

Upper Colorado River Wild & Scenic Alternative Management Plan

2023 Monitoring Plan Proposal

The Wild & Scenic Monitoring Committee (the Committee) has developed this proposal for 2023 monitoring based on the long-term monitoring plan and input from committee members and consultants, and in conjunction with the Fishing and Floatboating Recommendations Committee. The proposal covers boating and fishing user intercept surveys, stream temperature monitoring, macroinvertebrate monitoring, channel maintenance flow monitoring, and in-kind contributions.

Recreation Monitoring

For 2023, RRC Associates has submitted a \$53,700 work plan that builds on previous efforts, continues support for the Stakeholder Group (SG) and committees, and refines methods for warehousing and accessing data. Based on anticipated data needs, this plan includes the Angling and Floatboating Intercept surveys, as well as processing the BLM's vehicle counts. The Committee worked with RRC, the SG's committees and agency representatives to develop RRC's final scope of work for 2023. Details of the proposed RRC program are shown in Table 1, below.

Table 1: Summary of 2023 RRC Program

	2021 (Completed)	2022 (Completed)	2023 (proposed)
Data Collection			
Intercept Surveys / Observational Data Collection	\$28,000	\$35,000	\$40,250
Displacement Surveys (once every 3 years , last completed in 2021)	\$3,000	N/A	N/A
Self-reporting Kiosk Data Collection	\$3,000	N/A	N/A
User Group Surveys (once every 3 years, last completed in 2021)	\$3,000	N/A	N/A
Vehicle Counters*	\$3,500	\$2,000	\$1,000
Data Processing, Consolidation, and Management**			

Database Management	\$2,500	\$3,000	\$3,450
Warehousing of SG Data	\$2,500	\$2,000	\$2,300
Stakeholder Support**			
Committee Participation & Attendance	\$6,000	\$6,700	\$6,700
TOTAL:	\$54,500	\$51,700	\$53,700

*Assumes BLM Field Offices take primary responsibility for data collection.

**These categories will be billed hourly to a “not to exceed” budget as shown.

Temperature Monitoring

The Committee is proposing to continue the W&S-sponsored time-series temperature monitoring program through 2023, which includes three time-series temperature loggers deployed at established study sites (highlighted in orange in Table 2, below). The W&S SG is a dues-paying member of GCWIN and will contract with GCWIN to administer the three W&S temperature sites during 2022. GCWIN has been maintaining W&S temperature data in its database for several years.

In addition to the W&S temperature sites, time-series temperature data will be collected at three BLM temperature sites (COR-abvPump, COR-Rad, BL-abvCOR). Additional time-series temperature data will continue to be collected at three USGS sites located within W&S segments, as shown in Table 2, below.

Upon recommendation of the Committee, the SG approved weekly evaluation of stream temperature data, to be conducted by the Committee. The objectives for these weekly evaluations are to identify periods of thermal stress on W&S segments; provide the Committee and Stakeholder Group with timely data to make informed decisions; and assess stream temperatures against Colorado’s stream temperature standard thresholds, using the computational averaging methods that were intended to accompany such assessments. Weekly evaluations will access data from the two USGS sites with telemetry (09058000 Colorado River at Kremmling and 09060799 Colorado River at Catamount). Data from the two sites will be downloaded, processed, plotted, and distributed to the Committee on a weekly basis from June – September.

The Committee anticipates continued contracting with Lotic Hydrological to generate end-of-season thermographs and temperature standards analyses for all nine W&S sites of interest shown in Table 2.

Table 2: Stream temperature locations for 2023

Site ID	Station Description	Collecting / Data Storage Agencies	Latitude	Longitude
UPCO_DOT	Upper Colorado River above Dotsero	W&S/GCWIN	39.647917	-107.062861
UPCO_RD	Upper Colorado River below Red Dirt Creek	W&S/GCWIN	39.800583	-106.974028
UPCO_SB	Upper Colorado River above State Bridge	W&S/GCWIN	39.855556	-106.644528
9058000	Colorado River near Kremmling, CO	USGS/USGS	40.037	-106.439
9060799	Colorado River at Catamount Bridge, CO	USGS/USGS	39.891	-106.832
9071750	Colorado River at Catamount Bridge, CO	USGS/USGS	39.559	-107.29
COR-abvPump	Colorado River above Pumphouse	BLM/GCWIN	39.99	-106.508
COR-Rad	Colorado River at Radium	BLM/GCWIN	39.954	-106.55
Blue-abvCOR	Blue River above Colorado River Confluence	BLM/GCWIN	40.041	-106.394

Macroinvertebrate Monitoring

The SG has approved a [long-term plan](#) to conduct macroinvertebrate monitoring on a biennial basis. Monitoring will occur during odd years at the five sites shown in Table 3, below. Consistent with the long-term monitoring plan, the Committee anticipates contracting with Timberline Associates to conduct macroinvertebrate sampling in 2023.

Table 3: W&S macroinvertebrate monitoring sites for 2023

Site Location	County	Latitude	Longitude
Pumphouse	Grand	39.98471	-106.514
Radium	Grand	39.94985	-106.558
State Bridge	Eagle	39.85783	-106.647
Above Catamount	Eagle	39.91239	-106.785
Below Sweetwater	Eagle	39.70996	-107.047

Channel Maintenance Flow (CMF) Monitoring Plan Implementation

During 2023, the CMF Work Group will start collecting data per the [Channel Maintenance Flow Observational Monitoring Plan](#). General observer notes and repeated photo points will be completed by the SG. Drone-based aerial imagery/photogrammetry, cross-sectional channel surveys, and substrate measures will be conducted by outside consultants. The CMF WG requests \$2,500 for game cameras, at least one field trip, funds to execute the general observer notes, and materials to set photo points. The SG acknowledges that there will be a budget amendment to be approved at the July 2023 SG meeting after the contractor(s) are selected for drone-based aerial imagery/photogrammetry, cross-sectional channel surveys, and substrate measures.

Streamflow Monitoring (see Table 5)

The River District and the U.S. Geological Survey (USGS) cover operations and maintenance (O&M) costs for the USGS stream gage 09058000 Colorado River near Kremmling. The Kremmling gage operates year-round. The Bureau of Land Management (BLM), White River National Forest, and USGS cover O&M costs for the USGS stream gage 09060799 Colorado River at Catamount Bridge. The Catamount gage operates for eight months annually (March 15th - November 15th).

Other Monitoring Efforts

As per the SG Plan, the Committee is charged with gathering data collected by others. Starting during the Pre-Provisional Period, the Committee has maintained collaborative relationships with a host of entities who are actively monitoring parameters of interest to the SG. Some of these agencies (and the data they collect) include: USGS (Hydrology, Temperature, Water Quality (above Glenwood)), CPW (Biosurveys, Research Projects), BLM (User Data, Commercial logs, Traffic counters, Temperature), and USFS (User Data, Commercial Logs). Because these data serve an important role in the Committee's ability to help inform SG decisions, the Committee intends to maintain and expand relationships with other organizations collecting data in the Wild & Scenic segments.

In addition, a number of new data collection activities have started in areas that overlap with W&S efforts. Due to the Grizzly Creek fire, the USGS started collecting additional water quality parameters at a number of sites. The Upper Colorado River and Gunnison Rivers were also selected for the USGS Next Generation Water Observing System (NGWOS) which will intensively monitor a broad range of metrics over the next 10 years. Both of these endeavors may result in additional data that is of interest to the W&S SG.

2023 Monitoring Plan – Cost Summary

The proposed monitoring plan for 2023 will cost \$73,845. The breakdown for each element is shown in Table 4, below. In-kind contributions related to stream temperature and hydrology and flow-related monitoring are shown in Table 5, below.

Table 4: Monitoring budget for 2023

Category	2022 Cost
Recreation Monitoring (RRC Associates)	\$53,700
Stream Temperature	
- Data analysis at 9 sites (Lotic Hydrological)	\$800
- Monitoring of 3 W&S temp sites (GCWIN)	\$1,553
- GCWIN membership dues	\$552
Macroinvertebrate Monitoring	\$14,740
Channel Maintenance Flows	
- CMF Monitoring Plan Implementation	\$2,500 + cost for consultant(s) (budget amendment)
TOTAL:	\$73,845*

**Not including drone-based aerial imagery/photogrammetry, cross-sectional channel surveys, and substrate measures cost (SG budget amendment in July 2023).*

Table 5: Monitoring in-kind contributions for 2023/2024

Category	In-Kind
Stream Temperature	
- USGS stream temperature gage at Kremmling (River District)	\$1,842
- BLM stream temperature gages (3 sites)	Donated staff time
- Grand County stream temperature weekly analysis	Donated staff time

Hydrology & Flow-Related Monitoring

- USGS stream gages at Kremmling and Catamount (USFS & BLM)	\$17,500
TOTAL:	\$19,342