



January 22, 2024

Mr. Robert Viehl
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Dear Mr. Viehl,

High Country Conservation Advocates (HCCA) and Western Resource Advocates (WRA) submit this preliminary instream flow recommendation for Cabin Creek, located in Gunnison County, Water Division 4.

HCCA protects the health and natural beauty of the land, rivers, and wildlife in and around Gunnison County. Many of HCCA's members live and work in Gunnison County and enjoy the outdoor opportunities and quality of life available in the headwaters of the Colorado Rockies. HCCA has a long history of protecting waters in the Upper Gunnison Basin and of partnering with federal agencies and other non-profits to support a number of instream flow proposals in our region.

Western Resource Advocates fights climate change to sustain the environment, economy, and people of the West. WRA has a vision to see rivers thriving in the face of climate change. Together, HCCA and WRA share a common interest in protecting Colorado's natural environment and water resources.

The headwaters of Cabin Creek originate on land managed by the US Forest Service and Bureau of Land Management. Cabin Creek provides critical flows for wildlife within the Cabin Creek State Wildlife Area and the Van Tuyl State Wildlife Area and supports an important riparian area.

Enclosed you will find a preliminary instream flow proposal. If you have any questions regarding this recommendation, please feel free to contact Julie Nania at julie@hccacb.org or Bart Miller at bart.miller@westernresources.org.

Sincerely,

A handwritten signature in cursive script that reads "Julie Nania".

Julie Nania
Water Director
High Country Conservation Advocates

A handwritten signature in cursive script that reads "Bart P. Miller".

Bart Miller
Healthy Rivers Program Director
Western Resource Advocates

Enclosure: Preliminary Instream Flow Proposal for Cabin Creek.

ENCLOSURE – PRELIMINARY INSTREAM FLOW RECOMMENDATIONS FOR CABIN CREEK

Below is a description of the proposed instream flow. Additional details are provided in Attachments A-D.

Location

Cabin Creek is located within the Upper Gunnison Watershed in Gunnison County, Water Division 4. The headwaters originate between Lost Canyon Gulch and Fossil Ridge. Cabin Creek flows south towards Tomichi Creek through both the Cabin Creek and Van Tuyl State Wildlife Areas. Cabin Creek's watershed is about 15.9-square miles and is on the Signal Peak United States Geological Survey quad map (Attachment A).

The stream segment identified for the proposed instream flow appropriation is approximately 7.9 miles long from its headwaters to the Cabin Creek Ditch, located at stream mile 0.29.¹ The Cabin Creek Watershed is 100 percent public land managed by the Bureau of Land Management and Colorado Parks and Wildlife.

Table 1. Land Status in the Cabin Creek Watershed.

| Upper Terminus | Lower Terminus | Total Length (miles) | Land Ownership ^{1,2} | |
|----------------|-------------------|----------------------|-------------------------------|---------------------------|
| | | | Private (%) | Public (%) |
| Headwaters | Cabin Creek Ditch | 7.9 | Riparian Corridor 0% | Riparian Corridor 100% |
| | | | Watershed 0% | Watershed 100% |

1) Land ownership data was retrieved from the Gunnison County Assessor's Office.

2) The public land in the Cabin Creek Watershed is managed by the Bureau of Land Management and Colorado Parks and Wildlife.

Existing Instream Flow Rights

Cabin Creek does not have an existing instream flow water right.

Water Availability

Physical Availability

There is not a gage in the Cabin Creek watershed. The nearest downstream gage is Tomichi Creek at Gunnison with a period of record of 1937 to present (USGS 09119000).

¹ The approximate stream length was estimated using data from the Colorado Decision Support System Map Viewer accessed on 12/13/2023.

Hydrologists at Colorado State University developed a modeled, called [CSUFlow18](#),² to estimate stream flows in ungaged basins. CSUFlow18 reports a minimum monthly average flow of 0.5 cfs in October and a maximum monthly average flow of 7.59 cfs in June for the Cabin Creek Watershed (the Cabin Creek Ditch was used as the watershed outlet). The modeled flows were used to refine the preliminary instream flow recommendations and are discussed in the Preliminary Refinements Section.

Legal Availability

Three ditches divert water from Cabin Creek. The Van Tuyl Ditch No. 1 is decreed for 0.4 cfs for irrigation and stock watering with a priority date of 12/9/2009. The Van Tuyl Ditch No. 2 is decreed for 1.2 cfs for irrigation and stock watering with the same priority date of 12/9/2009. Both of these rights are held by Colorado Parks and Wildlife and used to support wildlife on nearby State Wildlife Areas.

The Cabin Creek Ditch is downstream and has two water rights appropriated in 1877.³ One is decreed for 0.65 cfs for irrigation; the other is decreed for 3.35 cfs for irrigation. There are also a number of small spring rights in the Cabin Creek Watershed.⁴

We recommend that the instream flow right extend from the headwaters of Cabin Creek to the Cabin Creek ditch (located at stream mile 0.29). This appropriation would provide protections for the Cabin Creek State Wildlife Area and the Van Tuyl Wildlife Area (located above the Van Tuyl Ditch No. 2). HCCA and WRA will discuss the proposed instream flow water right with Colorado Parks and Wildlife (CPW). Attachment B provides information about the surface water rights and spring rights.

Biological Summary

Cabin Creek, albeit a smaller creek, supports a robust riparian area and is the primary water source in the Cabin Creek State Wildlife Area. CPW holds seven water rights on Cabin Creek decreed specifically for wildlife watering. While sampling Cabin Creek, HCCA saw many macroinvertebrates. Significant cottonwood galleries line the creek and there is evidence of historic beaver ponds. See Attachment C for a map of the Van Tuyl and Cabin Creek state wildlife areas supported by the Cabin Creek system. CPW has sampled Cabin Creek but did not identify the presence of a fishery.

² Eurich, A., K. Willi, S. Kampf, J. Hammond, M. Ross, B. Pulver, A. Vorster (2021). Colorado streamflow prediction, HydroShare, <http://www.hydroshare.org/resource/b372d950da9b46dba2e5a6943c4d6e78>

³ 2023 is the first year since 2019 that there are recorded diversions from Cabin Creek via the Cabin Creek Ditch. See Attachment B.

⁴ Cabin Creek has 8 springs with water rights, the Upper Lands Gulch Springs (numbers 47, 26, 27, 28, 32, 15, 16) and Cabin Creek Spring #1. Each of the Upper Lands Gulch Springs are decreed .01 cfs for 'domestic, stock, federal reserved, and wildlife' purposes. Cabin Creek Spring #1 is decreed .0044 cfs for stock and wildlife. An overview of these springs is included in Attachment B.



Photo 1. Cabin Creek macroinvertebrates (6-21-2023).



Photo 2. Additional macroinvertebrates from Cabin Creek (6-21-2023).

R2Cross Results

HCCA relied on the expertise of Jay Skinner, Western Resource Advocates contractor, and Julie Nania to complete the R2Cross surveys. Two R2Cross surveys were completed at two adjacent locations on June 21, 2023. Alpine Environmental Consultants LLC interpreted output from the R2Cross model. R2Cross data entry, analysis, and interpretation were completed following fieldwork. The R2Cross output and field forms are attached for review (Attachment D).

Table 2. Preliminary R2Cross Assessment Results¹.

| Cross Section (Date) | Measured Discharge (cfs) | Bankfull Top Width (ft) | Flow Recommendation to meet 2 of 3 Criteria (cfs) ^{2,3} | Flow Recommendation to meet 3 of 3 Criteria (cfs) ⁴ |
|--------------------------|--------------------------|-------------------------|--|--|
| Cabin Creek #1 (6-21-23) | 0.32 | 5.16 | 0.39 | 1.1 ⁵ |
| Cabin Creek #2 (6-21-23) | 0.32 | 4.57 | 0.25 | 0.98 |
| Average: | | | 0.32 | 1.1 |

- 1) WRA or HCCA may complete additional R2Cross surveys in 2024.
- 2) This table rounds the R2Cross results based on CWCB guidance.
- 3) The recommendation that meets two of three criteria is typically applied as the winter flow rate.
- 4) The recommendation that meets three of three criteria is typically applied as the summer flow rate.
- 5) The 3 of 3 criteria flow recommendation is out of range (i.e., 1.1 cfs > 0.80 cfs which is 2.5 times the measured flow).

Preliminary Refinements

The R2Cross results were compared against the hydrograph, using a model developed by CSU specifically for ungauged basins in Colorado⁵, to refine the R2Cross results based on physical availability and to establish the seasons for the instream flow recommendation. The preliminary ISF recommendations and seasons are presented in Table 3. Attachment D provides the modeled average monthly flows, preliminary instream flow rates, and a plot of the annual hydrograph. HCCA and WRA will consult with CWCB and CPW staff and local stakeholders to further refine the preliminary recommendations.

The summer flow rate of 1.1 cfs meets all three criteria and would apply from 4/1 to 7/31. The winter flow rate of 0.39 cfs meets two of three criteria. The winter flow rate would apply from 10/1 to 3/31. The fall flow rate of 0.5 cfs meets two of three criteria and would apply from 8/1 to 9/30. Providing a fall ISF rate may help protect critical life stages of local aquatic life (e.g., fall spawning).

Table 3. Preliminary instream flow recommendations and associated seasons.¹

| Winter Flow Recommendation | Summer Flow Recommendation | Fall Flow Recommendation | Winter Flow Recommendation ² |
|----------------------------|----------------------------|--------------------------|---|
| 0.32 cfs 1/1 to 3/31 | 1.1 cfs 4/1 to 7/31 | 0.5cfs 8/1 to 9/30 | 0.32 cfs 10/1 to 12/31 |

- 1) The instream flow rates and seasons will be refined following additional analysis of legal and physical water availability.
- 2) The winter flow rate is presented twice in the table to reflect the calendar year. A single instream flow rate of 0.32 cfs would apply from 10/1- 3/31.

⁵Eurich A, Kampf SK, Hammond JC, et al. Predicting mean annual and mean monthly streamflow in Colorado ungauged basins. River Res Applic. 2021;1–10. <https://doi.org/10.1002/rra.3778>. This model is known as CSUFlow18.

Photographs



Photo 3. Cabin Creek cross-section: right to left bank view (6-21-2023).



Photo 4. Cabin Creek near cross-section looking downstream (6-21-2023).



Photo 5. Historic beaver ponds along Cabin Creek (6-21-2023).



Photo 6. Cabin Creek riparian environment (6-21-2023).

Relationship to Existing State Policy

HCCA is proposing this instream flow to the CWCB in furtherance of the State of Colorado's policy "that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors... and that, to carry out such program and policy, there shall be a continuous operation of planning, acquisition, and development of wildlife habitats and facilities for wildlife-related opportunities." C.R.S. 33-1-101(1).

Attachments

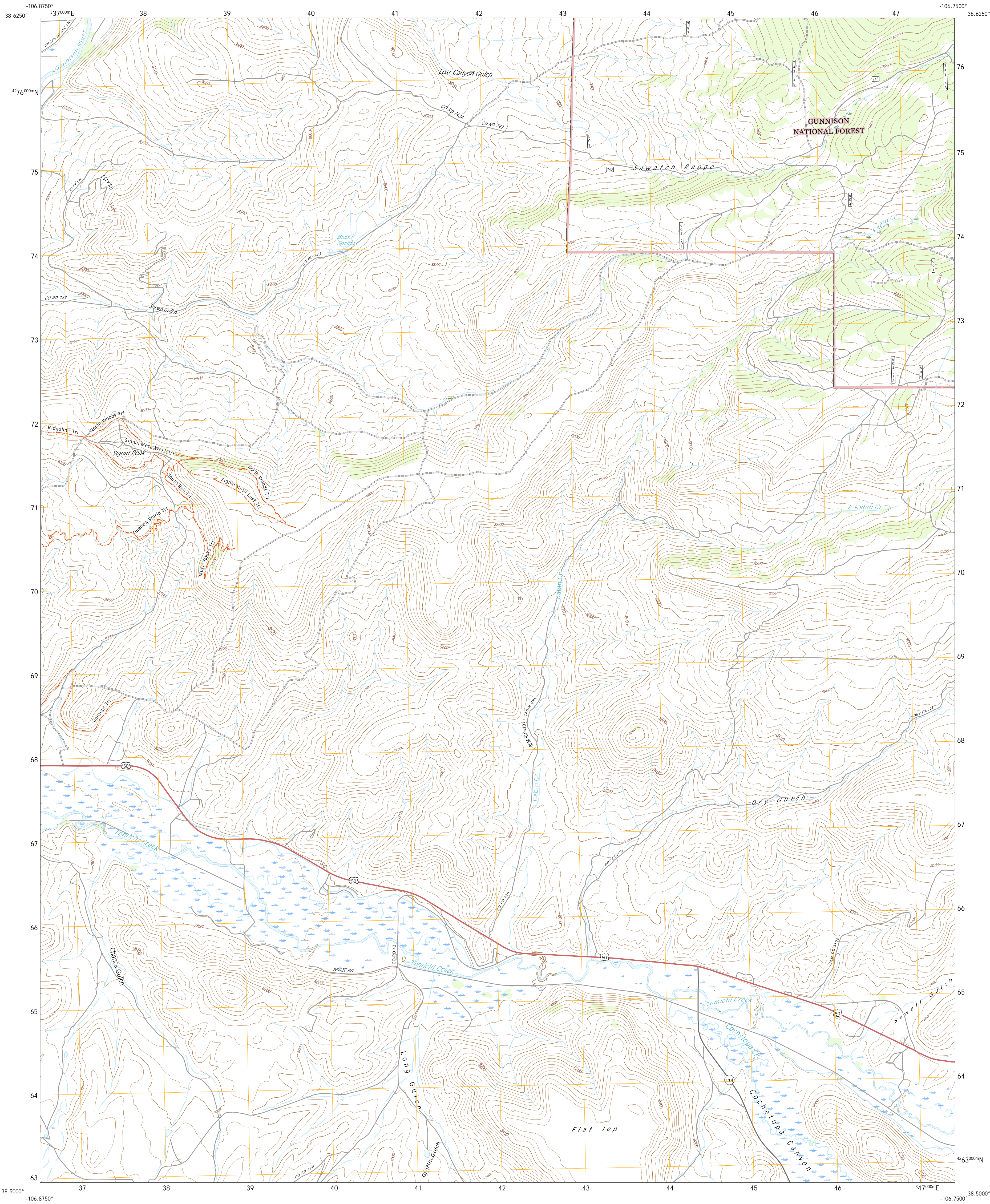
A – USGS Topographic Quadrangle Map

B – Water Rights Information

C – Cabin Creek State Wildlife Areas

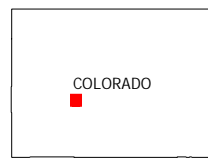
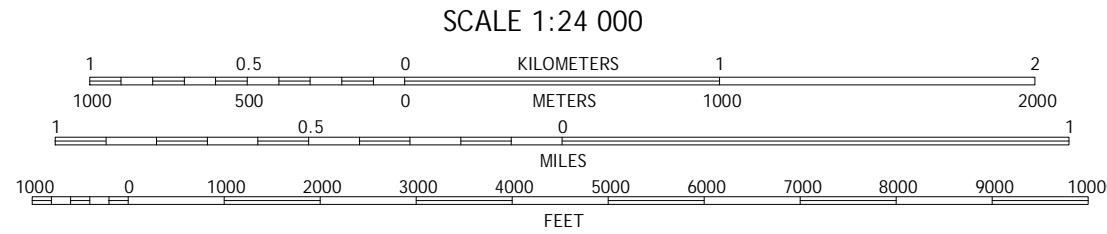
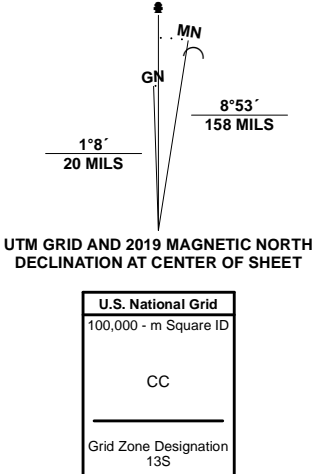
D – R2Cross Analysis and CSUFlow18 Summary

Attachment A- USGS Topographic Quadrangle Map



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84) Projection and
1 000-meter grid/Universal Transverse Mercator, Zone 13S
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

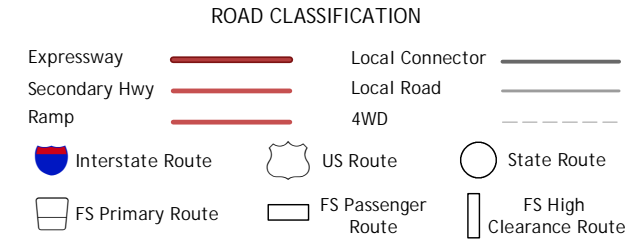
Imagery.....NAIP, September 2017 - January 2018
Roads.....U.S. Census Bureau, 2016
Roads within US Forest Service updates, 2013
Names.....National Hydrography Dataset, 2002
Hydrography.....National Hydrography Dataset, 2002
Contours.....National Elevation Dataset, 2021
Boundaries.....Multiple sources; see metadata file 2017, 2021
Public Land Survey System.....BLM, 2021
Wetlands.....FWS National Wetlands Inventory, 1983



| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

ADJOINING QUADRANGLES

1 Flat Top
2 Almont
3 Crystal Creek
4 Gunnison
5 Parlin
6 Iris NW
7 Iris
8 Houston Gulch



Check with local Forest Service unit
for current travel conditions and restrictions.

SIGNAL PEAK, CO
2022

