

San Miguel River Restoration Assessment SUMMARY

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Assessment Management Team

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Abstract: **The San Miguel River Restoration Assessment**

The *San Miguel River Restoration Assessment* was conceived to merge scientific information with stakeholder consensus to analyze and prioritize possible restoration sites on the main stem of the San Miguel, and on major tributaries.

The San Miguel River, in southwest Colorado, is one of the west's last free flowing rivers. Although there are some impoundments on tributaries and some diversions, the river is, essentially, hydrologically intact. Attributable to this are the native riparian plant communities found in the river corridor. Scientific studies recognize the San Miguel as harboring one of the longest and highest-quality stretches of high-quality deciduous and evergreen riparian forests and shrublands (about 80 miles) in the western United States. These studies also establish the ecologic, hydrologic and geomorphologic context in which these San Miguel riparian communities exist.

The watershed supports at least eleven known globally-rare riparian plant communities, 9 high-quality examples of more common plant communities, 6 globally rare animals (including 2 fish), 16 globally rare plants, and 12 declining species (including 2 fish). Declining species are species declining through all or a significant part of their ranges.

The goals of this *San Miguel River Restoration Assessment* are to:

- 1) Identify elements of biodiversity, their condition, and the ecological and hydrological processes that sustain them;
- 2) Identify and prioritize restoration reaches and activities that will help restore and maintain those elements and processes.

To assist with the prioritization of restoration activities and sites, the assessment included a stakeholder outreach component. Watershed stakeholders were interviewed and/or participated in facilitated meetings to describe unique, local political, economic and social factors relevant to the prioritization process.

The study found that, for the most part, human caused degradation in the San Miguel River corridor is site specific. A variety of human activities degrade specific sites, altering local hydrology, and impacting and fragmenting riparian and aquatic habitat. This restoration assessment identifies those specific sites and the reaches they lie within, and prioritizes them based on projected benefits of restoration to biodiversity.

In all, seventeen potential restoration sites were identified. Five reaches were selected as highest priority, though restoration of any of the sites identified is valuable and each should be pursued subject to local interest and opportunity.

One important addition to the recommendation to restore specific sites is the recommendation that the ice flow phenomenon more carefully studied. Ice flows originate in the South Fork and move more than 20 miles downriver. These releases scour the channel and banks of the river, damage riparian vegetation, destabilize banks, cause erosion and may impact fish habitat. The intensity of ice releases and ice flows appears to be increasing, and may be related to winter water releases from the Ames Power Plant. If studies prove such to be the case, controlling or at least lessening the impact of ice flows may be possible by altering water releases from the Ames plant at critical times of the year.

The following is printed under separate cover as:

San Miguel River Restoration Assessment

Volume II: Appendices

Preliminary Report on the Geology and Recent Geologic History of the San Miguel River Valley, Southwestern Colorado. Madole, Richard 2000. Report submitted to San Miguel River Restoration Assessment; and to BLM, Montrose District Office.

Hydrology, Geomorphology, and Sediment Transport of the San Miguel River, Southwest Colorado. Allred, T.M.; and Andrews, E.D. 2000. US Geological Survey.

High Flow and Riparian Vegetation Along the San Miguel River, Colorado. Friedman, J.M.; and Auble, G.T. 2000. US Geological Survey.

San Miguel River Fisheries Inventory, Creel Census and Shocking History. Hebein, Sherman 1999. Colorado Division of Wildlife.

Site Inspection Analytical Results Report: Carbonero Mine and Ophir Mining District, San Miguel County, Colorado. Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division 1999.

Total Maximum Daily Load Assessment: San Miguel River. Colorado Department of Public Health and Environment, Water Quality Control Division 2000.

Investigation of River Ice Process on the San Miguel River, CO. Ferrick, M.G.; and Murphy, D. US Army Cold Regions Research and Engineering Laboratory.

An Overview of Recent Bank Instability on San Miguel River. Groeneveld, David P. 2000. Submitted to San Miguel River Restoration Assessment.

Bill Janke's "Ames Power Plant" Letter to San Miguel River Restoration Assessment. 2001

Xcel Energy/Public Service "Planned Modification to the Ames Hydro Surge Line," Interoffice memo 1994.

Xcel Energy/Public Service "Ames Power Plant" Letters to Federal Energy Regulatory Commission, 1994, 2000.

I. San Miguel River Restoration Assessment Summary

The *San Miguel River Restoration Assessment* was conceived to merge scientific information with stakeholder consensus to analyze and prioritize possible restoration sites on the main stem of the San Miguel, and on major tributaries.

From its alpine headwaters to its desert confluence with the Dolores River eighty miles downriver, the San Miguel is one of Colorado's, indeed one of the west's, few remaining hydrologically intact watersheds. Although there are some impoundments on tributaries, and one major diversion on the main stem downstream of Horsefly Creek, seasonal high flows remain sufficient to efficiently move sediment through the system, to form and maintain channel and floodplain, and to provide habitat for riparian plant regeneration.

The San Miguel River harbors one of the longest and highest quality stretches of deciduous and evergreen forests and shrublands (about 80 miles) in the western United States (Neely). Riparian areas are of great importance to biodiversity. Healthy riparian areas stabilize stream banks, maintain water quality and quantity, and provide habitat for wildlife species, including fish, neo-tropical migratory birds, and raptor bird species.

Riparian habitat in the United States has been severely impacted by human activity. Over 80% of America's riparian areas have disappeared (Neely). Still, the high-quality riparian communities found along the San Miguel survive, despite a variety of human activities that have degraded specific sites that alter hydrology, and impact and fragment riparian and aquatic habitat. This restoration assessment identifies those specific sites and the reaches they lie within, and prioritizes them based on projected benefits of restoration to biodiversity.

In all, seventeen potential restoration sites were identified. Five reaches were selected as highest priority, though restoration of any of the sites identified is valuable and each should be pursued subject to local interest and opportunity.

A number of studies have documented the relative health and importance of the riparian communities within the San Miguel watershed, beginning with Bill Baker's 1986 *Riparian Vegetation of the Montane and Subalpine Zones in Westcentral and Southwestern Colorado*. Subsequent work by the Nature Conservancy and the Colorado Natural Heritage Program has confirmed the rarity of the San Miguel's riparian communities at the global scale (Kittel and Lederer; Lyon and Sovell). Intact hydrologic processes, particularly seasonal high flows, are critical for maintaining biodiversity values in the San Miguel watershed (Friedman).

Also interesting from an ecological perspective is that the river begins in the alpine zone of the Southern Rockies Eco-regional Province and flows into the high desert zone of the Colorado Plateau Eco-regional Province.

Assessment Objectives

The objectives of this assessment are to:

- 3) Identify elements of biodiversity and their condition, and the ecological and hydrological processes that sustain them;
- 4) Identify and prioritize restoration reaches and activities that will help restore and maintain these elements and processes.

To accomplish these goals, the assessment management team convened a science team to 1) consolidate and analyze biodiversity information; and 2) develop a list of disturbed sites; and 3) prioritize those sites according to projected benefits to the targeted biodiversity values.

The assessment management team sought to merge the priorities of the science team with those of local citizens via a program of facilitated stakeholder outreach. Watershed stakeholders were interviewed and/or participated in facilitated meetings, and generated a list of prioritized restoration reaches.

Restoration Goals

Syntheses of the science team and stakeholders meetings yielded the following general restoration goals for the San Miguel River:

- 1) Restore healthy and diverse native habitat and populations, including: native, regenerating riparian plant habitat and communities; aquatic fish and insect habitat and communities; and native bird habitat;
- 2) Restore and maintain water quality;
- 3) Re-establish hydrologic processes, including channel migration and re-establishing the hydrologic connection between channel and floodplain.

To help meet these restoration goals, four general conservation recommendations are made for the entire watershed. They are:

- 1) Maintain seasonal high flows;
- 2) Re-connect river channel to floodplain where practical, removing dikes and other artificial impediments to flooding, and to natural channel migration;
- 3) Prohibit cows from accessing the river channel, and limit grazing in the riparian floodplain to ecologically appropriate times;
- 4) Control invasive weeds in the riparian zone.

One additional recommendation, specific to the upper watershed, is to study ice flows originating on the South Fork and scouring the channel and banks of the South Fork and mainstem for over twenty miles. Ice flows are a major impact to the health of the river. The intensity of ice releases and ice flows appear to be increasing, and may be related to winter water releases from the Ames Power Plant. If studies prove such to be the case, controlling or at least lessening the impact of ice flows may be possible by altering water

releases from the Ames plant at critical times of the year (Groeneveld, personal communication)

It is the considered opinion of the science team that these recommendations will allow the San Miguel to regenerate and restore itself in all but the most extremely disturbed locations.

Protecting natural high flows, that is, allowing high flows to continue as a functioning process, is the single most important conservation recommendation of this report. It is also the most cost-effective. In reaches of the San Miguel requiring restoration, the river channel will restore itself, for the most part, if the natural hydrograph is respected and high flows are maintained (Andrews).

Reconnecting channel to floodplain is important because natural flooding improves riparian plant habitat, enables cottonwood regeneration (Fleener), redistributes nutrients, creates and recharges backwater habitat for native fish rearing. Reconnecting channel to floodplain also provides for lateral channel migration, which allows the channel to absorb energy, drop sediment, and to create and maintain riparian plant and aquatic habitat.

The impacts of degraded water quality often migrate downstream and are difficult to completely assess. They affect the health of the riparian plant and aquatic, particularly native fish, communities.

Priority Restoration Reaches

The three highest priority reaches, in order of greatest projected benefits to biodiversity, are:

- 1) San Miguel River, Dry Creek to Tabeguache Creek;
- 2) San Miguel River, Horsefly Creek to Cottonwood Creek;
- 3) Deep Creek and its tributaries;

The next highest priority reaches, with additional information needed, are:

- 4) Howard Fork of the San Miguel, Swamp Creek to Lake Fork;
- 5) Telluride Valley Floor, mainstem of the San Miguel, Butcher Creek to Prospect Creek.

Specific restoration recommendations are reported in the site descriptions in section II, Prioritized Restoration Reaches.

The Need for a San Miguel River Restoration Assessment

Despite one hundred and twenty years of intense human use, including mining, road building, logging, agriculture, and, in more recent times, intensifying recreational use and resort development, the San Miguel remains one of the west's few remaining healthy and intact watersheds. Health, however, is a relative term. The high quality riparian plant communities face a variety of threats, and the native aquatic fish communities have all but disappeared. Specific, degraded sites within otherwise intact reaches fragment the ecological and hydrological integrity of the river.

In the upper watershed, localized, disturbed sites, both within and outside the river corridor itself, impact the health of the river. Hard rock mining sites, including tailings and waste rock piles, and open adits continue to degrade water quality, despite most mining activity having ended more than a half century ago. Road building has increased sedimentation, and in places, contributes to straightening and widening of the stream channel. Gravel mining, though now mostly discontinued, has severely impacted the river channel in places. Non-native fish species, including rainbow trout, compete with native species for food and habitat.

Ice flows, perhaps enabled by altered winter stream flows related to hydroelectric power generation at the Ames Power Plant, scour the stream channel and destabilize bank vegetation. Affects of ice flows are observable for over 20 river miles, beginning on the South Fork, in Ilium Valley, and stretching downstream past Placerville. Ice flows may also impact fish populations, as they create dams potentially stranding fish in shallow sections of the river where they are less able to protect themselves from additional freezing (Murphy, personal communication).

The BLM, consulting with the US Army Cold Regions Research and Engineering Laboratory, concurs that surges from the Ames Power Plant are likely a factor in triggering ice flow releases, and may also contribute to the manner in which ice building occurs in the river channel downstream of the Ames plant. They observe that all ice flow events in recent years have originated in the South Fork below the power plant. Also, all documented ice flows in the last twenty years have occurred in late December or early January (near the winter solstice), and ice release and ice flows are related to consecutive sub-zero temperature days.¹

¹Ferrick, M.G.; and Murphy, D. Unpublished. Investigation of River Ice Process on the San Miguel River, CO. US Army Cold Regions Research and Engineering Laboratory, Hanover, NH.

Some believe that understanding and, if possible, reducing ice flow impacts may be the single most important restoration issue in the upper basin. David Groeneveld writes:

*“The simplest hypothesis for loss of bank stability is that it is due to ice flows in recent years that have changed frequency or magnitude due to changes in discharge from the Ames power plant. Power plant discharge provides energy, i.e., surging water that is warmer (by a degree C, or so) than the channel (at 0 degrees C) at much higher volume (probably at least 500% greater) that initiates an ice flow within the ice-bound winter channel. If this is so, a simple set of operating guidelines for power plant operation during December and January could easily reduce the potential for ice flow releases. Since curtailing power generation that offsets extremely high power consumption in the region due to resort operation will likely have an impact upon power plant revenues, conclusive proof is probably necessary. The key will be to first conclusively demonstrate that the Power Plant is responsible for the ice flows that, in turn, impact riparian vegetation and then bank stability and erosion. The key is to demonstrate causality and not just coincidence”.*²

In the lower watershed, dikes and riprap, in places, prevent flooding and inhibit channel migration. Water diversions impact late summer river flows. Irrigation return flows alter water chemistry. Cattle grazing in the river channel and floodplain is altering native vegetation composition and increasing stream bank erosion, contributing to straightening and widening of the stream channel, and warming of the water. Invasive exotic weeds, introduced into the watershed by people and livestock, displace native plants and transpire water out of the aquifer.

Remediation and mine clean up has occurred at some sites within the watershed, most notably at the Vancorum site downstream of Naturita, at the Umetco Mill site at Uravan, and at Telluride, where Newmont Mining Company is completing remediation of the Idarado millsite and mining complex.

At Uravan, mill tailings were relocated out of the floodplain to an upland hilltop in 1989. Since the removal of the tailings and the resulting decrease in salinity, native fish species not found in the San Miguel in over 40 years have again been sampled. Salinity that once flowed from the base of the Uravan tailings caused what biologists called a “biological dam” that deterred native fish migration to and from the Dolores River. Also, the Dolores itself continues to improve as native fish habitat due to salinity control projects and summer-long water releases from McPhee Dam, over 100 miles upstream on the Dolores from its confluence with the San Miguel.

² Groeneveld, David P. 2000. An Overview of Recent Bank Instability on the San Miguel River. Unpublished report. Submitted to San Miguel River Restoration Assessment and San Miguel County, Telluride, CO.

In 1996, members of the San Miguel Watershed Coalition embarked upon a two-year collaborative process to write and distribute the 1998 *San Miguel Watershed Plan*. The USEPA contributed funds to partially pay for the plan's publication, though the plan is clearly not a regulatory document. Mostly, the plan is a tool to facilitate stakeholder collaboration.

The mission statement of the coalition states: "Through a process of collaborative planning and substantive public involvement, the San Miguel Watershed Coalition will help identify, prioritize, and facilitate action that will conserve and enhance the natural, cultural, and recreational resources and the social and economic vitality of our communities. The Coalition will provide a forum for agencies, jurisdictions, interest groups and individuals to discuss issues and opportunities on an ongoing basis (*San Miguel Watershed Plan*, p. 8). It is in this spirit that this river restoration assessment was undertaken with an emphasis on stakeholder outreach.

The San Miguel Watershed Plan divides issues into five themes: Growth and Community Preservation; Water; Natural Resources; Recreation; and Education and Stewardship. Several objectives and potential actions under the themes of Water and Natural Resources provide the context for a river restoration assessment, including:

Achieve a sustainable condition to the Basin's river, riparian and wetland environments, and the uplands surrounding them. Support the development of restoration plans on high priority sites, based on condition, threat and importance, to re-establish stable channel geometry and healthy riparian vegetation, and to prevent future stream channelization (Plan, p.31).

Maintain, and where possible restore natural plant and animal communities in ways that are consistent with watershed objectives. Support and undertake appropriate restoration efforts (e.g. Colorado River cutthroat trout and Gunnison sage grouse). Identify high priority areas for reintroduction (Plan, p. 34).

Minimize non-point source pollution of surface and ground water from sediment, biological pathogens, excess nutrients, urban pollutants, heavy metals and hazardous wastes. Support restoration of unstable river reaches to reduce sediment loading and/or promote healthy riparian areas (Plan, p. 27).

Local Considerations

The San Miguel Watershed Coalition has identified stakeholder values that both support the undertaking of this assessment and recognize that conservation efforts have an obligation to take into account local considerations when planning restoration efforts. Included in those values are:

- 1) Support a sustainable economy throughout basin offering opportunities for growth and employment;
- 2) Maintain a diversity of high quality recreational experiences;
- 3) Create a cooperative atmosphere where individuals and organizations work together to create a balance between economic opportunity and resource conservation;
- 4) Promote landscape health through protection and restoration of natural resources;
- 5) Maintain and promote local control, community identity and educated citizenry

During stakeholder interviews undertaken by this assessment, citizens were asked to describe what local socio/political factors ought to be considered when contemplating river restoration. Not surprisingly, stakeholders emphasized many of the values noted above. Many emphasized that river restoration ought to be compatible with other values and economic goals. Some suggested that river restoration would be viewed most favorably when economic benefits, such as recreational and tourism amenities, are included. A few people expressed a fear that river restoration might invite additional government regulation or be used to justify interfering with personal property rights.

In fairness to the people that took time to discuss their views on river restoration, this assessment emphasizes the following considerations for all proposed restoration activities in the San Miguel watershed:

- 1) Portions of proposed restoration reaches include private property. Landowners must be communicated with openly and honestly. Their rights must be respected. Conservation actions on private property must be undertaken with the willing consent of the landowner, and the landowner must be fairly compensated for the use of the property.
- 2) Most of the water diverted from the San Miguel River is important for the viability of agriculture. Locals in the lower watershed are concerned about possible water takings. Restoration strategies that seek to achieve mutually beneficial goals dependant upon improving water-use efficiencies must not expect that agricultural water-users pay for any such improvements.
- 3) Locals in the lower watershed are interested in diversifying the local economy by enhancing recreation and tourism opportunities. Restoration strategies that address this need will be viewed more favorably than those that do not.
- 4) Hire locals to do restoration work.

II. Prioritized Reaches

The three highest priority reaches, in order of greatest projected benefits to biodiversity, are:

- 1) San Miguel River, Dry Creek to Tabeguache Creek;**
- 2) San Miguel River, Horsefly Creek to Cottonwood Creek;**
- 3) Deep Creek.**

The next highest priority reaches, with additional information needed, are:

- 4) Howard Fork of the San Miguel, Swamp Creek to Lake Fork;**
- 5) Telluride Valley Floor, mainstem of the San Miguel, Butcher Creek to Prospect Creek.**

A detailed description of each of the five highest prioritized reaches follows.

San Miguel River, Dry Creek to Tabeguache Creek Reach Description

This reach is the #1 highest priority for restoration, based on the presence and/or potential for restoration of highly ranked biodiversity values.

Location: The upstream end of this reach, the Dry Creek confluence with the San Miguel River, is located 1 mile northwest of Naturita, Colorado in western Montrose County.

USGS 7.5 minute quadrangles: Naturita, Nucla, Uravan.

Property Ownership: The San Miguel River, Dry Creek to Tabeguache Creek is a 12-mile long reach. All of the land in the river corridor in this reach is privately owned. About 4-miles of the corridor are owned by various private individuals, about 1 mile is known as owned as the Vancorum Millsite, and is owned by the Town of Naturita and Cyprus Corp., and 7 miles are owned by the Nature Conservancy, and known as the San Miguel River at Tabeguache Creek Preserve.

General Description:

The San Miguel River, Dry Creek to Tabeguache Creek, is the highest ranked priority restoration reach. This reach includes 7 miles of high-quality riparian area (under ownership of the Nature Conservancy) on the downstream end, and about 5 miles in degraded condition. Proposed restoration activities in this reach focus on localized, disturbed sites that impact the hydrology and fragment habitat.

The Vancorum millsite includes the site of a former vanadium processing facility. The site was subject to extensive remediation and clean up that concluded in 1998, leaving 60 acres re-contoured and reseeded. About 24 acres at Vancorum was deeded to the Town of Naturita in 1999. The remaining acreage is owned by Cyprus Corporation, and may be transferred to Naturita in the future. Remediation was careful to leave the river channel intact in this portion of the reach, but a low earth dike discourages natural channel migration and natural flooding. Local citizens have expressed an interest in constructing a golf course or some other recreational amenity on the site. Advocates for river restoration ought to consider cooperating with Naturita to agree upon mutually beneficial goals for the site.

Downstream of the Vancorum site, at both Calamity Draw and Coal Creek, agricultural return flows from irrigated fields near Nucla enter the river. No water quality data was found, but it is probable that these return flows include contaminants.

Downstream of Calamity Draw, on private ranchland, flooding and channel migration are prevented by a long dike, armored by riprap. The disconnected floodplain appears to have been cultivated at one time.

Biodiversity Restoration Potential:

The riparian corridor is characterized by mature cottonwoods, both the narrowleaf and Rio Grande species, as well as their hybrids. The native understory (where it has not been altered by agriculture, dikes, placer or gravel mining) consists of skunkbrush and coyote willow.

The riparian plant communities found at Nature Conservancy preserve present archetypes of what ought to be found upstream in this reach, including high-quality examples of riparian plant communities, including the globally imperiled Fremont cottonwood/skunkbrush association, the New Mexico privet riparian shrublands, and the more common Rio Grande cottonwood/coyote willow association.

Within the TNC preserve, the riparian zone varies from narrow and straight in incised canyons, to wide meanders that lead to a multi-layered successional pattern of plant associations on the riverbends. Shrubs generally line the channel, with upland vegetation, including sagebrush, rabbitbrush, rose and serviceberry occurring on the flat meander bends. In some areas, tamarisk has invaded the riparian vegetation, replacing the native New Mexico privet and skunkbrush. Cottonwoods and willows are reproducing successfully along the river, thanks to the natural flooding processes that can occur on this undammed river (Lyon and Sovell).

The riparian plant communities, together with two rare and imperiled native warm-water fish species, roundtail chub and flannelmouth sucker, are the biodiversity restoration targets.

Fish surveys conducted October, 1998 found a few roundtail chub in the San Miguel near Tabeguache Creek (Hebein). Roundtail chub are a native warm-water species, and a Colorado Species of Special Concern. It is estimated that there are less than 20 occurrences of this species in Colorado (Lyon and Sovell). Historic fish inventory records reveal historic sampling of flannelmouth sucker at this same location (Reed), though none were found in 1998. Both the roundtail chub and flannelmouth sucker are vulnerable to elevated sediments, channelization, modified flow regimes, stream dewatering and contaminants.

Restoration Recommendations

- 1) Maintain seasonal high flows;
- 2) Re-connect river channel to floodplain, removing riprap and dikes and other artificial impediments to natural channel migration. Identifying and removing selected sections of dikes might encourage the desired flooding and encourage channel migration.
- 3) Prohibit cows from accessing the river channel, and limit grazing in the riparian floodplain to ecologically appropriate times;
- 4) Control invasive weeds, including tamarisk and knapweed, in the riparian zone;
- 5) Conduct water quality testing, and, if necessary, improve water quality. Cooperate with the Natural Resource Conservation Service (NRCS) and agricultural water users to improve water use efficiency to reduce contaminant loading in Calamity and Coal Creeks.
- 6) Conduct minimum stream flow assessment.
- 7) Cooperate with Colorado Department of Transportation to limit dike building and highway related sedimentation.
- 8) Cooperate with Town of Naturita to design restoration strategies for Vancorum that compliment recreational use of the property.

Biodiversity Targets: San Miguel River, Dry Creek to Tabeguache Creek

Element	Common Name	G rank	S rank
<i>Forestiera pubescens</i>	New Mexico privet riparian shrubland	G1	S1
<i>Rhus trilobata/Salix exigua</i>	Skunkbrush/Coyote willow riparian shrubland	G2	S1
<i>Populus deltoides</i> ssp. <i>wislizenji/Rhus trilobata</i>	Fremont's cottonwood/Skunkbrush riparian forest	G2	S1
<i>Populus angustifolia/Rhus Trilobata</i>	Narrowleaf cottonwood/skunkbrush riparian forest	G3	S3
<i>Shepherdia argen tea</i>	Silver buffaloberry riparian shrubland	G3	S1
<i>Gila robuta</i>	Roundtail chub	G2	S2
<i>Castosomus latipinnis</i>	Flannelmouth Sucker	G3	S3

Local Considerations

Stakeholders emphasized the following points:

- 1) All of the land in this reach is private property. It is important to consult, openly communicate and cooperate with the landowner. Conservation actions on private property must be undertaken with the willing consent of the landowner, and the landowner must be fairly compensated for the use of the property.
- 2) Water diverted from the San Miguel River is important to the viability of agriculture. Restoration strategies that seek to achieve mutually beneficial goals dependant upon improving water-use efficiencies must not expect that agricultural water-users pay for any such improvements.
- 3) Locals are interested in diversifying the local economy by enhancing recreation and tourism opportunities. Locals are interested in the possible construction of a low-impact golf course on the Hecla property, and the construction of recreational vehicle camping facilities near Tabeguache Creek. Restoration strategies that address this will be viewed more favorably than those that do not.
- 4) Hire locals to do restoration work.

San Miguel River, Horsefly Creek to Cottonwood Creek Reach Description

This reach is the #2 highest priority for restoration, based on the presence and/or potential for restoration of highly ranked biodiversity values.

Location: The upstream end of this reach, the Horsefly Creek confluence with the San Miguel River, is located about 5 air miles north of Norwood, Colorado in western Montrose County. Horsefly Creek is about 10 river miles downstream of Norwood Bridge and Colorado Highway 145. Montrose County Road 90 crosses the San Miguel River at Pinyon Bridge, just upstream of Cottonwood Creek, on the downstream (northwest) end of the reach

USGS 7.5 minute quadrangles: Big Bucktail Creek, Norwood.

Property Ownership: The San Miguel River, Horsefly Creek to Cottonwood Creek is a 7-mile long reach. Three miles are privately. Four miles of the corridor, in the downstream portion of the reach, are publicly owned, and managed by the BLM. BLM lands are administered by the BLM Montrose office. Land at the confluence of Cottonwood Creek is privately owned.

General Description:

Horsefly Creek, on the upstream end of this reach, is located at the downstream end of a 6.5-mile roadless section of mostly BLM land. This roadless section includes mostly high-quality native riparian habitat, dominated by river birch shrubland and Blue spruce/thinleaf alder riparian forest. It is also habitat for wintering Bald Eagles. It is part of the BLM's Area of Critical Environmental Concern.

Just downstream and northwest of Horsefly Creek, the river leaves BLM land and travels for 3 miles through private property. This section has been extensively grazed. The grazing has impacted most of the native vegetation on the property, and broken down and flattened riverbanks. This impact has allowed the river to straighten, widen, and become shallower.

Near the downstream end of the private property, a channel-wide cement weir diverts water into the CC Ditch, and delivers it to Nucla. The water right for the CC Ditch diversion is 145 cfs (Campbell, personal communication). The amount of water diverted by the CC Ditch is relatively small compared to spring snowmelt and flood flows in the San Miguel, but is significant compared to late summer low flows (Andrews, personal communication). Consequently, the CC Ditch diversion appears to have little or no negative impact to the channel building and load carrying capacity of spring high flows. Late summer low flows, on the other hand, particularly during dry years, likely impact aquatic fauna. August 2000 flows immediately downstream of the CC Ditch diversion were estimated to be less than 1 cfs.

One suggestion is to cooperate with water users to conduct a CC Ditch efficiency study, with the goal of trading water efficiency improvements that deliver additional water to Nucla for a guaranteed low water minimum stream flow in the San Miguel downstream of the diversion. For instance, if the conservation community were to fund the lining of the CC Ditch, enabling the ditch to deliver additional water to Nucla (say an additional 10 to 20 cfs, delivered season long), it would appear to be win-win situation to allow a 10 cfs minimum stream flow. Such a minimum flow would only subtract water from the ditch when the river flow at the diversion falls below 145 cfs.

The downstream end of the reach, from the north end of the private property to just upstream of Pinyon Bridge, is BLM land. The BLM has designated their land as a Special Recreation Management Area. Camping, fishing and kayaking are popular, though there are no improved campgrounds or campground facilities. Camping and associated use of motor vehicles has impacted and degraded riparian vegetation in the floodplain.

A dirt road follows the north side of the river. Historical grazing has impacted riparian vegetation, though not to the intense degree found on the private property. The channel braids in places, possibly the result of historical placer mining.

Historical placer mining has reworked and altered the channel in places, and degraded wetlands. Some of the area that was formerly placer mined now has weedy gravel bars with hairy golden aster, dogbane, coyote willow and Russian knapweed. Numerous exotic species are present, including Russian olive, Russian knapweed, Canada thistle, oxeye daisy, yellow sweet clover, and meadow timothy

Recreational and small operation placer mining has experienced increased activity in this stretch in the last 7 years. This new activity is impacting disturbing the floodplain and channel, creating localized impacts to riparian vegetation, aquatic life and river hydrology.

Biodiversity Restoration Potential:

The riparian area upstream of Horsefly Creek gives some indication of what might naturally be found on the private property; i.e. a mosaic of river birch riparian shrublands, Silver buffaloberry riparian shrublands, blue spruce/thinleaf alder/red osier dogwood, and narrowleaf cottonwood/thinleaf alder riparian communities.

Near the confluence of Cottonwood Creek, riparian vegetation begins to take on more low elevation characteristics. Good examples of the globally imperiled skunkbrush riparian woodland, the globally vulnerable narrowleaf cottonwood/skunkbrush association, and an excellent example of the common coyote willow/mesic graminoid community are found here. Plant growth on the floodplain is very dense in places, with thick stands of cottonwood, river birch, box elder, Rocky Mountain juniper, clematis, poison ivy, wild rose, Gambel's oak, skunkbrush, thinleaf alder, gray aster and Fendler's barberry. The tall shrubs strapleaf willow, skunkbrush, chokecherry and red osier dogwood dominate other patches (Lyon and Sovell).

There is some regeneration of cottonwoods on BLM lands. Other riparian species here include lanceleaf cottonwood (*Populus acuminata*), the hybrid of the narrowleaf and Fremont cottonwoods, Rocky Mountain juniper, clematis, wild geranium, wild rose, Fender's barberry, red-osier dogwood, and river hawthorn.

Fish surveys conducted on BLM property October, 1998 found mottled sculpin, speckled dace and non-native brown trout (Hebein). Historic fish inventory recorded non-native rainbow trout and bluehead sucker (Reed). It is difficult to know what fish species occurred downstream of the irrigation diversion before it was built in the 1890's. Low water flows, such as those of August, 2000, likely raise water temperature and decrease available oxygen.

Restoration Recommendations

- 1) Maintain seasonal high flows;
- 2) Cooperate with, and compensate private landowner to prevent cows from accessing the river channel, and limit grazing in the riparian floodplain to ecologically appropriate times. Fencing may be required;
- 3) Control invasive weeds, including Russian olive, Russian knapweed, Canada thistle, oxeye daisy, in the riparian zone;
- 4) Jump-start cottonwood regeneration by plowing/exposing bare, wet, sandy soils to cottonseed dispersal;
- 5) Conduct minimum stream flow assessment;
- 6) Cooperate with water users to obtain a CC Ditch efficiency study, with the goal of trading water efficiency improvements that deliver additional water to Nucla for a guaranteed low water minimum stream flow.
- 7) Limit recreational impacts, particularly vehicle compaction, in the riparian areas. Consider constructing improved camper/visitor facilities that concentrate impacts and encourage BLM to increase supervision and monitoring.
- 8) Control small operation placer mining to discourage heavy equipment use in the channel and floodplain.

Biodiversity Targets: San Miguel River, Horsefly Creek to Cottonwood Creek

Element	Common Name	G rank	S rank
<i>Rhus trilobata</i> / <i>Salix exigua</i>	Skunkbrush/Coyote willow riparian shrubland	G2	S1
<i>Populus angustifolia</i> / <i>Rhus Trilobata</i>	Narrowleaf cottonwood/skunkbrush riparian forest	G3	S3
<i>Shepherdia argen tea</i>	Silver buffaloberry riparian shrubland	G3	S1
<i>Picea pungens</i> / <i>Alnus incana</i>	Blue Spruce/thinleaf alder	G3	S3

*Salix exigua/mesic
graminoid*

Coyote willow/mesic graminoid

G5

S5

Local Considerations

Stakeholders emphasized the following points:

- 1) Locals are interested in diversifying the local economy by enhancing recreation and tourism opportunities. Locals expressed a need for improved recreational vehicle camping opportunities in western Montrose County. The Pinyon Bridge area may be appropriate for construction of improved campsites.
- 2) Portions of this reach are privately owned. It's important to communicate, cooperate and respect affected landowners. Any conservation actions on private property must be undertaken with the willing consent of the landowner, and the landowner must be fairly compensated for the use of the property.
- 3) Water diverted from the San Miguel River is important for the viability of agriculture. Restoration strategies that seek to achieve mutually beneficial goals dependant upon improving water-use efficiencies must not expect that agricultural water-users pay for any such improvements.
- 4) Hire locals to do restoration work.

Deep Creek Reach Description

This reach is the #3 highest priority for restoration, based on the presence of and potential for restoration of Colorado River cutthroat trout.

Location: Deep Creek is 5 air miles west of Telluride, Colorado, in east-central San Miguel County.

USGS 7.5 minute quadrangles: Gray Head, Sams.

Property Ownership: Deep Creek and its three tributaries total about 10 miles in length. Most of this stretch is public land administered by the US Forest Service, Norwood Ranger District. Its headwaters are in the Mount Sneffels Wilderness. About one mile of Deep Creek crosses private property.

General Description:

Deep Creek drains the region south of the Sneffels Wilderness Area and enters the San Miguel River at the Lime townsite on Colorado Highway 145, west of Telluride, Colorado. The creek and its tributaries cross numerous vegetative communities and geologic formations along its route.

Deep Creek contains a population of Colorado River cutthroat trout that is of regional conservation significance.

Geologic features in the Deep Creek drainage include sedimentary rock of the Triassic Dolores Formation; Jurassic Morrison, Wingate, and Entrada Formations; Cretaceous Dakota Sandstone and Mancos Shale; and igneous rocks of the Tertiary occur at the base of Mount Sneffels. Surface soils include bedrock at Mount Sneffels to fine loamy-skeletal substrates near the San Miguel River. The dominant vegetation of the area moving up from the San Miguel River to Mount Sneffels includes deciduous oak, subalpine meadows, aspen forest, and alpine tundra (Lyon and Sovell).

Forest Service Road 639, a dirt road, is situated directly adjacent to Deep Creek from its confluence with the San Miguel, up creek two miles. The Whipple Mountain Trail (USFS 418) follows most of the West Fork and the Sheep Creek tributary. Irrigation water is drawn from the creek during summer months. A draining mine adit is located in the headwaters.

Private property owners withdrew a proposal to build a golf course on Deep Creek Mesa, summer, 2000. The proposed golf course would have depleted water from Deep Creek, and may have posed water quality problems for the creek, and altered habitat.

Biodiversity Restoration Potential:

The Deep Creek population of trout is listed in the *Conservation Agreement and Strategy for Colorado River Cutthroat Trout (Oncorhynchus clarki pleuriticus) in the states of Colorado, Utah and Wyoming* (March 1999). This report estimates that Colorado River cutthroat trout today occupies less than 1% of its historical range. Both the USFS and the BLM, and a Colorado Special Status Species classify it as a sensitive species.

The Colorado Division of Wildlife estimates the adult population native Colorado River cutthroat trout in Deep Creek to be 100 individuals. Within the San Miguel Basin, there are only seven known streams and, of these, this is the largest and the purest genetically (rated A- grade purity by CDOW). Elk Creek, a tributary to Fall Creek, has an estimated CCLT population of 50.

Slight genetic differences in the Deep Creek, Elk Creek and other San Miguel populations, as compared to CRCT found elsewhere in Colorado, have led Colorado Division of Wildlife (CDOW) to describe the San Miguel watershed populations as the Dolores River genetic strain. CDOW's management strategy is to keep the Dolores River strain segregated from other CRCT (Hebein, personal communication).

Stocking of non-native salmonoids is believed to have had the greatest impact on CRCT, followed by fragmentation and loss of habitat. Also, a wide variety of land management practices have been suggested to affect populations, including overgrazing, heavy metal pollution, water depletion and water diversion (CRCT Task Force).

Restoration Recommendations

- 1) Prevent re-introduction of non-native species by construct in-channel barriers to upstream non-native fish migration.
- 2) Remove non-native species.
- 3) Regulate angling and enforce regulations.
- 4) Monitor water quality.
- 5) Analyze USFS Road 639 impacts. Determine proper road drainage. Reduce sedimentation.
- 6) Analyze recreational impacts.
- 7) Maintain seasonal high flows.
- 8) Conduct minimum in-stream flow assessment, and secure water rights to protect CRCT habitat.
- 9) Perform in-depth genetic distribution analysis throughout Deep Creek drainage.

Biodiversity Targets: Deep Creek

Element	Common Name	G rank	S rank
<i>Oncorhynchus clarki pleuriticus</i>	Colorado River cutthroat trout	G4	S3

Local Considerations

Stakeholders emphasized the following point:

Portions of this reach are privately owned. It's important to communicate, cooperate and respect affected landowners. Any conservation actions on private property must be undertaken with the willing consent of the landowner, and the landowner must be fairly compensated for the use of the property.

Howard Fork of the San Miguel, Swamp Creek to Lake Fork Reach Description

This reach is the #4 highest priority for restoration, with important information needed to determine value of restoration to biodiversity.

Location: The Howard Fork flows through the Ophir Valley, immediately south of the town of Ophir, 5.5 air miles south of Telluride, Colorado, in southeast San Miguel County.

USGS 7.5 minute quadrangles: Ophir

Property Ownership: Most of the Howard Fork, Swamp Creek to Lake Fork, is private property, owned by a variety of landowners. Small, disconnected portions of the Howard Fork are public lands administered by the US Forest Service, Norwood Ranger District.

General Description: The Howard Fork originates approximately 2-miles east of Ophir, and flows 7-miles west to its confluence with the Lake Fork, near Ames, Colorado. The Howard Fork and the Lake Fork join to create the South Fork of the San Miguel.

The town of Ophir is a bedroom community with an estimated population in 1999 of 106 people. It sits at an elevation of 9600 feet, in a steep walled canyon. Numerous inactive mines dot the hillsides on each side of the Howard Fork. Ophir obtains municipal water from Spring Canyon, north of town.

Water quality in the Howard Fork has been severely impacted by acid mine drainage. The Colorado Department of Public Health and Environment (CDPHE) concluded in 1999:

The entire length of the Howard Fork River, from upstream of Ophir downstream to above the confluence with the South Fork River is impacted by metals contamination as indicated by heavy metals concentrations. Total zinc concentrations are fairly consistent...averaging 130 milligrams per liter (ug/l), above the Superfund Chemical Data Matrix (SCDM) Ambient Water Quality Criteria (AWQC) of 110 ug/l. The average total copper and lead concentrations along the Howard Fork River in this stretch is approximately 17ug/l and 20 ug/l, respectively, above the SCDM AWQC of 12.0 ug/l and 3.2 ug/l.³

³ Colorado Department of Public Health and Environment, O'Grady, Martin; Site Inspection Analytical Results Report, Carbonero Mine and Ophir Mining District, San Miguel County Colorado. August 1999.

Sources of contamination along the Howard Fork include:

- the Carbonero Mine adits and tailings pile;
- the Carribbeau Mine adit, waste rock pile, and tailings pile;
- the Silver Bell Mine adit;
- the Roanoke tailings pile;
- the New Dominion Mine waste rock pile and adit;
- the Gamebird Mine waste rock pile and adit.

Most but not all of these sources of contamination are on private property, though at least some, including the Carribbeau Mine adit, may be on US Forest Service land. The Forest Service has budgeted funds for further site investigation and analysis for 2001 (Gusey, personal communication).

During 2000, the owners of the Silver Bell Mine and Roanoke tailings pile completed a re-contouring and capping of the Roanoke tailings pile, designed to direct water around or across the top of the tailings pile, as opposed to leaching through it.

In addition to altering water quality, mining has directly impacted the stream channel, which is choked by mine tailings, causing the channel to braid. The low gradient stream results in flow velocities insufficient to flush excess sediment through the system. These tailings likely have trapped metals that may be released if disturbed.

Not surprisingly, the Howard Fork is mostly devoid of fish. CDOW sampled the Howard Fork in the early 1990's and found no fish and no macro-invertebrates (Hebein, personal communication).

The CDPHE study found elevated zinc levels downstream on the South Fork, apparently the result of contamination of the Howard Fork. USEPA may undertake a metals loading analysis to better determine sources of contamination and potential remediation strategies (Wireman, personal communication).

A number of government agencies have expressed interest in cooperating to further analyze and resolve metals loading and water quality degradation. These agencies include San Miguel County, the Town of Ophir, Colorado Department of Public Health and Environment, Colorado Division of Minerals and Geology, US Forest Service, Colorado Division of Wildlife and US Environmental Protection Agency.

Biodiversity Restoration Potential

A fundamental question is: what are the impacts water quality degradation of the Howard Fork to the South Fork and the San Miguel watershed?

The Howard Fork flows into the South Fork, about one mile upstream of a Nature Conservancy preserve. The South Fork Preserve harbors high quality occurrences of several riparian plant communities, including narrowleaf cottonwood and blue spruce dominated riparian forest, and high quality complexes of willows and sedges (Lyon and Sovell). Lacking in the South Fork is any indication of a native fishery. CDOW has observed that stocked trout experience difficulty surviving beyond the season they are stocked (Hebein, personal communication).

Restoration Recommendations: Howard Fork

- 1) Facilitate the meeting of interested entities, including San Miguel County, the Town of Ophir, Colorado Department of Public Health and Environment, Colorado Division of Minerals and Geology, US Forest Service, Colorado Division of Wildlife and US Environmental Protection Agency.
- 2) Cooperate with interested entities to analyze the impact of acid mine drainage and metals loading on downstream biodiversity targets.
- 3) Encourage remediation of acid mine drainage.
- 4) Analyze in-channel tailings to determine potential for metals release from in-channel mechanical manipulation, with the objective being the directing of braided channels into single channel.

Biodiversity Targets: Howard Fork

Element	Common Name	G rank	S rank
<i>Oncorhynchus clarki</i> <i>Pleuriticus</i>	Colorado River cutthroat trout	G4	S3
<i>Picea pungens/Alnus incana</i>	Blue spruce riparian forest	G3	S3
<i>Salix geyeriana-Salix</i> <i>monticola/mesic graminoid</i>	Montane riparian willow carr	GU	S3

Local Considerations

Stakeholders emphasized the following point:

Private property rights are of up-most concern, and must be respected. Any conservation actions on private property must be undertaken with the willing consent of the landowner, and the landowner must be fairly compensated for the use of the property.

Telluride Valley Floor

San Miguel River, Butcher Creek to Prospect Creek

Reach Description

This reach is the #5 highest priority for restoration, with important information needed to determine value of restoration to biodiversity.

Location:

USGS 7.5 minute quadrangles: Telluride

Property Ownership: Most of the Telluride Valley Floor reach is in private ownership, an 800-acre parcel of private land held by one party, the San Miguel Valley Corporation, a subsidiary of a Denver company, Cordillera Corporation. About 70 acres and several hundred yards of river corridor, upstream of the confluence of Mill Creek and the San Miguel River, is owned and managed by the US Forest Service. Telluride Ski and Golf Company holds an easement on 20 acres of land on the Prospect Creek alluvial fan for the purpose of restoring wetlands.

Known locally as “the Valley Floor,” the property has long been the subject of local debate and controversy surrounding potential development, culminating in the Town of Telluride’s current contemplation of condemnation. It is not the intent of the river restoration assessment to comment on, attempt to influence, or otherwise be involved in any of the controversy surrounding the Valley Floor. Rather, stakeholders participating in the assessment emphasized that all parties in the Valley Floor conflict generally agree the San Miguel River has been altered and impacted by past human activity, and that restoration is required. It bears repeating here that stakeholders as a group feel strongly that restoration activities anywhere in the San Miguel watershed should be undertaken only with the consent and cooperation of the landowner.

General Description: The Telluride Valley Floor, San Miguel River, Butcher Creek to Prospect Creek is an approximately three mile segment of the San Miguel River west and adjacent to the Town of Telluride.

Among the impacts to the river in this reach are: a built-up railroad grade that forces the river channel to the south side of the property for a distance of about 1.5 miles; trenches cut into the wetlands; grazing; and more than 20 acres of mine tailings left behind in the floodplain by a shallow reservoir that once inundated the west end of the site.

When river restoration on the Valley Floor will occur and by whom is not clear. Stakeholders felt that, regardless of who owns the property or what the use of the property is, river restoration is needed and will someday need to be undertaken. Because of this, and because the Valley Floor is the largest wetland complex in the watershed, the stakeholders regarded restoration of this reach as a high priority. The science team noted that, aside from the political controversies surrounding the property, scientific questions

remain . What is the biodiversity significance of the property? Are water quality impacts from the tailings on the property migrating downstream, and if so, what is the affect of those impacts to downstream flora and fauna? Are flora and fauna in the reach being impacted by the tailings? How should the tailings be remediated?

The abandoned railroad grade confines the channel, eliminating natural flooding and lateral channel migration. Hampering any attempt to remove the railroad grade is the fact that the Town of Telluride's sewer line, connecting the town to the waste treatment plant west of Highway 145, lies in the grade. If the railroad grade is removed someday, in-channel construction would likely be required to re-create sinuosity and channel meander. Unlike other reaches with steeper gradient, the San Miguel through the Valley Floor is a low gradient, lower volume river. Whereas seasonal high flows will allow the channel to restore itself in other stretches of the San Miguel in 10 to 20 years, natural recovery within the Valley Floor reach will require 50 to 60 years or longer (Andrews, personal communication).

Remediation of the Valley Floor tailings is addressed in the Idarado consent decree that settled the lawsuit brought by the State of Colorado against Newmont Mining Company, the owners of the Idarado Mill and mine complex, east of Telluride. The decree gave Newmont and the property owners until December 31, 2000 to either remove to tailings or to stabilize and cap them. However, no remediation has been undertaken to date. The landowner has not given Newmont access to the property to perform the remediation, nor has the landowner submitted its own plan (Price, personal communication).

A fundamental question regarding the tailings in the floodplain is: if the tailings are left in place, stabilized and capped, what flooding or lateral channel movement allow renewed metals loading into the river? Likewise, a corollary question is: will restoration-related construction and disturbance in the channel result in releasing metals stored in the channel bottom, renewing loading?

Unrelated to the Idarado consent decree is the proposed restoration of 20 acres of wetlands on the Prospect Creek alluvial fan and the filling of 3 trenches that were cut across the fan in 1970, in preparation for additional tailings disposal by Idarado. Telluride Ski and Golf Company has acquired an easement to allow the company to perform the restoration as part of its wetlands remediation plan (Hazen, personal communication). Work is expected to begin in 2001.

The San Miguel River, from Marshall Creek (just west of the Idarado Mill) to the South Fork confluence, including the Valley Floor reach, is listed by the State of Colorado as a listed Section 303(d) river, exceeding Total Maximum Daily Load (TMDL) guidelines, not expected to meet applicable water quality standards with technology-based controls alone.

The San Miguel was included on the Colorado 303(d) List, as partially supporting aquatic life, due to high levels of dissolved cadmium, manganese, zinc and sediment. High siltation from urban runoff is identified as a primary contributing non-point source. During the period of late winter/early spring runoff, high siltation from urban street runoff and low flow in the San Miguel River causes a buildup of silt that covers the streambed. When the problem was first identified, it was suspected that sediment was filling the interstices of the gravel bed and likely smothering benthic macroinvertebrates and trout fry (Colorado Water Quality Control Division).

The Town of Telluride has begun to implement a plan to control and reduce sediment load in the river, including: designing a stormwater retention system utilizing a constructed wetland; managing snowmelt from the Town of Telluride snow storage facility located on the west side by directing collected snowmelt through a series of managed wetlands to filter the water prior to entering the river; and restoring a 0.7 mile stretch of the river from below the confluence with Bear Creek to Fir Street, adjacent to Town Park. The goals of the river restoration project are to restore aquatic, wetland and riparian habitat; improve river hydraulics; and balance sediment movement throughout the channel. River restoration and construction began September, 2000, and has met unanticipated public criticism and complaints related to construction-related increased turbidity.

Restoration Recommendation

- 1) Cooperate with the Colorado Department of Public Health and Environment to analyze: metal loading in the channel and in the Valley Floor tailings; potential for metals release from in-channel mechanical manipulation; impacts of metals contamination to flora and fauna in the Valley Floor reach; impacts of metals contamination to flora and fauna downstream of Valley Floor reach.
- 2) Analyze flora within the reach to determine biodiversity value.
- 3) Cooperate with the Colorado Department of Public Health and Environment and landowner to remove tailings.
- 4) Encourage filling drainage trenches.
- 5) Cooperate with landowner and Town of Telluride to relocate sewer line and remove railroad grade.
- 6) Engineer and perform in-channel construction to restore sinuosity and meander.

Biodiversity Targets: Valley Floor

Element	Common Name	G rank	S rank
<i>Populus angustifolia-Picea pungens/Alnus incana</i>	Montane riparian forest	G3	S3
<i>Salix geyeriana-Salix monticola/mesic graminoid</i>	Montane riparian willow carr	GU	S3

Local Considerations

Stakeholders emphasized the following point:

It is not the intent of the river restoration assessment to comment on, attempt to influence, or otherwise be involved in any of the controversy surrounding the Valley Floor. Almost all of the land in this reach is privately owned. Any conservation actions on private property must be undertaken with the willing consent of the landowner, and the landowner must be fairly compensated for the use of the property.

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