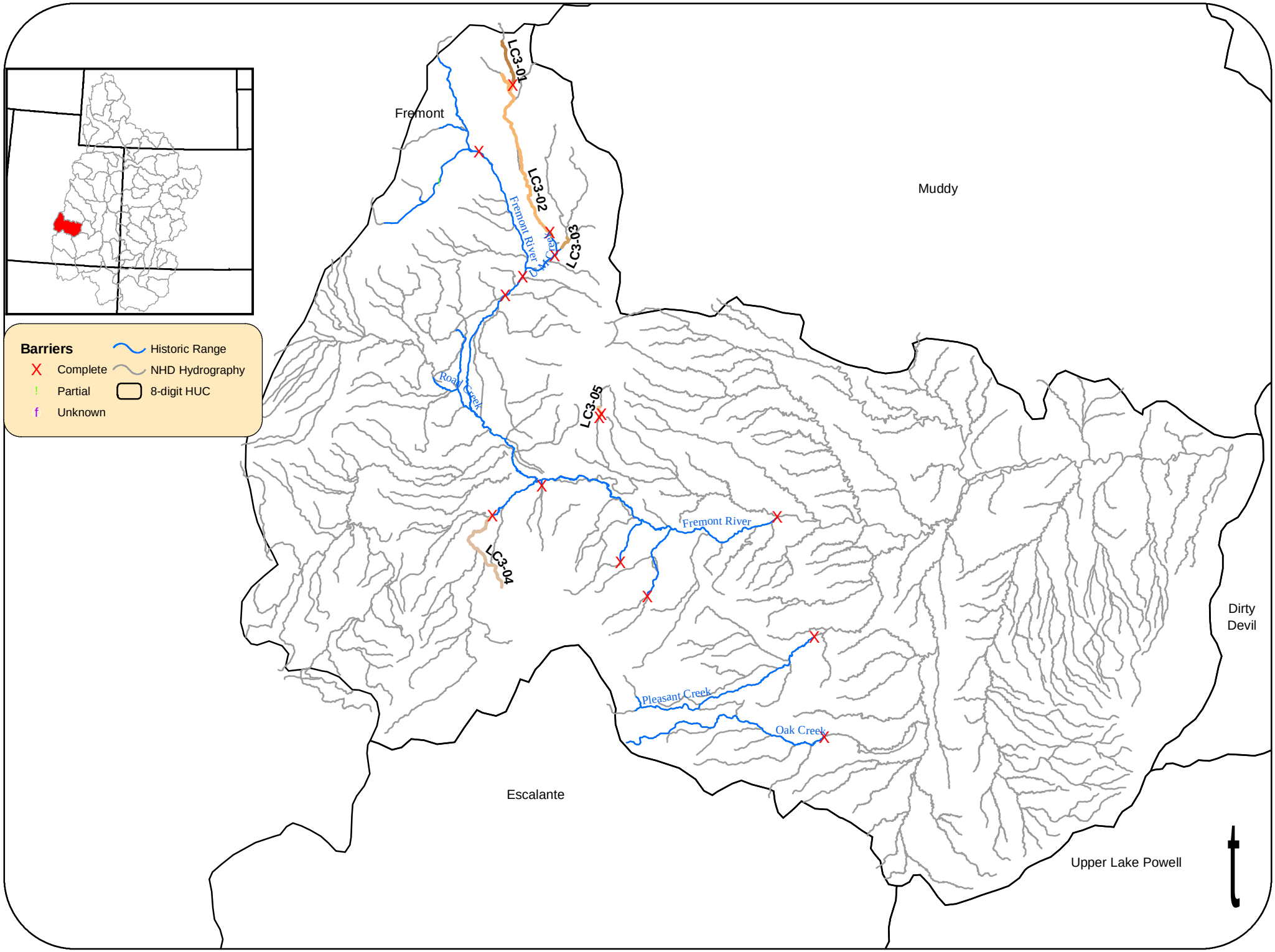
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAI130I01	Tie Fork Canyon	14060009cd011	Unaltered	151 to 400 fish	Fair	Unknown	None
WC: IIAI130I020	Gentry Hollow	14060009cd012	Unaltered	50 to 150 fish	Good	< 5 feet	None

Conservation Population	***LG9-06***	*4.07*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IIAI130M01	Scad Valley Creek	14060009cd005	Not Tested - Unaltered	151 to 400 fish	Fair	< 5 feet	BRN

Lower Colorado GMU

Fremont (14070003)



14070003 Fremont

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LC3-01***	*3.21*	*Population Isolated*	*Moderate Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAZ130Z02	U M Creek	14070003cd005	Unaltered	151 to 400 fish	Poor	5 to 10 feet	None

Conservation Population	***LC3-02***	*13.45*	*Weakly Connected*	*Population is Infected*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAZ130Z02	U M Creek	14070003cd003	Unaltered	50 to 150 fish	Fair	10 to 15 feet	TRT
WC: IAZ130Z020	Left Fork U M Creek	14070003cd004	Unaltered	0 to 50 fish	Poor	< 5 feet	TRT

Conservation Population	***LC3-03***	*1.28*	*Weakly Connected*	*Population is Infected*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res, Ad-fluv*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAZ130Z010	Short Creek	14070003cd001	Unaltered	50 to 150 fish	Fair	< 5 feet	TRT
WC: IAZ130Z02	U M Creek	14070003cd002	Unaltered	0 to 50 fish	Fair	10 to 15 feet	TRT

Conservation Population	***LC3-04***	*7.18*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

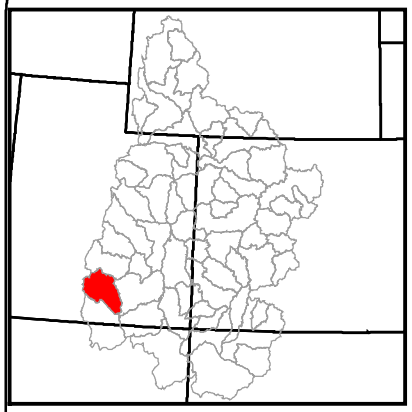
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAZ130U02	Pine Creek	14070003cd006	Unaltered	0 to 50 fish	Good	5 to 10 feet	None

Conservation Population	***LC3-05***	*0.92*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAZ130M01	Sand Creek	14070003cd007	Unaltered	0 to 50 fish	Poor	< 5 feet	None

Lower Colorado GMU

Escalante (14070005)



Barriers

- Complete
- Partial
- Unknown

Historic Range

NHD Hydrography

8-digit HUC

LC5-01

LC5-02

LC5-03

LC5-04

LC5-05

LC5-06

LC5-07

LC5-08

LC5-09

North Creek

Pine Creek

Sweetwater Creek

Lake Creek

Boulder Creek

Deer Creek

Fremont

Upper Lake Powell

Lower Lake Powell

Escalante

14070005 Escalante

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LC5-01***	*0.33*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAJ170B01	Water Canyon	14070005cd001	Unaltered	50 to 150 fish	Poor	< 5 feet	None

Conservation Population	***LC5-02***	*1.39*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAJ160E01	White Creek	14070005cd002	Unaltered	151 to 400 fish	Good	5 to 10 feet	None

Conservation Population	***LC5-03***	*2.84*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: IAJ160F01	Twitchell Creek	14070005cd003	Unaltered	50 to 150 fish	Good	5 to 10 feet	TRT

Conservation Population	***LC5-04***	*0.44*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 16l	Dougherty Basin Inlet	14070005cd006	Unaltered	Unknown	Good	< 5 feet	BRK

Conservation Population	***LC5-05***	*8.1*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 68	Pine Creek	14070005cd004	Unaltered	Over 400 fish	Excellent	10 to 15 feet	None
WC: 111	Unnamed Trib. #2 to Pine Creek	14070005cd005	Unaltered	151 to 400 fish	Excellent	5 to 10 feet	None

Conservation Population	***LC5-06***	*2.98*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 30	East Fork Boulder Creek	14070005cd007	Unaltered	Over 400 fish	Good	5 to 10 feet	None

Conservation Population	***LC5-07***	*3.79*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 30	East Fork Boulder Creek	14070005cd011	Unaltered	Over 400 fish	Good	5 to 10 feet	None

Conservation Population	***LC5-08***	*0.61*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 128	Unnamed Trib. to Boulder Creek	14070005cd009	Unaltered	Over 400 fish	Excellent	15 to 20 feet	None

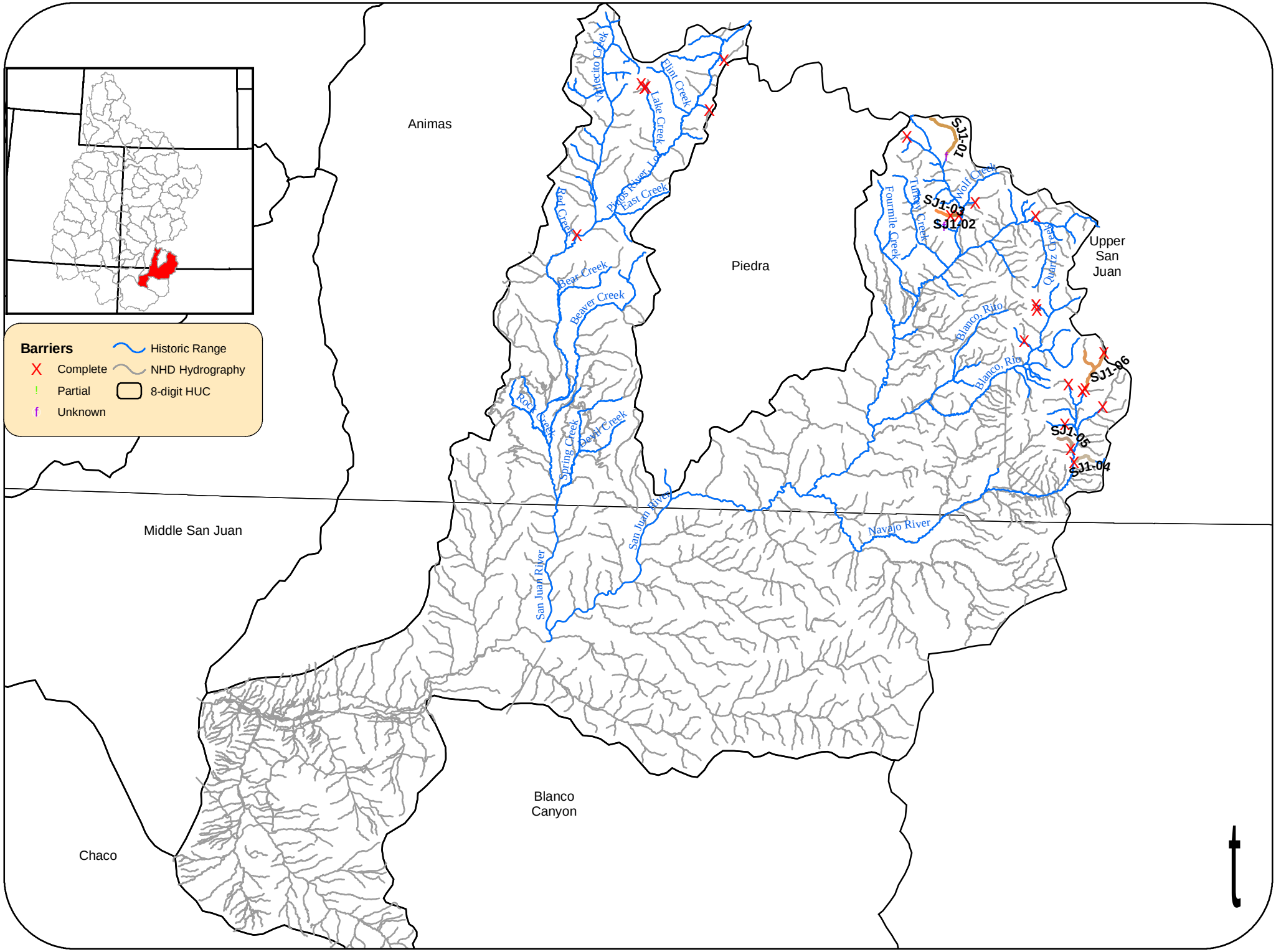
14070005 Escalante

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***LC5-09***	*3.04*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species are sympatric*	*Known or Probable Unique Life History*	*Sink*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 128	Unnamed Trib. to Boulder Creek	14070005cd010	Not Tested - Hybridized	50 to 150 fish	Excellent	20 to 25 feet	BRK, RBT

San Juan GMU

Upper San Juan (14080101)



14080101 Upper San Juan

		Stream Miles	Connectivity of Conservation Population	Disease Risk	Hybridization Risk	Population Qualifier	Source or Sink	Life History
Conservation Population	***SJ1-01***	*5.68*	*Population Isolated*	*Limited Disease Risk*	*Hybridizing species < 10 km*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 38275	Beaver Creek	14080101cd003	90% - 99%	Over 400 fish	Excellent	15 to 20 feet	None

Conservation Population	***SJ1-02***	*0.85*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Sink*	*Res*

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 39502	Himes Creek	14080101cd002	Unaltered	50 to 150 fish	Good	5 to 10 feet	BRK

Conservation Population	***SJ1-03***	*1.55*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 39502	Himes Creek	14080101cd001	Unaltered	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***SJ1-04***	*2.51*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 39491	Headache Creek	14080101cd004	Unaltered	50 to 150 fish	Good	5 to 10 feet	BRK

Conservation Population	***SJ1-05***	*2.22*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

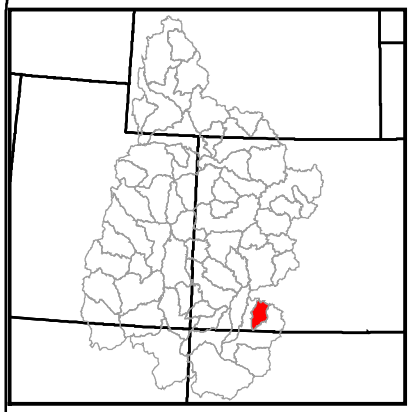
Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 39415	Cutthroat Creek	14080101cd005	90% - 99%	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***SJ1-06***	*6.66*	*Weakly Connected*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Source*	*Res*

Ind. Pops.:	Stream Name	Population ID	Genetic Status	Adult CRCT/mi	Habitat	Stream Width	Non Natives
WC: 49064	Navajo River	14080101cd008	Unaltered	Over 400 fish	Good	15 to 20 feet	BRK
WC: 44486	Augustora Creek	14080101cd009	Unaltered	50 to 150 fish	Fair	15 to 20 feet	None

San Juan GMU

Piedra (14080102)



Barriers

- Complete
- Partial
- Unknown
- Historic Range
- NHD Hydrography
- 8-digit HUC

Upper San Juan

Piedra

SJ2-01

SJ2-02

Milk Creek
Hossick Creek
Indian Creek
Falls Creek
Shaw Creek
Bear Creek
Middle Fork Piedra River
Lean Creek
North Fork Sand Creek
Little Sand Creek
Weminuche Creek
Piedra River
Pagosa Creek
Mosca Creek
Coldwater Creek
Sand Creek
Trail Creek
Williams Creek
O'Neal Creek
Plumtaw Creek
Trout Creek
Red Creek
First Fork Piedra River
Heflin Creek
West Fork Devil Creek
Devil Creek
Dutton Creek
Horse Creek
Yellowjacket Creek
Squaw Creek
Stollsteimer Creek

14080102 **Piedra**

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***SJ2-01***	*8.56*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

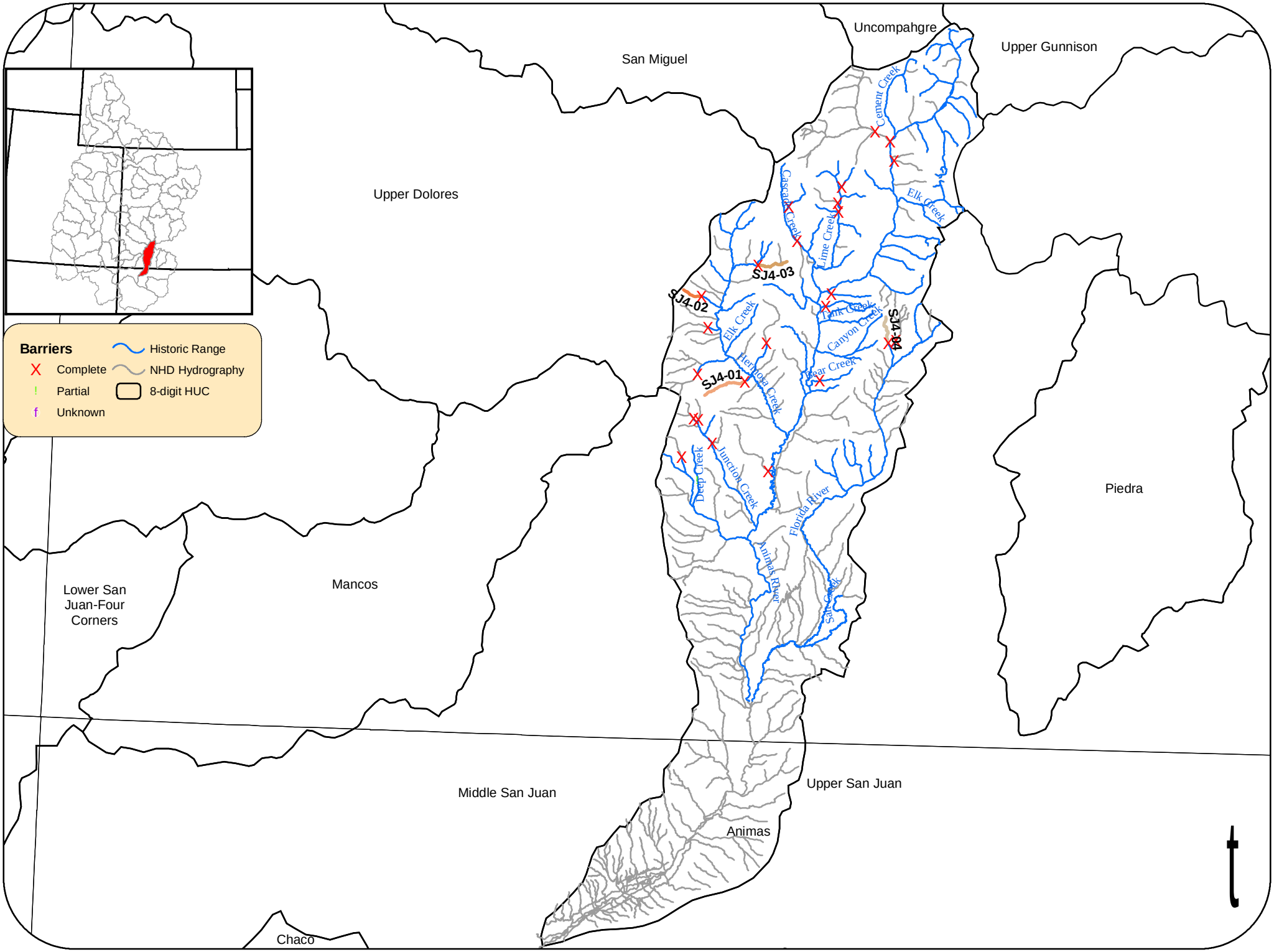
Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 42096	Piedra River	14080102cd001	Unaltered	151 to 400 fish	Excellent	20 to 25 feet	None

Conservation Population	***SJ2-02***	*1.93*	*Population Isolated*	*Limited Disease Risk*	*No Risk of Hybridization*	*Other*	*Source*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 43977	Shaw Creek	14080102cd002	Not Tested - Hybridized	50 to 150 fish	Good	5 to 10 feet	None

San Juan GMU

Animas (14080104)



14080104 Animas

		Stream Miles	*Connectivity of Conservation Population*	*Disease Risk*	*Hybridization Risk*	*Population Qualifier*	*Source or Sink*	*Life History*
Conservation Population	***SJ4-01***	*4.15*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 47565	Clear Creek	14080104cd001	Unaltered	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***SJ4-02***	*1.88*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 47325	Big Bend Creek	14080104cd002	Unaltered	50 to 150 fish	Good	5 to 10 feet	None

Conservation Population	***SJ4-03***	*3.15*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Core Conservation Population*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 47628	East Fork Hermosa Creek	14080104cd003	Unaltered	151 to 400 fish	Fair	5 to 10 feet	None

Conservation Population	***SJ4-04***	*2.75*	*Population Isolated*	*Minimal Disease Risk*	*No Risk of Hybridization*	*Known or Probable Unique Life History*	*Not Applicable*	*Res*

Ind. Pops.:	**Stream Name**	**Population ID**	**Genetic Status**	**Adult CRCT/mi**	**Habitat**	**Stream Width**	**Non Natives**
WC: 43923	West Virginia Gulch	14080104cd018	Not Tested - Unaltered	50 to 150 fish	Good	5 to 10 feet	None