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MONTANA FIRST JUDICIAL DISTRICT, LEWIS AND CLARK COUNTY

UPPER MISSOURI WATERKEEPER, ALLIANCE FOR THE WILD ROCKIES, and SAVE THE BULL TROUT Plaintiffs, v. MONTANA DEPARTMENT OF FISH, WILDLIFE and PARKS, an agency of the State of Montana Defendant.	Case No. **COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF**

Plaintiffs Upper Missouri Waterkeeper, Alliance for the Wild Rockies, and Save the Bull Trout (collectively, "Plaintiffs"), through counsel, file this Complaint seeking judicial review of the Montana Department of Fish, Wildlife and Parks' ("FWP") new pattern and practice of making "call" on its senior water rights for in-stream flow purposes (hereinafter the "Protocol"), requesting declaratory and injunctive relief, and their other claims and causes of action, state and allege as follows:

INTRODUCTION

1. Montana is currently experiencing its most extreme drought on record, while simultaneously experiencing its greatest demand for water.
2. While the state's cold-water fisheries are the envy of the world, Montana's iconic trout species are almost universally experiencing population-level declines.
3. Today, Montana is also experiencing a decline in available surface water. This hydrologic fact is well documented by the state and its agencies.
4. Likewise, the harmful impacts that low-flow surface water conditions have on aquatic life are well known, both to the State of Montana, its agencies, and the public.
5. Despite persistent drought across Montana's river systems, documented declines in Montana's wild trout fisheries, and the ecological values gained from bolstering instream flows during summer, low-flow conditions, Defendant FWP is, has, and threatens to continue to apply its new Instream Flow Protocol to the detriment of Montana's waterways, Montana's aquatic wildlife, and Montana's citizens.
6. Plaintiffs seek this Court's judgment to redress the harms being committed by Defendant. Plaintiffs first seek a declaration of their constitutional rights, the constitutionality of FWP's Protocol for instream flows, and the liability and duties of the agency Defendant. Second, Plaintiffs seek an order enjoining Defendant from enforcing its Protocol and ordering the agency to implement agency instream flow rights based upon the priority of its water rights and its scientific criteria representing flows necessary to maintaining and improving aquatic life.
7. More specifically, Plaintiffs request this Court declare and adjudge that the Montana FWP is, has, and threatens to continue to violate its non-discretionary, constitutional obligation to Montana's current and future generations to maintain and improve a

clean and healthful environment when the agency fails to make calls on its water rights to bolster instream flows.

8. Plaintiffs allege FWP has an affirmative and anticipatory duty to protect Montana's river systems and the aquatic life they support by and through implementing its instream flow water rights, which the agency holds in trust for the public, based on scientific metrics related to protection of aquatic life.

PARTIES

9. Plaintiff Upper Missouri Waterkeeper ("Waterkeeper") is a member-supported clean water advocacy and public education organization based in Bozeman, Montana, that works to protect and restore fishable, swimmable, drinkable water throughout the 25,000 square miles of Southwest and West-central Montana's Upper Missouri River Basin. The Upper Missouri River Basin includes the Missouri River and tributaries from the confluence of the Jefferson, Madison and Gallatin Rivers.
10. Waterkeeper is dedicated to, in part, protecting its and its members' rights to a clean and healthful environment and lawful government decision-making that protects the public trust. More than a thousand individuals in Montana and around the country support Waterkeeper as members, both financially and with their activism. Waterkeeper members regularly fish, float, hunt, recreate, and view wildlife on public and private lands, including for business purposes, and on surface waters throughout the Upper Missouri River Basin.
11. Plaintiff Save the Bull Trout ("SBT") is a Montana nonprofit public benefit corporation, whose mission is dedicated to ensuring the survival and recovery of bull trout.
12. SBT and its members have been at the forefront of native salmonid conservation and have fought to ensure the survival and recovery of native trout.
13. Plaintiff Alliance for the Wild Rockies ("Alliance") is a tax-exempt, public interest organization dedicated to the protection and preservation of the native biodiversity of the Northern Rockies Bioregion, its native plant, fish, and animal life, and its naturally functioning ecosystems.
14. Alliance has over 2,000 individual members, many of whom are located in Montana. Members of the Alliance work as fishing guides, outfitters, and researchers, who

observe, enjoy, and appreciate Montana's native wildlife, water quality, and terrestrial habitat quality, and expect to continue to do so in the future.

15. A present controversy exists between Plaintiffs and Defendants.
16. Plaintiffs' members use and enjoy Montana's rivers, including cold-water fisheries traditionally supported by many Montana rivers, and Plaintiffs and their members are harmed by Montana FWP's decision to not make calls on its publicly-owned water rights for instream flow purposes.
17. FWP's actions have already caused harm to Plaintiffs' members' protected interests, including, but not limited to, diminishing their ability to fish, float, view, and photograph scenery and wildlife, and engage in other vocational, scientific, spiritual, and recreational activities which rely on healthy aquatic ecosystems. Plaintiffs' members intend to continue to use and enjoy Montana waterways in the future.
18. Plaintiffs' members live in the State of Montana, including within the Blackfoot watershed and the Clark Fork and Upper Missouri river basins.
19. In addition, Plaintiffs have an interest in the goals of protecting water resources, promoting sound water planning and lawful process, and ensuring that Montana's executive agencies are carrying out their duties to protect and enforce the water rights it holds in trust for the benefit of the public.
20. Such interests are adversely affected by FWP's unlawful actions described in this Complaint.
21. These adverse impacts may be redressed by granting the relief requested in this Complaint.
22. This action is brought on behalf of Plaintiffs and their members.
23. FWP is an executive agency of the State of Montana entrusted with administering Montana's publicly-owned water rights and managing fisheries, including Montana's unique cold-water wild trout populations.

JURISDICTION AND VENUE

24. Jurisdiction in this matter is based on §2-4-506, MCA, and § 27-8-201, MCA.
25. Jurisdiction is also based on, *inter alia*, Article II, Sections 3,16, 34, Article VII Section 4(1), and Article IX, Sections 1 and 3, of the Montana Constitution; the

Montana Water Use Act MCA § 85-1-101 *et seq*; the Montana Administrative Procedures Act, § 2-4-101, MCA, *et seq*.; the Montana Declaratory Judgments Act, MCA § 27-8-101 *et seq.* (uniform declaratory relief); and § 27-19-201, MCA (injunctive relief).

26. Venue is proper in this district under § 25-2-126, MCA, because the Defendant is a state agency located in Helena, Montana.

27. Venue is appropriate in Lewis and Clark County pursuant to § 2-4-506(4), MCA.

FACTUAL BACKGROUND

A) Montana's History with Instream Flow Water Rights

28. Montana's Constitution enshrines "[a]ll surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for the beneficial uses as provided by law." Mont. Const. art. IX, § 3(3).

29. Adopted in 1973, the Montana Water Use Act ("WUA") sets forth the statutory framework under which water rights are to be obtained, administered, and adjudicated. MCA §§85-2-301, *et seq*.

30. Among other considerations, the primary purpose of the WUA is to provide for beneficial use of Montana waters through a centralized administration and system that recognizes, establishes, preserves, and protects ordered water rights of record priority from encroachment by later appropriators. *See* §§ 85-2-101(1)-(3) and -311, MCA; *Montana Power Co. v. Carey*, 211 Mont. 91, 98, 685 P.2d 336, 340 (1984).

31. In conjunction with its primary purpose, the WUA "provide[s] for the wise utilization, development, and conservation of [state] waters…for the maximum benefit of [the] people with the least possible degradation of the natural aquatic ecosystems." Section 85-2-101(3), MCA.

32. Montana's first irrigation statute was passed by the Territorial legislature over two decades before Montana achieved statehood in 1889. That first statute, passed in 1870, "undertook to limit the right to appropriate water for irrigation purposes to persons or corporations having title to, or possession of, agricultural lands." *Bailey v. Tintinger*, 45 Mont. 154, 122 P. 575, 579 (1912), citing *Tucker v. Jones*, 8 Mont. 225, 19 Pac. 571, citing (Laws 1869–70, p. 57).

33. This uncodified common law of appropriation, often referred to in Montana case law as the "settlers' customs," was summarized by the Court as early as 1897 in *Murray v. Tingley*, as follows: "A person acquired a right to use the water by digging a ditch, tapping a stream, and turning water into it, and applying the water so diverted to a beneficial use. This constituted a valid appropriation of water." *Murray*, 20 Mont. 260, 268, 50 P. 723, at 725 (1897). Consequently, the Montana Supreme Court reaffirmed that "[t]he essence of an appropriation [is] a completed ditch, actually diverting water, and putting it to a beneficial use...." *Murray*, 20 Mont. at 269, 50 P. at 725.
34. As a result, the foregoing was the state of the law pertaining to water use rights when the state constitutional convention was held in 1972.
35. As a part of Art. IX of the new 1972 Constitution, the convention adopted subsections (3) and (4) of Section 3. Those subsections provide:

> (3) All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law.
> (4) The legislature shall provide for the administration, control, and regulation of water rights [.]

36. When those subsections came before the convention for adoption, Delegate McNeil, supporting their adoption, spoke to the convention, stating:

> Subsection 3 is a new provision to establish ownership of all water in the state subject to use by the people. This does not, in any way, affect the past, present, or future right to appropriate water for beneficial uses and is intended to recognize Montana Supreme Court decisions and guarantee the State of Montana's standing to claim all of its waters for use by the people of Montana in manners involving other states and the United States government.

Verbatim Transcript, Montana Constitutional Convention, Vol. V, at 1301.

37. "By the adoption of Article IX, Section 3 in its present form, the Constitutional Convention left it to the legislature to provide appropriation rights for beneficial uses not theretofore recognized under our law." *Matter of Dearborn Drainage Area*, 234 Mont. 331, 342–43, 766 P.2d 228, 235, 1988 WL 110800 (1988), overruled by *In re Adjudication of the Existing Rights to the Use of All the Water*, 2002 MT 216, 311 Mont. 327, 55 P.3d 396, 2002 WL 31109914.

38. The legislature did so with the passage of the Water Use Act in 1973 and previously with the passage of the "Murphy Law."
39. The "Murphy Law" arose in 1969 when the Montana legislature enacted a law allowing the Montana Fish and Game Commission to file for water rights on the unappropriated waters of 12 "blue ribbon" streams in order to maintain stream flows necessary for the preservation of fish and wildlife habitat (Section 89-801(2), RCM 1947).
40. The resulting appropriations, known as "Murphy rights" after the principal sponsor of the bill, have a priority over other uses which arose subsequent in time.
41. Under this statutory authority, the Montana Department of Fish, Wildlife, and Parks has filed for appropriations on all 12 "blue ribbon" streams in Montana, including Big Spring Creek, Blackfoot River, Flathead River, Gallatin River, Madison River, Missouri River, Rock Creek (Clark Fork), Smith River, Yellowstone River, and the Middle, South, and North Forks of the Flathead River.
42. Of the headwater rivers in the Upper Missouri headwaters basin, upgradient of the Missouri's confluence at Three Forks, Montana, only the Jefferson River lacks instream flow protections based on a Murphy right. Thus, streamflow protection is limited on the Jefferson to its more junior 1985 water reservation; conversely, both the Gallatin and Madison rivers have Murphy rights that are more senior in priority, dating back to 1970.
43. Additionally, the Missouri River's priority date (above Canyon Ferry) is five days earlier than the Murphy rights on both the Gallatin and Madison Rivers, making it the most senior FWP instream flow water right in that part of the Missouri River basin. This right thus applies to upgradient, more junior, users in the Missouri headwaters subbasin.
44. To date, FWP Murphy appropriations have not been challenged by other water users.
45. While the Murphy rights legislation was repealed in 1973, the claimed appropriations remain valid.
46. In 1973, the Montana Water Use Act was enacted, setting forth a systematic and comprehensive mechanism for the protection of instream values (§ 85-2-316, MCA).

47. In the seminal case regarding FWP's claims of non-diversionary flows in Bean Lake, the Water Court itself, alongside Montana's dominant agricultural powers argued that "under Montana law before 1973, no appropriation right was recognized for recreation, fish and wildlife, except through a Murphy right statute." *In re Adjudication of the Existing Rights to the Use of All the Water,* 2002 MT 216.
48. As part of *Bean Lake's* resolution, the Montana Supreme Court scoured Montana case law for any decision which would have recognized the same. When it could not find any precedent, the Court held that "[t]he fact that there are no Montana decisions establishing such an instream right merely reflects the fact that that issue was not litigated, not that such a right was beyond the pale of Montana prior appropriation doctrine." *In re Adjudication of the Existing Rights to the Use of All the Water,* 2002 MT 216, ¶ 26, 311 Mont. 327, 338, 55 P.3d 396, 403 (2002).
49. Later, in *Bean Lake III*, the Montana Supreme Court held that "the doctrine of prior appropriation does not require a physical diversion of water where no diversion is necessary to put the water to a beneficial use. Thus, instream/inlake appropriations of water for beneficial uses may be valid when the purpose (e.g., stock-watering, fish, wildlife and recreation) does not require a diversion." *Id.*, at ¶36.
50. "We now hold that Montana law prior to 1973 did not absolutely require a diversion for a valid appropriation of water." *Id.*, at ¶37.
51. The *Bean Lake* holdings allowed Montana FWP to claim instream uses of water with priority dates that pre-date 1973.
52. Separately, Montana statute also provides an opportunity to reserve water for future diversionary and consumptive uses as well as for maintaining stream flows for the protection of existing water rights, aquatic life, and water quality (Section 85-2-316(1), MCA).
53. While the reservation process provides a mechanism to evaluate the instream flow needs of a stream or watershed, to balance instream with future consumptive uses, and to legally protect needed instream flows, it is time-consuming and costly.
54. Notably, unlike water use permits – which are granted a priority date as of the date of application – priority dates for instream reservations are not established until applications have been approved. The reservation application preparation and review

process can often take years, resulting in belated recognition of reservation dates as compared to traditional appropriative right claims.

55. Thus, due to the legal reality that Montana law did not recognize instream flow rights as a beneficial use until relatively late in the State's history, the vast majority of instream water rights held by the State are relatively "junior" to other types of water rights.

FWP's Instream Flow Rights On the Blackfoot and Clark Fork Rivers:

The Milltown Water Right

56. The Milltown Water Right arose on December 11, 1904 as an instream hydropower right to generate electricity at the Milltown Dam for the Bonner lumber mill. The dam and its water right were later acquired by Montana Power Company for regional power supply, and then acquired by Northwestern Energy.
57. In 2008, the State acquired the water right through the Upper Clark Fork River Basin Superfund settlement with the intent the water right would be used to restore the fishery and recreational uses.
58. On April 24, 2015, the Montana Legislature ratified the Confederated Salish & Kootenai Tribes – Montana Water Rights Compact (§ 85-20-1901, MCA).
59. § 85-20-1901, MCA, stipulates as follows: 1) the Milltown Dam hydropower water right will be split into two separate, active and enforceable water rights that are owned by Fish, Wildlife & Parks (FWP); 2) upon the Effective Date, the Tribes will be a co-owner with FWP of these water rights; 3) enforcement of the water rights will be deferred for 10 years (until April 24, 2025); and, 4) during the deferral period, FWP and the Tribes will engage with other stakeholders in the basin on water management, drought planning and the exercise of water rights with other water users and interested citizens.
60. The Milltown Water Right was split into two rights – one right for the Clark Fork River and one right for the Blackfoot River. These water rights were then formally changed by the state of Montana in the following ways:

	From	To
Water right number	76M 94404-00	Clark Fork: 76M 94404-01 Blackfoot: 76M 94404-02
Purpose	Hydropower generation	Instream fishery habitat
Minimum flow rate	2,000 cubic feet/second (cfs)	Clark Fork: 500 cfs Blackfoot: 700 cfs
Maximum flow rate	2,000 cfs	Clark Fork: 833 cfs Blackfoot: 1,167 cfs
Measurement point	Below the Clark Fork & Blackfoot confluence	Clark Fork: Turah bridge Blackfoot: Bonner
Initiation of call	Flow falls below 2,000 cfs	Flow falls below daily enforceable flow rate during 4 out of 5 consecutive days
Termination of call	Flow rises above 2,000 cfs	Flow rises above daily enforceable rates during 2 out of 5 consecutive days
Water uses susceptible to call	Any water use junior to Dec 11, 1904	Surface water irrigation with a priority date between Dec 11, 1904 and Apr 24, 2015 Groundwater irrigation exceeding 100 gallons/minute with a priority date between Dec 11, 1904 and Apr 24, 2015 Any water use junior to Apr 24, 2015

61. The enforceable water right in the Blackfoot Basin can only be called in the Blackfoot Basin. Likewise, the enforceable water right in the Upper Clark Fork Basin can only be called in the Upper Clark Fork Basin. The following diagram is illustrative of the measuring locations and call potential.

62. As shown below, the Milltown water rights have a sliding scale flow rate for implementation and enforcement.

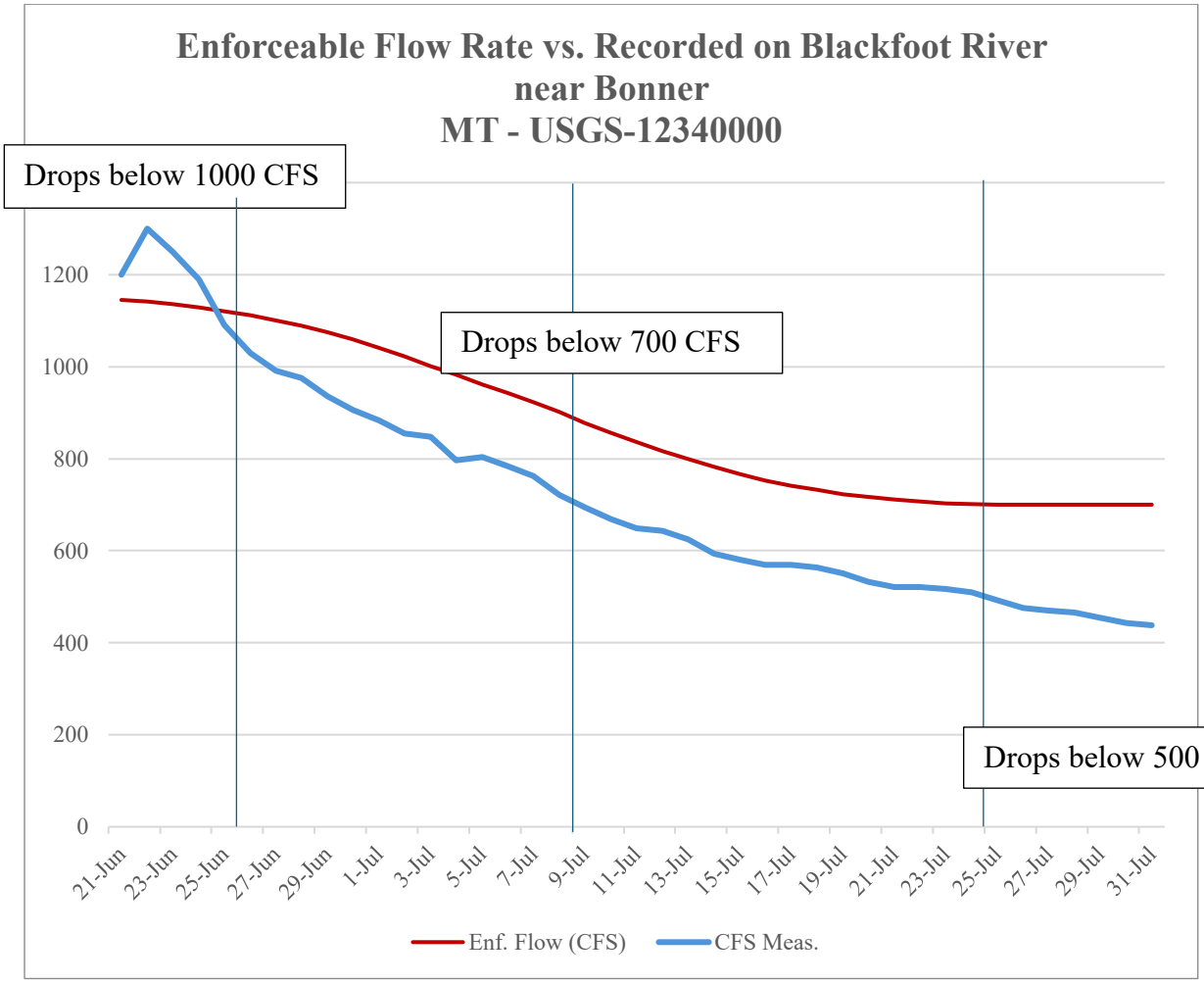
Appendix 31, Table 2

Enforceable Daily Flows for 76M 94404-02 on the Blackfoot @ Bonner, MT												
	Month											
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	700	700	700	700	1,167	1,167	1,041	700	700	700	700	700
2	700	700	700	700	1,167	1,167	1,022	700	700	700	700	700
3	700	700	700	700	1,167	1,167	1,001	700	700	700	700	700
4	700	700	700	700	1,167	1,167	982	700	700	700	700	700
5	700	700	700	700	1,167	1,167	961	700	700	700	700	700
6	700	700	700	704	1,167	1,167	943	700	700	700	700	700
7	700	700	700	713	1,167	1,167	923	700	700	700	700	700
8	700	700	700	723	1,167	1,167	902	700	700	700	700	700
9	700	700	700	733	1,167	1,167	878	700	700	700	700	700
10	700	700	700	747	1,167	1,167	856	700	700	700	700	700
11	700	700	700	765	1,167	1,167	836	700	700	700	700	700
12	700	700	700	788	1,167	1,167	817	700	700	700	700	700
13	700	700	700	815	1,167	1,167	799	700	700	700	700	700
14	700	700	700	843	1,167	1,167	782	700	700	700	700	700
15	700	700	700	870	1,167	1,167	766	700	700	700	700	700
16	700	700	700	898	1,167	1,166	752	700	700	700	700	700
17	700	700	700	925	1,167	1,164	741	700	700	700	700	700
18	700	700	700	953	1,167	1,161	732	700	700	700	700	700
19	700	700	700	980	1,167	1,156	723	700	700	700	700	700
20	700	700	700	1,008	1,167	1,151	717	700	700	700	700	700
21	700	700	700	1,035	1,167	1,145	711	700	700	700	700	700
22	700	700	700	1,062	1,167	1,142	707	700	700	700	700	700
23	700	700	700	1,086	1,167	1,136	703	700	700	700	700	700
24	700	700	700	1,104	1,167	1,129	701	700	700	700	700	700
25	700	700	700	1,122	1,167	1,120	700	700	700	700	700	700
26	700	700	700	1,139	1,167	1,111	700	700	700	700	700	700
27	700	700	700	1,153	1,167	1,101	700	700	700	700	700	700
28	700	700	700	1,162	1,167	1,089	700	700	700	700	700	700
29	700	700	700	1,166	1,167	1,075	700	700	700	700	700	700
30	700		700	1,167	1,167	1,059	700	700	700	700	700	700
31	700		700		1,167		700	700		700		700

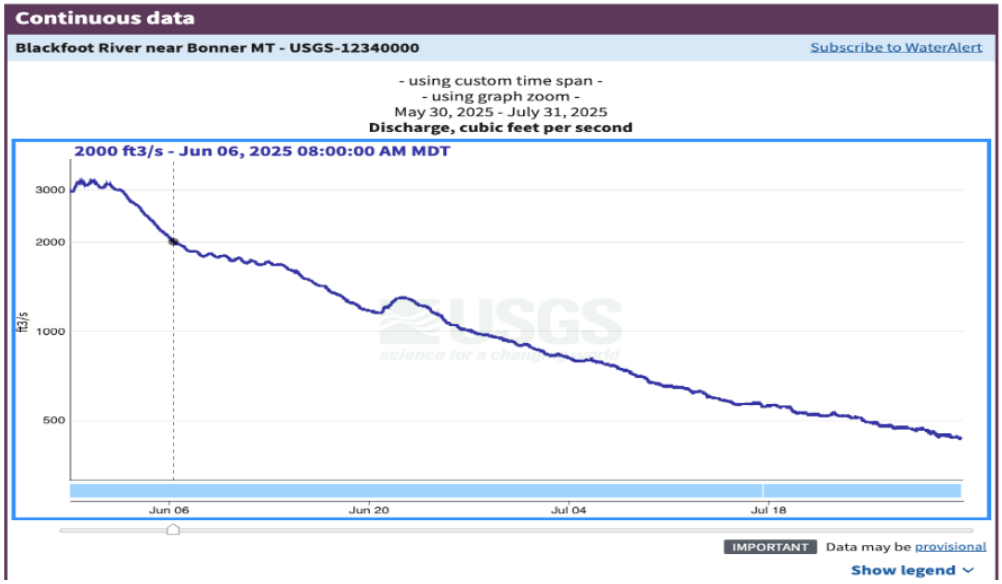
June 25 was the first day where recorded flows began to be consistently below the enforceable daily flow rate.

63. Below is a graph that depicts the enforceable flow rate for 76M 99404-02 derived from the Milltown Water Right Technical Information (Appendix 31, Table 2) (shown in red) and the daily recorded flow rates measured at the USGS gage #12340000 near Bonner, Montana (shown in blue) from June 22nd to July 30th of 2025. Per this data, June 26, 2025, was the first date the water levels dropped below 1000 CFS, July 9,

2025, was the first date the water levels dropped below 700 CFS and July 25, 2025, was the first date the water levels dropped below 500 CFS.



64. As for FWP's Murphy Right on the Blackfoot, June 06, 2025 was the first day when the Blackfoot's flowrate was consistently below the enforceable daily flow rate.



65. Upon information and belief, as of the date of this filing, call has still not been made on the 1904 Milltown water rights, on either the Clark Fork or Blackfoot Rivers.
66. Even if call has been made already, FWP's delay in implementing calls resulted in harm to citizens and the public trust of Montana by virtue of irreversibly losing legal entitlement to additional water in those waterbodies, and consequential harm to aquatic life caused by less water capable of mitigating negative ecological and biological impacts.
67. The 1904 priority dates for Milltown instream rights, alongside the large volumes associated with these water rights, make them unique and especially valuable water rights in FWP's portfolio.

State Murphy Rights and Water Reservations on Upper Missouri Basin

68. The Upper Missouri River drainage includes the Missouri River and tributaries from the confluence of the Jefferson, Madison and Gallatin Rivers (near the town of Three Forks). The upper river reach extends from the headwaters 43 river miles to the upper end of Canyon Ferry Reservoir.
69. This drainage includes several designated blue-ribbon trout streams including the Big Hole River, Madison River and Gallatin River.

70. The drainage contains fish species common to southwestern Montana. The native species found here include westslope cutthroat trout, mountain whitefish, mountain sucker, longnose dace, longnose sucker, Rocky Mountain sculpin, stonecat and white sucker. The Upper Missouri River drainage is also home to several conservation populations of westslope cutthroat trout.
71. The drainage also contains several prized wild, non-native, wild trout fisheries including rainbow and brown trout.
72. FWP's stated "longterm goal of cutthroat conservation in the upper Missouri River Drainage is to have approximately 20% of the historically occupied habitat restored to secure a conservation population of cutthroat trout." See Exhibit 1, Water Right Call Protocol.
73. FWP holds Murphy rights on the two of the three headwaters streams in the Upper Missouri River. Both the Gallatin and Madison Rivers have Murphy rights with priority dating back to 1970, as well as reservation rights.
74. FWP instream flow water rights on the Gallatin River by flow and time period are as follows:

Type of Instream Flow Water Right	Time Period	Flow (cfs)
Murphy Right	September 1-April 30 May 1-May 15 May 16-May 31 June 1-June 15 June 16-June 30 July 1-August 31	800 947 1,278 1,500 1,176 850
Water Reservation	January 1-December 31	533.5

75. Gage data indicates that flow generally fall below both FWP's instream flow rights most years, with the driest of years, flows falling below the Murphy right as early as June 25th. Despite this, FWP typically only recommends making call once the flows fall below FWP's junior reservation right in July.
76. The Jefferson River is the only one without streamflow protections based on a Murphy right. The streamflow protection is limited on the Jefferson to its more junior 1985 water reservation.

77. FWP's instream flow reservation on the Jefferson is for a year-round flow of 1,095 cfs. Gage data indicates that flows generally fall below FWP's instream reservation in most years, with its driest years falling below on or around July 2nd.
78. Currently, FWP will not consider call on its reservation rights on the Big Hole River which have a priority date of July 1, 1985. FWP's water reservations in the Big Hole are based on year-round minimum instream flow in the following reaches:

Table 2: FWP Water Reservations by Reach in the Big Hole River

Reach	Description	Flow (cfs)
Big Hole River #1	Warm Springs Creek to Pintler Creek	160
Big Hole River #2	Pintler Creek to Old Divide Dam	800
Big Hole River #3	Old Divide Dam to Mouth	573

79. The flow levels of FWP's instream rights in the Upper Missouri River basin are primarily based on the wetted perimeter methodology. See Exhibit 2.

FWP's Other Instream Water Rights in Montana

80. FWP has Murphy rights on eight (8) other streams across Montana, including Big Spring Creek, Rock Creek, Flathead River, Smith River, and Yellowstone River.
81. FWP also holds separate water reservations on the Judith River, Shields River, Boulder River, Stillwater River, Tongue River, Musselshell River, Sun River, Red Rocks River, Marias River, Teton River, Bighorn River and Young Creek.

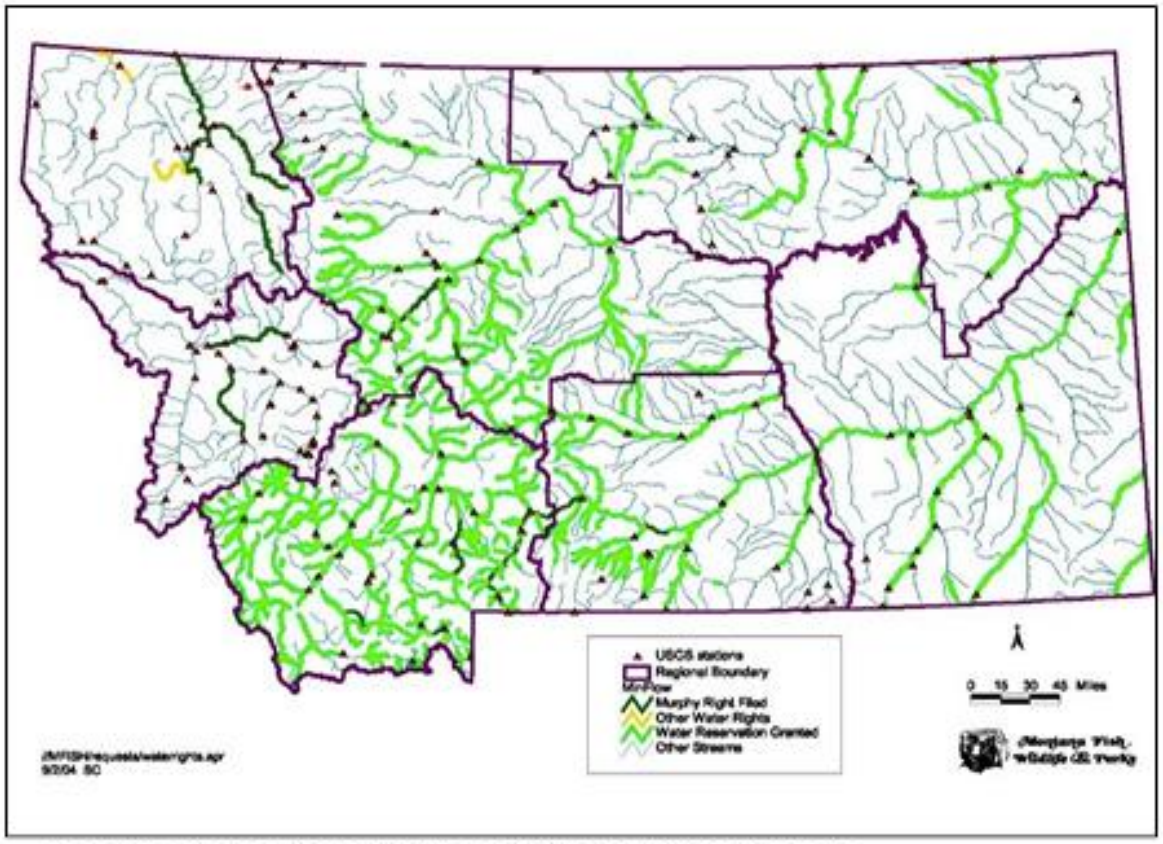


Fig. 1: Montana instream flow reservations and "Murphy" rights

FWP's Instream Flow Call Protocol

82. Water rights possessed by FWP are held in trust for the public, to protect aquatic life and recreation.
83. On June 30, 2021, FWP Water Conservation Specialist Andy Brummond was preparing to make a call on 48 junior water rights on the Smith River and 37 on the Shields River. FWP has made similar calls in past years.
84. However, in 2021, the Governor's Office stepped in, wanting to know the names and types of water users that would be affected and asking for proof of how the call would provide benefit to the stream.
85. In a July 1, 2021, memo, FWP Lands Program manager Bill Schenk used hypothetical situations to explain why FWP staff couldn't provide hard data showing the benefit of making a water rights call. Among other hypotheticals, the memo included speculation that other senior users might divert the very water FWP called for; that junior users maybe weren't using their water to begin with so they had nothing to add; or that

junior users might not comply with a call. Mr. Brummond had made similar calls in past years, according to the memo.

86. On July 7, 2021, Gov. Greg Gianforte sent a letter to then FWP Director Hank Worsech, instructing FWP to abstain from asking junior water rights owners to stop using water on the Smith and Shields rivers in central Montana. See Exhibit 3, Letter from Gov. Gianforte to FWP Director Hank Worsech.
87. The Smith River flows to the Missouri River and is hydrologically within the Upper Missouri River Basin.
88. More specifically, Gov. Gianforte's letter stated: "Montana is currently experiencing a historic drought, and both the Smith and Shields Rivers are facing historic lows. However, based on the analysis provided by FWP and subsequent discussion, it is apparent that a call would provide questionable, if any, measurable benefit to the resources in question. As such, I am directing FWP to forego a call for water on the Smith and Shields Rivers."
89. The Governor's July 7, 2021, letter and FWP's July 1, 2021, memo marked a clear departure from past practices and have created confusion about when and whether FWP may enforce its instream flow rights.
90. Following public outcry and reporting about the 2021 season as described above, on July 22, 2022, Montana FWP issued what is entitled its Water Right Call Protocol. Attached hereto as Exhibit 1.
91. As a preface, the Protocol states that "there are many basins where we do not consider call as there are alternative approaches to maintaining instream flow."
92. Relevant to this Complaint, FWP's Protocol makes the following conclusions:
    a. Generally, when a stream is below its instream flow level, a relatively small increase in flow can benefit the fishery by providing improved habitat conditions;
    b. There are additional benefits to protecting instream flow in riffles, including providing adequate water depth so that fish can move between aquatic habitats. This is especially important when water temperatures are elevated and fish are seeking deeper, cooler water. Protecting flow through riffles also increases the area of habitat along banks of rivers where fish can find cover;
    c. Calls on tributary streams may yield a small amount of water relative to the instream water right level on the associated mainstem river, but the additional water in the tributary may provide significant benefit to that stream;
    d. Calls on tributaries can provide localized, cool water refugia for fish in addition to moderating overall water temperatures on mainstem rivers;

e. An instream FWP water right call may, or may not, produce enough added flow by itself capable of easy documentation at any existing river gauge given site specific characteristics, such as the size of the right and/or distance from any gauge.
f. An FWP instream flow call, even if it not readily observable, may help slow a decline in a surface water's flow, and thereby still benefit aquatic life.

93. The Protocol also, for the first time, sets out a new four-part call analysis outlining the determinations FWP must make before issuing any call for an instream flow rights. The new analysis includes: (1) streamflow monitoring; (2) determining non-call basins; (3) analyzing basin-specific recommendations; and (4) final call recommendation and Director's Office review.
94. As to Step Two of the Protocol's new call methodology, the Bitterroot Basin is used as an example of where the agency categorically does not make instream flow calls. For the Bitterroot, FWP states it does not issue instream flow calls because it augments flows with water the agency releases from Painted Rocks Reservoir, upstream.
95. The Protocol fails to examine how aquatic life or recreational uses - the purposes of FWP instream flows - are protected when, without any FWP calls in-place on the Bitterroot (or any other waterbody on which FWP possesses instream rights), where any water released from Painted Rocks Reservoir can be diverted by any rights on that waterbody. FWP also fails to explain how or why augmenting flows into a river is mutually exclusive with or dispositive of calling junior water users to cease diversions – both of which independently and jointly are beneficial.
96. As a second example, the Protocol states that it does not make call on streams or rivers where there is a water commissioner in place. However, the Protocol offers no explanation as to why the existence of a water commissioner precludes FWP from enforcing its own water rights. In fact, FWP's enforcement would be made easier on streams with water commissioners because enforcement is already being handled by a court appointed official.
97. Most shockingly, the Protocol explains that for the foregoing reason, the agency has not utilized or enforced its water rights in the Musselshell River for over two decades.

98. As a third example, the Protocol explains that the agency does not make calls on any water user who is participating in a stream specific drought management plan, such as on the Blackfoot or the Big Hole rivers.
99. The Protocol does not identify or discuss how, as-applied, implementation of its elements could constitute legal abandonment of its flow rights thereby abrogating the public trust, delegitimizing the agency's rights amongst senior irrigators, or explain how the Protocol maintains and improves instream flows to the benefit of aquatic life and recreational uses.

Climate Change Induced Drought in Montana

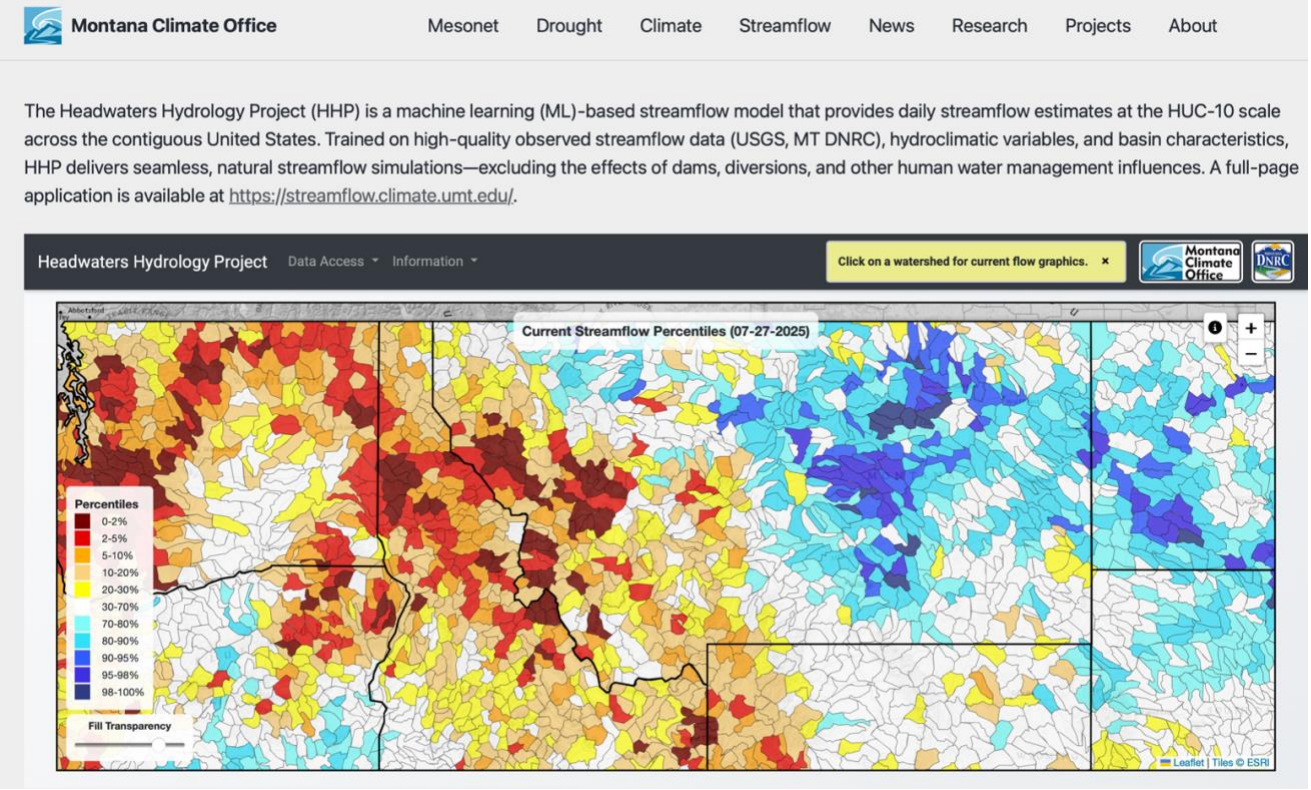
100. Montana's river basins are experiencing unprecedented drought.
101. Two epicenters of ongoing drought are in the Clark Fork and Upper Missouri basins.
102. Over the last three years, these river systems have experienced significant seasonal precipitation deficits as compared to historic annual averages, and simultaneously experienced persistent above-average temperatures.
103. Diminished precipitation and elevated annual temperatures are ecological consequences of climate change.
104. In both the summer of 2024 and the summer of 2025, stream flows in the Upper Blackfoot River have been marked by all-time low flow conditions.
105. On Wednesday, July 2, 2025, the Montana Department of Natural Resources and Conservation ("DNRC") released its summer drought report, finding: "Likely impacts include diminished forage and crop production, declining surface water availability, increased grasshopper infestations, wildfire risk, health impacts due to excessive heat and smoke, reduced recreational opportunities due to forest and fishing closures among others."
106. The report, authored by DNRC's drought program manager, and the agency's water planning staff adds "[l]arge areas of Montana have experienced nearly continuous drought since the spring of 2020." See Exhibit 4, Montana Drought Outlook Report Summer 2025.
107. "The period from September through December was the warmest on record with temperatures exceeding the average by 5.5 degrees Fahrenheit statewide, with some areas reaching more than 10 degrees Fahrenheit above normal." *See* Exhibit 4.

108. According to the U.S. Drought Monitor, by June of 2025, drought conditions had worsened across much of the State of Montana. Compared to 2024, when 56% of the State was classified as experiencing drought, this year 82% of the state is experiencing drought conditions.

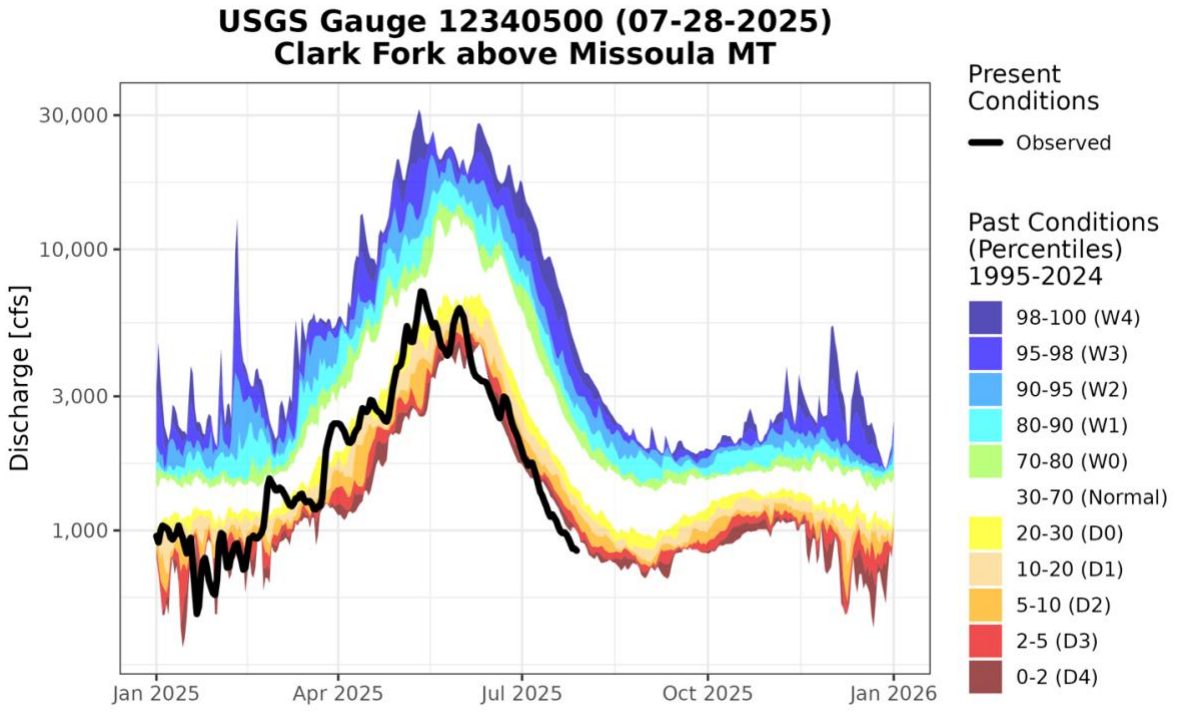
109. The CEO of Energy Keepers, who operates the SKQ Dam on the CSKT Reservation, stated in a press release in June, 2025: "we are in year three of the warmest, driest three consecutive years on record. Let that sink in. Three driest, warmest years ever recorded." *Flathead Lake unlikely to reach full pool as snowpack, streamflow forecasts drastically decrease*, Daily Montanan (August 8, 2025) https://dailymontanan.com/2025/06/06/flathead-lake-unlikely-to-reach-full-pool-as-snowpack-streamflow-forecasts-drastically-decrease/.

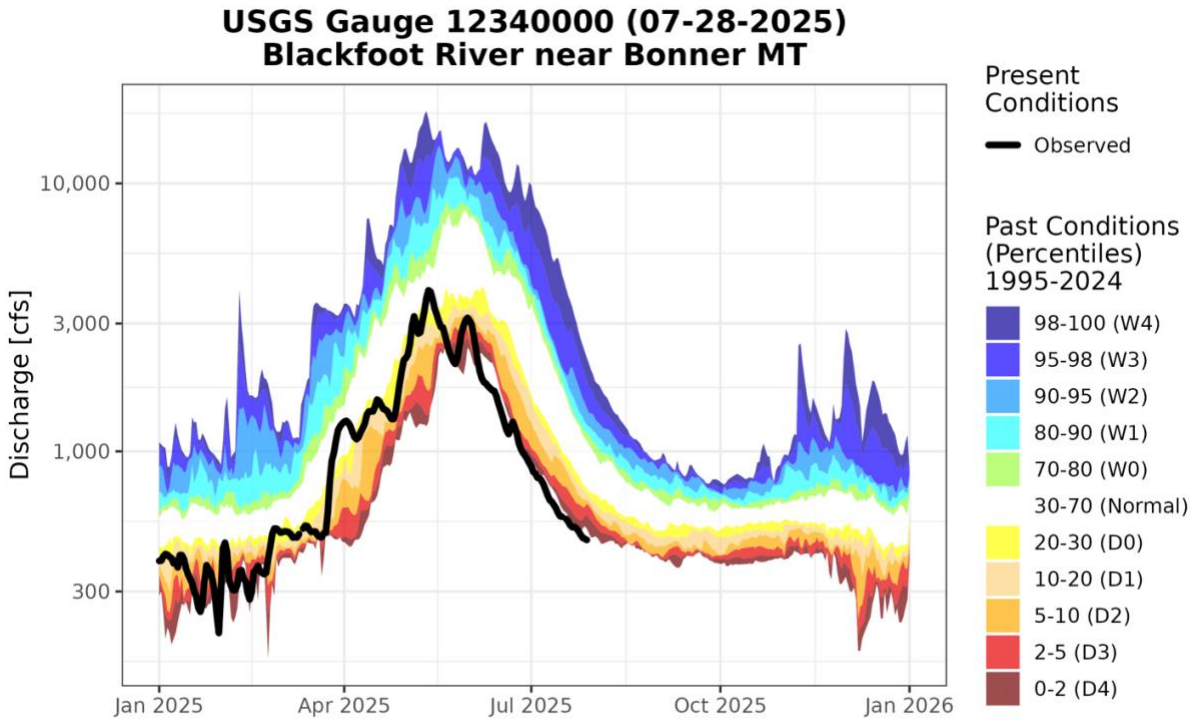
110. This information is supported by the drought and climate research of the Montana Climate Office at the University of Montana.

111. Current stream flows are shown below:



Headwaters Hydrology Project, Montana Climate Office-Streamflow (July 28, 2025) https://climate.umt.edu/streamflow/.

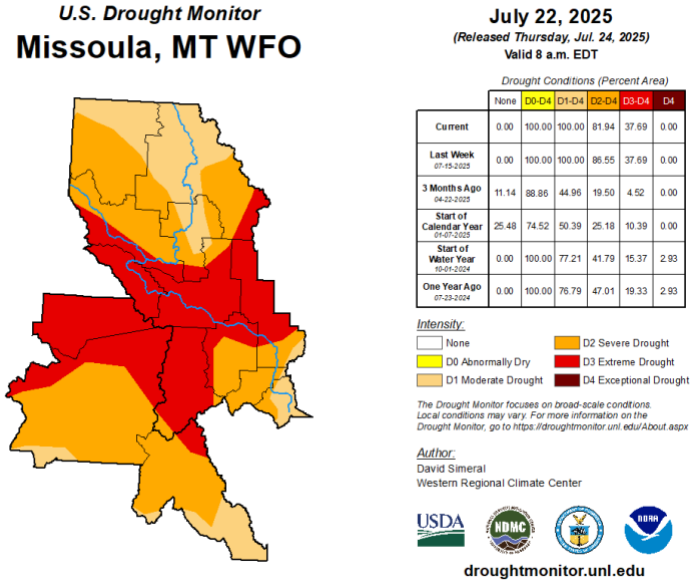




UMRB Indicators Dashboard, Montana Climate Office-Drought (July 28, 2025) https://climate.umt.edu/drought/.

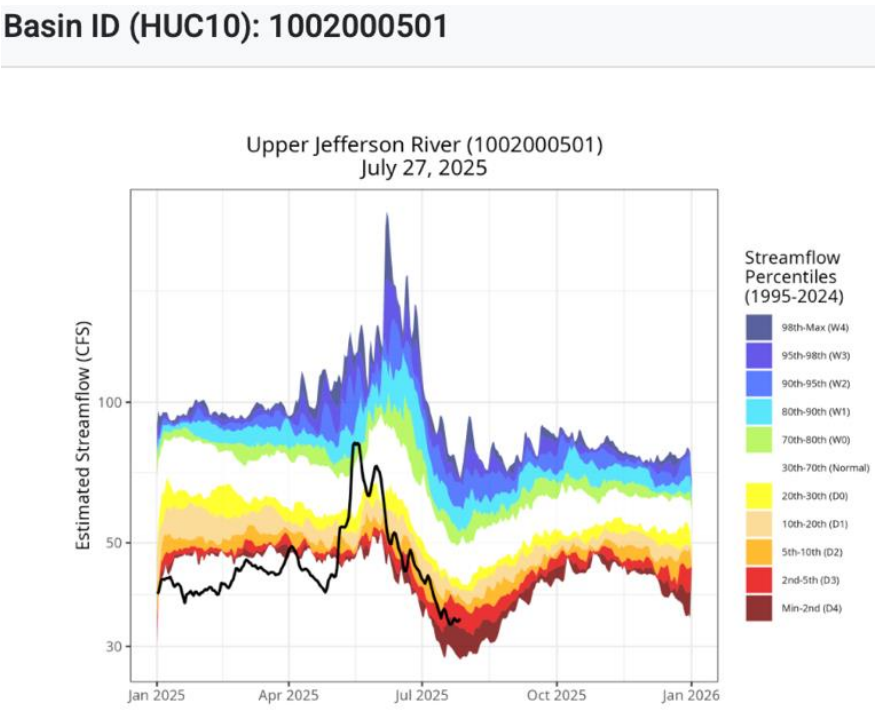
112. This data establishes that the majority of both the Clark Fork and Blackfoot watersheds are currently experiencing surface flows in the 0 percentile. These flows represent the lowest stream flows on record for those waterbodies.

113. The current drought outlook for Western Montana is shown below:

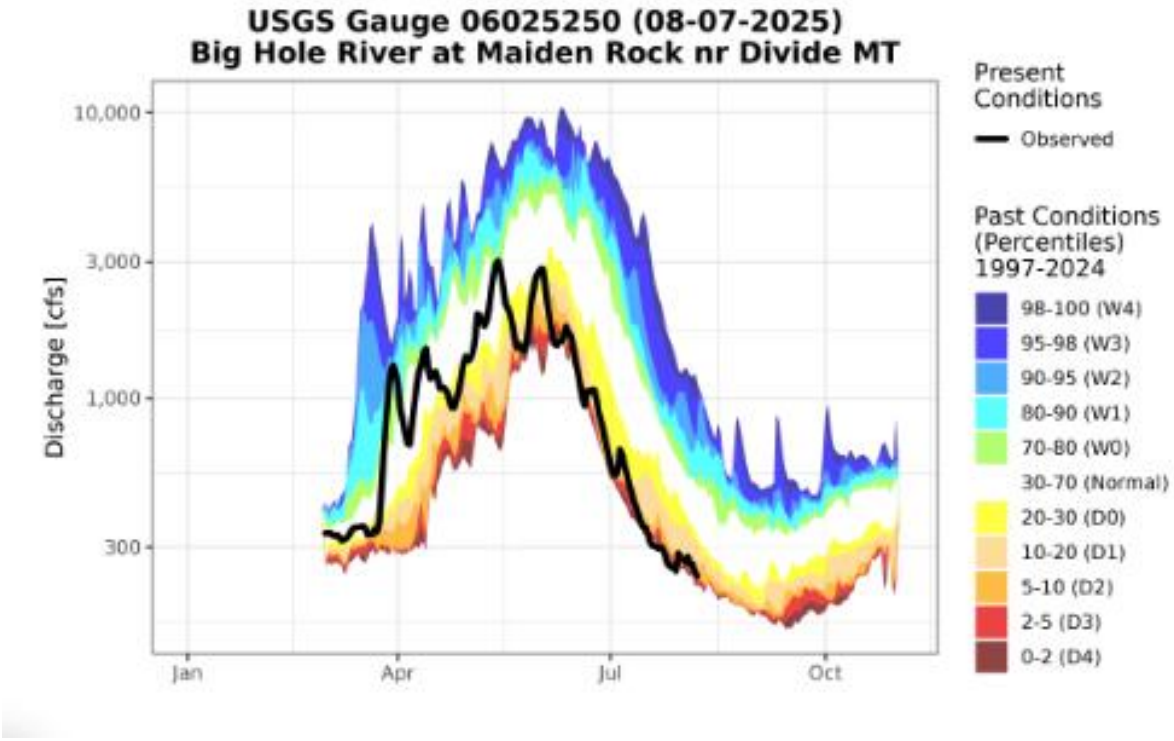


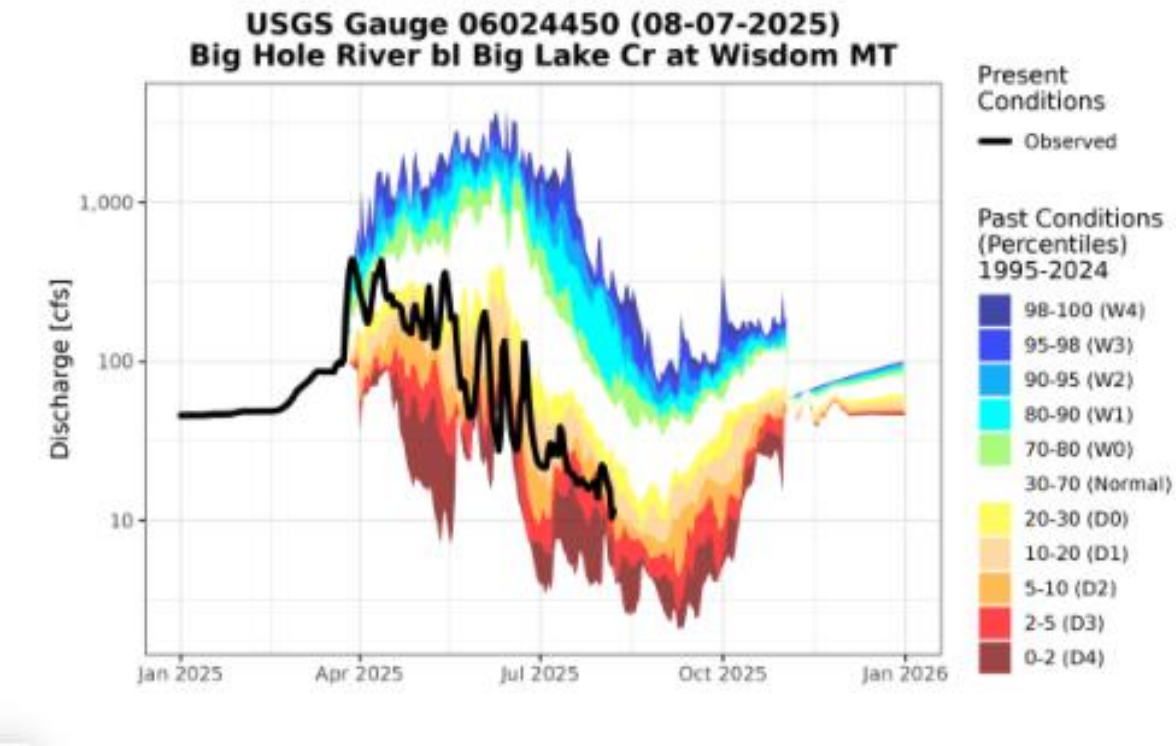
U.S. Drought Monitor, National Drought Mitigation Center (July 22, 2025) https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?MT.

114. Likewise, the Upper Missouri river basin's headwaters, the Upper Jefferson Basin (Big Hole, Beaverhead, and Ruby Rivers) is currently in the 3rd percentile of flows.



Headwaters Hydrology Project, Montana Climate Office-Streamflow (July 28, 2025) https://climate.umt.edu/streamflow/.





UMRB Indicators Dashboard, Montana Climate Office-Drought (July 28, 2025) https://climate.umt.edu/drought/.

115. In spite of the State's ongoing and well-documented drought, as of the date of this Complaint filing, FWP still has not made call on all of its instream flow rights, begging the question: if the agency will not make call during the largest drought, and lowest river flows, on record, when would it ever do so?

Impacts of Climate Change on Drought and Stream Flows

116. The following facts were established in the District Court during the state's litigation of impacts of climate change in *Held v. State, No. CDV-2020-307 (Mont. 1st Dist. Ct.) (14 Aug. 2023)*. Because these findings of fact from the district court were not challenged on appeal, this court can take judicial notice of them here.

117. Anthropogenic climate change is impacting, degrading, and depleting Montana's environment and natural resources, including through increasing temperatures, changing precipitation patterns, increasing droughts and aridification, increasing extreme weather events, increasing severity and intensity of wildfires, and increasing

glacial melt and loss. [JS 655:2-658:10, 659:6-660:11; *see generally* SR, CW, DF; CW-56; DF-20].

118. Climate change impacts result in hardship to every sector of Montana's economy, including recreation, agriculture, and tourism. For example, private water supplies will be harmed. [SR 144:13-145:17; CW-52].

119. Montana's snowpack has been decreasing and is likely to Continue decreasing with warmer temperatures, as a long-term trend caused by impacts to the climate. [CW 283:11-19; CW-33, CW-35, CW-55; DF 421:12-23].

120. Climate change results in water levels in Montana's rivers and lakes that are routinely well below normal levels in summer and fall months and water temperatures that are well above historical levels. [JS 686:18-687:4, 690:7-17, 692:22-25, 693:2-7; JS-25].

121. Anthropogenic climate change is disrupting the natural range of variation in the flow paths of Montana's river systems. Compared to the 1960s, the summer streamflow [*51] in Montana's rivers has decreased by approximately 20% and stream temperatures have increased between 1-2°C. [JS 666:15-667:20; JS-10, JS-25].

122. As a result of anthropogenic climate change:

    a. Surface temperatures in Flathead Lake are too warm for bull and cutthroat trout to sustain their historic populations. [JS 687:5-14].

    b. The Flathead River is experiencing low streamflow and a decline in cutthroat trout populations due to warm temperatures and low water. Bull trout populations have also declined in Flathead Lake. [JS 687:5-14].

    c. The Missouri River is experiencing discharge declines, and increase in stream temperatures, fishing restrictions, and algae blooms. [JS 687:15-688:25].

    d. The Clark Fork River is experiencing low streamflow and discharge declines. [CW 292:21-293:18; CW-42].

    e. The Yellowstone River is experiencing discharge declines, low streamflow, increasing temperatures, fish die offs due to diseases, record-setting floods, a decline in brown trout populations, and algae blooms. [JS 676:4-25, 689:9-690:1].

    f. The Powder River is experiencing low streamflow and a decline in water quality. [JS 690:7-17].

g. The Madison River is experiencing increased temperatures, declining [*52] discharge, fishing closures, a decline in brown trout populations, algae blooms, fish die offs and river closures. [JS 692:2-10].

h. The Blackfoot River is experiencing declining discharge, increased temperatures, and river closures. [JS 692:22-25].

i. The Smith River is experiencing record low flows in June, increased temperatures, and fishing restrictions. [JS 693:2-7].

j. The Shields River is experiencing low flows and river closures. [JS 693:9-10].

k. The Bitterroot River has experienced increased temperatures, a reduction in bull trout habitat, algae blooms, and fishing closures. [JS 693:12-22]

123. One impact of anthropogenic climate change to Montana's aquatic ecosystems is that runoff (spring spate) from snowmelt is days to weeks earlier. Loss of snowpack also accelerates warming and water loss owing to reduced reflection than would occur if the snowpack was sustained. [JS 670:20-671:2].
124. Low water levels and abnormally warm water temperatures create harmful conditions for fish and other aquatic organisms. [JS 671:3-17].
125. Access to boating and fishing on certain rivers and lakes in Montana has been limited, and in some instance completely foreclosed, because of low river [*53] flows or high-water temperatures. These changes limit the ability of some Plaintiffs to fish and access the State's rivers and lakes for sport or recreation. [SR 152:25-153:9, 153:10-13; JS 679:7-15].

Impacts of low stream flows of Cold-Water Fisheries of Western Montana

126. When surface water becomes warmer, the amount of oxygen it can carry decreases, which can be dangerous for aquatic life, especially wild trout that require cold water habitat.
127. Warm water temperatures interact synergistically with nutrient loading in surface water, causing and contributing to algal growth.
128. Nutrient pollution is a leading cause of surface water impairment in Montana.
129. Waters of the Clark Fork, Bitterroot, Missouri, Beaverhead, Madison, Gallatin, and Big Hole rivers possess nutrient or nuisance algal bloom impairment determinations by the Montana Department of Environmental Quality.

130. Nuisance algal blooms cause and contribute to negative trophic shifts in aquatic food webs, including negative ecological tipping points and regime shifts that impact aquatic food abundance, aquatic life foraging, and aquatic life habitat. Nuisance algal blooms are also often correlated with unhealthy dissolved oxygen concentrations for aquatic life in freshwater systems.
131. Beyond ecological harm, these climate driven, low-flow regimes have economic harm to Montana as well.
132. Scientists with the U.S. Geological Survey, Montana Fish, Wildlife & Parks and the University of Montana studied how climate change affected trout fisheries across 3,100 miles of rivers in Montana from 1983 to 2017.
133. The study is published in the journal Science Advances and found the following:
    a. Trout (Salmonidae)—a group of cold-water fishes with substantial ecological and socioeconomic importance—are highly prized by fishers in many parts of the world (*20*).
    b. Fishers travel long distances to pursue trout in streams, rivers, and lakes, often generating substantial revenues for local and regional economies.
    c. The northern Rocky Mountains in Montana (USA) support some of North America's most popular trout fisheries, valued at more than US$750 million $year^{-1}$ (*21*) representing more than 20% of the spending by tourism in the state (*22*).
    d. Differences in fishing pressure between cold- and cool-water habitats amounted to substantial differences in fisher spending, with cold-water sections generating US$500,000 km^{-1} $year^{-1}$ and cool-water sections generating US$60,000 $km^{-1}year^{-1}$ (Fig. 4B), primarily due to the preference for cold-water by nonresident fishers.
    e. 35% of Montana's cold-water habitats may no longer be suitable for trout by 2080, resulting in the loss of $192 million per year in state revenue.
    f. The continued loss of suitable trout habitat could further test the resiliency of the state's fishing economy in coming decades.

FWP's Wetted Perimeter Methodology for Desired Instream Flows

134. FWP's instream flow rights, including in particular its Milltown and Murphy Rights, are designed to mitigate against harmful impacts to aquatic life.
135. FWP developed a wetted perimeter test as a derivation of desired instream flow for particular waterbody segments. This method focuses on the well-founded assumption that the food supply can be a major factor influencing a stream's carrying capacity (the total number of fish that can be maintained by the aquatic habitat). The principal food

of most juvenile and adult fish inhabiting Montana surface waters are aquatic invertebrates, which are primarily produced in stream riffle areas. The wetted perimeter test emphasizes that waterbody fish population carrying capacity is related to food production, which, in turn, is a function of the amount of wetted perimeter in riffles.

136. Wetted perimeter is the distance along the bottom and sides of a channel cross-section in contact with water. As the flow in a stream channel increases, the wetted perimeters also increases, but the rate of gain of wetted perimeter is not constant throughout the entire range of flow.

137. Under the wetted perimeter test, the area available for food production is considered near optimal at the upper inflection point ,where almost all of the available riffle is wetted. At flows below the upper inflection point, the stream begins to pull away from the riffle bottom until, at the lower inflection point, the rate of loss of wetted bottom area begins to accelerate rapidly. Once flows are reduced below the lower inflection point, the riffle bottom is being exposed at an even greater rate and the area available for food production greatly diminishes.

138. Thus, a primary utility of the wetted perimeter test is describing a threshold below which a stream's food producing capacity begins to decline (upper inflection point) and a threshold at which the loss is judged unacceptable for supporting viable fisheries.

139. While the inflection point concept focuses on food production, the wetted perimeter test relates to other factors that influence a streams' ecological carrying capacity. One such factor is cover, a well-recognized component of fish habitat. In many tributary streams of Montana, overhanging or submerged bank vegetation and undercut banks are important components of cover. The wetted perimeter - flow relationship for a stream channel is often similar to the relationship between bank cover and flow. Flows exceeding the upper inflection point are considered to provide near optimal bank cover. Below the upper inflection point, the water pulls away from the banks, decreasing the amount of bank cover associated with the waterbody. At flows below the lower inflection point, the water is sufficiently removed from the bank cover to severely reduce its value as fish shelter.

140. In addition to food production, riffles are used by many fish species for spawning and rearing of young. Consequently, the protection of riffles helps ensure that the habitat required for these critical life functions is also protected.
141. Riffles are the area of a waterbody most affected by flow reductions. By setting instream flows based on optimal wetted perimeter, FWP's site-specific desired flow criterion are, at the same time, protecting both runs and pools, areas where adult fish normally reside.
142. In sum, the wetted perimeter test provides a range of flows between lower and upper inflection points from which a single instream flow recommendation is selected. Flows below the lower inflection point are undesirable based on their probable negative impacts on food production, bank cover, and spawning and rearing habitats, while flows at and above the upper inflection pint are considered to provide near optimal conditions for growth and propagation of fish and aquatic life.

LEGAL FRAMEWORK

The Montana Administrative Procedures Act

143. The Montana Administrative Procedures Act (MAPA) defines a "rule" as "each agency regulation, standard, or statement of general applicability that implements, interprets, or prescribes law or policy." § 2-4-102(11)(a), MCA.
144. MAPA categorizes "substantive rules" as either "legislative rules" or "adjective and interpretive rules." § 2-4-102(14), MCA.
145. "Legislative rules" have the force of law and are invalid unless adopted via rulemaking. § 2-4-102(14)(a), MCA.
146. "Adjective or interpretive rules," in contrast, lack the force of law, § 2-4-102(14)(b), MCA, and may be adopted with publication of a statement of the advisory nature of the rule in the Administrative Rules of Montana. § 2-4-308, MCA.
147. Prior to the adoption, amendment, or repeal of any rule, the agency shall give written notice of its proposed action. § 2-4-302(1), MCA.
148. A rule may be declared invalid or inapplicable in an action for declaratory judgment if it is found that the rule or its threatened application interferes with or impairs or

threatens to interfere with or impair the legal rights or privileges of a plaintiff. § 2-4-506(1), MCA.

149. A rule may also be declared invalid in the action on the grounds that the rule was adopted with an arbitrary or capricious disregard for the purpose of the authorizing statute. § 2-4-506(2), MCA.

150. A declaratory action under § 2-4-506 *et seq*, MCA, is distinct from contested case proceedings under § 2-4-601 *et seq*, MCA.

151. A plaintiff bringing an action seeking declaratory judgment under MAPA may bring such suit in the county in which the agency maintains its principal office. § 2-4-506(4), MCA.

The Right to a Clean and Healthful Environment

152. Article II, Section 3, of the Montana Constitution guarantees all persons certain inalienable rights, "includ[ing] the right to a clean and healthful environment."

153. Article IX, Section 1, of the Montana Constitution further provides that:

(1) The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations.

(2) The legislature shall provide for the administration and enforcement of this duty.

(3) The legislature shall provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.

154. The Montana Supreme Court has previously addressed these constitutional provisions—including a detailed historical review of the 1972 Montana Constitutional Convention—and "determined that the framers of the Montana Constitution intended it to contain 'the strongest environmental protection provision found in any state constitution' " that is " 'both anticipatory and preventative.' " *Park Cnty. Env't Council v. Mont. Dep't of Env't Quality*, 2020 MT 303, ¶ 61, 402 Mont. 168, 477 P.3d 288 (quoting *MEIC 1999*, ¶¶ 66, 77); *see generally MEIC 1999*, ¶¶ 65–77.

155. The descriptive adjectives "clean and healthful" were not in the original committee proposal because the committee thought that the proposal provided stronger environmental protections without them: " 'The majority felt [including "clean and healthful"] would permit degradation of the present Montana environment to a level as defined in Illinois, which may be clean and healthful. And our intention was to permit

no degradation from the present environment and affirmatively require enhancement of what we have now.' " MEIC 1999, ¶¶ 66, 69 (quoting Convention Transcript at 1205) (emphasis in original). *Held v. State*, 2024 MT 312, ¶ 24, 419 Mont. 403, 419, 560 P.3d 1235, 1246, 2024 WL 5151077

156. The Montana Supreme Court further concluded that the Framers' intent was to provide environmental protections which are "both anticipatory and preventative" and did not intend to prevent only environmental degradation that could be conclusively linked to ill health or physical endangerment. *MEIC 1999*, ¶ 77. Indeed, the Constitution's "farsighted environmental protections can be invoked" prior to harmful environmental effects. *MEIC 1999*, ¶ 77. The right's preventative measures "ensure that Montanans' inalienable right to a 'clean and healthful environment' is as evident in the air, water, and soil of Montana as in its law books." *Held v. State*, 2024 MT 312, ¶ 25, 419 Mont. 403, 419, 560 P.3d 1235, 1247, 2024 WL 5151077
157. "Our constitution does not require that dead fish float on the surface of our state's rivers and streams before its farsighted environmental protections can be invoked." *MEIC 1999*, ¶ 77.

The Public Trust Doctrine

158. The rights of the public and future generations as beneficiaries under the Public Trust Doctrine are an attribute of sovereignty that predate Montana's Constitution, they are secured by the Constitution, and they cannot be abrogated. *Montana Coalition for Stream Access v. Curran*, 210 Mont. 38, 682 P.2d 163 (1984); *Montana Coalition for Stream Access v. Hildreth,* 211 Mont. 29, 684 P. 2d 1088 (1984).
159. The Public Trust Doctrine imbues the state with a fiduciary duty to protect and conserve common pool natural resources, particularly water, for public benefit. The roots of the public trust doctrine are found in sixth-century Roman civil law. *See* J. Inst. 2.1.1. (Emperor Justinian declaring "By the law of nature these things are common to all mankind - the air, running water, the sea, and consequently the shores of the sea...); Joseph L. Sax*, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 Mich. L. Rev. 471 (1970).)
160. Under Article IX, section 3(3), "*All surface, underground*, flood, and atmospheric *waters* within the boundaries of the state are the property of the state for the use of its

people and are subject to appropriation for beneficial uses as provided by law." (emphasis added). The Montana Supreme Court has recognized this provision as an underpinning of the Public Trust Doctrine for water rights under the Montana Constitution. *Galt v. Montana,* 225 Mont. 142, 731 P.2d 912, 914-15 (1987); *see also, Montana Trout Unlimited v. Beaverhead Water Co.,* 2011 MT 151, ¶¶ 29, 30, 361 Mont. 77, 255 P.3d 179.

161. Wild fisheries are a species of property the general right and ownership of which is in the people of the state, *i.e*., they constitute public trust resources.

162. The Public Trust Doctrine requires all sovereign governments, including Defendant as trustee, to maintain control, protect, preserve, and prevent substantial impairment to and waste of Public Trust Resources for the benefit of all Montanans, including Plaintiffs, their members, and future generations of Montanans.

163. A property right in water is only usufruct, which is the right to use under limited circumstances.

164. Montana law roundly recognizes that these property rights can be lost if not exercised and protected. ("If an appropriator ceases to use all or a part of an appropriation right with the intention of wholly or partially abandoning the right or if the appropriator ceases using the appropriation right according to its terms and conditions with the intention of not complying with those terms and conditions, the appropriation right is, to that extent, considered abandoned and must immediately expire." § 85-2-404, MCA.)

165. Defendant, as trustee, has an obligation to account for the Public Trust and refrain from exercising its authority in manners that wastes, abandons, or harms the quality of public trust resources.

FIRST CLAIM FOR RELIEF

(Violation of Mont. Const. art. II, §3, art. IX, sec. 1)

166. The allegations in the foregoing paragraphs are re-alleged and incorporated by reference.

167. FWP's instream flow water rights are interests held in trust for the benefit of all Montanans.

168. FWP has a duty to enforce and protect its water rights – including Murphy Rights and instream reservations – by making call to support minimum flows designed to protect aquatic life.
169. FWP's Murphy Rights contain site-specific instream flow minima based upon scientific criteria related to protection of aquatic life.
170. Flow rates specific to each Murphy Right and instream flow reservation were defined using biological and hydrological analyses, including Montana's Wetted Perimeter Method.
171. Below FWP's established minimum flow thresholds, those waterways lose the capability to adequately support aquatic food production and quality habitat, diminishing the viability of aquatic life, and especially cold-water fisheries, in those waterways.
172. FWP's current instream call Protocol establishes a threshold question for whether the agency will assert an instream right as "whether a call would result in a demonstrable [flow] increase sufficient to satisfy FWP's objectives."
173. Defendant FWP, by and through application of its Protocol and pattern and practice of failing to make instream flow calls when rivers approach instream flow minima, is unconstitutionally depleting and degrading the ecological life support system of Montana waterways, thereby injuring Plaintiffs and their members of their constitutionally guaranteed rights under Article II, section 3, and Article IX, Section 1 of the Montana Constitution.
174. FWP's failure to make instream flow calls for waterways on which it possesses rights and has established flow minima is contrary to the agency's constitutional obligations to exert its authority in an anticipatory and preventative fashion that maintains and improves river health, including aquatic life, for present and future generations.
175. FWP has a non-discretionary duty to protect and enhance the state's trout fisheries using every tool it has available.
176. FWP's instream water rights are a critical tool in the states effort to protect and enhance its fisheries and not enforcing these rights is a violation of its affirmative and anticipatory obligations to "maintain and improve" a clean and healthful environment.

177. With regard to Plaintiffs' right to a clean and healthful environment, the Montana Supreme Court has instructed that "as to any statute or rule which implicates that right must be strictly scrutinized and can only survive strict scrutiny if the State establishes a compelling state interest and that its action is closely tailored to effectuate that interest and is the least onerous path that can be taken to achieve the State's objective." *Mont. Envt'l Info Ctr. v. Dep't of Envt'l Quality*, 1999 MT 248, ¶ 63.
178. There is no interest that justifies Defendant's failure to implement available instream flow rights when subject waterways are approaching instream flow minima. Similarly, Defendant's conduct is not narrowly tailored to implement any valid state interest.

SECOND CLAIM FOR RELIEF

(Violation of the Public Trust Doctrine)

179. The allegations in the foregoing paragraphs are re-alleged and incorporated herein by reference.
180. The Public Trust establishes that the waters and wildlife of the State belong to the people, and that the State acts as a trustee to manage and protect these resources and their associated public uses for its peoples' benefit.
181. Parties acquiring rights in trust property hold those rights subject to the trust, and cannot act in a manner to harm the trust.
182. It is the State's responsibility to account for the public's outdoors heritage in healthy rivers and aquatic wildlife, the interdependency of which the physical qualify of those resources implies, and to manage those resources for the greatest public benefit.
183. State held instream flow rights are part of the public trust.
184. By and through FWP's Protocol and its pattern and practice of failing to make instream flow calls based on scientific metrics that maintain and improve aquatic life, Defendant has unconstitutionally caused, and continues to cause, impairment to and waste of Public Trust Resources, including the state waters of Montana, fish, and other aquatic life.
185. FWP's Protocol is contrary to tenets of the Prior Appropriations Doctrine and Montana law.

186. First, if a senior user's water right is not being met, he is entitled to make call on any junior users who are diverting water, regardless of the nature of the junior's water right or if the benefits to the senior may be minimal. *Raymond v. Wimsette*, 12 Mont. 551, 560, 31 P. 537, 540 (1892) (senior appropriator "is entitled to insist that ... water remain, in order to carry the flow down to his point of diversion, although a large portion of it would be lost by evaporation and percolation.")

187. Second, per the prior appropriation doctrine, the burden is on the junior user to establish that his or her actions do not impede the appropriative rights of the senior. In contrast, FWP's Protocol improperly shifts the burden to FWP to demonstrate that the agency's issuance of any call will enable it to produce "measurable benefits." *Kelly v. Teton Prairie LLC*, 2016 MT 179, at ¶ 20 (burden is on junior water user to show his actions are not injurious to the senior); *Donich v. Johnson*, 77 Mont. 229, 241, 250 P. 963, 966 (1926); *Irion v. Hyde*, 110 Mont. 570, 581–82, 105 P.2d 666, 673 (1940).

188. Third, the Protocol ignores the complexity of site-specific hydrologic conditions and the variety of benefits to enforcement of instream rights. An FWP call on instream rights may serve to slow the rate of decline in waterway flows, even though the call by itself may or may not lead to a measurable "bump" in flows at a given downstream stream gage. Similarly, instream flow benefits vary by location and can be more critical on specific river sections or tributaries even if significant flow improvements aren't measured within a specific downstream reach. Existing stream gages are often dozens of miles apart and do not have the resolution to detect flow inputs and outputs in reaches between gages.

189. Fourth, FWP's failure to make instream flow calls abrogates its responsibility to protect public trust resources because it invites argument over the validity of FWP's instream rights as a *bona fide* beneficial use. A criterion of diminishment or abandonment of FWP's rights includes the persistent failure to beneficially apply a water right.

190. Finally, while the vast majority of FWP's Rights are of relatively junior priority, they remain senior to a significant number of junior users, and were also filed in order to serve as a safeguard against future appropriations or changes to existing appropriations that could adversely impact instream flows.

191. Just as FWP must exercise its responsibility to call on its instream rights when needed, it must actively participate and defend its rights against those who refuse to honor a call.
192. FWP's decision-making about making "call" and/or enforcing its instream flow water rights is also means for implementing its Public Trust responsibilities.
193. The Public Trust Doctrine requires FWP to implement its instream flow rights to protect, and avoid or minimize any harm, to public trust resources.

THIRD CLAIM FOR RELIEF

(Violation of MAPA)

194. The foregoing paragraphs are hereby incorporated by reference.
195. FWP's instream flow Protocol has never been subject to rulemaking and is by definition a policy document.
196. FWPs application of the Protocol since its inception constitutes a standard of general applicability with legal force because its use constrains agency decision-making discretion regarding making instream flow calls.
197. FWP's application of the Protocol to any instream flow decision-making without following MAPA's procedures renders the Protocol unlawful under § 2-4-302(1), MCA.
198. Even if FWP's Protocol is exempt from MAPA rulemaking, the Protocol is unlawful because FWP lacks authority to impose instream flow decision-making metrics that are divorced from scientific criteria designed to maintain and improve river health and fisheries health.
199. FWP's application of its Protocol since its development by the Gianforte Administration unlawfully hinders the agency from exercising its constitutional duties to improve surface water flows to protect instream aquatic life uses.

FOURTH CLAIM FOR RELIEF

(Declaratory Judgments Act §§2-4-506, 2-4-302, 2-4-506)

200. The foregoing paragraphs are hereby incorporated by reference.
201. When FWP uses call considerations (such as the Rules in the Protocol or stream specific Drought Management Plans on the Blackfoot or Big Hole rivers) it is making arbitrary and capricious decisions because those documents conflict with and contradict

FWP's own research in establishing desired instream flow values and flow rates enumerated therein calculated to fully support aquatic life.

202. Plaintiffs seek and are entitled to a declaration that FWP's failure to apply all available instream flow and make requisite call(s) based upon its own scientific criteria defining healthy river conditions and flow minima violates Plaintiffs' rights to a clean and healthful environment.

203. Plaintiffs seek and are entitled to a declaration that FWP's failure to implement its instream flow rights when FWP's own science demonstrates negative ecological impacts are likely to occur in applicable waterways based on low flow conditions violates the agency's Public Trust duties to protect the public's use, enjoyment, and the natural qualities of healthy Montana waterways, and those waters' use as habitat for fish and associated aquatic life.

204. Plaintiffs seek and are entitled to a declaration that Plaintiffs' Right to a Clean and Healthful Environment and the Public Trust Doctrine impose an affirmative duty on FWP to take the public trust and maintenance and protection of the ecological life support system into account in the planning and allocation of water resources.

205. Plaintiffs seek and are entitled a declaration that FWP's Protocol (a) constitutes an unpromulgated rule under MAPA; (b) is arbitrary and capricious to the extent its requirements conflict with the agency's own science establishing desired instream flows and rate objectives designed to fully support aquatic life; and (c) FWP's application of its unpromulgated Protocol is unconstitutional.

FIFTH CLAIM FOR RELIEF

(Permanent Injunction)

206. The allegations in the foregoing paragraphs are re-alleged and incorporated herein by reference.

207. Pursuant to § 27-19-102, MCA, a permanent injunction should be issued if:

(1) pecuniary compensation would not afford adequate relief;
(2) it would be extremely difficult to ascertain the amount of compensation which would afford adequate relief;
(3) the restraint is necessary to prevent a multiplicity of judicial proceedings;

208. FWP's application of the Call Protocol constitutes use of a standard of general applicability, with legal force under MAPA, without requisite rulemaking, and therefore is unlawful.
209. FWP's application of the Protocol's metrics is arbitrary, capricious, and/or violative of the Montana Constitution and Public Trust Doctrine as plead herein.
210. FWP's actions as described above cause continuing injury to Plaintiff's constitutional rights and are arbitrary and capricious as plead herein.
211. Monetary relief is inadequate to afford relief created by these harms.
212. If FWP's practice is allowed to continue as plead herein, an infinite multiplicity of challenges will have to continue every time DNRC does not take actions to affirmatively protect these river systems due to political influence of the executive.
213. The Court should enjoin this arbitrary, capricious and unlawful agency practice described above to avoid harm from the unconstitutional and unlawful actions of FWP.
214. If the Court does not enjoin this practice, FWP will fail to enforce the public's instream flow water rights and will continue to apply arbitrary and capricious decision making in relation to protecting Montana's sensitive aquatic life.

REQUEST FOR RELIEF

WHEREFORE, Plaintiffs pray for relief against Defendant FWP as follows:

A. Determine and declare that Plaintiffs' and their members' fundamental constitutional right to a clean and healthful environment includes healthy rivers with minimum flows that sustain aquatic life, fisheries, and existing uses of waterways, and that right is being violated by Defendant's actions and Protocol as set forth above;

B. Determine and declare that FWP's failure to make call, enforce, and protect its water rights, as described herein, violate its affirmative obligations as the trustee of Montana Public Trust for water resources and fisheries, and that Montana's publicly owned instream water rights and water reservations embody the public trust;

C. Determine and declare that FWP's failure to make call, enforce and protect its water rights, as described herein, violate its affirmative and anticipatory duty to "maintain and

improve a clean and healthful environment" and thus, violate Plaintiffs' constitutional rights;

D. Determine and declare that FWP's Protocol constitutes an unpromulgated rule contrary to MAPA and its application is therefore unlawful, that the Protocol is arbitrary and capricious to the extent it is contrary to site-specific science providing instream flow minima, and vacate the Protocol for all FWP decision-making;

E. Enjoin FWP from relying on or implementing its Protocol absent rulemaking; and

F. Award Plaintiffs their reasonable fees, costs, and expenses, including attorney's fees, associated with this litigation, under the Uniform Declaratory Judgements Act, the Private Attorney General Doctrine, as otherwise provided by Montana law; and

G. Grant Plaintiffs such additional relief as the Court may deem just and proper.

Respectfully submitted this 8th day of August 2025.
/s/ Graham Coppes
/s/ Emily Wilmott
/s/ Guy Alsentzer
/s/ Timothy Bechtold
Attorneys for Plaintiffs

Exhibit 1

Montana Fish, Wildlife & Parks

Water Right Call Protocol

July 22, 2022

Exhibit 1

Montana Fish, Wildlife and Parks

Water Right Call Protocol

July 22, 2022

Introduction: This Water Right Call Protocol is a procedure for deciding where and when to make call on water rights that are junior to instream flow water rights held by Montana Fish, Wildlife & Parks (FWP) for fisheries, fish & wildlife and recreation purposes, and which water rights to include.

Montana was dry in 2021. With lower-than-average snowpack, FWP Water Program and Fisheries Division staff were aware that streamflows were likely to be low and conditions would warrant making call on water rights junior to FWP-held instream flow water rights in some areas. Toward the end of the legislative session and the weeks that followed, Director Worsech was briefed on the various functions of the Water Program, including participation in Montana's water rights adjudication, and engaging with water permit applicants to find creative mitigation solutions. However, when streamflow began to drop quickly, it was clear that the Water Program Manager had not adequately prepared the director and Governor's Office for the prospect of FWP making water right calls. As a result, when the program proposed to make call on juniors in the Smith and Shields River basins, the governor instructed us not to as there was inadequate evidence that the fisheries would benefit from said calls. The governor asked the program to articulate the process we use in determining which water rights we recommend calling and why.

The Water Program, in conjunction with the Fisheries Division, worked to articulate a call process that integrated FWP's historical approach to making call based on flow levels with river-specific fisheries information. The effort culminated in a memo titled: FWP Water Right Call Protocol and Basis for Call (8/17/21). The process described in that memo is largely based on past practice. However, additional steps to ensure timely communication between the Water Program, Fisheries Division and Director's Office were included. An analysis of junior water rights in certain Upper Missouri watersheds was provided as an example for discussion.

In response to the program's proposal to make call in the Smith and Shields, the governor also instructed FWP to engage in watershed planning efforts in those and other basins. The Water Program and Fisheries Division have evaluated water planning activities and identified active watershed groups in various basins. In the protocol described below, the state of watershed planning and local efforts to protect instream flow are strongly considered when assessing where call should be made. FWP Water Program and Fisheries Division staff have for many years participated actively in local watershed planning and drought planning efforts, most often providing technical, financial, and administrative assistance to the local group however possible. Our involvement ideally comes at the request of these local actors and officials; rarely, if ever, has FWP seen success in attempting to initiate such a planning effort on its own, or without local invitation.

The protocol discussed herein for making recommendations on where and when to make call and which water rights to include is largely based on the 8/17/21 memo. However, it has been updated to emphasize the fact that there are many basins where we do not consider call as there are alternative approaches to maintaining instream flow.

Exhibit 1

At each step of the process, we must clearly explain the reasons for our recommendation. Therefore, along with discussions of non-call basins and the call protocol itself, this document contains an appendix of individual watershed assessments. These assessments describe the individual watershed, local efforts to address flow, factors such as the presence of commissioners in the watershed, and river-specific fisheries information. They also list the number of junior water rights and discuss how many would be recommended for call under the requisite streamflow conditions, and why. The intent of this exercise was to assemble all relevant information in one place, make a preliminary determination of which basins would be recommended as call-eligible and clearly explain why. The intent is also for these documents to be iterative: conditions change from year to year, watershed groups can form but also dissolve, and commissioners can be appointed one year and not the next. Our intent is for these assessments to be updated as needed and help inform the ultimate decision on whether call will be made.

FWP's Instream Water Rights. FWP's instream flow rights have been established through administrative and judicial processes that required FWP to prove the amount of water necessary to protect (primarily) fishery resources. The department holds instream flow water rights throughout the state, but not in all Montana streams and rivers. Figure one shows Murphy rights (filed pursuant to legislation and named for the sponsor), instream flow reservations and two judicially recognized rights, but omits a limited number of recreation claims and the Upper Clark Fork instream flow right recognized by the Confederated Salish and Kootenai Tribes (CSKT) Water Compact.

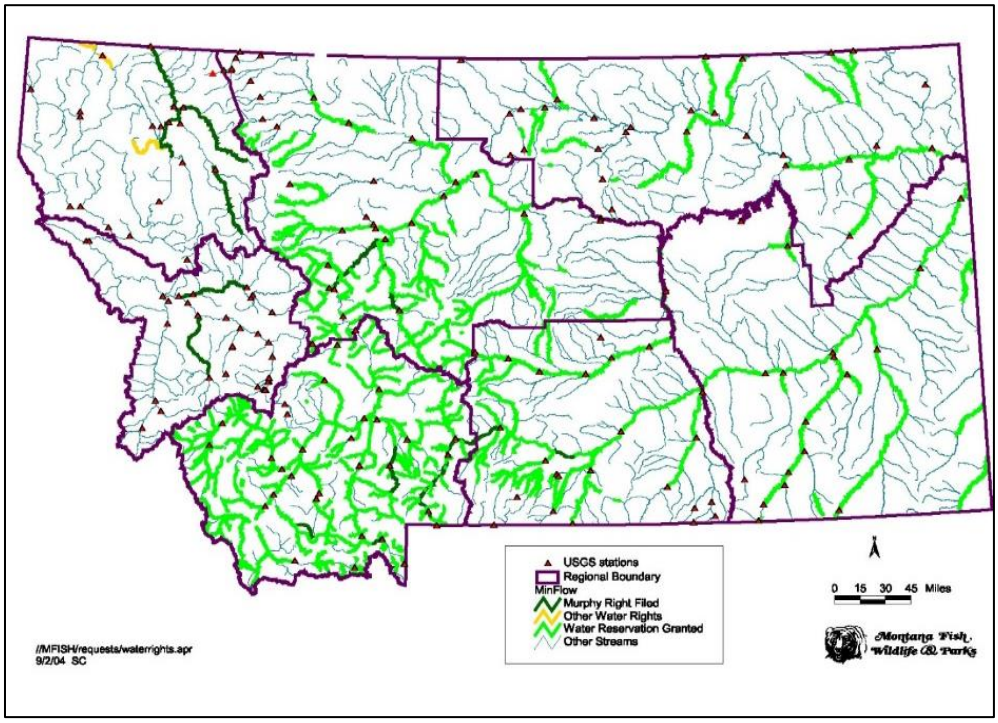


Fig. 1: Montana instream flow reservations and "Murphy" rights

Objective of a Call: The objective of making a water right call is to maximize the amount of habitat available to fish and other aquatic life under low flow conditions.

Exhibit 1

In the Upper Missouri basin, flow levels of FWP's instream rights are mostly based on the wetted perimeter (wetted-p) methodology. This methodology was designed to identify a flow level that protects macroinvertebrate production in riffles, which in turn provides food for fish. Other methods were used to set instream flow levels in other areas, but generally when a stream is below its instream flow level, a relatively small increase in flow can benefit the fishery by providing improved habitat conditions. There are additional benefits to protecting flow in riffles, including providing adequate water depth so that fish can move between habitats. This is especially important when water temperatures are high and fish are seeking out deeper, cooler water. Protecting flow through riffles also increases the area of habitat along banks of rivers where fish can find cover.

Calls on tributary streams may yield a small amount of water relative to the instream water right level on the associated mainstem river, but the additional water in the tributary may provide significant benefit to that stream. Calls on tributaries can provide localized cool water refugia for fish in addition to moderating overall water temperatures on mainstem rivers.

Note that a call may or may not produce enough added flow that it can be easily observed at a gage given the size of the diversion and/or distance from the gage. However, even if it is not observed, a call may help slow the decline in flow.

Call Recommendation Protocol

Step One: Streamflow Monitoring. Each year, when high flows begin to recede, Water Program staff monitor streamflow gages and compare the data against FWP instream right levels using an FWP-created application (https://apps.fwp.mt.gov/gis/maps/waterRights/). The application automatically compares current streamflow conditions to the level of FWP's instream flow water rights and can both identify juniors and map their location. See Figures 2 and 3 below.

Catchment	Current Flow (cfs)	Current In-Stream Flow Requirement (cfs)	Current Flow Caclulation
Blackfoot R Abv Clearwater	597	500	+ 295.0 cfs (USGS 12338300) + 302.0 cfs (USGS 12335100)
Boulder R	247	490	+ 247.0 cfs (USGS 06200000)
Boulder R	28.1	47	+ 28.1 cfs (USGS 06033000)
Boulder R Abv Cold Spring	28.1	8	+ 28.1 cfs (USGS 06033000)
Boulder River Above Little Boulder River	28.1	20	+ 28.1 cfs (USGS 06033000)
Boxelder Crk	unknown	7	No associated gauges
Clarks Fork Yellowstone R	429	1640	+ 429.0 cfs (USGS 06208500)
Clear Crk Abv Clear Crk Rd	0.08	5	+ 0.08 cfs (USGS 06142400)
Dearborn R	80.4	110	+ 80.4 cfs (USGS 06073500)
East Fork Poplar R	15.3	4	+ 15.4 cfs (USGS 06181000) - 0.1 cfs (USGS 06178000)
East Gallatin R	304.13	170	+ 304.13 cfs (DNRC 41H 08900)
East Gallatin R Abv Bozeman STP Outlet	28.9	42.4	+ 28.9 cfs (USGS 06048650)
East Gallatin R Abv Thompson Spring Crk	28.9	90	+ 28.9 cfs (USGS 06048650)
Flathead R Abv SF Flathead R	3600	3945	+ 1770.0 cfs (USGS 12355500) + 1830.0 cfs (USGS 12358500)

Fig. 2: Table comparing measured streamflow to FWP instream rights

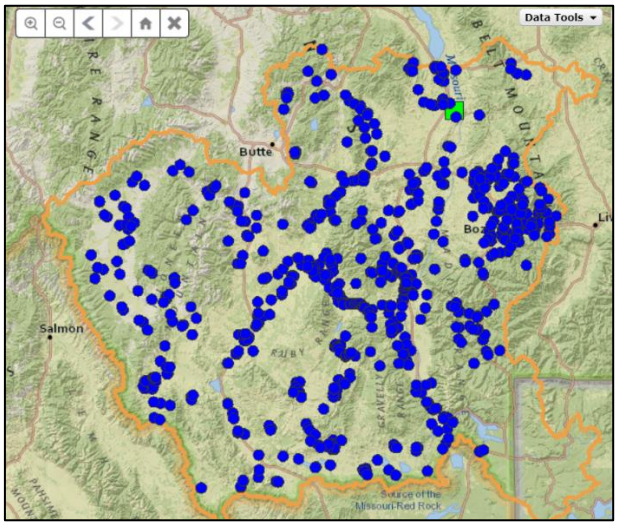


Fig. 3: Upper Missouri basin showing stream gage and junior water rights

Many instream flow reaches do not have active streamflow gages, so only those with readily available data from United States Geological Survey (USGS) or Department of Natural Resources and Conservation

(DNRC) are monitored. When a gauged stream is below FWP's instream water right and is expected to stay below it for several weeks to months, the basin is identified as a candidate for a call on water rights junior to FWP's instream flow rights.

Step Two: Determine Non-Call Basins. There are many basins where FWP has not historically made call. Obviously, where there are no instream flow water rights, or no water rights junior to instream flow rights, there would be no call. Where FWP does have instream rights, we first determine which basins would not be called because a call would be impractical or moot. For example:

- The Bitterroot River is an important fishery and recreational resource. As such, adequate instream flows are important. There, flows have historically been addressed not through call but through storage. FWP holds the rights to 15,000 acre-feet of storage in Painted Rocks Reservoir and an additional 3,037 in Lake Como. This water is released and left instream to maintain summer flows.

- In the Musselshell River, there are water rights junior to FWP's instream flow reservation. However, water rights in the Musselshell are administered by a court-appointed water commissioner from the confluence of the North and South Forks to below the USGS gauge at Mosby. As flows in the river drop, the commissioner adjusts the priority date at which water is available for use. The lower the flow, the earlier the priority date. Any water user junior to FWP is precluded from diverting water under all but high-water conditions. There is simply no practical reason to make call.

Step Three: Analyze Basin Specific Considerations.

In those basins not eliminated from call consideration in step one, a stream flowing below the level of FWP's instream rights does not automatically qualify it (or every junior in the basin) as a call candidate. A variety of factors are considered before recommending call. These factors may apply to an entire basin or part of one. They may influence when to make calls and on whom. Junior rights are eliminated from consideration for call for a variety of reasons:

- In some basins, a watershed group or community-based organization has water management or community drought response plans that are implemented under low flow conditions. For example, in the Blackfoot there is a drought committee (of the Blackfoot Challenge) that works with water users on individual drought plans. The committee's drought plan excuses cooperators from a call but requests that FWP make call on select juniors when flows at the Bonner gage fall below 700 CFS. In 2021, FWP received a request to make call from the drought committee and did make call on junior users who do not have individual drought plans.

- Some FWP instream rights, particularly in the Yellowstone basin, change each month with several having steep declines between their July and August levels. For example, the Yellowstone River instream flow right at Miles City drops from 10,278 CFS in July to 3,862 CFS in August. As of July 16, 2021, streamflow was 5,830 CFS which is well below the July instream

value, but above the August value. Under those conditions, a call would not be recommended until the right was reassessed in August to prevent a call being made just prior to FWP's right being met in early August.

- Water rights being administered by a court-appointed water commissioner are not recommended for call. As noted above, FWP has not made a call in the Musselshell River since commissioners began administering water nearly two decades ago. In a basin where water commissioners are administering only some of the junior rights, those under a commissioner's supervision would typically not be recommended for call.

- Domestic water rights are not called unless they include an irrigation component. Livestock water rights are not called unless they include a diversion of water into a ditch or some other type of highly inefficient use.

- Other junior water rights are evaluated to determine if cessation of use would provide any benefit. FWP's internal application allows staff to use aerial photographs to assess whether a call would result in water contributing to instream flow. For example, a right for a pond on a small stream that would most likely no longer be flowing would not be called. Local fisheries biologists are consulted for additional information. Figures 4 & 5 show an example of where a call may not be warranted: The point of diversion (red dot) is from Sheep Creek (flowing from right to left across the maps) which is technically tributary to the Beaverhead River. However, the topographic map and aerial photograph show the stream does not reach the Beaverhead River. The former path of the stream is now covered by fields with center pivots. Even if the stream did flow across the irrigated fields, it would be intercepted by East Bench Canal which is shown prominently on the left side of the maps. Because it is highly unlikely the cessation of this right would result in additional water reaching the Beaverhead River, it would not be called.

Exhibit 1

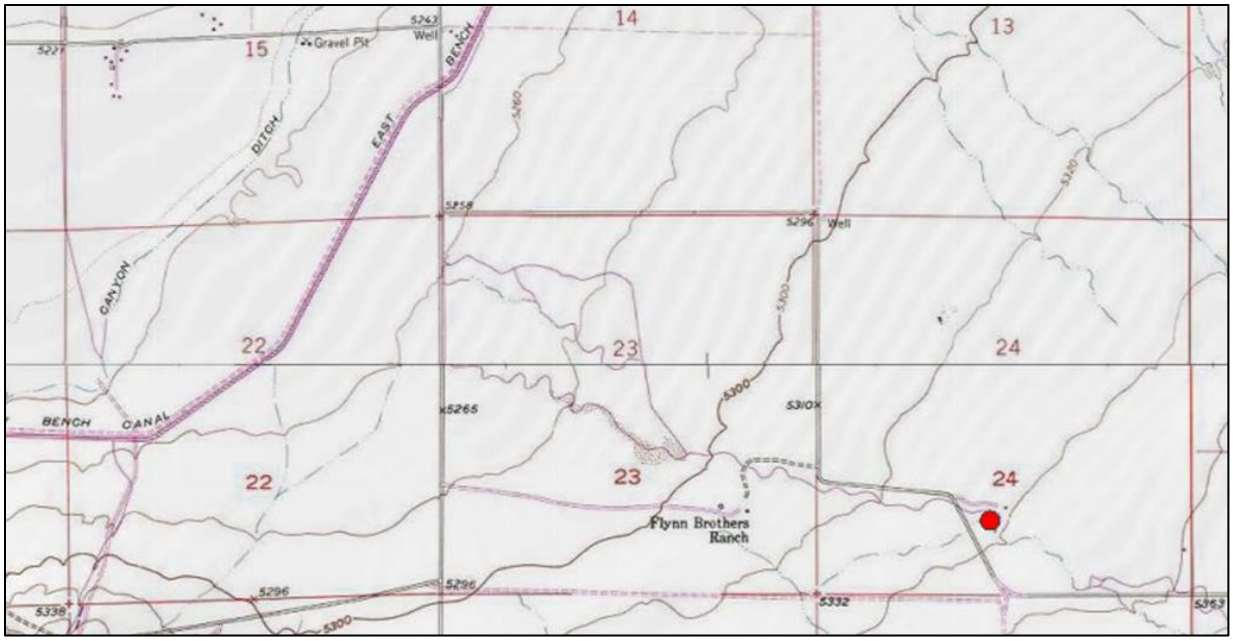


Fig.4: Topographic map junior water right diversion (red dot) on Sheep Creek above East Bench Canal


Fig.5: Aerial photograph showing same area as in Fig. 4

Historically, Water Program staff have been contacted by regional fisheries managers and fisheries biologist asking if call will be made or urging that it be made. Alternatively, Water Program staff have initiated contact with regional and field fisheries staff. Contact is generally maintained throughout the process of making a call recommendation and notice is provided once call is made.

Under the protocol developed in Summer 2021, once Water Program staff have determined which water rights in candidate basins should be eligible for call based on considerations described above and in the example provided, the Water Program manager would contact and consult with the Fisheries Division administrator and/or designated division staff, the regional fisheries manager and area fisheries

management biologist. For each hydrologic basin for which the Water Program provides a list of recommended juniors to call, the Fisheries Division Administrator would direct regional staff to prepare a statement or brief report on the potential fishery benefit of that call. If the report prepared by Fisheries supports the call, Fisheries and the Water Program will jointly submit the call recommendation to the Director's Office.

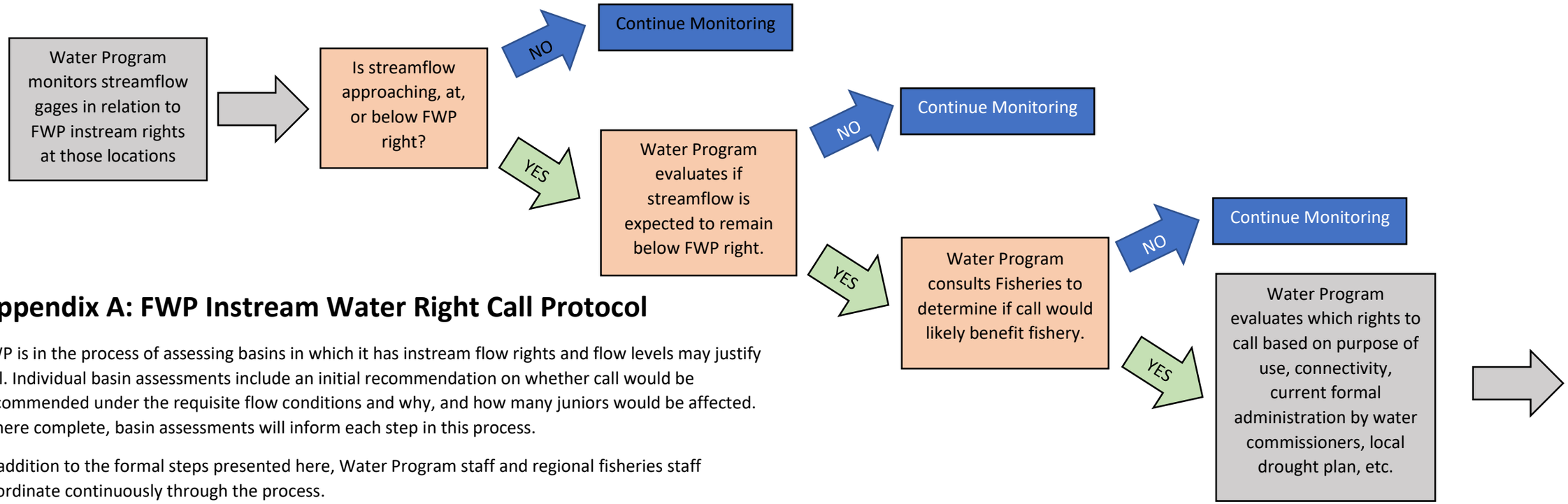
Under this revised protocol, this formal consultation will still occur as individual basins are recommended for call. However, with the development of individual basin assessments, which are done in consultation with fisheries staff, the goal is to minimize the need for last-minute information from field staff.

Step Four: Final Call Recommendation and Director's Office Review

The goal of having individual basin assessments is to be prepared for potential call. However, when a basin is recommended for call, a clear explanation of the recommendation will be provided to the FWP Director's Office. If approved, a call letter is sent to the junior water user. (An example call letter is attached as Exhibit C.) Because many water users hold both junior and senior water rights, the water right abstract(s) for the water right(s) being called are enclosed with the letter so that it is clear which water rights are being called. The letter includes potential options for water users to mitigate their water use instead of simply shutting off. Often, when a call letter is sent, several water users contact FWP to inform us of the actions they have taken or to discuss the nature of their water use and whether it is impacting streamflow. Information from these interactions provides valuable data on whether to include those rights in future water right calls.

Conclusion. River basins vary and many demand unique considerations. Therefore, the process described above is adaptable. Unforeseen circumstances, requests to make call by some water users and changes in local conditions can all be considered. Accordingly, it should apply to most, if not all basins where FWP may seek to call junior water rights, with minor variations to account for unique local conditions.

Exhibit 1



Appendix A: FWP Instream Water Right Call Protocol

FWP is in the process of assessing basins in which it has instream flow rights and flow levels may justify call. Individual basin assessments include an initial recommendation on whether call would be recommended under the requisite flow conditions and why, and how many juniors would be affected. Where complete, basin assessments will inform each step in this process.

In addition to the formal steps presented here, Water Program staff and regional fisheries staff coordinate continuously through the process.

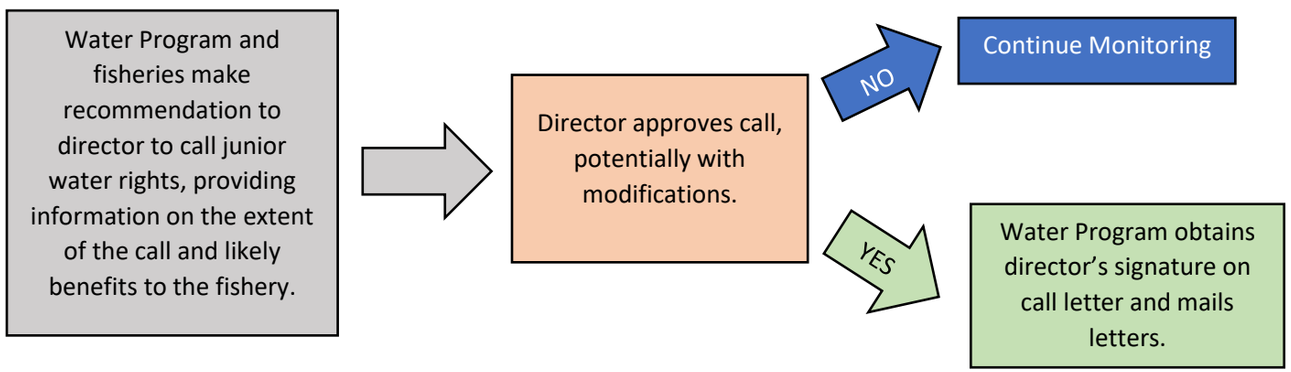


Exhibit 1

Appendix B – 2022 Preliminary Call Recommendation Guidelines

The following table summarizes FWP's preliminary recommendation on whether to call junior water rights in basins where FWP holds instream flow water rights under flow conditions that would legally justify the call. It is not a final recommendation or prescription as many factors must be considered. For example, if flow drops below the level of an FWP instream right on July 15, we may recommend call. However, if it does not drop to that level until September 15, we may not recommend call because days are getting shorter, and nights are getting cooler. There are many other factors that could change from year to year, or within any given year. Therefore, these guidelines are reviewed and revised annually and as conditions warrant.

Basin/River	Type of Instream Right	Will Call be Considered?	Rationale
Clark Fork Basin			
Bitterroot	Recreation Claim	Not at this time	Instream flow provided by storage.
Blackfoot	Murphy	Yes	As requested by Blackfoot Drought Committee.
Rock Creek	Murphy	Yes	Important tributary in the Upper Clark Fork and spawning habitat for bull trout and westslope cutthroat trout.
Upper Clark Fork	Compact	Not at this time	Right not enforceable until April 24, 2025.
Flathead and Kootenai Basins			
Young Creek	Fish & Wildlife Claims	Yes	FWP investments in westslope cutthroat trout spawning and rearing to mitigate impacts from Libby Dam. Call has been made in the past.
Tobacco River	Fish & Wildlife Claims	Yes	River and its tributaries developed to mitigate fisheries loss caused by construction of Libby Dam. Presence of T&E species in the drainage.
Flathead River	Murphy	Evaluating	Many junior rights. Recent activity limited to request to conserve water rather than official call.
Flathead River, North Fork	Murphy	Evaluating	Recent activity limited to request to conserve water rather than official call.
Flathead River, South Fork	Murphy	Not at this time	Only two junior USFS rights with bucket diversions.
Flathead River, Middle Fork	Murphy	Evaluating	Recent activity limited to request to conserve water rather than official call.
Upper Missouri Basin			
Smith River	Murphy	Possible	Fisheries Division conducting comprehensive basin assessment and possible community involvement and investment. Preference is that local efforts will lead but call still possible.

Exhibit 1

Sun River	Reservation	Not at this time	Nearly all junior rights to be called are in Muddy Creek basin where reduction in flow is desired.
Dearborn River	Reservation	Not at this time	No contributing rights to call.
Missouri River above Canyon Ferry	Murphy	Possible	Frequent fishing restrictions and closures in headwater streams (Jefferson, Madison, and Gallatin).
Jefferson River	Reservation	Possible	Voluntary drought plan and few irrigation rights junior to reservation but could be called with Missouri (Toston).
Gallatin River	Murphy and Reservation	Yes/Partial	Active water commissioner on the West Gallatin, but several juniors in the East Gallatin basin could be called.
Madison River	Murphy and Reservation	Possible/Partial	Northwestern Energy FERC license guides how flows are managed between Hebgen and Ennis Lakes rendering call impractical. Possible call on juniors below Ennis Lake with Missouri (Toston).
Big Hole River	Reservation	Not at this time	Active community drought plan in place and CCAA participation.
Beaverhead River	Reservation and Recreation	Not at this time	Water commissioner and BOR manage distribution and releases.
Red Rocks River	Reservation	Not at this time	Flows are dominated by reservoir storage between Lima Reservoir and Clark Canyon.
Ruby River	Reservation	Possible	Flows managed by Ruby Reservoir (DNRC) and several water commissioners on tributary streams. Could be called with Jefferson and Missouri (Toston).
Missouri River below Canyon Ferry	Murphy	Evaluating	Dependent on releases from Canyon Ferry Dam. Calls have been made in the past during significant drought.
Lower Missouri Basin			
Marias River	Reservation	Evaluating	During significant drought calls have been made above and below Tiber Dam.
Teton River	Reservation	Not at this time	Active water commissioners throughout basin.
Judith River	Reservation	Yes	During significant drought call has been made in the past on the limited number of junior water rights in the basin.

Exhibit 1

Big Spring Creek	Murphy	Possible	The local watershed group has developed a draft drought plan, but it has not been necessary to implement it yet. Preference is that local efforts will lead but call still possible.
Musselshell	Reservation	Not at this time	Active water commissioners on north and south forks and mainstem.
Yellowstone Basin			
Shields River	Reservation	Yes/Partial	No call where commissioner is active. Possible call where there is no commissioner. Watershed group is active but does not work on flow issues.
Yellowstone River above Boulder River	Murphy	Yes	Important recreational fishery. Local drought planning efforts may provide alternative in the basin above the Shields River.
Boulder River (Big Timber)	Reservation	Possible	Call has been made in the past, but active local watershed group may provide alternate approaches. Preference is that local efforts will lead but call still possible.
Stillwater River (Columbus)	Reservation	Possible	Call has been made in the past, but active local watershed group may provide alternate approaches. Preference is that local efforts will lead but call still possible.
Clarks Fork Yellowstone River	Reservation	Possible/Partial	Newly forming watershed group in basin interested in exploring alternatives to call. Preference is that local efforts will lead but call still possible. Rock Creek portion of basin administered by water commissioner.
Yellowstone River at Billings	Reservation	Evaluating	Call has been made in the past.
Bighorn River	Reservation / Public Recreation	Not at this time	Streamflow is regulated by Yellowtail Dam. Most large junior water users now using CD reservation which is senior to FWP reservation.
Tongue River	Reservation	Yes	FWP has made significant investment in removing barriers in this river. Low flows during drought negatively impact the fishery.
Powder River	Reservation	Evaluating	Call has been made in the past.
Yellowstone River at Sidney	Reservation	Evaluating	Call has been made in the past. The necessity of call is largely dependent on releases from Yellowtail Dam.

Exhibit 1

Appendix C - Sample Water Right Call Letter

FWP.MT.GOV

THE **OUTSIDE** IS IN US ALL.

(Date)

(Return Address)

Dear _____River Basin Water Right Owner:

You have received this letter because you own a water right junior in priority to Montana Fish, Wildlife & Parks' instream flow water right for the _____River. Flow in the river has fallen below levels required by FWP's instream flow rights. An abstract(s) for your junior water right(s) is enclosed.

Under the water right priority system of Montana water law, standard procedure for allocating water during time of shortage is for the older (senior) water right holder (in this case FWP) to require you as the newer (junior) water user to cease using your junior water right immediately. This approach does not consider other water management or conservation measures that some water users are already taking.

FWP is aware that voluntary and informal water management and drought responses are used in several river basins of Montana. Senior water users are in some cases already making significant reductions in water diversion in order to maintain flow in the rivers during times of drought.

If you have already ceased using this junior water right or reduced the use of senior water rights to help maintain streamflow your efforts are greatly appreciated. If you have not taken steps to mitigate or cease diversion of water under your junior water right, FWP requests that you either:

- cease use of this junior water right, or
- seek a means to offset or mitigate your use of that junior water right.

Exhibit 1

Mitigation examples:

1. You have a newer but junior irrigation system that is critical to your operation and is more efficient than a more senior water right. Perhaps you might "trade water". Some irrigators cease or reduce the diversion under a senior water right to offset the continued use of the more efficient, cost effective, and often more productive irrigation system operated under a junior water right.

2. Use of water in a pond operated under a junior water right could be similarly mitigated. Ditch losses and evaporative losses from the ponds decrease pond outflow. The quantity of water returned to the source is also reduced. Again, if you also have a senior irrigation right, a reduction in the amount of water being diverted for irrigation could offset the flow reduction caused by evaporation from the pond.

3. If you don't have a senior irrigation right to offset the use of your junior water right, collaborating with a neighbor who does have a senior right and working out a reduction in use of that right is an option. (Such agreements can be formalized under Montana's law via the temporary change of use provisions.)

Use of your junior right must either stop, or that use must be mitigated until streamflow in the _____River improves to at least (list instream right flow rate(s) and applicable time period(s)). You can determine current flow in the river by accessing the U. S. Geological Survey (USGS) site for stream gauges (insert link to station) and then reading the current flow for station number (insert station number and name). Clicking on the station number will take you to a more detailed page, which will show trends at this gauge over the past several days. Long-term flow records indicate that under present water supply conditions, flow in the _____River generally does rise above FWP's instream flow water right through (applicable month).

If you have any questions or ideas regarding this issue, please contact (name) ____at (phone number) or at (email) _____.

Sincerely,

(Name)
(Title)

c: DNRC –Regional Office

Appendix D – Individual Basin Assessments

Exhibit 1

Young Creek

Young Creek is a tributary to the Kootenai River, originating in the Purcell Mountains and flowing approximately 14 miles before entering Lake Koocanusa roughly 2.5 miles south of the Canadian border. The creek was developed as a spawning and rearing tributary for westslope cutthroat trout to mitigate losses resulting from the construction of Libby Dam and remains one of the most important westslope cutthroat trout spawning tributaries to Lake Koocanusa.

Demand for irrigation water often exceeds typical low flows during the summer and fall months. FWP has invested substantial resources on the fisheries and associated habitat, including chemical treatments to remove non-native fishes, migration barrier removal, habitat restoration, and fish screening on major diversions. Improving flows can help protect both fisheries and investments made on the resource.

Drought Planning
Currently, there are no watershed groups in the region that handle water allocation issues. FWP has worked with water users when call has been made in previous years and this relationship may serve as a starting point for future drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no active commissioners in Lincoln County. Call responsibility is left to affected senior users.

Necessity of Call
Seasonal flow recommendations represent thresholds for westslope cutthroat trout at various life stages. With dewatering negatively impacting both fisheries and recreational opportunities, a call on junior water rights is justified in cases where the water being left instream is likely to improve overall streamflow or slow its decline.

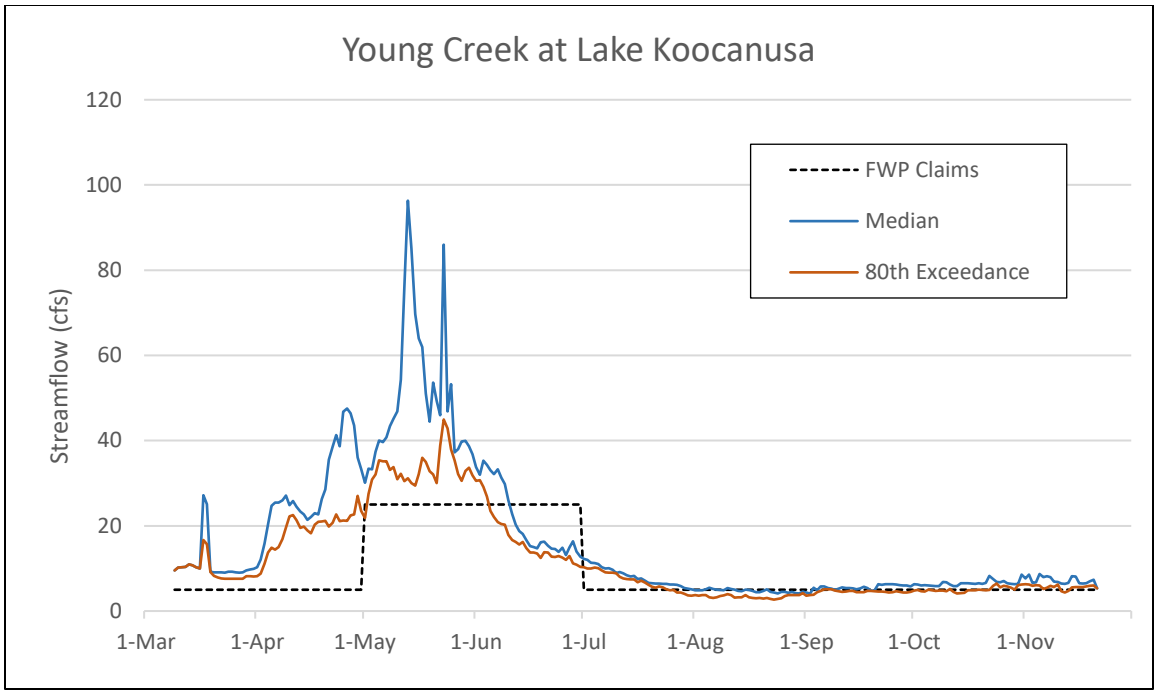
Basis of Call
Call on junior water rights is predicated on FWP's two statements of claim on Young Creek, from the headwaters in the Purcell mountains to the mouth at Lake Koocanusa. The flow rates are supported by wetted-p methodology, used to establish flow at critical periods for westslope cutthroat trout. The priority date for these instream flow claims is **March 19, 1968**.

FWP's instream flow statements of claim vary throughout the year as follows:

Statement of Claim No.	Months	Flow (cfs)
76D 110407-00	May - June	25
76D 110408-00	Jan - April; July - December	5

A call would not be made late in a month when the instream flow reservation for the subsequent month is substantially lower. For example, if flow was 20 cfs the last week in June, a call would not be made because on July 1, the instream flow reservation value would decrease to 5 cfs, which is substantially lower than flow would likely be at that time.

Exhibit 1



The hydrograph above compares FWP's instream flow reservation (dotted black line) with the median and 80th percentile exceedance flow obtained from seven years of flow data collected less than a mile upstream from the outlet at Lake Koocanusa (2013-2019). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds instream flow requirements excepting the latter half of June. The 80th percentile exceedance (shown in brown) represents streamflow met or exceeded 8 out of 10 years and generally falls below the instream flow requirements during both June and August. The dataset indicates that over the period of streamflow record, a call on junior water rights would commonly occur in the month of June and occasionally in the month of August. Due to the cyclical nature of drought and issues inherent with limited data sets, the actual frequency with which call would be made is unknown; however, FWP has successfully worked with water users in the past to limit diversions on this source during periods of low flow.

Junior Water Rights

DNRC's water rights database includes 44 junior water rights in the Young Creek basin, excluding an instream flow right held by the USFS. Each water right was reviewed to determine if cessation of diversion would likely result in additional flow to Young Creek. Based on those findings, FWP classified junior rights into two categories: those that would likely result in flow increases if call were made (Call) and those that would not (No Call). The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Irrigation	40	1	16.55 cfs
Stock	0	1	-
Fish & Wildlife	1	0	0.33 cfs
Lawn & Garden/Stock	0	1	-
Total	**41**	**3**	**16.88 cfs**

Exhibit 1

The following map shows the diversion location of all junior water rights; there are multiple shared diversions on Young Creek identified with a single blue dot. The yellow dots with the red arrows are the diversion points for the three water rights that would not receive call due to the low likelihood of improving flows in the creek; the diversion highest in the system has a low flow rate (10 gpm) and provides for some domestic use while the two rights that share the lower diversion both include stock water as a purpose and have a combined flow rate of 100 gmp. The green square represents the approximate location of the flow measurement device on Young Creek.

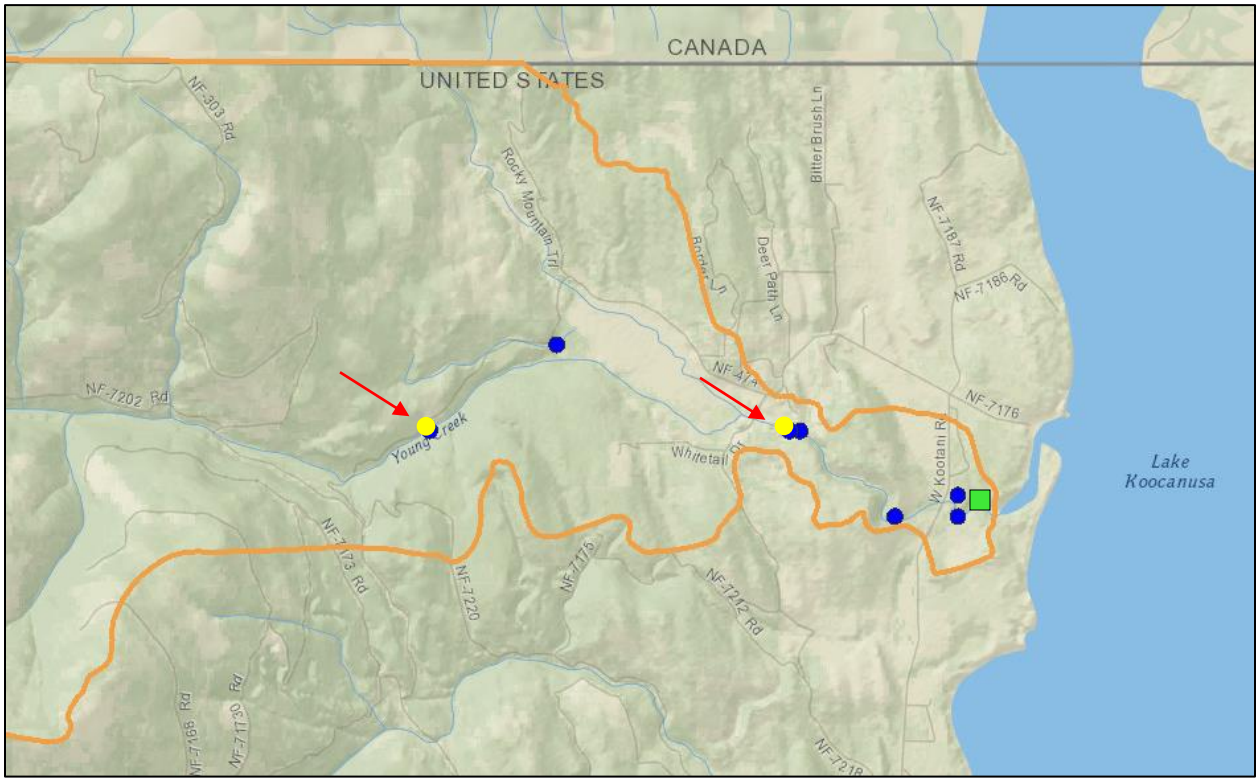


Exhibit 1

Tobacco River

The Tobacco River is the largest Montana tributary to the Kootenai River upstream of Libby Dam, originating at the confluence of Grave and Fortine creeks and flowing approximately 15 miles before entering Lake Koocanusa roughly 7 miles south of the Canadian border. The river provides critical passage for migratory bull trout populations that spawn in Grave Creek, which is the only Montana population residing in Lake Koocanusa. Recreational angling of bull trout is a rare opportunity only allowed in two water bodies in Montana. Lake Koocanusa is one of those fisheries, authorized by a USFWS special permit and contingent upon continued vitality of the Grave Creek population. The Tobacco River and associated 266 miles of perennial streams within the watershed also provide spawning and rearing habitat for westslope cutthroat and rainbow trout that support popular local fisheries.

Demand for irrigation water often exceeds typical low flows during the summer and fall months. FWP has invested substantial resources on the fisheries and associated habitat, including migration barrier removal, habitat restoration, and fish screening on major diversions within the watershed. Improving flows can help protect both fisheries and investments made on the resource.

Drought Planning
Currently, there are no watershed groups in the region that handle water allocation issues. FWP has worked with water users when call has been made in previous years and this relationship may serve as a starting point for future drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no active commissioners in Lincoln County. Call responsibility is left to affected senior users.

Necessity of Call
Seasonal flow recommendations represent thresholds for westslope cutthroat trout at various life stages. With dewatering negatively impacting both fisheries and recreational opportunities, a call on junior water rights is justified in cases where the water being left instream is likely to improve overall streamflow or slow its decline.

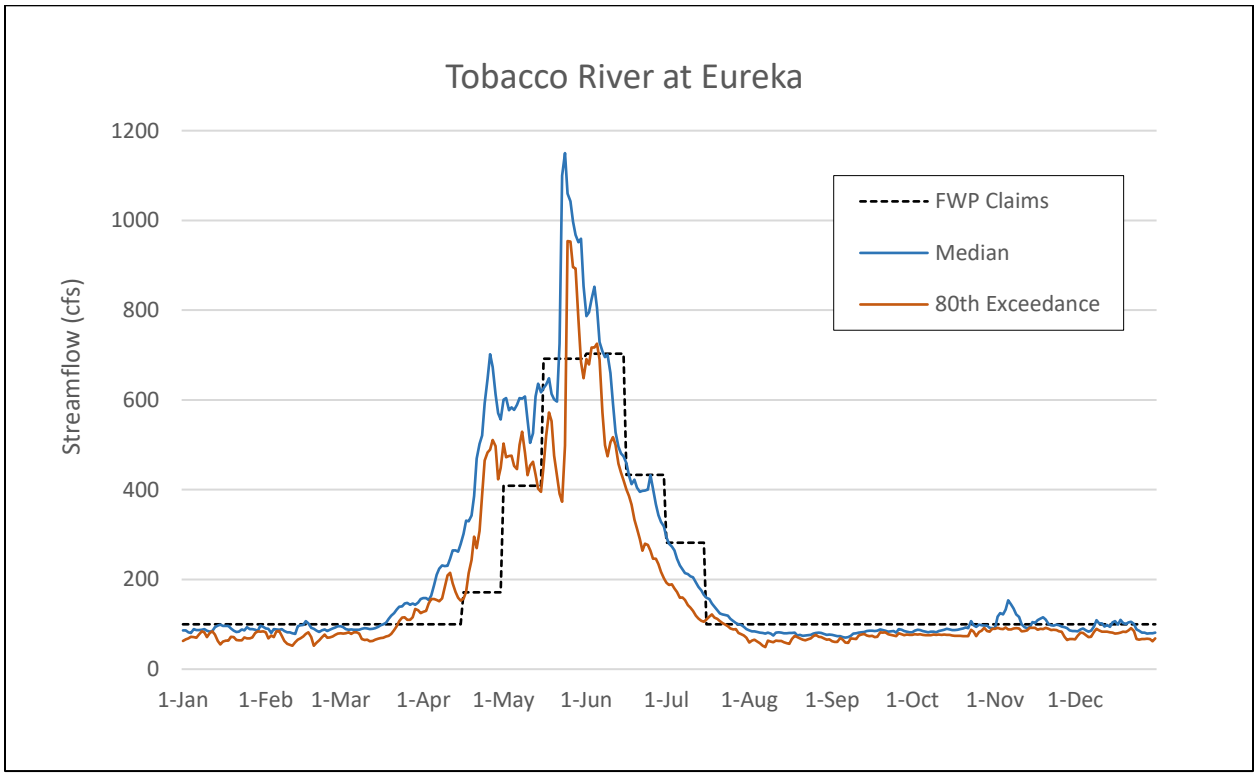
Basis of Call
Call on junior water rights is predicated on FWP's eight seasonal statements of claim on the Tobacco River, from the confluence of Grave and Fortine creeks to the mouth at Lake Koocanusa. The flow rates are supported by wetted-p methodology, used to establish flow at critical periods for westslope cutthroat and rainbow trout. The priority date for these instream flow claims is **February 24, 1965**.

Exhibit 1

FWP's instream flow statements of claim vary throughout the year as follows:

Statement of Claim No.	Months	Flow (cfs)
76D 122348 00	April 16 – April 30	171
76D 122351 00	May 1 – May 15	409
76D 122370 00	May 16 – May 31	692
76D 122346 00	June 1 – June 15*	1,263
76D 122349 00	June 1 – June 15**	703
76D 122350 00	June 16 – June 30	433
76D 122345 00	July 1 – July 15	282
76D 122347 00	July 16 – April 15	100
*One day flushing flow **15-day flow rate		

A call would not be made late in a month when the instream flow reservation for the subsequent month is substantially lower. For example, if flow was 375 cfs the last week in June, a call would not be made because on July 1, the instream flow reservation value would decrease to 282 cfs, which is substantially lower than flow would likely be at that time.



The hydrograph above compares FWP's instream flow claims (dotted black line) with the median and 80th percentile exceedance flow for USGS Gages 12301300 (1958-2016) and 12301250 (2016-2022) combined. Gage 12301300 was located approximately 3 river miles below 12301250 which is the current gage location on the Tobacco River, in the town of Eureka. Both gages are located along the claimed reach for FWP instream flow. Gage 12301300 includes Ksanka Creek in its measurements.

Exhibit 1

In 5 out of 10 years (median shown in blue), streamflow meets or exceeds instream flow requirements about a third of the time, predominantly during spring runoff and occasionally during late fall and early winter. The 80th percentile exceedance (shown in brown) represents streamflow met or exceeded 8 out of 10 years and generally falls below the instream flow requirements throughout the year, except for spring runoff. The dataset indicates that over the period of streamflow record, a call on junior rights could occur anytime outside of the spring runoff period.

Junior Water Rights

DNRC's water rights database includes 71 junior water rights in the Tobacco River basin, excluding instream flow rights on Therriault Creek, Deep Creek and Canyon Creek held by the USFS and various domestic and stock claims. Claims related to fisheries and wildlife were also excluded if they did not have an active diversion from the source. Each water right was reviewed to determine if cessation of diversion would likely result in additional flow to Tobacco River. Based on those findings, FWP classified junior rights into two categories: those that would likely result in flow increases if call were made (Call) and those that would not (No Call). The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Irrigation	43	0	29.53 cfs
Fish & Wildlife/Fishery	17	2	11.88 cfs
Lawn & Garden	2	1	0.11 cfs
Industrial	0	1	-
Power Generation	0	5	-
Total	**62**	**9**	**41.52 cfs**

Exhibit 1

The following map shows the location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square is the location of USGS Gage 12301250.

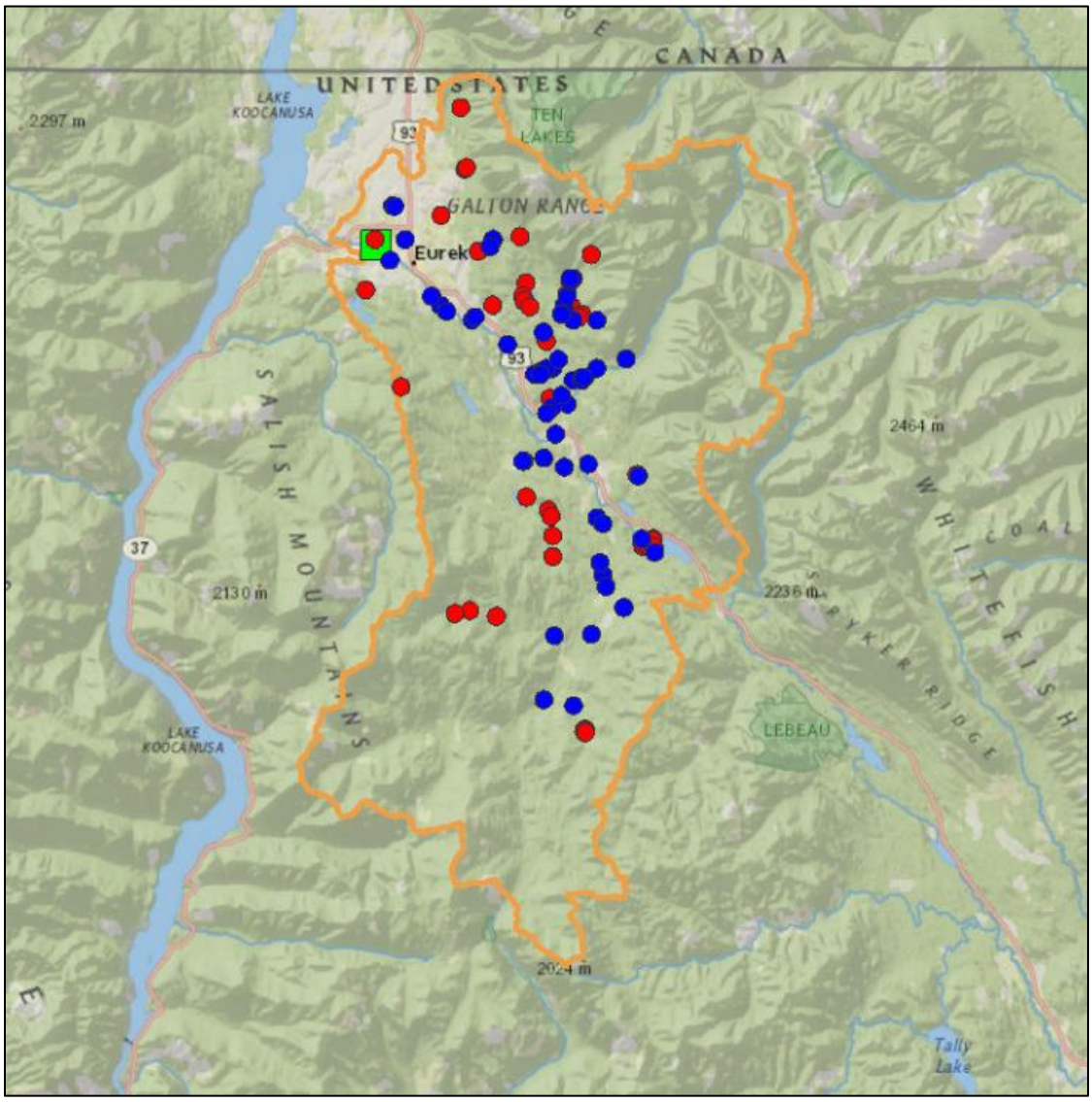


Exhibit 1

Upper Clark Fork River

The Upper Clark Fork River extends from the Clark Fork's headwaters near Butte, MT downstream to the mouth of Flint Creek. The drainage includes the uppermost segment of the Clark Fork River and its tributaries, including Silver Bow Creek, Warm Springs Creek, and the Little Blackfoot River. The Clark Fork River begins at the junction of Silver Bow and Warm Springs Creeks, near the small community of Warm Springs. From its headwaters, the river flows northwesterly for approximately 70 miles through Deer Lodge, Powell and Granite Counties. Located in the west-central part of the state, the Upper Clark Fork has a long history of mining-related impacts that have negatively affected the fishery and aquatic resources along much of the river. This has led to the stream being one of the more underutilized rivers in western Montana. However, ongoing environmental cleanup by the state and the U.S. Environmental Protection Agency, as well as a diversity of recreational opportunities, has contributed to an increase in the Upper Clark Fork's popularity in recent years.

The Upper Clark Fork River is primarily a brown trout fishery with a small native westslope cutthroat trout population. It also supports robust populations of native non-game species (mountain whitefish, largescale suckers, etc.). Brown trout numbers in the upper reaches (above Deer Lodge) were once as high as 2000 fish/mile but have recently declined to less than 200 fish/mile. Brown trout and westslope cutthroat trout numbers in lower reaches (below Deer Lodge) have remained relatively stable.

There are many variables that affect trout populations in the Upper Clark Fork, but flows have historically been the key variable driving fluctuations. Flow evaluations based on wetted perimeter/inflection point methods were performed by Fish, Wildlife & Parks starting in 1986; this evaluation indicated a minimum flow of 40 CFS at Galen and 90 CFS at Deer Lodge is necessary to maintain aquatic ecosystem function. The method identifies an inflection point where the rate of habitat loss increases significantly with reduced flow.

Flows routinely drop below minimum flow targets on the Upper Clark Fork River in drought years and maintaining minimum flows is not always possible given other water uses in the basin. However, avoiding the rapid loss of habitat at lower flows and maintaining a trout population that is resilient to drought years is necessary to enhancing and maintaining overall trout populations on the Upper Clark Fork River.

Drought Planning

While there is no formal drought plan in the Upper Clark Fork, FWP and the CSKT have been engaging with local stakeholders to discuss water management options as it relates to future implementation of the Milltown Water Right which becomes enforceable on April 24, 2025. Efforts to improve streamflow in the Upper Clark Fork has been a priority of the Department of Justice Natural Resource Damage Program (NRDP). NRDP has been working with local partners on restoration and flow projects. In the last two years, NRDP has also worked with Trout Unlimited on negotiating a summer release of water for instream flow from Silver Lake which is managed by Butte/Silverbow. In fall of 2021, the Upper Clark Fork Streamflow Group was formed, whose

mission is to "pursue solutions that support and balance the water needs of the Upper Clark Fork River watershed communities".

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are three water commissioners on Cottonwood Creek, Dempsey Creek, Racetrack Creek, Lower Willow Creek and Flint Creek which are all tributary to the Upper Clark Fork.

Necessity of Call
With dewatering negatively impacting fisheries, a call on junior water rights would be justified on sources not being administered by a water commissioner and on rights that would likely result in improved or less rapidly declining streamflow.

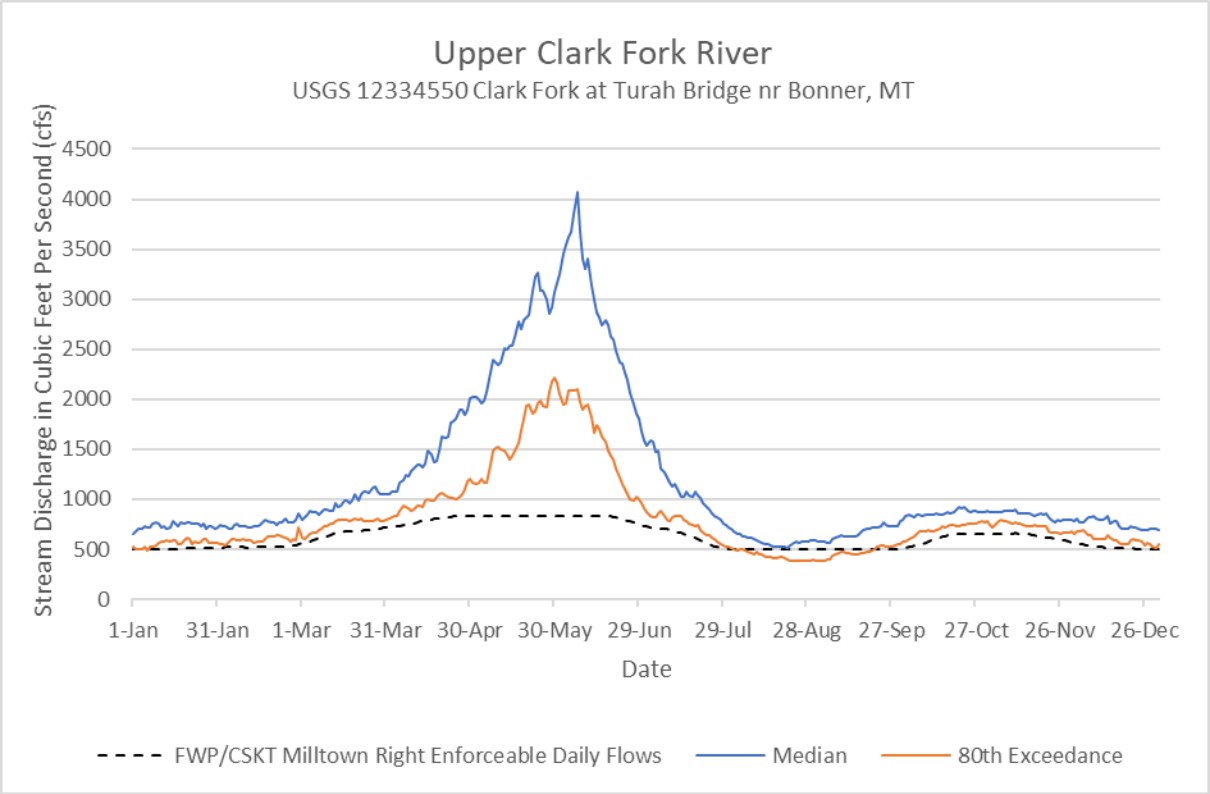
Basis of Call
Starting in 2025, FWP and/or CSKT calls on junior water rights in the Upper Clark Fork River basin will be predicated on the Milltown water right as measured at the USGS Gage 12334550 (Clark Fork at Turah Bridge nr Bonner MT). Call may be initiated on the day following a five-consecutive-day period where four out of five average daily flows fall below their respective daily enforceable flow values; calls may persist until such time as two average daily flows of the previous five-consecutive-day period are in excess of their respective daily enforceable flow values. The priority date for the Milltown water right is **December 11, 1904.**

FWP/CSKT Milltown water right as enforced at Turah is as follows:

Type of Instream Flow Water Right	Time Period	Flow (cfs)
Milltown Water Right	January 1-December 31	500[1]

[1] Minimum enforceable stream flow as described in Appendix 31: 76M 94404-01 and 76M 94404-02 Technical Documentation of the CSKT-Montana Compact.

Exhibit 1



The preceding hydrograph compares FWP/CSKT's Milltown water right (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 12334550 (Clark Fork River at Turah Bridge nr Bonner MT) based on 36 years of record (1986-2022). In the summer months in 5 out of 10 years, the median flows stay slightly above FWP/CSKT's Milltown right. The 80th percentile exceedance (shown in brown) represents the streamflow met or exceeded in 8 out of 10 years. The gage data indicates that during the driest of years, flows fall below FWP/CSKT's Milltown right's minimum enforceable flow of 500 cfs on or about August 2nd and stay below that level until on or about September 21st.

Exhibit 1

Rock Creek (Upper Clark Fork River)

Rock Creek is a tributary to the Upper Clark Fork River, originating in the Sapphire Mountains south of Interstate 90 and entering the Clark Fork River roughly 22 miles east of Missoula. FWP has two sequences of Murphy rights on a 14-mile reach, one from the confluence of the East and West forks to Ranch Creek and the other from Ranch Creek to the confluence with the Clark Fork River. The creek is a premier wild trout water body with blue-ribbon status, supporting populations of rainbow, brown, westslope cutthroat, brook, and bull trout and mountain whitefish.

Demand for water often exceeds typical low flows during the non-irrigation season and occasionally the latter half of June and months of August and September. FWP has invested substantial resources on the fisheries and associated habitat, including habitat restoration, diversion reconstruction and fish screening on major diversions on the mainstem and important tributaries. Improving flows can help protect both fisheries and investments made on the resource.

Drought Planning
The Granite Headwaters watershed group is active in the region that includes the Rock Creek watershed; however, they have chosen not to venture into water allocation issues. If that position changes in the future, this established group may provide structural organization to assist in the implementation of drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no active commissioners on Rock Creek in Granite County. Call responsibility is left to affected senior users.

Necessity of Call
Seasonal flow recommendations represent thresholds for native and nonnative trout species at various life stages. With dewatering negatively impacting both fisheries and recreational opportunities, a call on junior water rights is justified in cases where the water being left instream is likely to improve overall streamflow or slow its decline.

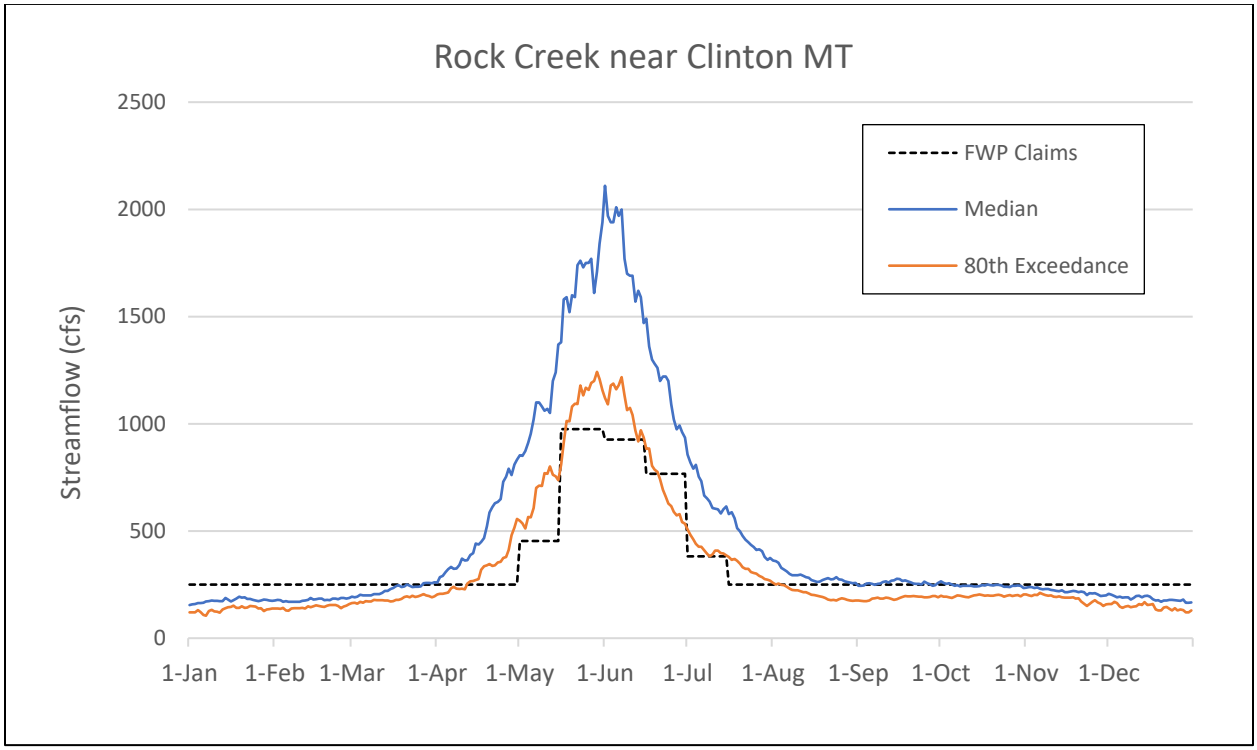
Basis of Call
Call on junior water rights is predicated on FWP's six Murphy rights on Rock Creek, from the confluence with Ranch Creek to the mouth at the Clark Fork River. The flow rates are supported by wetted-p methodology, used to establish flow at critical periods for various trout species. The priority date for these instream flow rights is **January 6, 1971**.

FWP's Murphy rights vary seasonally as follows:

Water Right No.	Period of Use (Claim)	Flow (cfs)
76E 133209 00	July 16 – April 30	250
76E 133211 00	May 1 – May 15	454
76E 133213 00	May 16 – May 31	975
76E 133214 00	June 1 – June 15	926
76E 133212 00	June 16 – June 30	766
76E 133210 00	July 1 – July 15	382

Exhibit 1

A call would not be made late in a month when the instream flow water right for the subsequent month is substantially lower. For example, if flow was 650 cfs the last week in June, a call would not be made because on July 1, the instream flow water right decreases to 382 cfs, which is substantially lower than flow would likely be at that time.



The hydrograph above compares FWP's instream flow water right claims (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 12334510, based on 51 years of flow data (1972-2022) collected between Stage Station Road and the Clark Fork River, approximately 0.4 miles upstream from the mouth. In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds instream flow requirements from late March through early October. The 80th percentile exceedance (shown in brown) represents streamflow met or exceeded 8 out of 10 years and generally falls below the instream flow requirements from early August through mid-April, in addition to the latter part of June.

The dataset indicates that over the period of streamflow record, a call on junior water rights may occur in the month of June and occasionally during the warmer months of August and September. Due to the cyclical nature of drought, calls may occur many years in a row; however, with the presence of cooler water temperatures in the months of October through May, the actual frequency with which call would be made is unknown. Due to the limited number of water users in the drainage, call has rarely been used. Since 2000, call has only been made once, in 2015.

Junior Water Rights

DNRC's water rights database includes 23 junior rights in the Rock Creek basin, excluding instream flow rights, stock directly from the source, and most domestic rights. Each of the remaining water

Exhibit 1

rights was reviewed to determine if cessation of diversion would likely result in additional flow to Rock Creek. Based on those findings, FWP classified junior rights into two categories: those that would likely result in flow increases if call were made (Call) and those that would not (No Call). The following table lists the water rights by general purpose and category.

Purpose	Call	No Call	Total Called Flow Rate
Irrigation	13	1	6.60 cfs
Commercial/Domestic	2	0	8.34 cfs
Fish & Wildlife	4	0	12.25 cfs
Mining	3	0	1.61 cfs
Total	22	1	**28.80 cfs**

The following map shows the diversion location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square is the location of USGS gage 12334510.

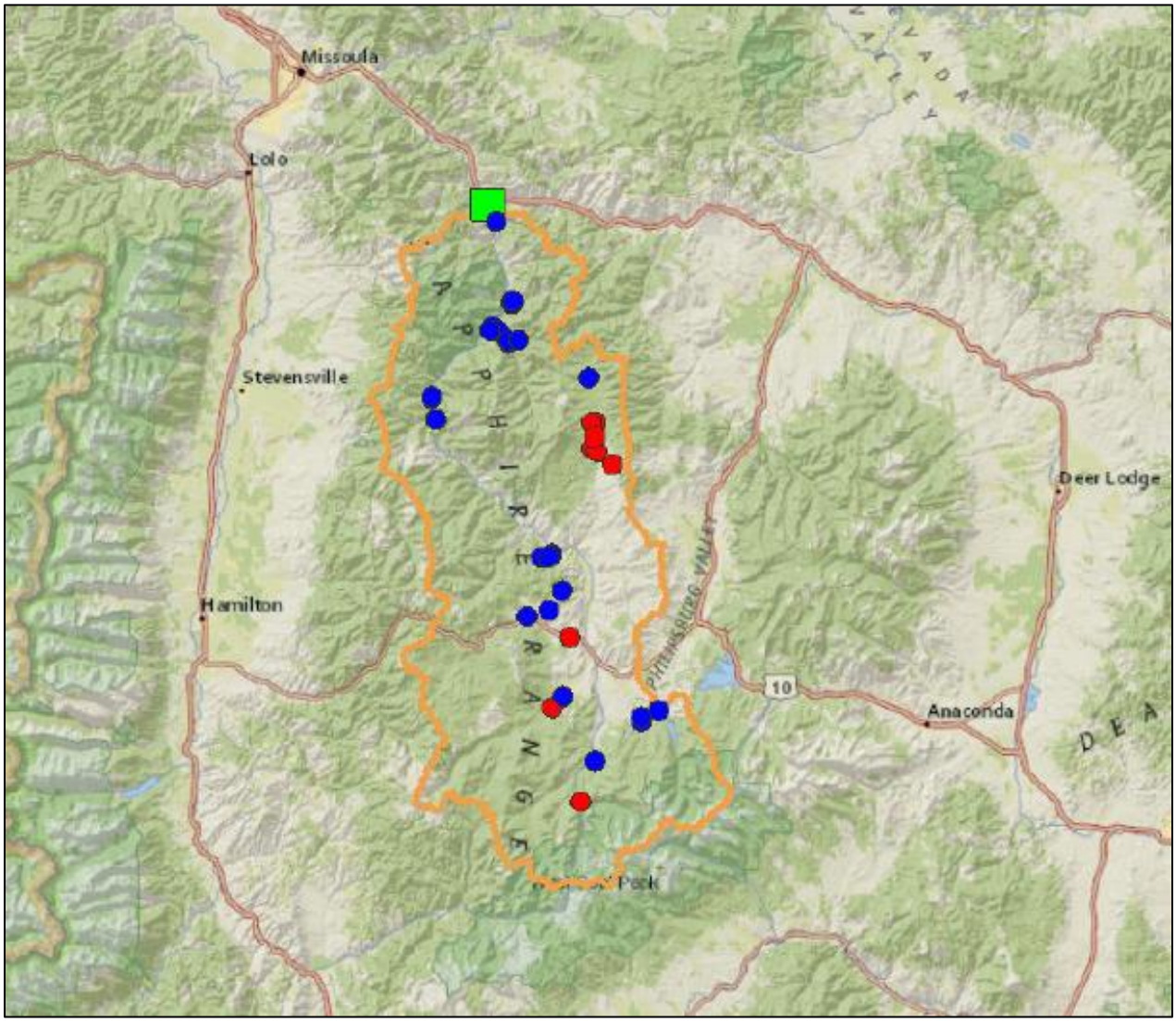


Exhibit 1

Blackfoot River

The Blackfoot River begins at the junction of Beartrap and Anaconda Creeks, located near the Continental Divide between Rogers Pass and Flesher Pass. From its headwaters, the river flows westward for 132 miles through Lewis and Clark, Powell and Missoula Counties, draining a 2,290 square mile basin to Bonner, where it joins the Clark Fork River. Located in the west-central part of the state, the Blackfoot River is one of twelve renowned blue-ribbon rivers in Montana and is one of Montana's most popular rivers for recreation. The Blackfoot River is managed as a wild trout fishery, relying on natural reproduction of native and nonnative trout. Native westslope cutthroat trout and bull trout have been the primary focus of basin-wide protection and restoration activities for over 30 years. Restoration projects, such as instream improvements, fish passage enhancements, fish screening and water leases have been undertaken throughout the basin in order to help recover bull trout, westslope cutthroat trout and other species. This work has occurred on both private and public land.

Drought Planning

The Blackfoot Challenge is an active land and watershed group in the Blackfoot River basin. The group adopted the Blackfoot Drought Plan (BDP) in 2000 and FWP is an active participant and partner in the implementation of the BDP. The implementation plan is based on recommendations of the Blackfoot Drought Committee. The committee meets monthly during the irrigation season when flows and conditions in the Blackfoot River basin dictate drought response. The model of the plan is based on "shared sacrifice" with the goal that all Blackfoot water users (agricultural, irrigators, outfitters, anglers, recreational users, government agencies, homeowner's associations, businesses, conservation groups and others) voluntarily agree to take actions that will result in water savings and/or reduction of stress to fisheries resources during critical low flow periods.

Water Commissioners

According to DNRC's January 20, 2021 water commissioner list, water commissioners are active in Douglas Creek, Washington Creek and Cottonwood Creek. Contract water out of Nevada Creek Reservoir is also managed by the Nevada Creek Water User's Association. Junior water rights from these streams or stream reaches are not called.

Necessity of Call

The Blackfoot Drought Committee's drought response plan has identified triggers for both flow and temperature. The flow trigger is based on FWP's Murphy right of 700 cfs, which was determined by the application of the wetted-p methodology that assesses habitat availability as it relates to wetted channel width in the riffle section of a river. Streamflow influences the physical template and biological processes of rivers, ultimately controlling fish population size and potential. As flows decrease, so does food production, oxygenation and habitat availability. Competition for food and habitat resources increase at low flows, further exacerbating stressful conditions.

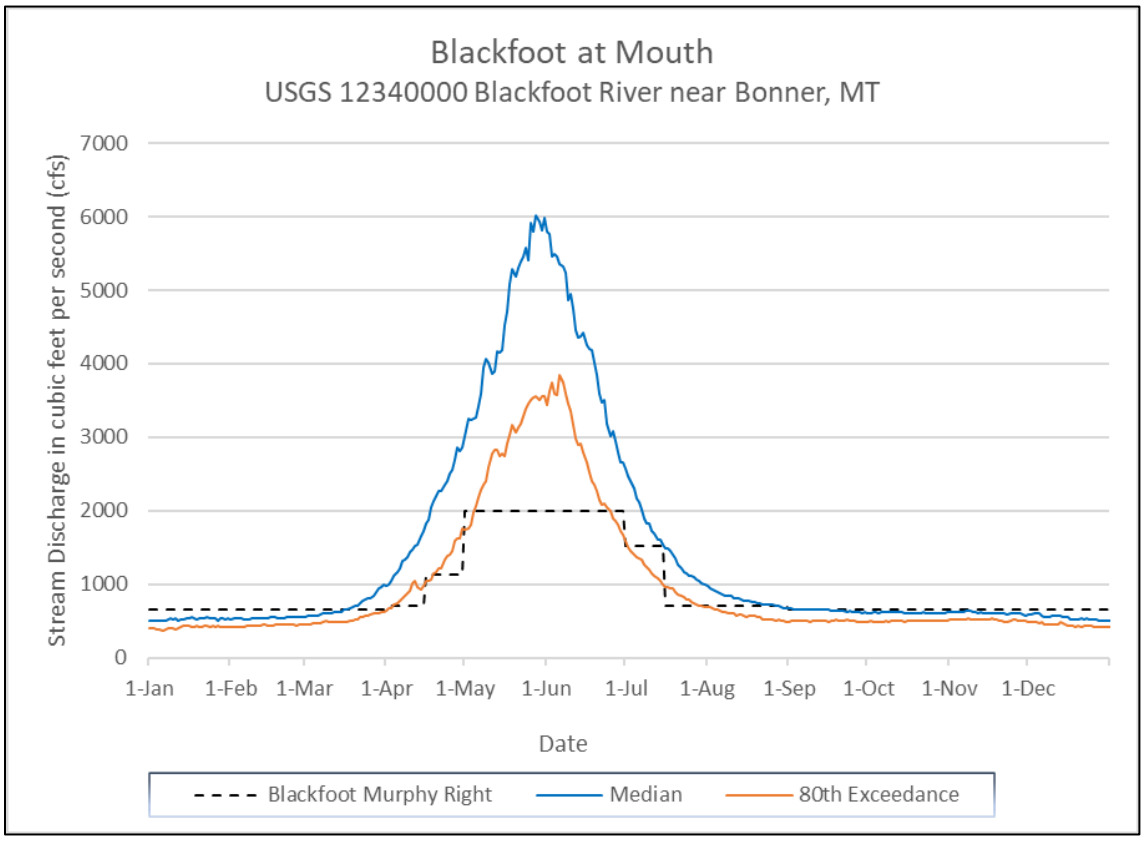
Basis of Call

The Blackfoot drought plan is implemented when flows in the Blackfoot River fall to or below 700 cfs. FWP, in consultation with the rest of the committee and in absence of extenuating

circumstances, will issue a call for water on non-participating water right holders whose continued water use, in the judgement of FWP, warrants a call. If flows in the Blackfoot River fall below 500 cfs, the Blackfoot Drought Committee and FWP will make a call on all junior water right holders with an exception to those who in their drought response plan, are able to exchange or trade water on a 1-to-1 basis[2]. Flow triggers are predicated on FWP's Murphy right on the Blackfoot River as measured at USGS Gage 12340000 near Bonner, MT. The priority date of the Murphy right is **January 6, 1971.**

FWP's Murphy right varies by month as follows:

Period	Flow (cfs)
September 1-March 31	360
April 1-April 15	700
April 16-April 30	1,130
May 1-June 30	2,000
July 1-July 15	1,523
July 16-August 31	700



[2] Water Trades occur when a water user seeks to use water from a junior right in exchange for using their senior right. This is often the case when a water user has a more efficient system associated with a junior right as opposed to a senior right that is associated with a less efficient flood system. In the case on the Blackfoot, a 1-to-1 exchange in a drought plan suggests that the water user is using 0.5 cfs of a junior right in place of a 0.5 cfs senior right.

Exhibit 1

The preceding hydrograph compares FWP's Murphy right (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 12340000 based on 120 years of record (1900-2020). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds the FWP's Murphy right throughout most of the irrigation season. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years mostly falls below the instream Murphy right. This data indicates that over the period of streamflow record, a call on junior water rights may occur over half of the years. However, much of the call depends on timing of when flows fall below 700. For example, if flows fall below the Murphy right in mid-September when irrigation is beginning to wind down and temperatures are cooler, a call may not be warranted. Also, with the cyclical nature of drought, calls may occur many years in a row. Since the implementation of the BDP in 2000, FWP has called junior water rights in the Blackfoot River basin 12 times.

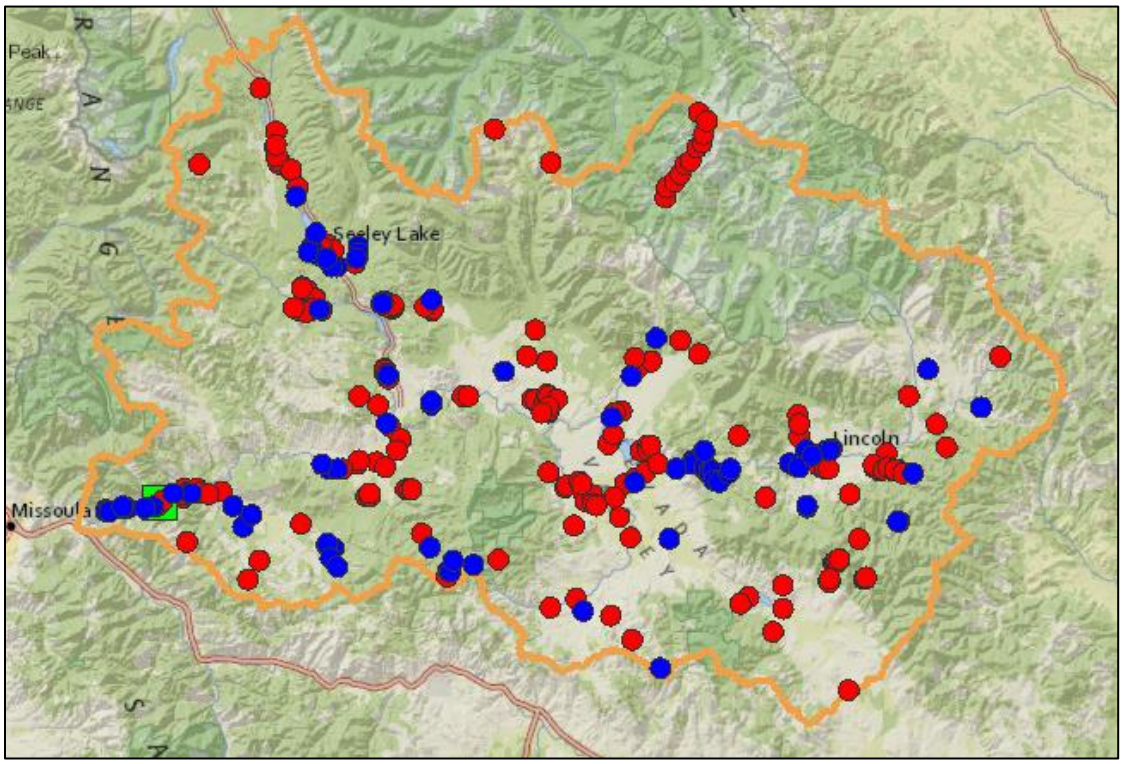
Junior Water Rights

DNRC's water rights database includes 250 junior water rights in the Blackfoot River basin. Each water right was reviewed to determine if cessation of water use would likely result in additional flow reaching the Blackfoot River. Water rights of those who have an active drought plan were also not recommended for call. The following table lists the recommended junior water rights to call by general purpose category.

Purpose	**Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	3	0.41 cfs
Irrigation	46	55.63 cfs
Domestic w/ irrigation	19	0.96 cfs
Mining	5	1.36 cfs
Total	**73**	**58.36 cfs**

Exhibit 1

The following map shows the location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square is the location of USGS Gage 12340000.



CSKT Compact Milltown Water Right

On April 24, 2015, the Montana Legislature passed the Confederated Salish & Kootenai Montana Water Rights Compact (85-20-1901, MCA). The passage of the compact stipulated that the power generation water right that was once associated with Milltown Dam be split into two separate, active and enforceable instream flow water rights for purposes of protecting the fisheries in both the Upper Clark Fork and Blackfoot Rivers. These water rights have individual minimum flow criteria of 500 cfs in the Clark Fork River and 700 cfs in the Blackfoot River. The priority date of the two water rights is December 11, 1904.

Secretary of the Interior Deb Haaland signed the CSKT Montana Compact on September 17, 2021, which formally executed the Compact that was previously enacted by Congress on December 21, 2020. Under the Compact, the tribes became co-owners of the Milltown right along with FWP. The legislature implemented a 10-year planning period for purposes of allowing both FWP and CSKT to engage water users to develop plans on how best to administer the water rights in the future. The ability for both CSKT and FWP to implement and administer the Milltown right begins on April 24, 2025.

There are about 1,952 junior water users in the Blackfoot River that are junior to the Milltown water right. FWP and CSKT plan to continue to work with the Blackfoot Challenge, irrigators and other stakeholders to build shared knowledge about water management, explore options to improve water management in the future, and look for opportunities to minimize the impact of the Milltown water right on other water users in the basin.

Exhibit 1

Missouri River (Above Canyon Ferry Reservoir)

The Upper Missouri River drainage includes the Missouri River and tributaries from the confluence of the Jefferson, Madison and Gallatin Rivers (near the town of Three Forks). The upper river reach extends from the headwaters 43 river miles to the upper end of Canyon Ferry Reservoir. The drainage contains fish species common to southwestern Montana. The native species found here include westslope cutthroat trout, mountain whitefish, mountain sucker, longnose dace, longnose sucker, Rocky Mountain sculpin, stonecat and white sucker. Nonnative species include rainbow trout, brown trout, brook trout, northern pike, smallmouth bass, largemouth bass, yellow perch, walleye and common carp. Hybrids of rainbow trout and westslope cutthroat trout are also found in the drainage.

The Upper Missouri River drainage is also home to several conservation populations of westslope cutthroat trout, providing opportunities to preserve this native species in the drainage. The long-term goal of cutthroat conservation in the upper Missouri River Drainage is to have approximately 20% of the historically occupied habitat restored to secure a conservation population of cutthroat trout.

Drought Planning

There is currently no formal drought plan developed for the Upper Missouri River basin. As indicated in other basin assessments of the Gallatin River, Jefferson River and Big Hole River, there are some efforts that have been made to develop comprehensive voluntary drought plans in other Missouri Headwater streams.

Water Commissioners

According to DNRC's January 20, 2021 water commissioner list, there is one water commissioner that administers water on Deep Creek. Other commissioners exist in the Gallatin, Madison and Jefferson River basins and have been described in those specific basin call summaries. Juniors who are on streams being administered by a water commissioner would not be called.

Necessity of Call

With dewatering negatively impacting fisheries, a call on junior water rights is justified on sources not being administered by a water commissioner and for which a call would likely result in improved or less rapidly declining streamflow. During times of severe water shortage on Missouri River headwater streams, making a call based on the Missouri River above Canyon Ferry may have benefits to headwater streams and tributaries, especially those in the Jefferson River basin where protections are limited to the FWP water reservation which has a later priority date of July 1, 1985.

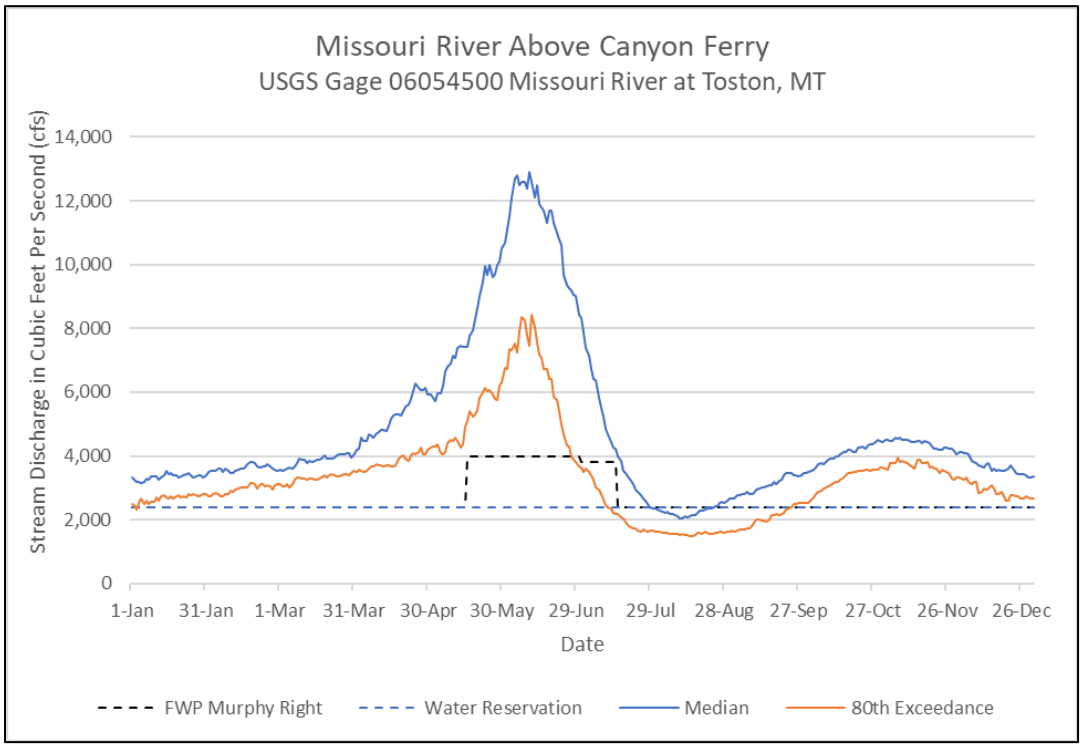
Basis of Call

FWP calls on junior water rights in the Missouri River Above Canyon Ferry Reservoir are predicated on both a Murphy right and water reservation as measured at the USGS Gage 06054500 (Missouri River at Toston MT). The priority dates for the Murphy right and water reservation are **December 17, 1970** and **July 1, 1985,** respectively.

Exhibit 1

FWP's instream flow water rights on Missouri River by flow and time period:

Type of Instream Flow Water Right	Time Period	Flow (cfs)
Murphy Right	January 1-January 31	2,400
	February 1-May 15	2,400
	May 16-June 30	4,000
	July 1-July 15	3,816
	July 16-September 14	2,400
	September 15-December31	2,400
Water Reservation	January 1-December 31	2,400



The preceding hydrograph compares FWP's Murphy right (dotted black line) and water reservation (dotted blue line) with the median and 80th percentile exceedance flow for USGS Gage 06054500 based on 130 years of record (1891-2021). In the summer months in 5 out of 10 years, the median flows drop below FWPs Murphy right on or about July 29th and stay below that flow until about August 24th. The 80th percentile exceedance (shown in brown) represents the streamflow met or exceeded in 8 out of 10 years. The gage data indicates that during the driest of years, flows fall below FWP's Murphy right on or about July 16th and stay below that flow until about September 24th. It is also worth pointing out that flows fall below FWP's water reservation days prior to when they fall below FWP's Murphy right. However, making a call on juniors would be predicated on when flows fall below FWP's Murphy right, the more senior of the two rights.

Exhibit 1

Junior Water Rights

Of the three headwater streams in the Upper Missouri River, the Jefferson River is the only one without streamflow protections based on a Murphy right. Thus, streamflow protection is limited on the Jefferson to its more junior 1985 water reservation while both the Gallatin and Madison Rivers have Murphy rights that are more senior in priority, dating back to 1970. Additionally, the Missouri River's (above Canyon Ferry) priority date is five days earlier than the Murphy rights on both the Gallatin and Madison Rivers, making it the most senior FWP instream flow water right in that part of the Missouri River basin.

During the extraordinary hot and dry conditions that took place during the summer of 2021, FWP conducted an assessment of junior water users based on the Missouri River (above Canyon Ferry) Murphy right and found that the following juniors could be called to increase flows or slow additional declines in streamflow that might not otherwise occur if a call were not made.

Exhibit 1

Missouri River Basin Mainstem			
	Purpose(s)	***Call***	***Flow Rate***
	Irrigation	22	77.49 cfs
	Lawn and Garden	2	0.06 cfs
	Fish, Wildlife and Recreation	4	4 cfs
	Subtotal:	28	81.55 cfs
Jefferson River Basin			
Beaverhead	Irrigation	21	47.91 cfs
	Lawn and Garden	2	.08 cfs
	Mining	1	.62 cfs
	Fish and Wildlife/Recreation	9	6.09 cfs
	Subtotal:	*33*	*54.70 cfs*
Ruby	Irrigation	20	128.88 cfs
	Fish, Wildlife and Recreation	15	19.1
	Subtotal:	*35*	*148.98 cfs*
Big Hole[3]	Irrigation	55	175.62 cfs
	Lawn and Garden	1	0.12 cfs
	Subtotal:	*56*	*175.74 cfs*
Boulder	Irrigation	11	30.35
	Industrial	1	1.11
	Mining	4	1.37
	Subtotal:	*16*	*32.83*
Mainstem	Irrigation	27	55.29 cfs
	Lawn and Garden	2	0.11 cfs
	Recreation	1	0.5 cfs
	Subtotal:	*30*	*55.9 cfs*
Madison River Basin			
	Irrigation	16	33.74 cfs
	Fish and Wildlife/Recreation	2	1.96 cfs
	Subtotal:	*18*	*35.7 cfs*
Gallatin River Basin			
	Irrigation	33	36.35 cfs
	Domestic Lawn and Garden	2	0.71 cfs
	Fish and Wildlife/Recreation	2	2.33 cfs
	Subtotal:	*37*	*39.39 cfs*
	Total:	**253**	**624.79 cfs**

[3] Making any calls to juniors on the Big Hole River would have to be supported by the Big Hole Watershed Committee.

Exhibit 1

Figure 1: Jefferson River and Missouri Mainstem Juniors

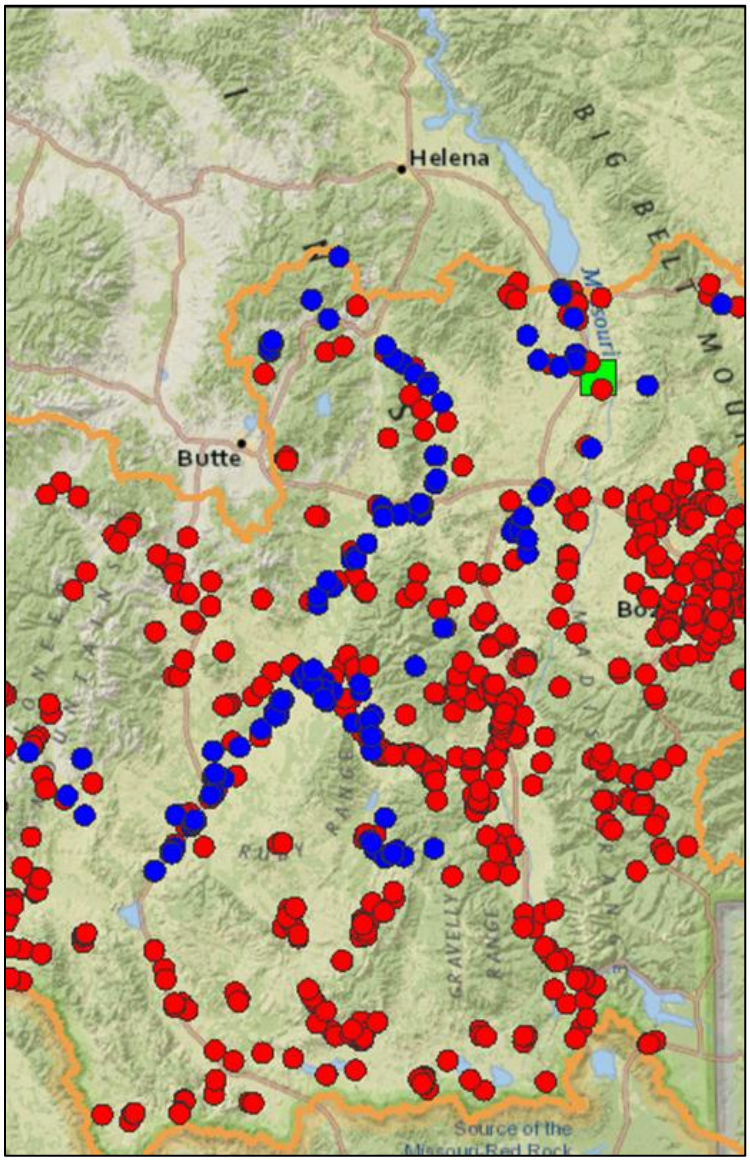


Exhibit 1

Figure 2: Madison River Juniors

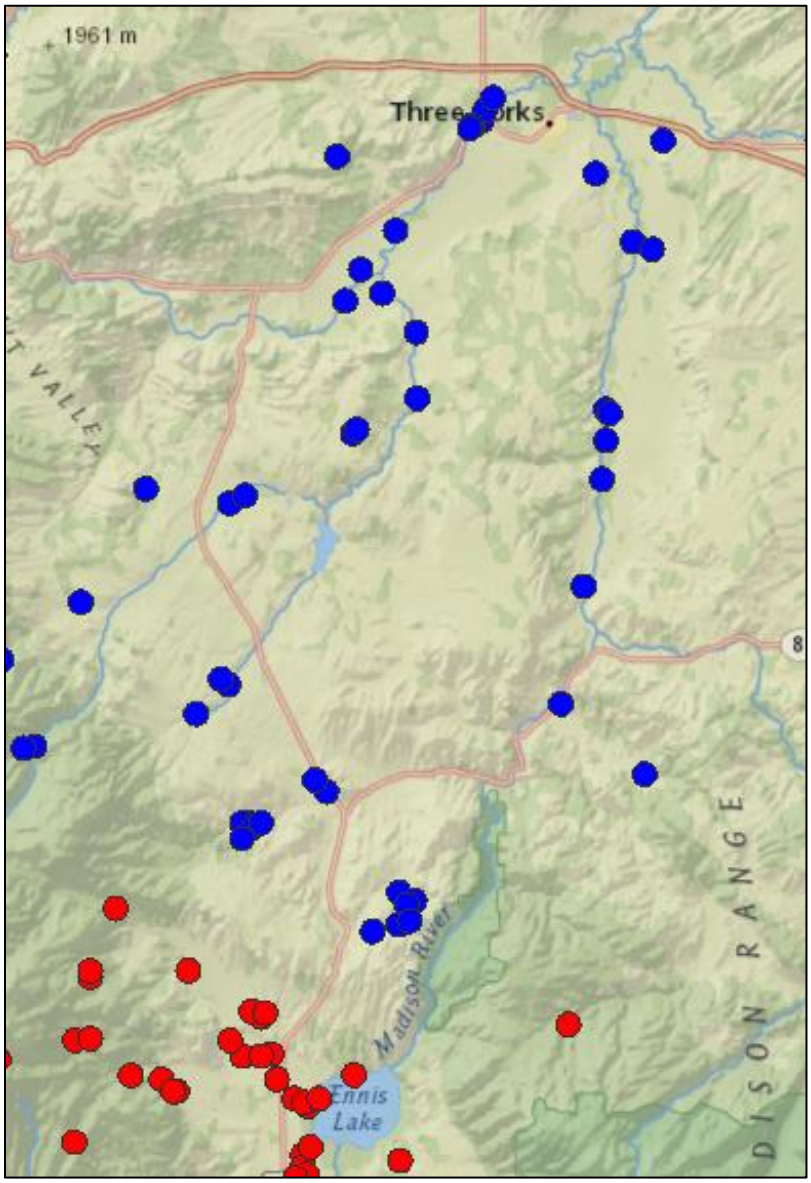


Exhibit 1

Figure 3: Gallatin River Juniors

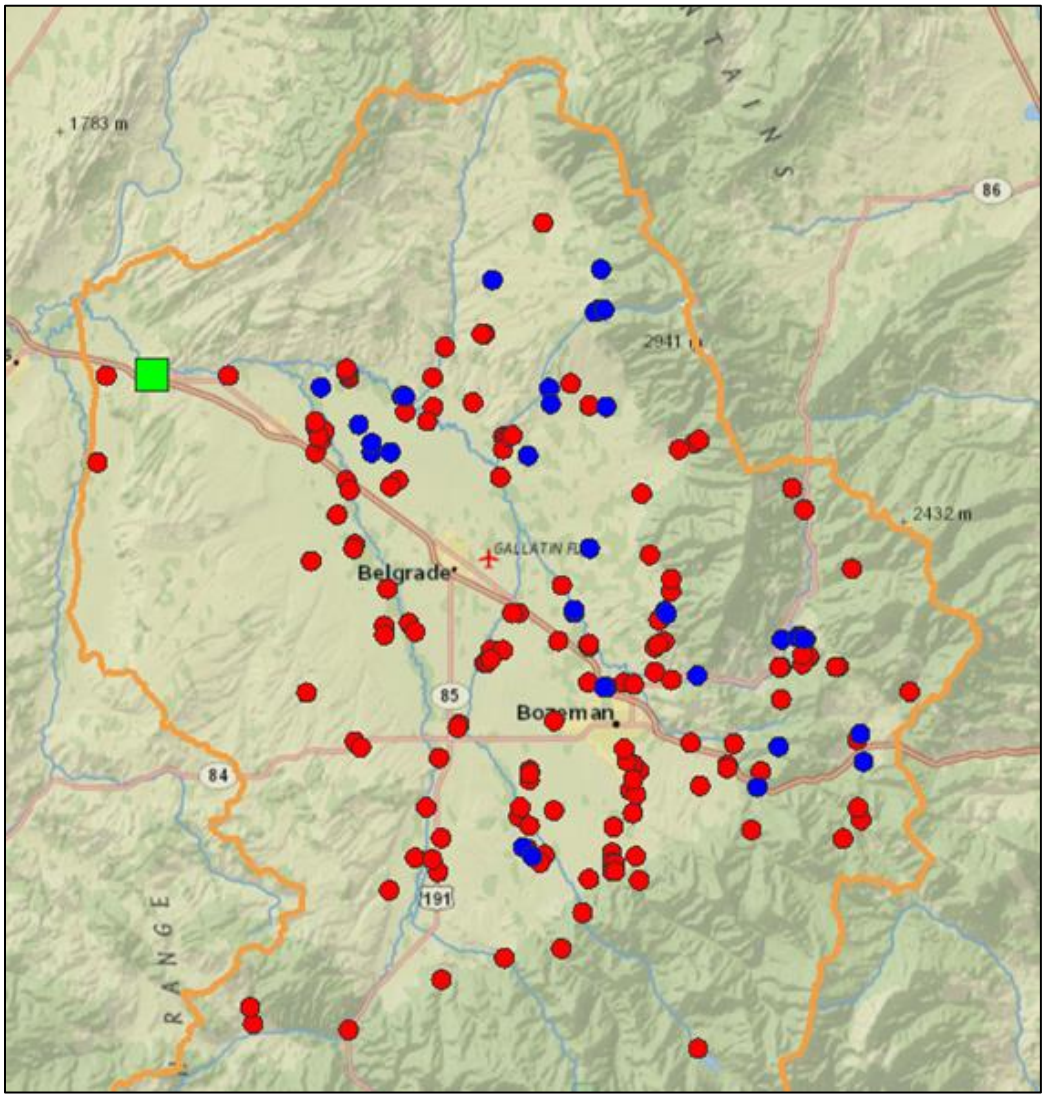


Exhibit 1

Big Hole River

The Big Hole River originates at the outlet of Skinner Lake at an elevation of 7,340 ft in the Beaverhead Mountains of southwest Montana. From its modest beginnings, the river gathers volume and velocity due to numerous tributaries along its 115-mile course until its confluence with the Beaverhead River near Twin Bridges at an elevation of 4,600 ft. The Big Hole drainage encompasses approximately 2,476 square miles. Today, the mainstem river contains fish species common to southwestern Montana including rainbow trout and brown trout. Mountain whitefish and other native suckers and minnow are also common, but westslope cutthroat trout and arctic grayling are rare. Brook trout are the most common trout species in the upper river from Jackson through Wisdom and in most tributary streams. The Big Hole River is a blue-ribbon trout fishery, and its trout population trends are closely monitored. The Upper Big Hole River drainage contains one of the last known fluvial arctic grayling populations in the lower 48 states, with fluvial arctic grayling also occurring in the Madison, Centennial and Ruby Rivers. Active conservation programs are ongoing to enhance habitat conditions for both arctic grayling and westslope cutthroat trout in the Big Hole River. The river and many of its tributaries can become dewatered, particularly during dry years.

Drought Planning

A Drought Management Plan (DMP) was created in 1997 by the Big Hole Watershed Committee (BHWC) and its many technical advisors and partners. The plan sets flow and water temperature targets on the mainstem Big Hole River which is divided into five river sections. In a drought year, the plan begins with voluntary conservation participation by river water users, particularly outfitters/anglers and irrigators. When voluntary conservation targets are not met, state-managed fishing restrictions are implemented and enforced by Montana Fish, Wildlife & Parks. Fishing restrictions can be triggered by high-water temperatures, low streamflows or both.

In addition to the DMP, there are also specific conservation programs that are dedicated to the recovery of arctic grayling in the Big Hole Watershed. These efforts have been directed by the Arctic Grayling Recovery Program (AGRP) and the Candidate Conservation Agreement with Assurances for Fluvial Arctic Grayling in the Upper Big Hole River (Big Hole CCAA). The Big Hole CCAA was developed to help alleviate concerns associated with the potential ESA listing of Montana grayling and incentivize improved habitat conditions for grayling throughout the Big Hole CCAA project area. The project area includes the Big Hole River watershed from Dickie Bridge upstream to the headwaters. Currently, there are 33 enrolled non-federal landowners. Conservation measures outlined in the Big Hole CCAA document are addressed in each site-specific plan by implementing actions that: 1) improve streamflow, 2) improve and protect the function of riparian habitats, 3) identify and reduce or eliminate entrainment threats to grayling, and 4) remove barriers to grayling migration.

Water Commissioners

According to DNRC's January 20, 2021 water commissioner list, there is one water commissioner on Rock Creek.

Exhibit 1

Necessity of Call

The Big Hole Watershed Committee's DMP has identified flow triggers for five reaches of the Big Hole River. Each flow target in each section is described in in Table 1.

Table 1: Big Hole River DMP Sections and Flow Targets

River Section	Flow Targets
DMP Section I-Saginaw Bridge to Mouth of North Fork of Big Hole River Monitored at Big Hole River bl Big Lake Cr at Wisdom USGS Gage 06024450	April 1-June 30 160 cfs-Water users with CCAA site plans will be required to implement their plans July 1-October 31 60 cfs-Prepare for Conservation 40 cfs-Conserve 20 cfs-MFWP River Closure
DMP Section II-Mouth of the North Fork to Dickey Bridge Monitored at Big Hole near Wise River, MT USGS Gage 06024580	April 1-June 30 450 cfs-Water users with CCAA site plans will be required to implement their plans. July 1-October 31 170 cfs-Prepare of Conservation 140 cfs-Conserve 100 cfs-FWP River Closure
DMP Section III-Dickey Bridge to Maiden Rock FAS Monitored at Big Hole River at Maiden Rock nr Divide, MT, USGS Gage 06025250	May 1-October 31 250 cfs-Prepare for Conservation 200 cfs-Conserve 150 cfs-FWP River Closure
DMP Section IV-Maiden Rock FAS to FWP Tony Schoonen FAS Monitored at Big Hole River near Glen, MT, USGS Gage 06026210	May 1-October 31 290 cfs-Prepare for Conservation 240 cfs-Conserve 190 cfs-FWP River Closure
DMP Section V-Tony Schoonen FAS to Confluence with Jefferson River Monitored at Big Hole River bl Hamilton Ditch nr Twin Bridges, MT, USGS Gage 06026420	May 1-October 31 200 cfs-Prepare for Conservation 150 cfs-Conserve 100 cfs-FWP River Closure

Basis of Call

FWP has traditionally relied upon the Big Hole Watershed Committee and its DMP to meet flow and temperature targets needed for sustaining the Big Hole Fishery. However, FWP does have instream flow water reservations on three reaches of the Big Hole River. The priority date for these reservations is **July 1, 1985.**

FWP's water reservation is based on a year-round (January 1-December 31) minimum instream flow in three reaches, as described in Table 2.

Exhibit 1

Table 2: FWP Water Reservations by Reach in the Big Hole River

Reach	Description	Flow (cfs)
Big Hole River #1	Warm Springs Creek to Pintler Creek	160
Big Hole River #2	Pintler Creek to Old Divide Dam	800
Big Hole River #3	Old Divide Dam to Mouth	573

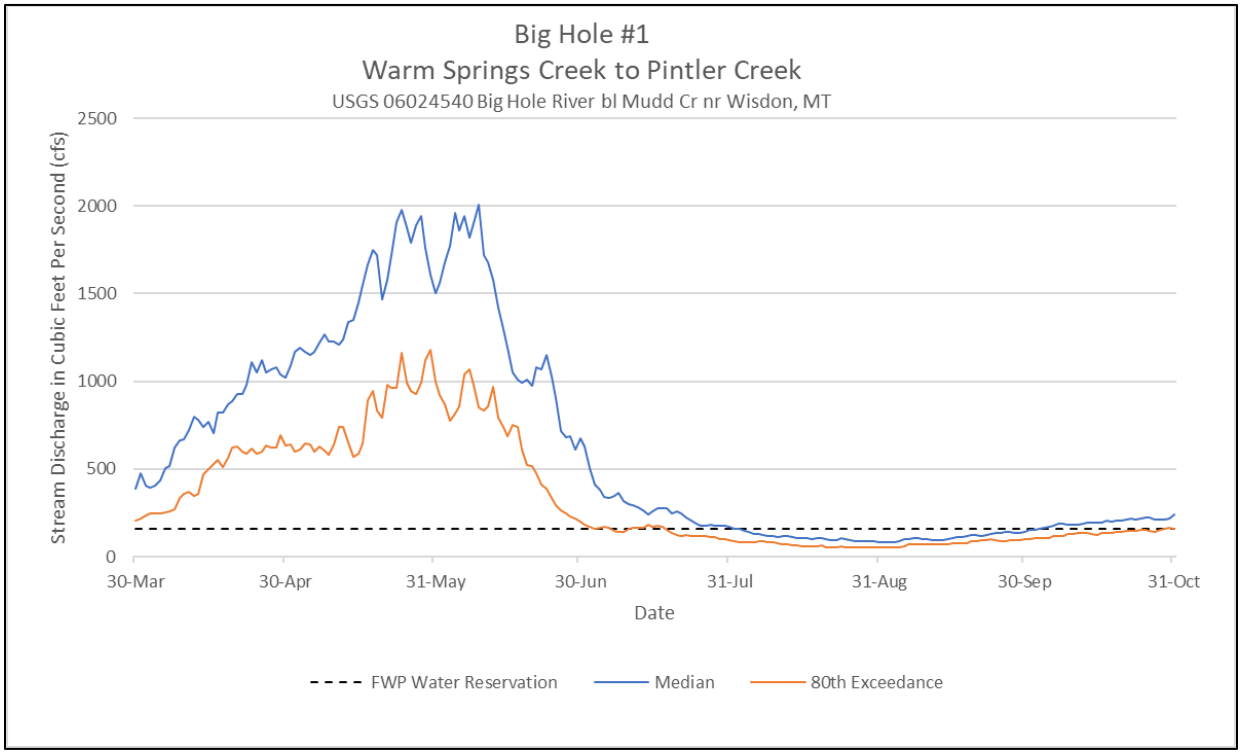
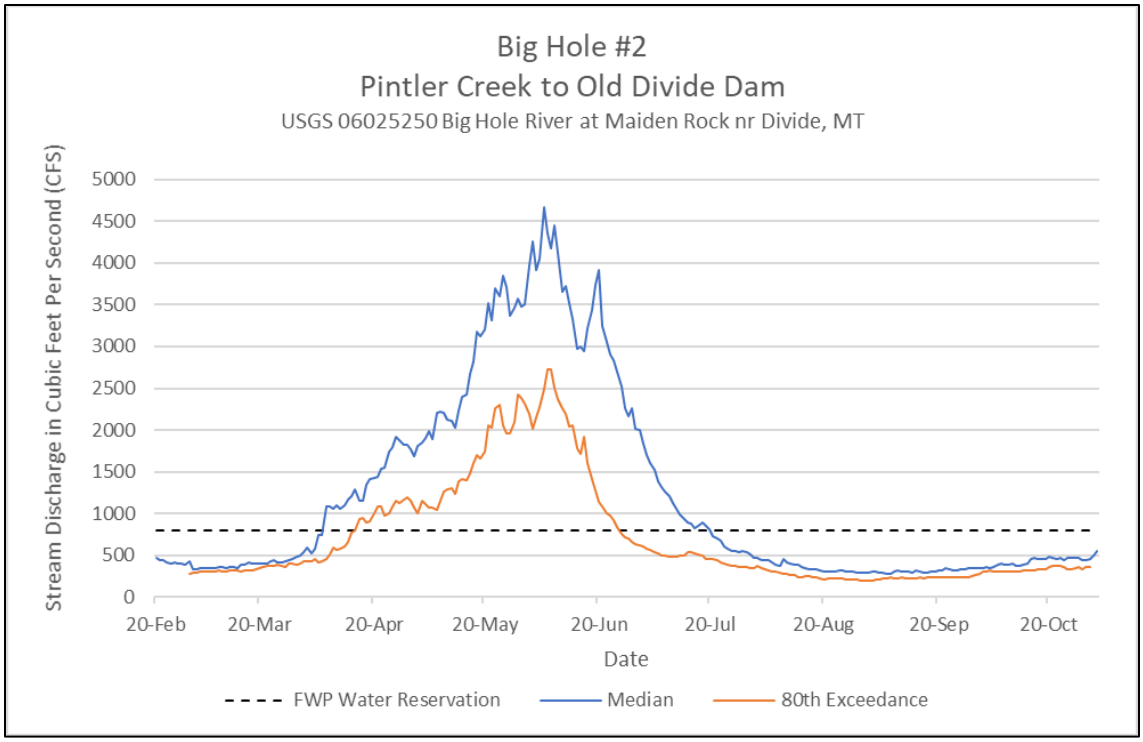


Exhibit 1


Big Hole #2
Pintler Creek to Old Divide Dam
USGS 06025250 Big Hole River at Maiden Rock nr Divide, MT
Stream Discharge in Cubic Feet Per Second (CFS)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
20-Feb
20-Mar
20-Apr
20-May
20-Jun
20-Jul
20-Aug
20-Sep
20-Oct
Date
FWP Water Reservation
Median
80th Exceedance

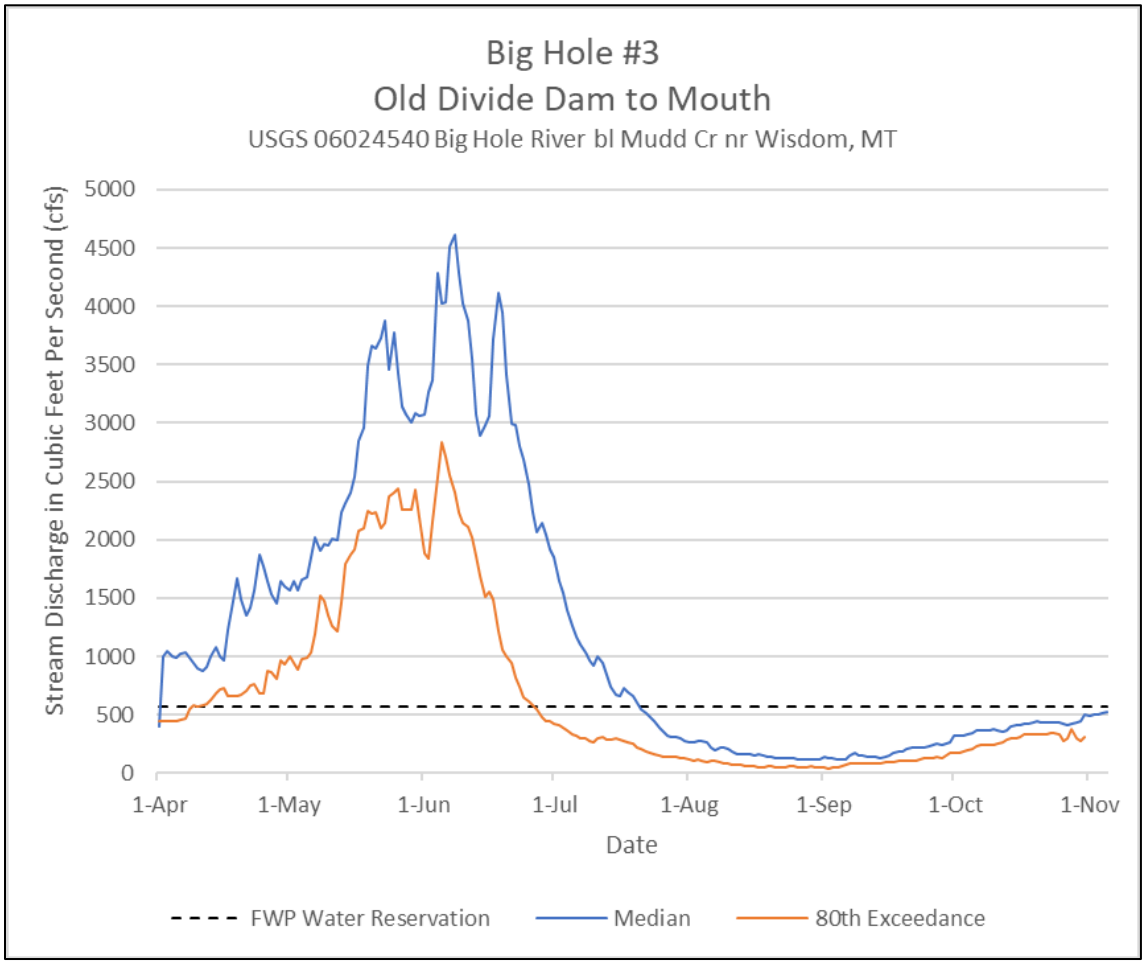

Big Hole #3
Old Divide Dam to Mouth
USGS 06024540 Big Hole River bl Mudd Cr nr Wisdom, MT
Stream Discharge in Cubic Feet Per Second (cfs)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
Date
FWP Water Reservation
Median
80th Exceedance

Exhibit 1

The preceding hydrographs compare FWP's water reservation (dotted black line) with the median and 80th percentile exceedance flow in the three stream reaches of the Big Hole River. The reference stream gages for these reaches are USGS Gage 06024540 (Big Hole River bl Mudd Cr nr Wisdom MT), USGS Gage 06025250 (Big Hole River at maiden Rock nr Divide MT), and USGS Gage 06026420 (Big Hole R bl Hamilton Ditch nr Twin Bridges MT). In the summer and fall months in most years, both the median flow and 80th percentile flows are below FWPs instream flow water reservation. The flow triggers identified in the Big Hole DMP provide a good point of reference when critical flows are being reached in the Big Hole River.

Junior Water Rights

A review of DNRC's water rights database includes a list of 9 water rights that are junior to FWP's water reservation. Of these, there are only two irrigation rights. Six of the water rights are associated with fish and wildlife and one water right is for stock water. The limited number of junior water users may suggest there is limited benefit to making a call on FWP's water reservation in the Big Hole River basin. FWP staff will cross reference the owners of these water rights with those who actively participate in the Big Hole CCAA to determine if there would be any benefit to making call on these water users.

Exhibit 1

The following map shows the location of all junior water rights. The nine juniors identified in DNRC's water rights database are represented by blue dots. The green square is the location of USGS Gage 06026420 (Big Hole River bl Hamilton Ditch nr Twin Bridges MT).

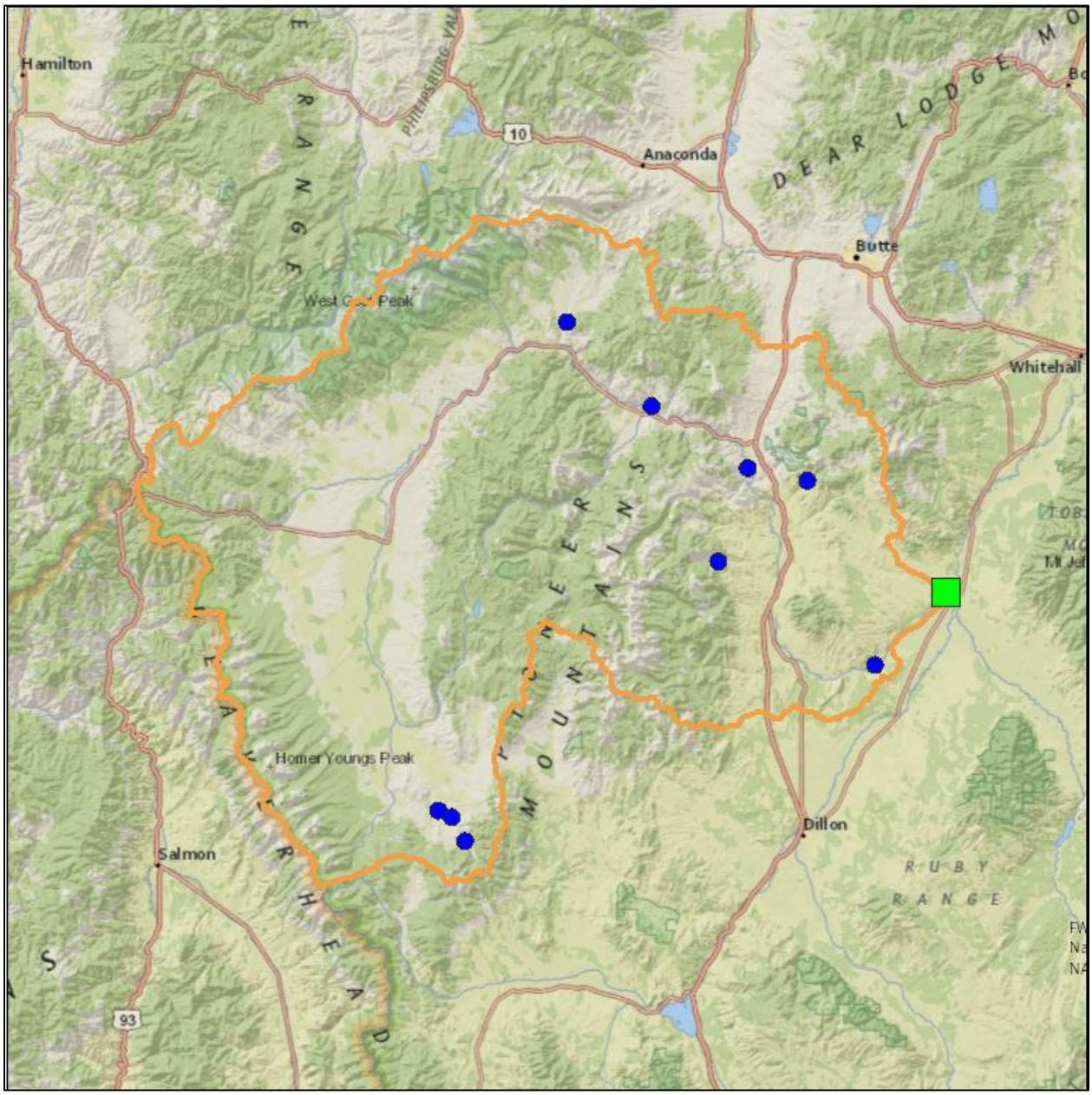


Exhibit 1

Jefferson River

The Jefferson River flows for 84 miles from its origin at the junction of the Big Hole and Beaverhead Rivers to its mouth at Three Forks, MT where it joins the Madison and Gallatin Rivers to form the Missouri River. During the irrigation season, virtually all tributaries to the Jefferson are diverted before reaching the river. The Jefferson River basin contains fish species common to southwestern Montana. The sport fishery in the Jefferson River is primarily comprised of brown and rainbow trout. The current trout density is approximately 600 trout per mile in the upper 40 miles of the river and less than 300 trout per mile in the lower 40 miles of the river. Trout abundance is closely associated with streamflow levels, with significant declines in fish populations occurring during drought cycles (late 1980s and 2000-2007), and documented recoveries during recent years of near normal streamflow. The goal of habitat and restoration projects in the Jefferson River and associated tributaries is to sustain 1,000 trout per mile in the upper 40 miles and 500 trout per mile in the lower 40 miles.

Drought Planning
A drought management plan was developed and approved in July, 2000 to attract voluntary participation in meeting streamflow targets in the Jefferson River basin. The plan was modified in 2012 and identifies various flow and temperature targets that once reached, initiate conservation measures to benefit aquatic resources.

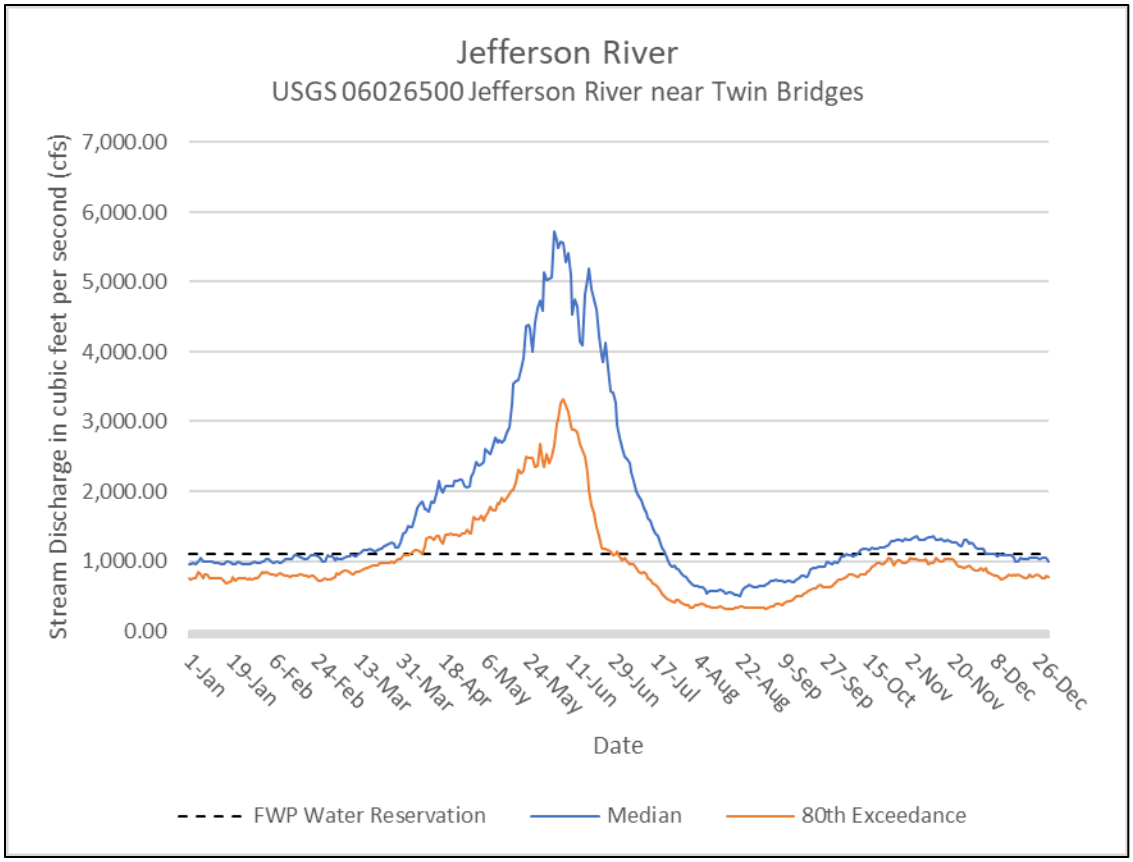
Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, water commissioners are active on several first and second order tributaries in the Jefferson River basin. On the Beaverhead River, there is a commissioner on the mainstem as well as Medicine Lodge Creek, Horse Prairie Creek, Big Lake Creek and Rattlesnake Creek. On the Big Hole River, there is a commissioner on Rock Creek. On the Ruby River, there is a commissioner on Wisconsin Creek, Indian Creek and Mill Creek. On the Jefferson mainstem, there are water commissioners for both the Parrot Ditch and Creekln Ditch, and its tributaries of Whitetail Creek, Little and Big Pipestone creeks, Fish Creek and Willow Creek.

Necessity of Call
As described above, trout abundance in the Jefferson is closely associated with streamflow. While the voluntary drought plan has helped sustain streamflow in the Jefferson during periods of drought, there may be times when call is necessary to support drought efforts, especially in rivers and streams not administered by a water commissioner and would likely result in improved or less rapidly declining streamflow.

Basis of Call
FWP calls on junior water rights in the Jefferson River basin are predicated on FWP's instream flow reservation for the Jefferson River at its mouth as measured at USGS Gage 06026500 (Jefferson River near Twin Bridges MT). The priority date of this instream flow reservation is **July 1, 1985**.

FWP's instream flow reservation is for a year-round (January 1-December 31) flow of 1,095 cfs.

Exhibit 1



The preceding hydrograph compares FWP's instream reservation (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06026500 based on 80 years of record (1941-2021). In 5 out of 10 years (median shown in blue), median flows fall below FWP's water reservation on or around July 20thand stay below the reservation throughout the summer months. The 80th percentile exceedance (shown in brown) represents the streamflow met or exceeded in 8 out of 10 years. The gage data indicates that during the driest of years, flows fall below FWP's water reservation on or around July 2. While the data indicates that flows generally fall below the FWP's instream flow reservation in most years, FWP has typically only recommended making a call once flows fell below FWP's reservation in July during times of drought. Since 2010, FWP has made a call on juniors in the Jefferson River basin 2 times, both times were associated with calling juniors above Toston Dam based on FWP's Murphy right in the Upper Missouri, which includes both the Jefferson and Gallatin River basins.

Exhibit 1

Junior Water Rights

DNRC's water rights database includes 82 junior water rights in the Jefferson River basin. Each water right was reviewed to determine if cessation of water use would likely result in additional flow reaching the Jefferson River. The following table lists the water rights by general purpose category.

Purpose	Call	Total Called Flow Rate
Mining	4	5.7 cfs
Fish/Wildlife and Recreation	8	7.4 cfs
Total	**12**	**13.1 cfs**

The following map shows the location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square is the location of USGS Gage 06026500.

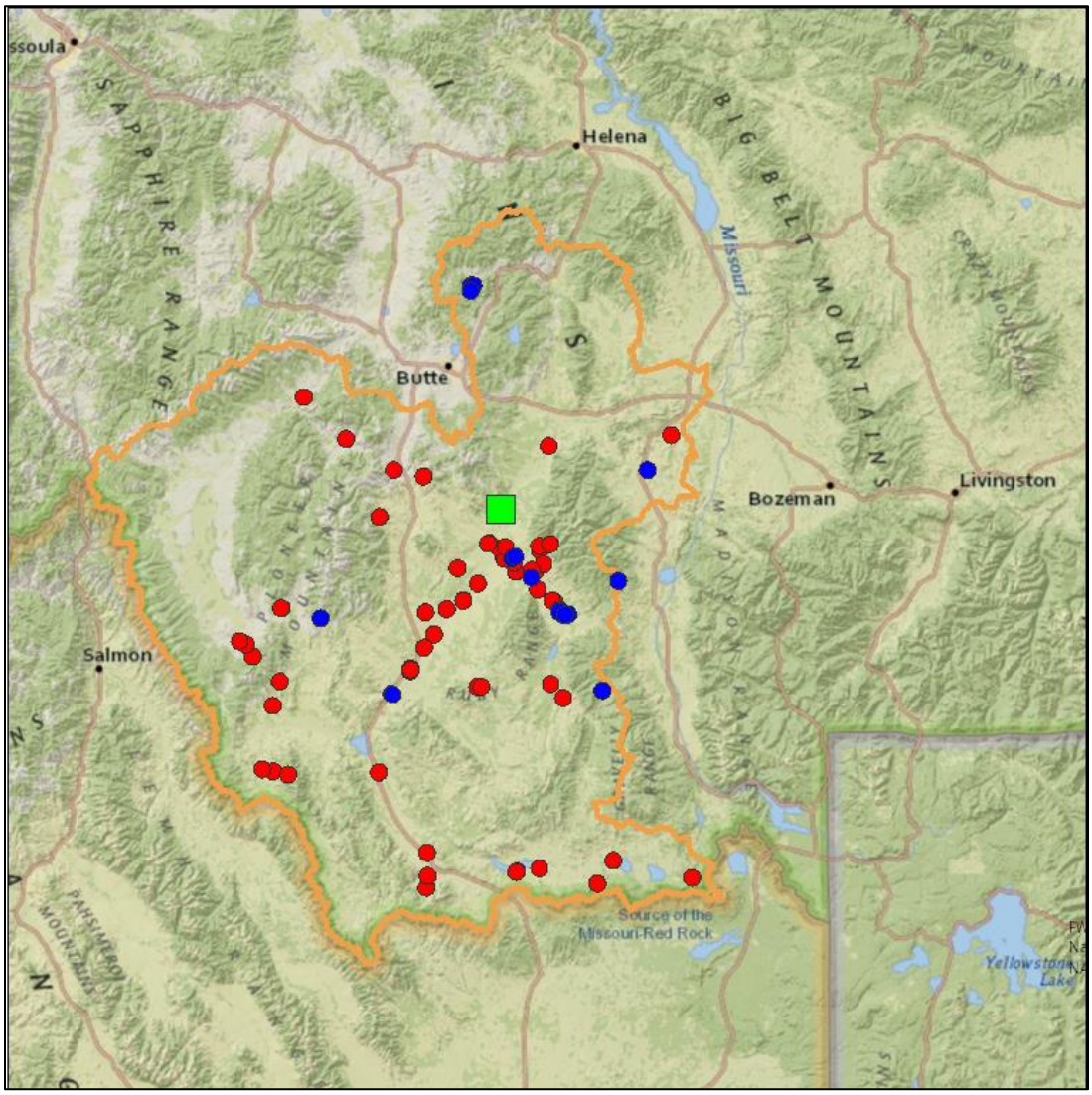


Exhibit 1

Madison River

The Madison River originates in Yellowstone National Park (YNP) at the junction of the Firehole and Gibbon rivers. It then flows in a northerly direction for 149 miles to Three Forks, MT where it joins the Jefferson and Gallatin Rivers to form the Missouri River. There are two reservoirs on the river: Hebgen Reservoir, located 1.5 miles downstream of the park boundary, and Ennis Lake, located 65 miles downstream from Hebgen Reservoir. From its source in YNP, the Madison crosses a high forested plateau (7,000 ft and higher in elevation) to Hebgen Reservoir. Upon leaving Hebgen Reservoir, the Madison River flows about 3 miles through a narrow canyon to Earthquake Lake, a natural lake formed by an earth slide during a major earthquake on August 17, 1959. Below Earthquake Lake, the river enters the upper Madison River Valley where it flows about 57 miles before entering Ennis Reservoir. Once it leaves Ennis Reservoir, the Madison enters a narrow gorge (Bear Trap Canyon) where it flows about 14 miles before entering the lower Madison River Valley for the final 26 miles to its junction with the Jefferson and Gallatin Rivers.

Flows in the Madison River are regulated by the two reservoirs. Hebgen Reservoir built in 1915 by the Montana Power Company (presently owned and operated by Northwestern Energy), stores water for downstream power generation. Water storage usually occurs during the snow runoff period of mid-May through early June. Stored water is released to downstream reservoirs during the fall (October-December). Fall releases usually range from 1,500 to 2,200 cfs at Hebgen Dam. Ennis Reservoir, built in 1908 by a predecessor of the Montana Power Company (presently owned and operated by Northwestern Energy), has a rather stable water level with little storage capacity of its own. Its primary function is to create head pressure for the power generating facility immediately below Ennis Dam. Outflows from Ennis Reservoir are primarily regulated at Hebgen Dam.

The Madison River is one of Montana's premier wild trout fisheries. High scenic values, good public access and excellent wild trout populations have all contributed to its national reputation as an outstanding sport fishery and have led to its designation as a blue-ribbon trout stream by FWP.

Drought Planning

There is currently no formal drought plan developed for the Madison River basin. The lower Madison River below Ennis Dam suffers from chronic high-water temperatures in the summer. Fish kills have been documented at water temperatures above 82.5°F. Northwestern Energy, which operates the two reservoirs on the river, has in place an operating plan to keep water temperatures in the lower river below the critical lethal temperature for fish. The plan calls for temporarily raised discharges from Ennis Dam (otherwise known as pulsing) which holds water temperatures below 80°F at Black Ford Fishing Access Site.

Water Commissioners

According to DNRC's January 20, 2021 water commissioner list, there are two water commissioners that distribute water on the following streams: Bear Creek and South Meadow Creek. Both streams are above Ennis Reservoir.

Exhibit 1

Necessity of Call

With dewatering negatively impacting fisheries, a call on junior water rights is justified for those drainages not being administered by a water commissioner that would likely result in improved or less rapidly declining streamflow. Given the nature of reservoir management between Hebgen and Ennis reservoirs, there may be little benefit to making a call above Ennis Reservoir. However, there are junior water rights below Ennis Reservoir that when called could benefit the lower Madison River and could complement the pulsing actions taken by Northwestern Energy to protect the fishery.

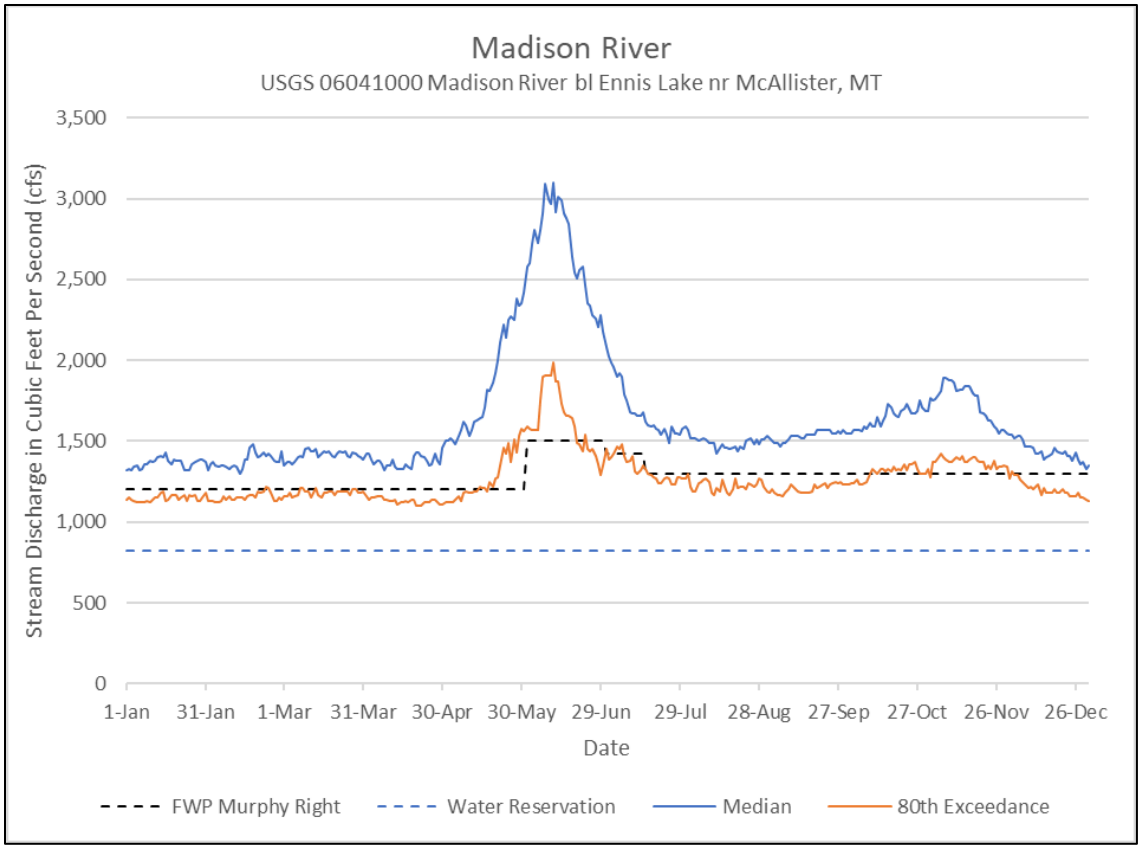
Basis of Call

FWP calls on junior water rights in the Madison River basin are predicated on both a Murphy right and water reservation as measured at USGS Gage 06041000 (Madison River bl Ennis Lake nr McAllister MT). The priority dates for the Murphy right and water reservation are **December 21, 1970** and **July 1, 1985,** respectively.

FWP instream flow water rights on Madison River by flow and time period:

Type of Instream Flow Water Right	**Time Period**	**Flow (cfs)**
Murphy Right	January 1-May 31 June 1-June 30 July 1-July 15 July 16-December 31	1,200 1,500 1,423 1,300
Water Reservation	January 1-December 31	825

Exhibit 1



The preceding hydrograph compares FWP's Murphy right (dotted black line) and water reservation (dotted blue line) with the median and 80th percentile exceedance flow for USGS Gage 06041000 (Madison River bl Ennis Lake nr McAllister, MT) based on 83 years of record (1939-2022). In the summer months in 5 out of 10 years, the median flows stay above FWPs Murphy right. The 80th percentile exceedance (shown in brown) represents the streamflow met or exceeded in 8 out of 10 years. The gage data indicates that during the driest of years, flows fall below FWP's Murphy right on or about July 18th and stays below that level until on or around October 9th. However, unlike the Gallatin River, flows stay well above the FWP water reservation throughout the season.

Junior Water Rights

Given the uniqueness of water management above Ennis Reservoir and the measures that are taken by Northwestern Energy to reduce the temperatures in the lower Madison, making a call on the Madison based on its own Murphy right and water reservation may not provide much benefit. However, under severe drought conditions where multiple basins in the Missouri Headwaters are undergoing issues of high temperatures and low flows, making a call on the lower Madison based on FWP's Murphy right above Canyon Ferry (December 17, 1970 priority date) may provide some necessary relief. Under that circumstance, below is a summary of junior water users:

Purpose	**Call**	**Total Called Flow Rate**
Irrigation	16	33.74 cfs
Fish and Wildlife/Recreation	2	1.96 cfs
Total	**18**	**35.7 cfs**

Exhibit 1

The following map shows the location of all the junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square is the location of USGS Gage 06041000.

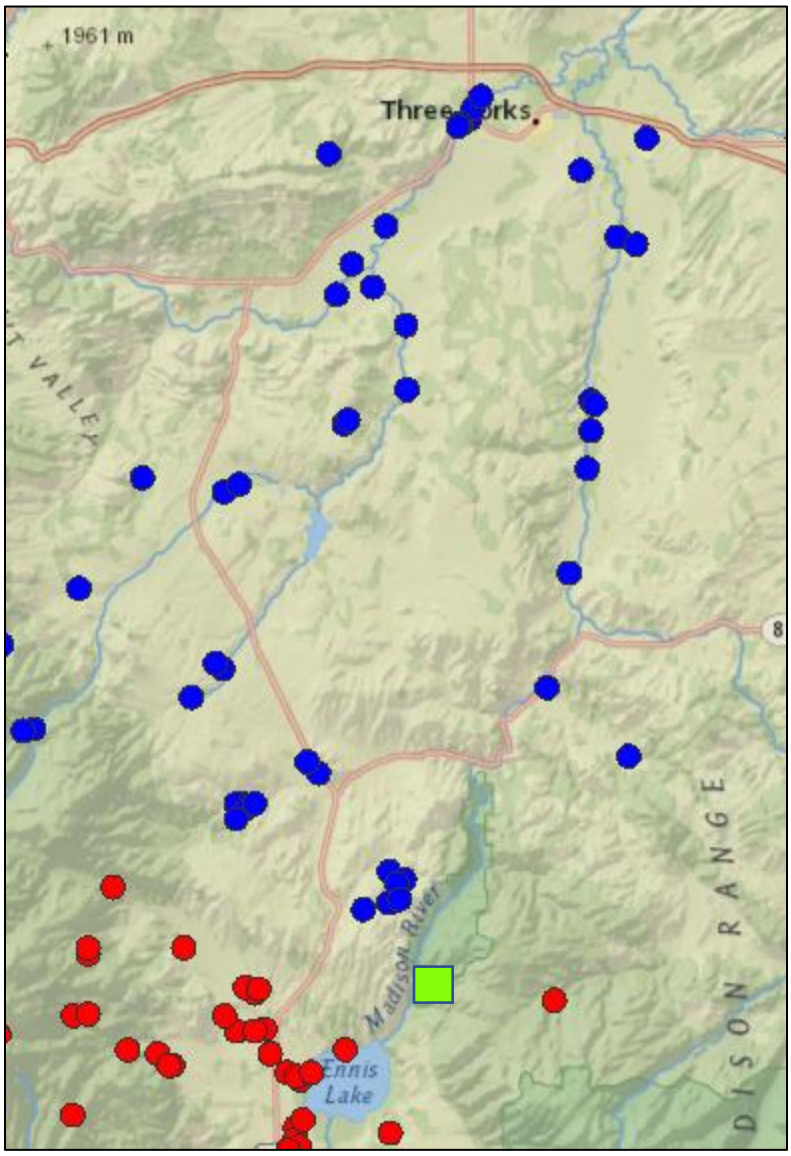


Exhibit 1

Gallatin River

The free-flowing Gallatin River originates at Gallatin Lake in Yellowstone National Park at an elevation of 8,834 feet. It flows north for 115 miles to Three Forks, Montana, where it joins the Madison and Jefferson rivers to form the Missouri River. From the park boundary, the river flows about 44 miles through the narrow Gallatin Canyon, then enters the broad Gallatin Valley where it then flows an additional 45 miles to its mouth. Much of the Gallatin River is classified as blue-ribbon by FWP in recognition of its high recreational, fishery and aesthetic values. Most streams in the drainage are managed for nonnative self-sustaining wild trout fisheries that includes brown trout, brook trout, rainbow trout and Yellowstone cutthroat trout. These trout populations are currently stable from year to year. Only one pure population of native westslope cutthroat trout exists in the drainage. Hybridized (westslope cutthroat with rainbow trout) populations exist in a few headwater streams.

Drought Planning
The City of Bozeman adopted a Drought Management Plan (DMP) in 2017. The DMP has three components that include: identifying drought severity indicators, developing drought mitigation and response activities, and developing strategies for curtailing municipal water use during each stage of drought utilizing usage fees and assessing penalties for water use violations. The DMP is limited to those who are connected to city water and sewer and does not cover those who utilize exempt wells for purposes of lawn and garden irrigation. Aside from the city's efforts in adopting a drought plan, a formalized drought plan that addresses rural water use has yet to be developed. However, there has been an informal agreement among water users to ensure the West Gallatin River maintains streamflow throughout the irrigation season.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are two water commissioners that administer water on the following streams: Baker Creek, Hyalite Creek, Middle Cottonwood Creek, Sourdough Creek, S. Cottonwood Creek, West Gallatin River and Big Bear Creek. Junior water rights on these stream reaches are not called.

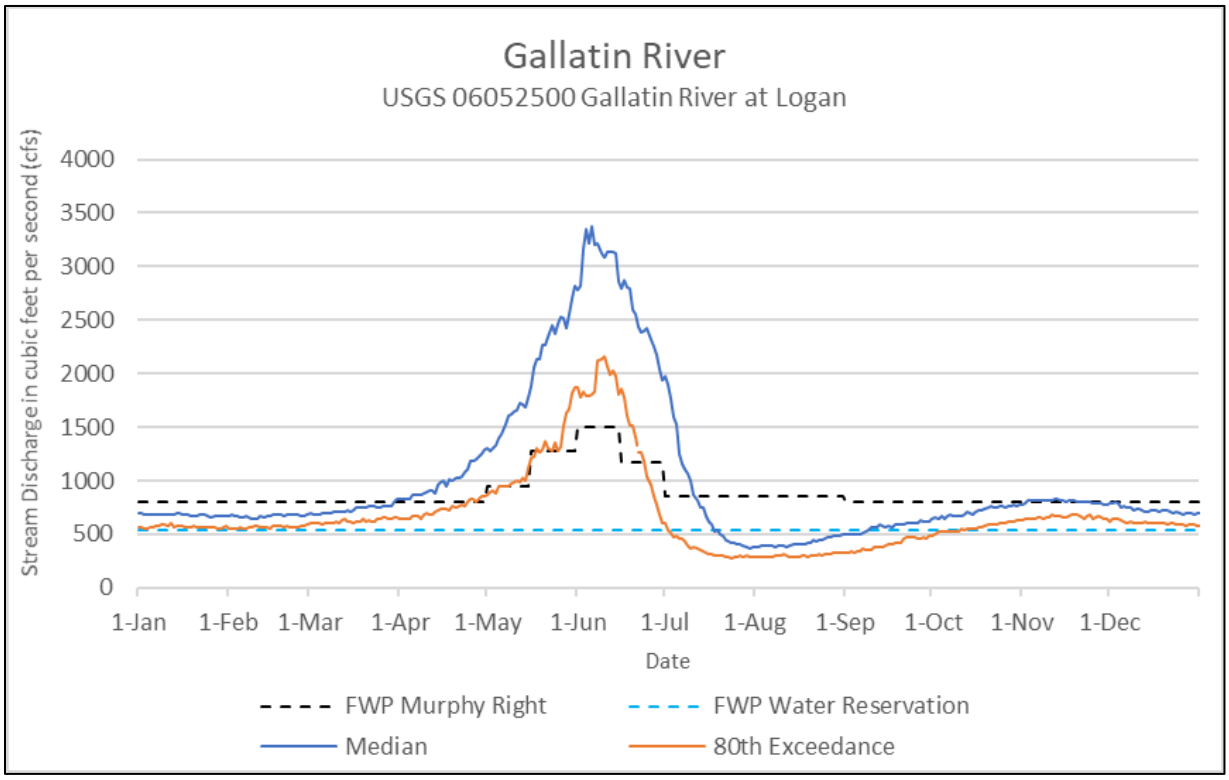
Necessity of Call
With dewatering negatively impacting fisheries, a call on junior water rights is justified on those sources not being administered by a water commissioner and that would likely result in improved or less rapidly declining streamflow.

Basis of Call
FWP calls on junior water rights in the Gallatin River basin are predicated on both a Murphy right and water reservation below the confluence of the East and West Gallatin rivers as measured at USGS Gage 06052500 (Gallatin River at Logan MT). The priority dates for the Murphy right and water reservation are **December 21, 1970** and **July 1, 1985,** respectively.

Exhibit 1

FWP's instream flow water rights on Gallatin River by flow and time period are as follows:

Type of Instream Flow Water Right	Time Period	Flow (cfs)
Murphy Right	September 1-April 30 May 1-May 15 May 16-May 31 June 1-June 15 June 16-June 30 July 1-August 31	800 947 1,278 1,500 1,176 850
Water Reservation	January 1-December 31	533.5



The preceding hydrograph compares FWP's Murphy right (dotted black line) and water reservation (dotted blue line) with the median and 80th percentile exceedance flow for USGS Gage 06052500 based on 127 years of record (1894-2021). In 5 out of 10 years, the median flows fall below FWPs Murphy right on or near the 12th of July and fall below FWP's water reservation on or near July 20th. The 80th percentile exceedance (shown in brown) represents the streamflow met or exceeded in 8 out of 10 years. The gage data indicates that during the driest of years, flows fall below FWP's Murphy right on or about June 25th and fall below FWP's water reservation on or about July 3. While the data indicates that flows generally fall below both of FWP's instream flow water rights in most years, FWP has typically recommended making a call once flows fell below FWP's reservation in July during times of drought. Since 2010, FWP has made a call to juniors in the Gallatin River basin 3 times

Exhibit 1

Junior Water Rights

Given several active water distribution projects that occur on the West Gallatin River, most junior water users on both the mainstem and tributaries are likely notified by the water commissioner early in the season. FWP's focus is on junior water users who divert water from both the mainstem and tributaries of the East Gallatin River where no water commissioner is currently present. A review of DNRC's water rights database includes a list of 37 junior water rights. Each of the water rights was reviewed to determine if cessation of water use would likely result in additional flow reaching the Gallatin River. The following table lists the water rights by general purpose category.

Purpose	**Call**	**Total Called Flow Rate**
Irrigation	33	36.35 cfs
Domestic Lawn and Garden	2	0.71 cfs
Fish and Wildlife/Recreation	2	2.33 cfs
Total	**37**	**39.39 cfs**

The following map shows the location of all the junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square is the location of USGS Gage 06052500.

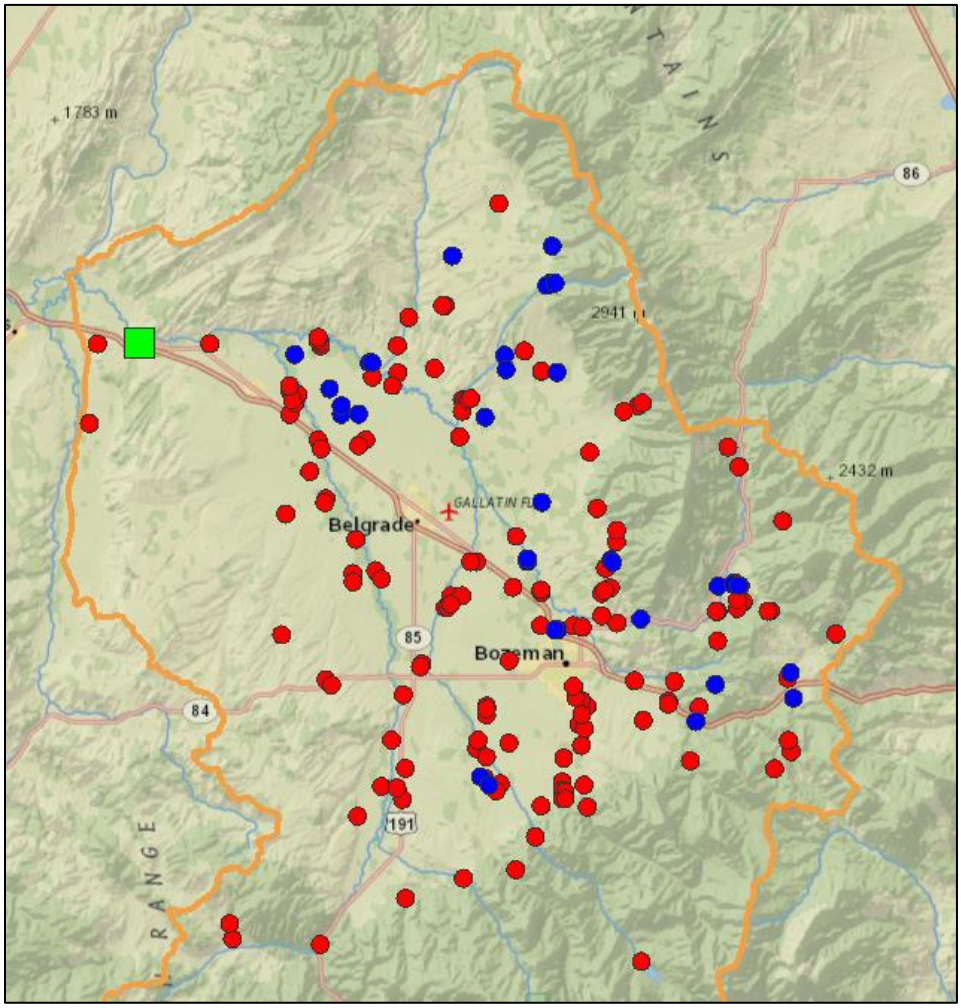


Exhibit 1

Smith River

The Smith River is a popular fishery, supporting over 36,333 angler days in 2019. Throughout the Smith River basin, angling opportunities exist for rainbow and brown trout along with other fish species. Elevated water temperature exacerbated by low streamflow often prompt fishing restrictions. Dewatering and associated warm water temperatures routinely negatively impact the Smith River fishery. The Smith River offers a unique and highly valued recreational floating and angling opportunity downstream of Camp Baker through Smith River State Park. Flow conditions generally limit floating opportunity for drift boats below 350 cfs, rafts below 250 cfs and canoes below 150 cfs.

Drought Planning
The Smith River Community Council administers a community benefits program associated with the Black Butte Copper Mine. As this group develops, it may provide a good structural organization to pursue and implement drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, a water commissioner is active on the North Fork Smith River. Junior water rights from North Fork are not called.

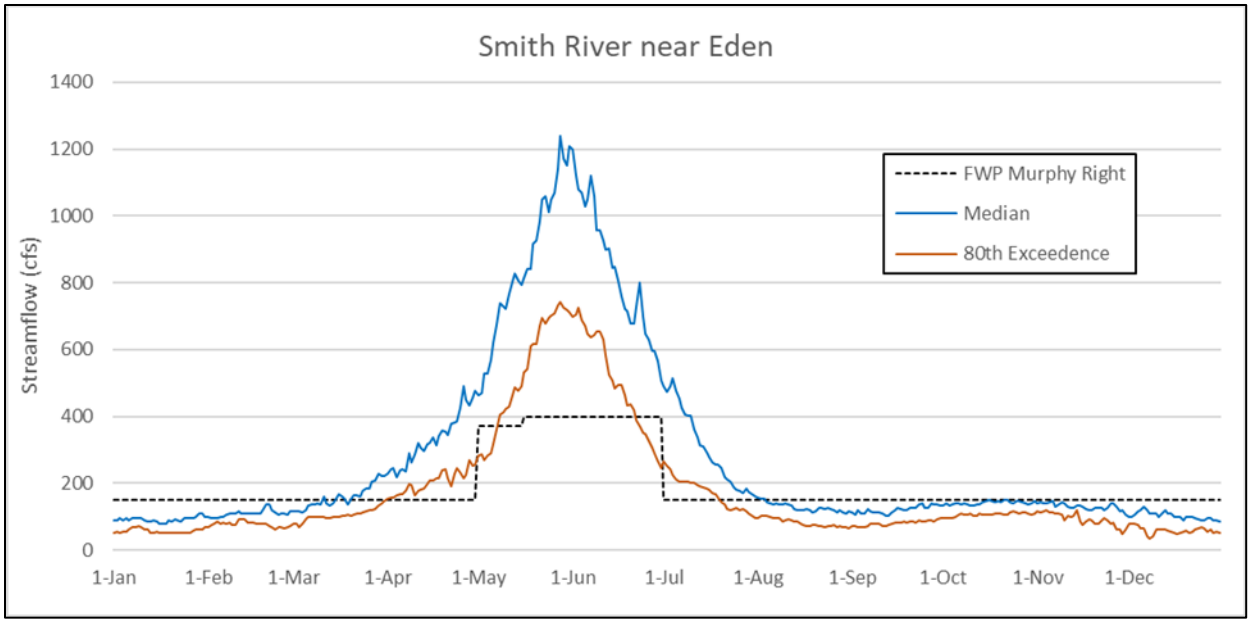
Necessity of Call
With dewatering negatively impacting fisheries, a call on junior water rights is justified for those not being administered by a water commissioner and that would likely result in improved or less rapidly declining streamflow.

Basis of Call
FWP calls on junior water rights in the Smith River basin are predicated on FWP's instream flow Murphy rights which vary by reach and period as follows:

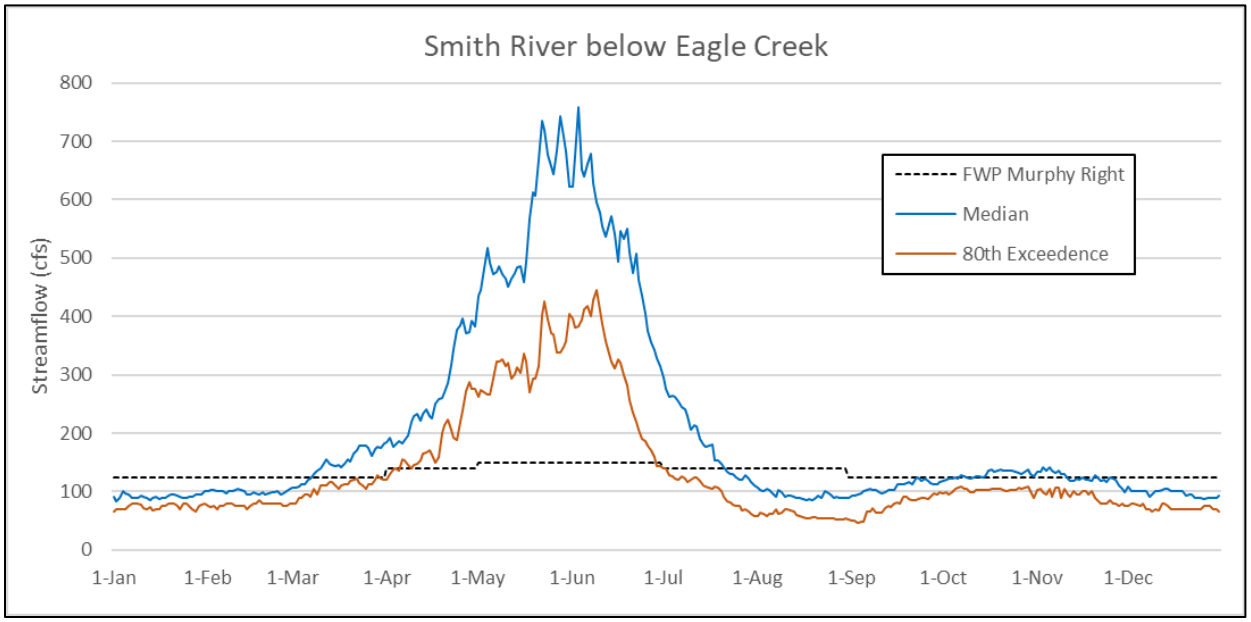
Reach	Priority Date	Period	Flow (cfs)	USGS Gage
Hound Creek to Cascade County line.	December 17, 1970	Jul 1 – Apr 30	150	06077500 Smith River near Eden
		May 1 – May 15	372	
		May 16 – Jun 15	400	
		Jun 16 – Jun 30	398	
Above Cascade County Line	December 22, 1970	Sep 1 – Mar 31	125	0606077200 Smith River bl Eagle Cr nr Fort Logan
		Apr 1 – Apr 30	140	
		May 1 – Jun 30	150	
		Jul 1 – Aug 31	140	

A call would not be made late in a period when the instream flow for the subsequent period is substantially lower. For example, if flow at the Eden Gage was 200 cfs the last week in June, a call would not be made because on July 1 the instream flow value would decrease to 150 cfs which is substantially lower than flow would likely be at that time.

Exhibit 1



The preceding hydrograph compares FWP's Murphy right (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06077500 (Smith River near Eden MT) based on 25 years of record (1979-2022). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds the Murphy right until early August and then recovers to near the Murphy right level in October. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years falls below the Murphy right by late July and does not exceed the Murphy right until the next spring.



The above hydrograph compares FWP's Murphy right (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06077200 (Smith River bl Eagle Cr nr Fort Logan MT) based on 24 years of record (1997-2020). The median streamflow generally meets or exceeds the

Exhibit 1

Murphy right until late July and then recovers above this level in October. The 80th percentile exceedance falls below the Murphy right by the beginning of July and does not exceed the Murphy right until the next spring. Data from both hydrographs indicate that over the period of streamflow record, a call on junior water rights may occur in more than half of the years. Since 2000, FWP has called junior water rights in the Smith River basin 11 times, including 2000.

Junior Water Rights

DNRC's water rights database includes junior water rights in the Smith River basin above Hound Creek. Each water right was reviewed to determine if cessation of water use would likely result in additional flow reaching the Smith River. The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	5	0	1.92 cfs
Irrigation	28	17	88.62 cfs
Mining	2	8	2.77 cfs
Stock	0	18	-
Domestic	0	3	-
Total	**35**	**46**	**93.31 cfs**

Exhibit 1

The following map shows the location of all the junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green squares are the location of the USGS gages with the Eden gage being more downstream toward the top of the map.

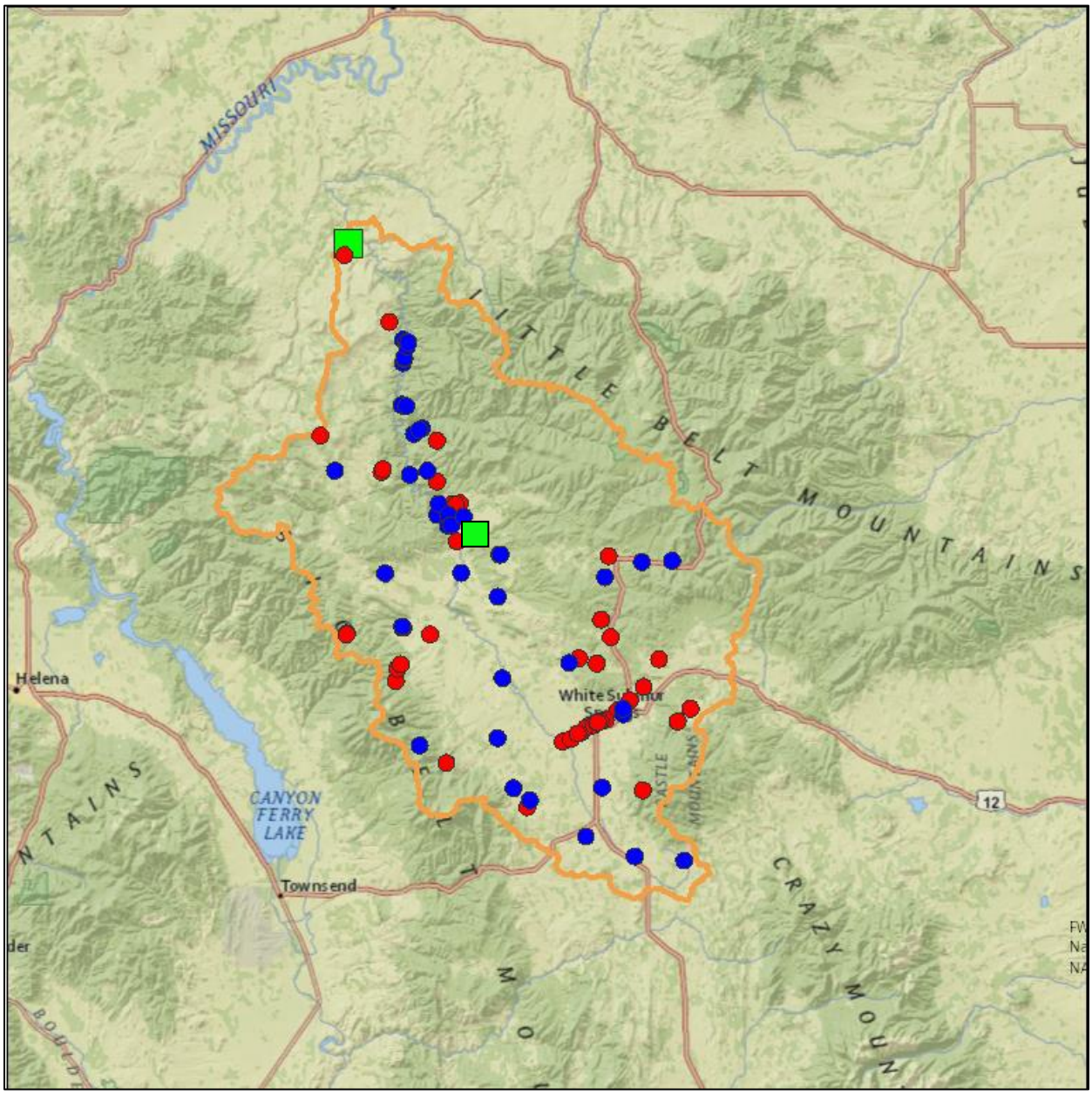


Exhibit 1

Big Spring Creek

Big Spring Creek as the name implies is fed by Big Spring which provides a consistent supply of about 93 cfs. It is an exceptionally productive fishery and for its size is rated as one of Montana's finest fishing waters. Big Spring Creek also experiences significant recreational use in the upper 15 miles. Dewatering during times of drought negatively impacts the fishery as habitat is reduced and fish are concentrated.

Drought Planning
The Big Spring Creek Watershed Council has developed a drought plan along the lines of the BDP where junior water users not enrolled in the plan are called by FWP when flows drop below the Murphy right. This plan, developed in the 2000s, has not been implemented in recent years as flow has not been an issue.

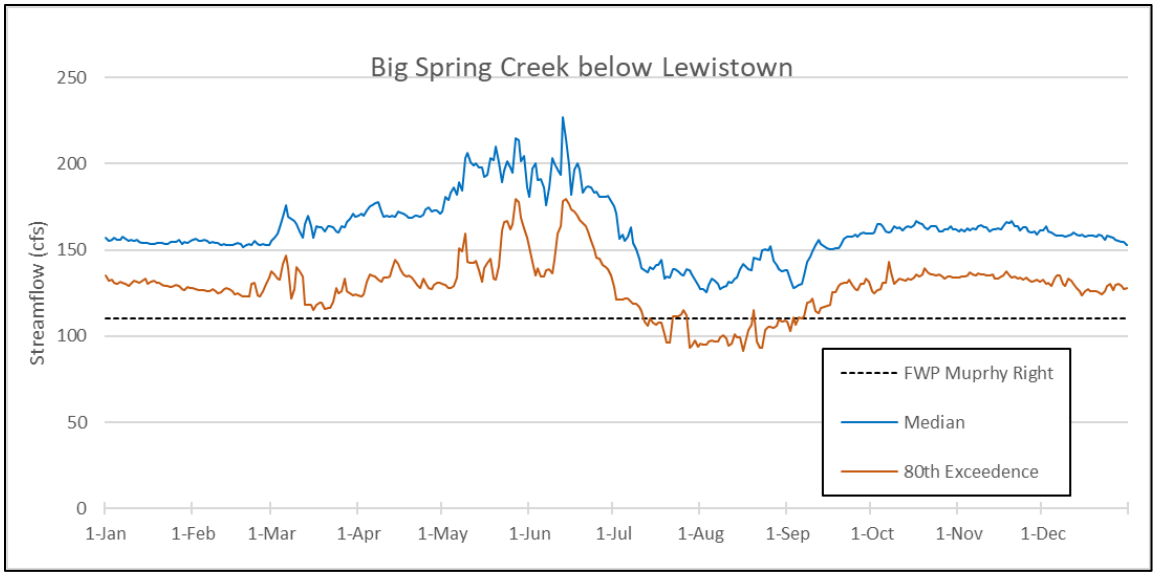
Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no water commissioners operating within the Big Spring Creek basin.

Necessity of Call
With dewatering negatively impacting fisheries, a call on junior water rights would likely result in improved or less rapidly declining streamflow. Implementation of the Watershed Council Drought Plan would provide an alternative to call participants in the plan while nonparticipants would be called.

Basis of Call
FWP calls on junior water rights in the Big Spring Creek basin are predicated on FWP's instream flow Murphy right as measured at USGS Gage 06111800 (Big Spring Cr at R&B Trading Post nr Lewistown MT). The priority date of this instream flow reservation is **December 21, 1970,** with a year-round flow rate of **110 cfs.**

The following hydrograph compares FWP's Murphy right (dotted black line) with the median and 80th percentile exceedance flow for Big Spring Creek immediately below Lewistown. The median and 80th percentile of flow data is calculated using data from two FWP gages and USGS Gage 06111800, all located in a 2-mile reach downstream of Lewistown with varying periods of record from 2001 to 2021. In 5 out of 10 years (median shown in blue), streamflow exceeds the Murphy right throughout the year. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years falls below the Murphy right by late July and does not exceed the Murphy right until into September.

Exhibit 1



Junior Water Rights

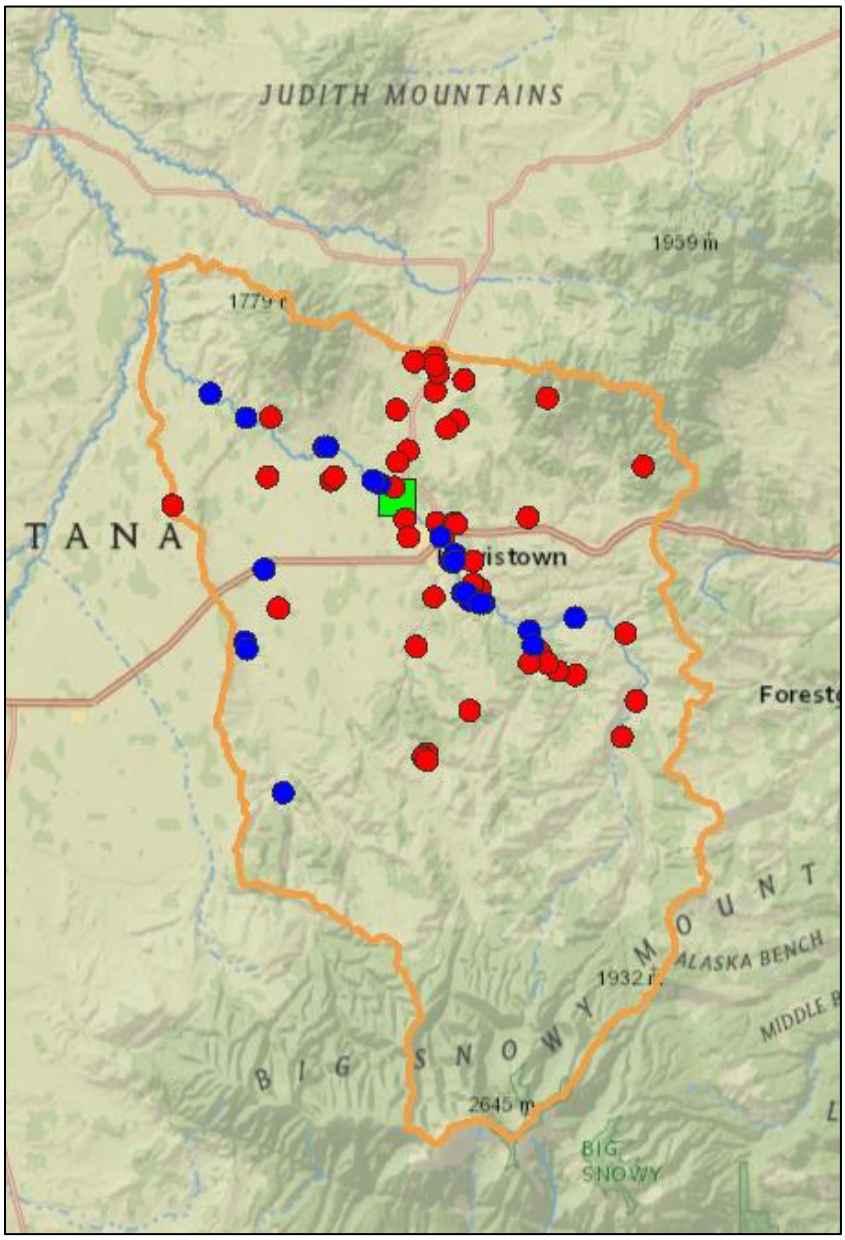
DNRC's water rights database includes junior water rights in the Big Spring Creek basin. Each water right was reviewed to determine if the cessation of water use would likely result in additional flow in Big Spring Creek. The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	1	0	-
Irrigation*	24	12	26.12 cfs
Stock	0	10	-
Total	**25**	**22**	**26.12 cfs**

*Includes two "domestic" rights used for lawn and garden irrigation

Exhibit 1

The following map shows the location of all the junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square represents the location of the USGS Gage.



Judith River

The lower Judith River below Big Spring Creek is primarily a warm water fishery supporting sauger, burbot, channel catfish, smallmouth bass, and northern pike with rainbow and brown trout found during cooler seasons. It is an important tributary to the Missouri River, providing important habitat for a variety of species to act out various stages of their life history such as spawning, nursery and residence. Population dynamics of sauger, burbot, channel catfish, northern pike and large river non-game species such as blue sucker and bigmouth/smallmouth buffalo rely on the Judith River. Additionally, endangered pallid sturgeon have recently been documented in the Judith, further highlighting the importance of quality habitat linkage with the Missouri River. Rainbow, brown, brook and westslope cutthroat trout are found primarily in the headwater tributaries into the mainstem Judith above Utica. Dewatering from above Hobson to Big Spring Creek significantly negatively impacts the fishery in this reach.

Drought Planning
Outside of the Big Spring Creek basin, which is addressed separately, there is no active watershed group in the basin to take on drought planning.

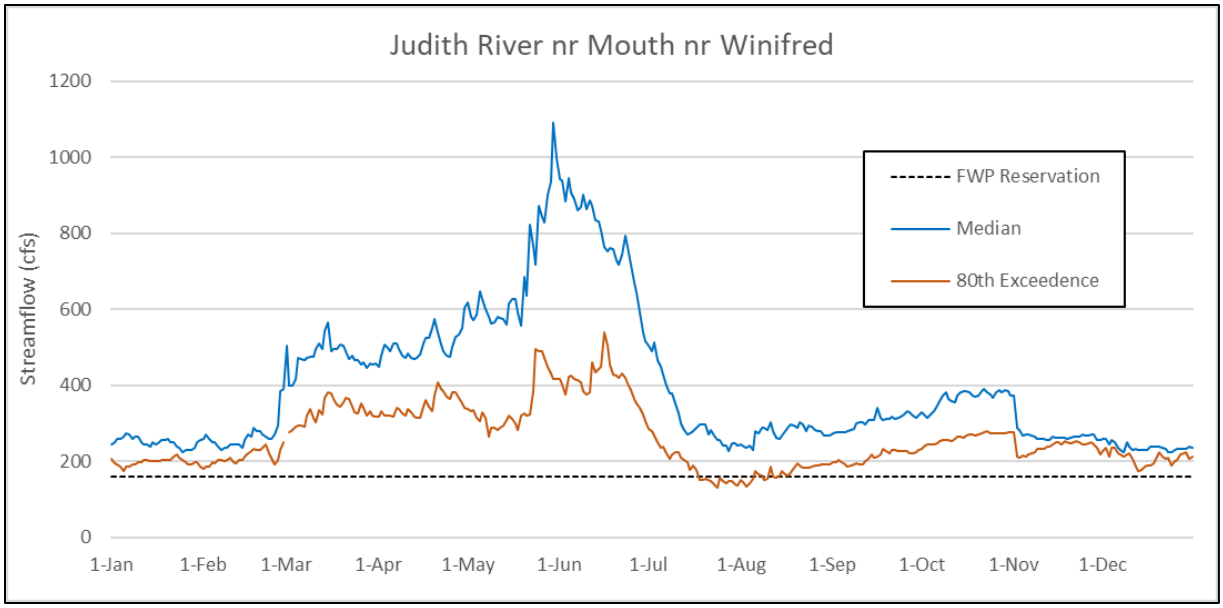
Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no water commissioners operating within the Judith River basin.

Necessity of Call
With dewatering negatively impacting fisheries, a call on junior water rights likely resulting in improved or less rapidly declining streamflow is justified.

Basis of Call
FWP calls on junior water rights in the Judith River basin, not including the Big Spring Creek drainage, are predicated on FWP's instream flow reservation as measured at USGS Gage 06114700 (Judith River nr mouth, nr Winifred MT). The priority date of this instream flow reservation is **July 1, 1985,** with a year-round flow rate of **160 cfs.**

The following hydrograph compares FWP's water reservation (dotted black line) with the median and 80th percentile exceedance flow for Judith River near its mouth. In 5 out of 10 years (median shown in blue), streamflow exceeds the reservation throughout the year. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years falls below the reservation by mid-July with flow rebounding above the reservation level by latter August. The hydrographs show a marked drop in November through February as the data for this period was collected only during the 2000s when flow conditions were generally lower. Since 2007 the gage has not operated during the winter as data quality was low due to ice conditions and the gage was difficult to reach to take flow measurements.

Exhibit 1



FWP holds a sperate water reservation for 25 cfs on the Judith River upstream of Big Spring Creek. Limited available streamflow data as well as observations indicate that this reservation is often not met in the reach from above Hobson to Big Spring Creek. However, the only real-time gage is located well upstream of the dewatered reach and does not provide a good basis on which to base a call on junior rights.

Junior Water Rights

Junior water rights in the Judith River basin being evaluated do not include the Big Spring Creek basin which is addressed separately. Each water right was reviewed to determine if cessation of water use would likely result in additional flow reaching the Judith River. The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	3	37	-
Irrigation	3	5	6.79 cfs
Stock	0	10	-
Mining	0	4	-
Total	**6**	**56**	**6.79 cfs**

Exhibit 1

The following map shows the location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The red dots include all junior rights in the Big Spring Creek basin that are addressed separately. The green square is the location of the USGS gage near the mouth of the Judith River.

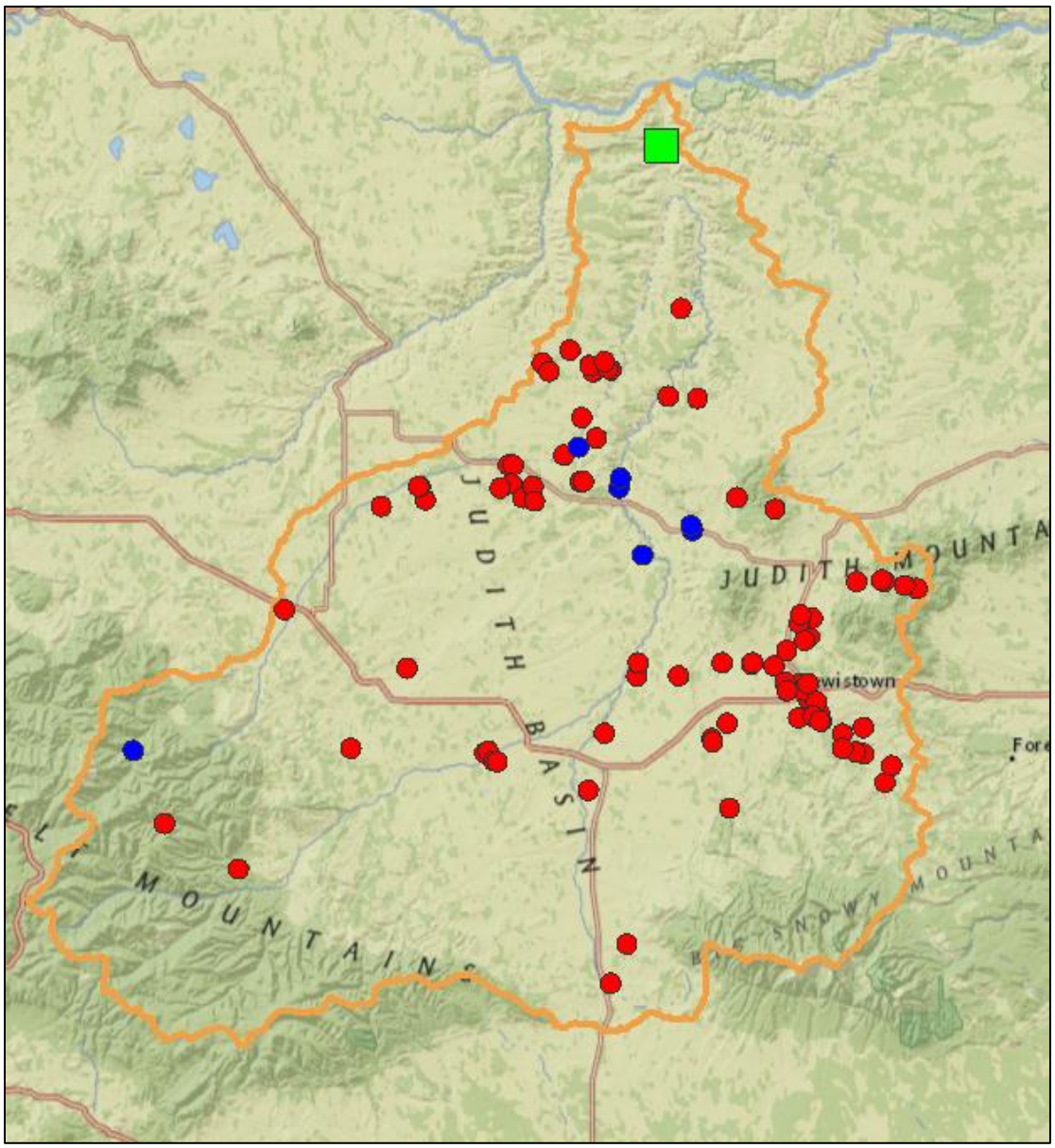


Exhibit 1

Yellowstone River above Boulder River

The Yellowstone River basin upstream of the Boulder River provides a high quality and popular rainbow, brown and Yellowstone cutthroat trout fishery, although Yellowstone cutthroat decline moving downstream as water temperatures warm. Protection and restoration of native Yellowstone cutthroat is a priority within the basin. Tributary streams and their connectivity to the Yellowstone mainstem are crucial for fish reproduction, particularly for Yellowstone cutthroat. Connected tributaries can provide refuge during times of low flow and warm water temperatures as well.

This summary does not include water rights junior to FWP's water reservation for the Shields River which would likely have already been called when a call on the Yellowstone River is justified.

Drought Planning
The Upper Yellowstone Watershed Group operating in the Paradise Valley includes drought response and preparedness in its list of goals. A group of local stakeholders has been working with DNRC in the initial stages of drought planning. As this effort develops, an across the board call on junior water rights could shift to alternative approaches under a drought plan.

The Shields Valley Watershed Group is an active and productive watershed group. However, they have chosen to not venture into water allocation issues. If that position changes in the future, this established group may provide a good structural organization to implement drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, water commissioners are active on the upper Shields River (above Wilsall), Cottonwood Creek, and Rock Creek in the Shields River basin and on Big Timber Creek north of Big Timer. Junior water rights from these areas are not called.

Necessity of Call
With dewatering negatively impacting fisheries, a call on junior water rights is justified on those sources not being administered by a water commissioner and that would likely result in improved or less rapidly declining streamflow.

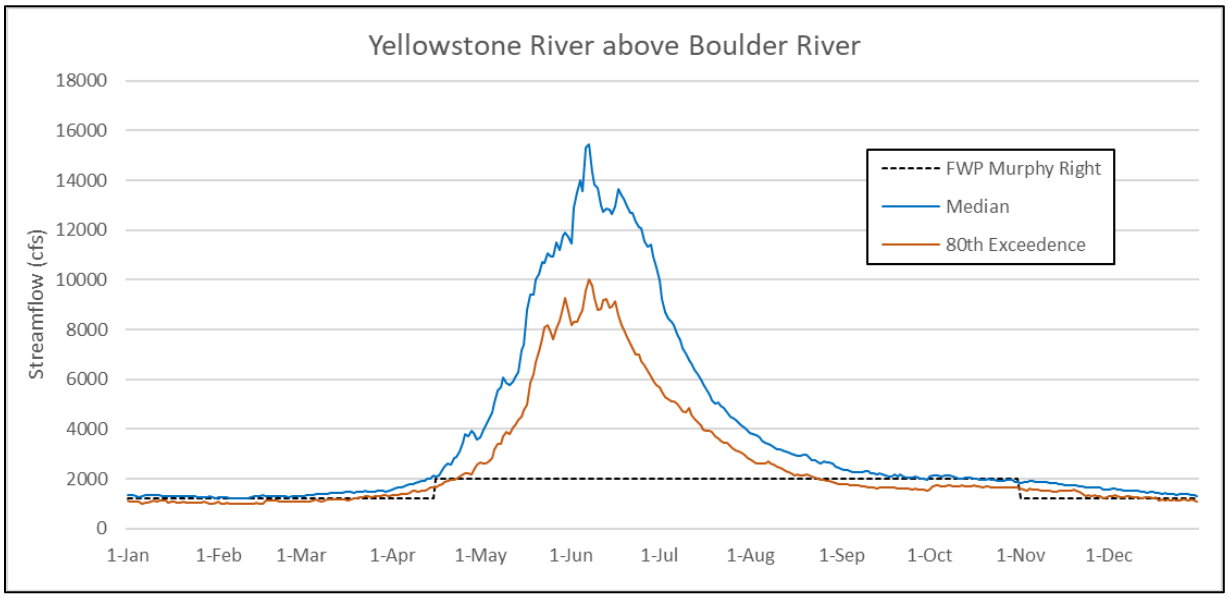
Exhibit 1

Basis of Call

FWP calls on junior water rights in the Yellowstone River basin above the Boulder River are predicated on FWP's instream flow Murphy rights which vary by period as follows:

Reach	Priority Date	Period	Flow (cfs)	USGS Gage
Boulder River to Tom Miner Creek.	December 14, 1970	Nov 1 – Apr 15	1200	06192500 Yellowstone River near Livingston + 06195600 Shields River near Livingston
		Apr 16 – Oct 31	2000	

As there is no USGS gage on the Yellowstone River immediately above the Boulder River, streamflow is estimated to be the sum of the Yellowstone River near Livingston gage and the Shields River near Livingston gage. Contributions of other tributaries below the Yellowstone River gage near Livingston are minor and do not offset diversions of water through this reach. This method of estimating the flow immediately above the Boulder River somewhat underestimates the actual flow and does not risk calling junior water rights when not justified.



The preceding hydrograph compares FWP's Murphy right (dotted black line) with the median and 80th percentile exceedance flow for the sum of USGS Gage 06192500 (Yellowstone River near Livingston, MT) and USGS Gage 06195600 (Shields River nr Livingston MT) based on 25 years of record (1979-2022). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds the Murphy right. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years falls below the Murphy right by late August and does not exceed the Murphy right until the beginning of November.

Since 2000, FWP has called junior water rights in the upper Yellowstone River basin 3 times, including 2000.

Exhibit 1

Junior Water Rights

DNRC's water rights database includes junior water rights in the Yellowstone River basin above the Boulder River. Each water right was reviewed to determine if cessation of water use would likely result in additional flow reaching the Yellowstone River. The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	39	22	31.24 cfs
Irrigation	185	92	359.85 cfs
Mining	2	3	0.04 cfs
Stock	0	33	-
Domestic	0	10	-
Other including hydropower	0	8	-
Total	**226**	**168**	**391.13 cfs**

Exhibit 1

The following map shows the location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green squares are the locations of the USGS Gages.

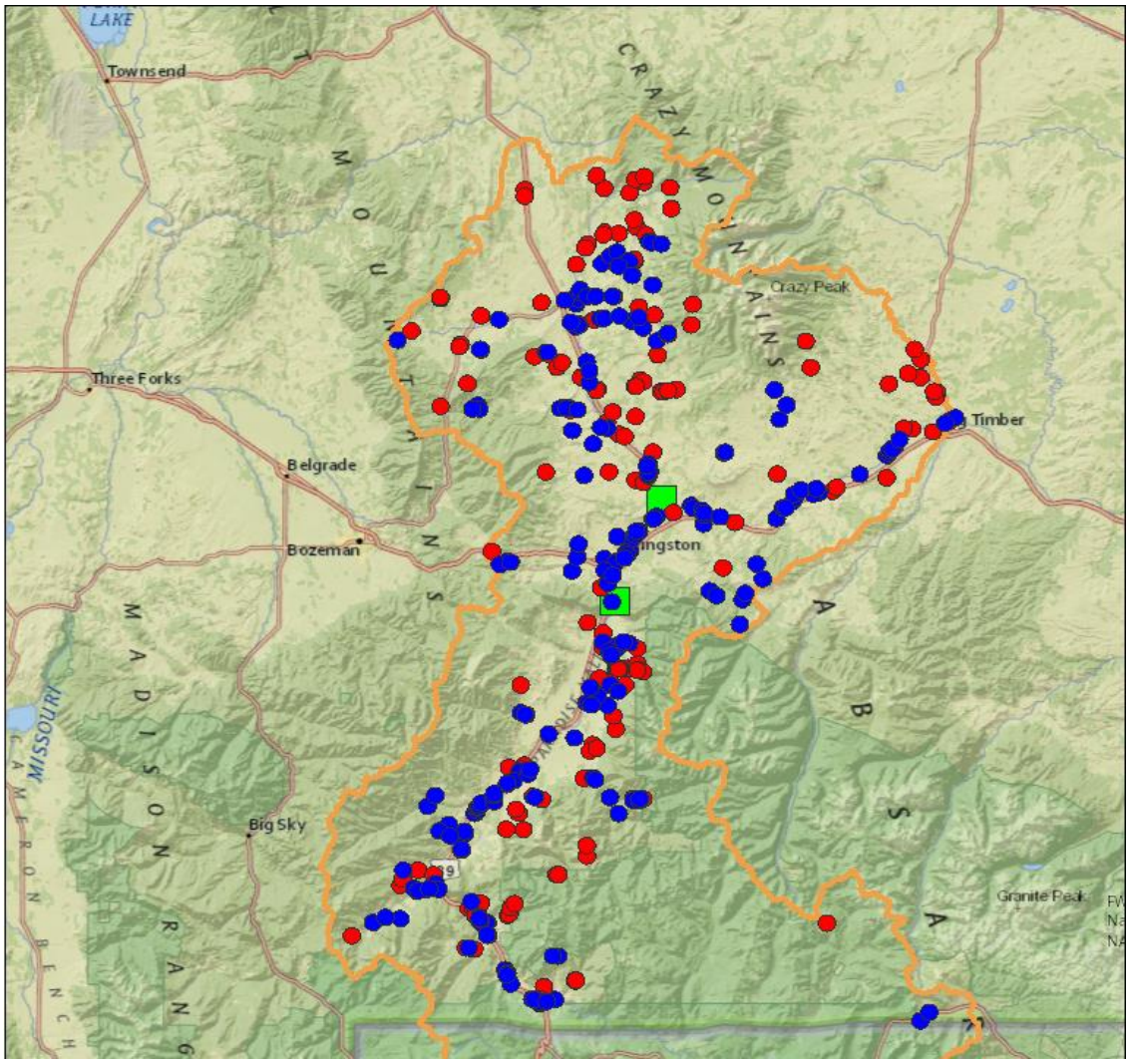


Exhibit 1

Shields River

The Shields River is a major tributary to the upper Yellowstone River, providing a quality rainbow and brown trout fishery below the Chadborne Diversion, approximately 11 miles from the mouth. Above this diversion, the basin holds a relatively intact distribution of Yellowstone cutthroat trout. No other watershed in Montana has retained this spatial extent of Yellowstone cutthroat trout and thus, the Shields River basin is a core area for conservation and restoration of the species.

Dewatering and associated warm water temperatures routinely negatively impact the fishery of the basin with high-water temperatures and fragmented habitat increasing stress and mortality. During high temperature periods, improved flows can counteract the effects of high temperature and improve fish survival.

Drought Planning
The Shields Valley Watershed Group is an active watershed group; however, they have chosen not to venture into water allocation issues. If that position changes in the future, this established group may provide a suitable structural organization to implement drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, water commissioners are active on the upper Shields River above Wilsall, Cottonwood Creek and Rock Creek. Junior water rights from these streams or stream reaches are not called.

Necessity of Call
With dewatering negatively impacting fisheries and recreational opportunities, a call on junior water rights is justified in subbasins not being administered by a water commissioner and on rights that are likely to contribute to improved or less rapidly declining streamflow.

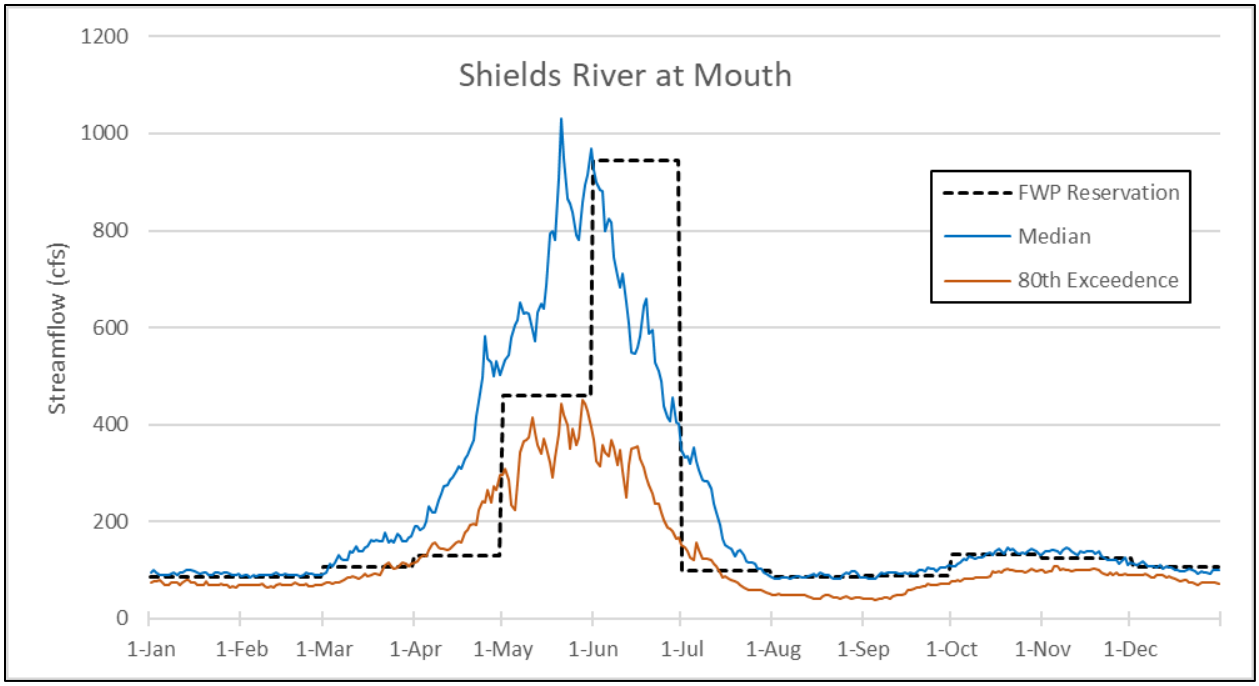
Basis of Call
FWP calls on junior water rights in the Shields River basin are predicated on FWP's instream flow reservation on the Shields River at its mouth, as measured at USGS Gage 06195600 (Shields River nr Livingston MT). The priority date of this instream flow reservation is **December 15, 1978**.

FWP's instream flow reservation varies by month as follows:

Month	Flow (cfs)	Month	Flow (cfs)
January	86.2	July	99.0
February	87.3	August	85.6
March	106	September	87.5
April	131	October	132
May	460	November	125
June	945	December	107

A call would not be made late in a month when the instream flow reservation for the subsequent month is substantially lower. For example, if flow was 500 cfs the last week in June, a call would not be made because on July 1, the instream flow reservation value would decrease to 99.0 cfs which is substantially lower than flow would likely be at that time.

Exhibit 1



The preceding hydrograph compares FWP's instream flow reservation (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06195600 based on 43 years of record (1978-2021). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds the instream reservation. The 80th percentile exceedance (shown in brown) represents streamflow met or exceeded in 8 out of 10 years and frequently falls below the instream reservation. This data indicates that over the period of streamflow record, a call on junior water rights may occur somewhat less than half of the years. However, with the cyclical nature of drought, calls may occur many years in a row. Since 2000, FWP has called junior water rights in the Shields River basin 6 times.

Junior Water Rights

DNRC's water rights database includes 43 junior water rights in the Shields River basin. Each water right was reviewed to determine if cessation of diversion would likely result in additional flow reaching the Shields River. The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	12	14	5.76 cfs
Irrigation	13	1	16.45 cfs
Stock	0	3	-
Total	**25**	**18**	**22.21 cfs**

Exhibit 1

The following map shows the location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not because of the low likelihood of improving flow in the river. The green square is the location of USGS Gage 06195600.

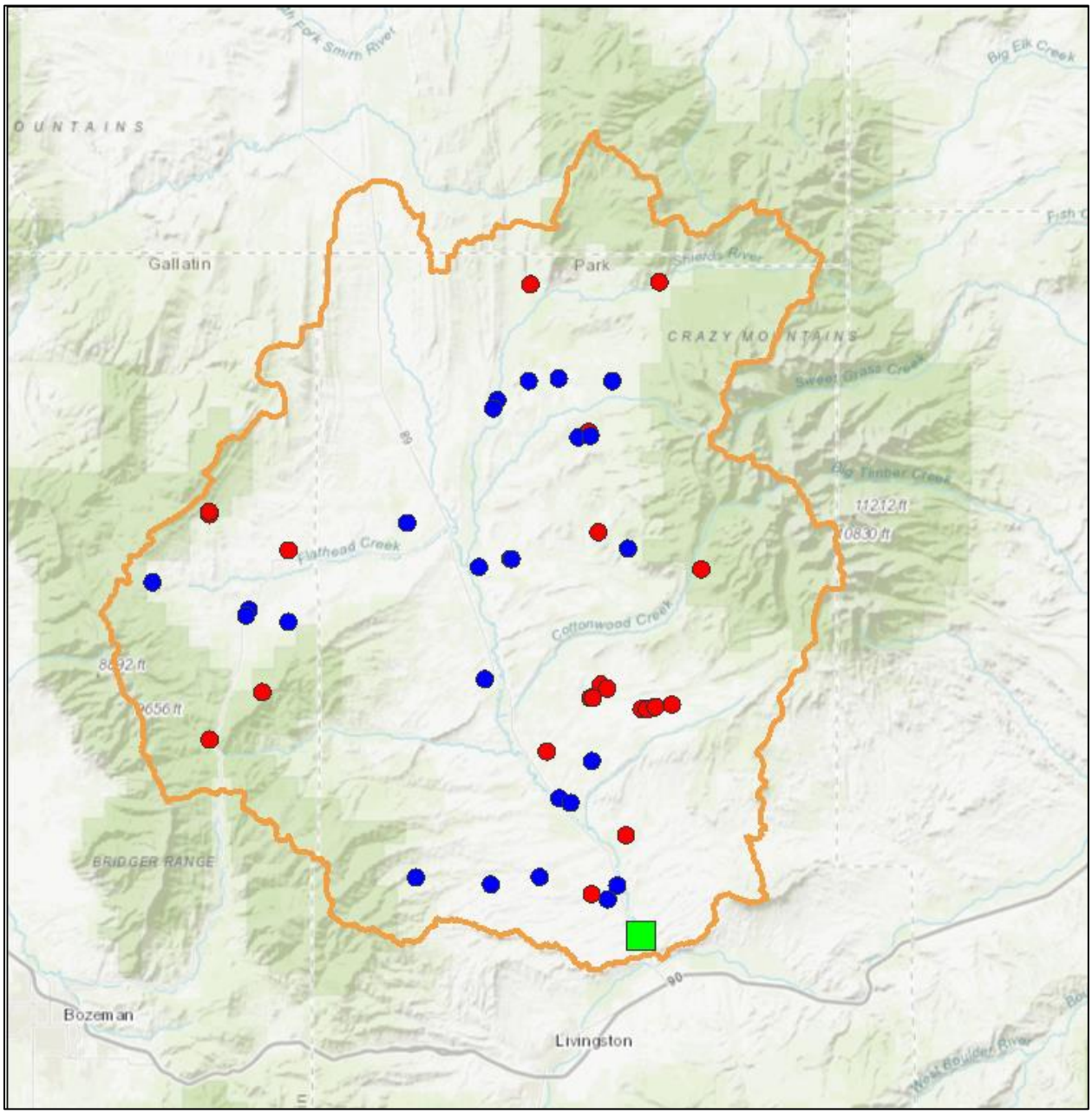


Exhibit 1

Boulder River (Yellowstone)

The Boulder River is a major tributary to the upper Yellowstone River supporting wild trout, mountain whitefish and other species. The headwaters are home to pure Yellowstone cutthroat trout. Dewatering is a concern primarily in the lower reaches of the East and West Boulder rivers, as well as the Boulder River downstream of Natural Bridge.

Drought Planning
The Boulder River Watershed Association is an active watershed group in the basin. This group may provide a good structural organization to implement drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no water commissioners operating within the Boulder River basin.

Necessity of Call
FWP will pursue an alternate approach, working with the watershed group to engage all water users in developing strategies and plans for dealing with drought and low streamflow. A list of junior rights may provide initial contact information for drought planning purposes, engaging this group of water users that would otherwise be called by FWP.

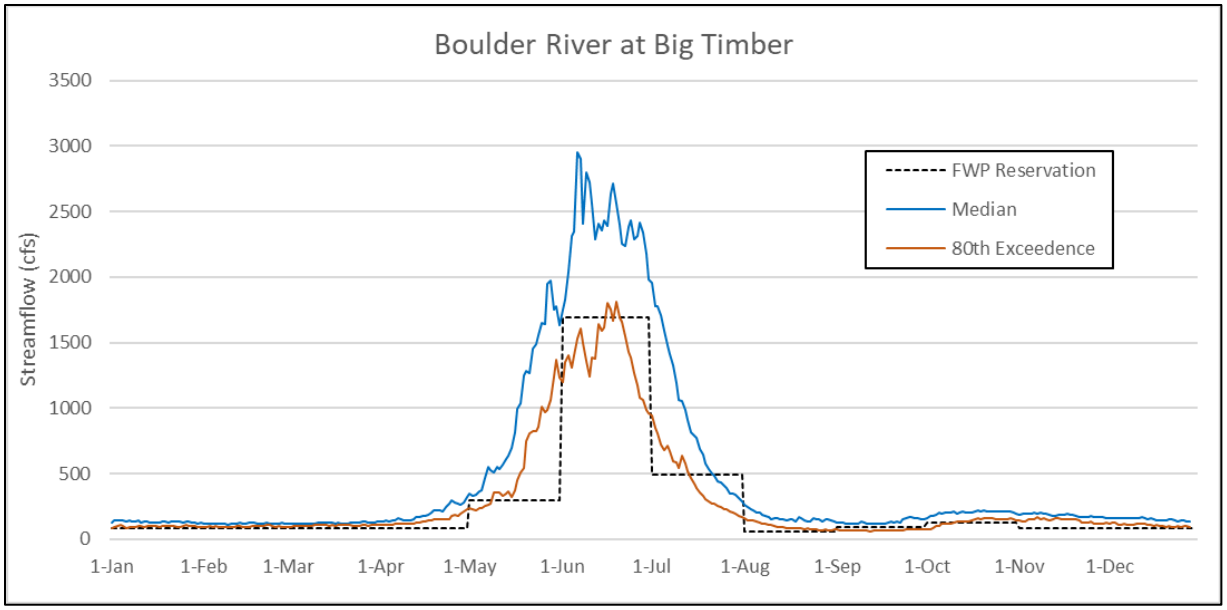
Basis of Call
FWP calls on junior water rights in the Boulder River basin are predicated on FWP's instream flow reservation for the Boulder River at its mouth as measured at USGS Gage 06200000 (Boulder River at Big Timber MT). The priority date of this instream flow reservation is **December 15, 1978**.

FWP's instream flow reservation varies by month as follows:

Month	Flow (cfs)	Month	Flow (cfs)
January	80	July	490
February	80	August	60
March	80	September	95
April	80	October	130
May	300	November	80
June	1690	December	80

A call would not be made late in a month when the instream flow for the subsequent month is substantially lower. For example, if flow was 300 cfs the last week in July, a call would not be made because on August 1 the instream flow value would decrease to 60 cfs which is substantially lower than flow would likely be at that time.

Exhibit 1



The preceding hydrograph compares FWP's instream reservation (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06200000 based on 43 years of record (1979-2021). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds the instream reservation. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years falls below the instream reservation from late August through mid-October. This data indicates over the period of streamflow record, a call on junior water rights may occur about 2 out of 10 years or less. However, with the cyclical nature of drought, calls may occur many years in a row. Since 2000, FWP has called junior water rights in the Boulder River basin once, in 2003.

Junior Water Rights

DNRC's water rights database includes 16 junior water rights in the basin. The following table lists the water rights by general purpose category.

Purpose	**Rights**	**Total Flow Rate**
Fish, Wildlife, Recreation Ponds	9	6.13 cfs*
Irrigation	4	3.87 cfs
Stock	1	-
Industrial, Mining	2	0.62 cfs
Total	**16**	**10.62 cfs**

*Does not include a 10 cfs right for the Dry Creek Canal that is held jointly between the canal company and FWP to preserve brown trout redds in the upper reaches of the canal through the winter.

Exhibit 1

The following map shows the location of all junior water rights. As the current approach is to pursue drought planning efforts with the local watershed group, rights that would be called are not differentiated from those not to be called as this time. The green square is the location of USGS Gage 06200000.

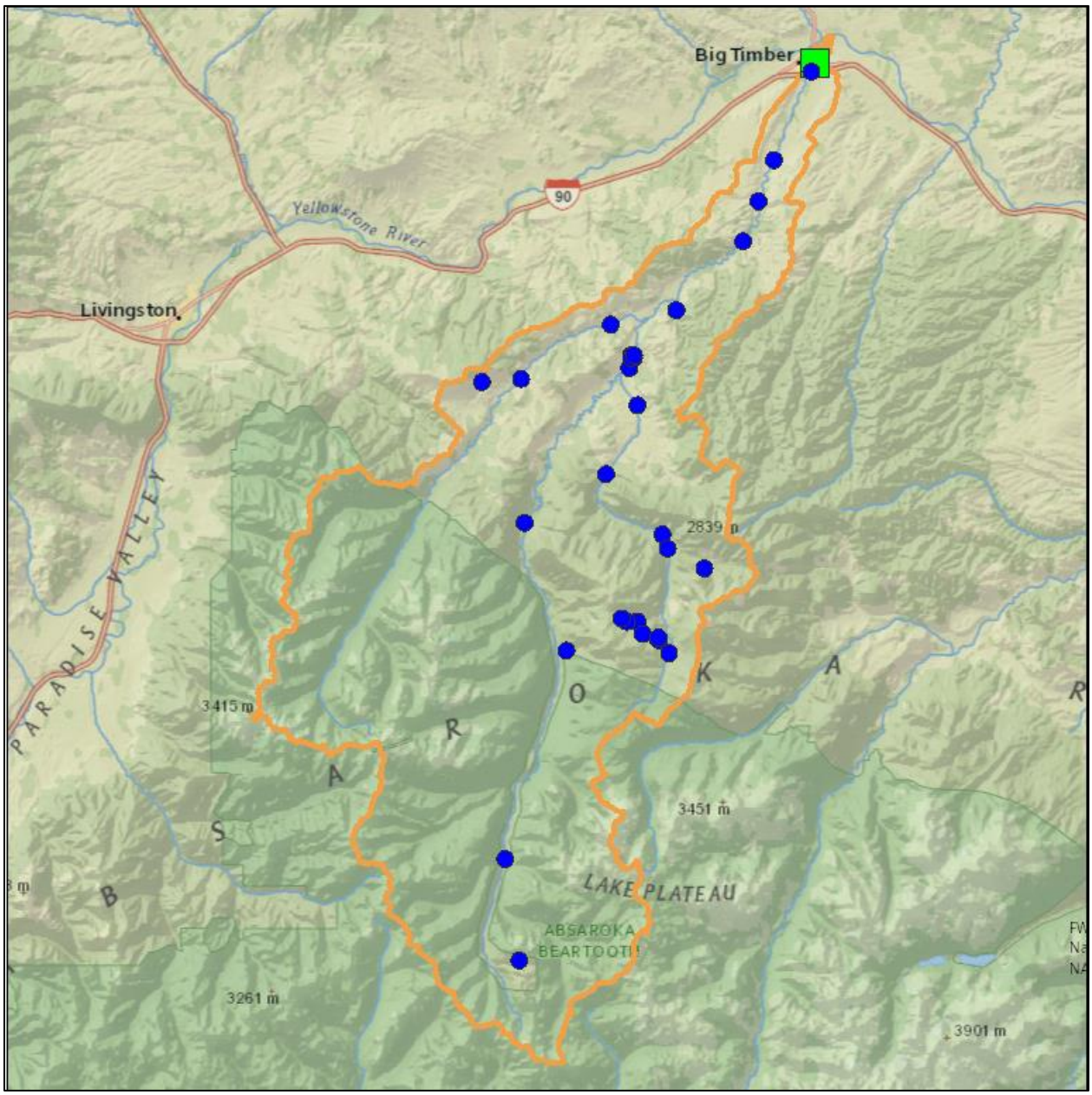


Exhibit 1

Stillwater River (Yellowstone)

The Stillwater River is a major tributary to the upper Yellowstone River, supporting mountain whitefish and wild trout species, including Yellowstone cutthroat trout. Dewatering is a concern primarily in tributary streams; however, at times there are low flow issues on the mainstem Stillwater River.

Drought Planning
The Stillwater Valley Watershed Council is an active watershed group in the basin. This group may provide a good structural organization to implement drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no water commissioners operating within the Stillwater River basin.

Necessity of Call
FWP will pursue an alternate approach working with the watershed group to engage all water users in developing strategies and plans for dealing with drought and low streamflow. A list of junior rights may provide an initial contact list for drought planning purposes, engaging this group of water users that would otherwise be called by FWP.

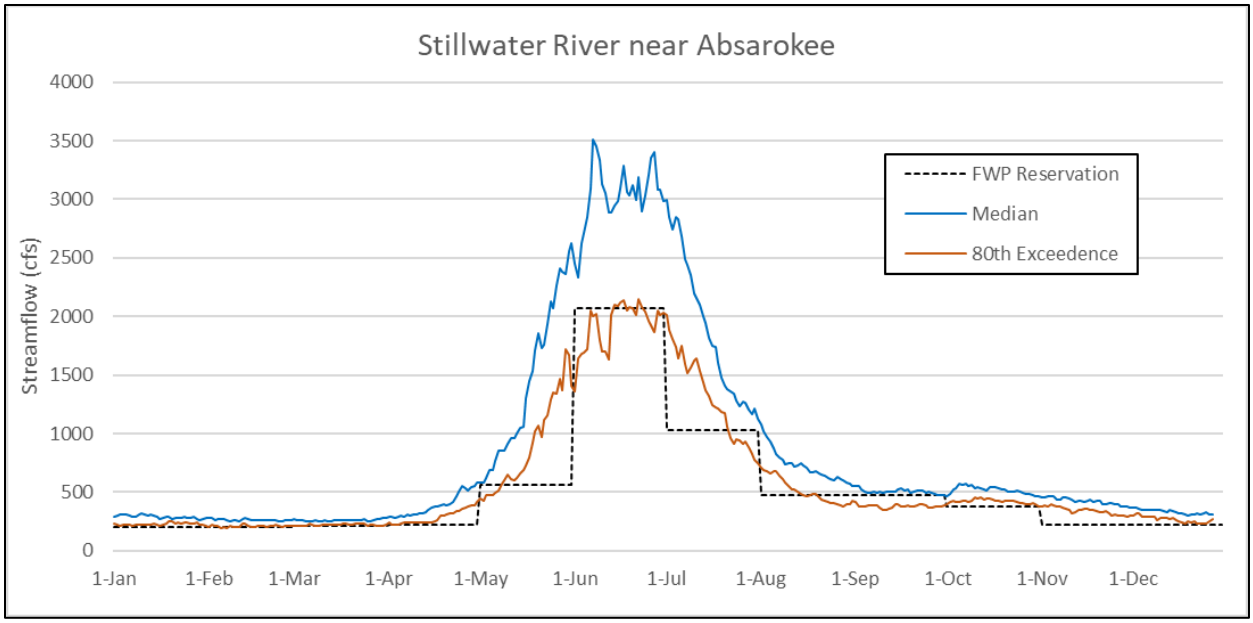
Basis of Call
Call on junior water rights is predicated on FWP's instream flow reservation on the Stillwater River at its mouth, as measured at USGS Gage 06205000 (Stillwater River near Absarokee MT). The priority date of this instream flow reservation is **December 15, 1978**.

FWP's instream flow reservation varies by month as follows:

Month	Flow (cfs)	Month	Flow (cfs)
January	200	July	1030
February	205	August	480
March	210	September	480
April	225	October	380
May	560	November	225
June	2075	December	225

A call would not be made late in a month when the instream flow for the subsequent month is substantially lower. For example, if flow was 600 cfs the last week in July, a call would not be made because on August 1 the instream flow value would decrease to 480 cfs, which is substantially lower than flow would likely be at that time.

Exhibit 1



The preceding hydrograph compares FWP's instream reservation (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06200000 based on 37 years of record (1979-2020). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds the instream reservation. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years falls below the instream reservation from late August through September. This data indicates that over the period of streamflow record, a call on junior water rights may occur about 2 out of 10 years. However, with the cyclical nature of drought, calls may occur many years in a row. Since 2000, FWP has called junior water rights in the Stillwater River basin in 2007, based on the Stillwater River USGS gage, and in 2000, 2001 and 2013, based on the Yellowstone River at Billings water reservation.

Junior Water Rights

DNRC's water rights database includes 105 junior water rights in the Stillwater basin. The following table lists the water rights by general purpose category.

Purpose	**Rights**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	23	10.67 cfs
Irrigation	67	29.25 cfs
Stock	4	0.21 cfs
Domestic	2	0.06 cfs
Industrial, Mining	9	0.93 cfs
Total	**105**	**41.12 cfs**

Exhibit 1

The following map shows the location of all the junior water rights. As the current approach is to pursue drought planning efforts with the local watershed group, rights that would be called are not differentiated from those not to be called at this time. The green square is the location of USGS Gage 06205000.

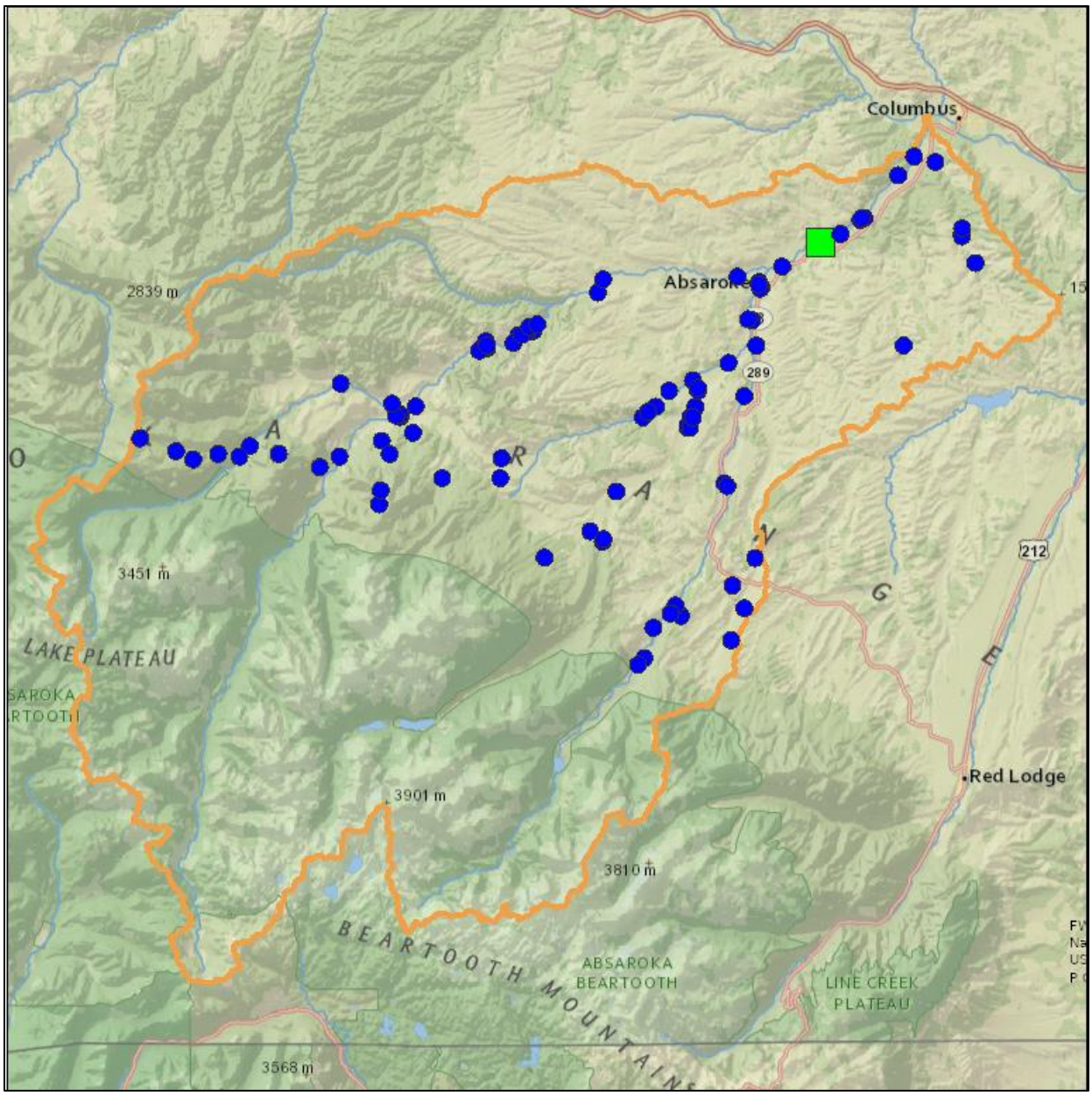


Exhibit 1

Clarks Fork of the Yellowstone River

The Clarks Fork of the Yellowstone River is a major tributary to the upper Yellowstone River supporting wild trout, burbot and other native species. Dewatering in the Clarks Fork of the Yellowstone River suppresses fisheries with burbot being a particular concern. Rock Creek is a major tributary of the Clarks Fork, entering low in the basin. It also supports a wild trout fishery with brown trout and rainbow trout being a focus of conservation efforts. Dewatering in the Rock Creek basin is severe if not complete in some reaches.

Drought Planning
The Clarks Fork Yellowstone Partnership is newly formed and has expressed a strong interest in drought planning. A watershed group in the Rock Creek drainage is in the early stage of formation with drought being one of the driving factors. These groups may provide a good structural organization to implement drought planning activities.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, water commissioners are active on Rock Creek. If a call were made based on the Clarks Fork Yellowstone water reservation, it would not include the Rock Creek basin. However, a separate call on junior water rights above Cooney Reservoir may be warranted.

Necessity of Call
With nascent watershed groups in the basin interested in drought planning, FWP will pursue an alternate approach working with these groups to engage all water users in developing strategies and plans for dealing with drought and low streamflow. A list of junior rights may provide initial contact information for drought planning purposes, engaging this group of water users that would otherwise be called by FWP.

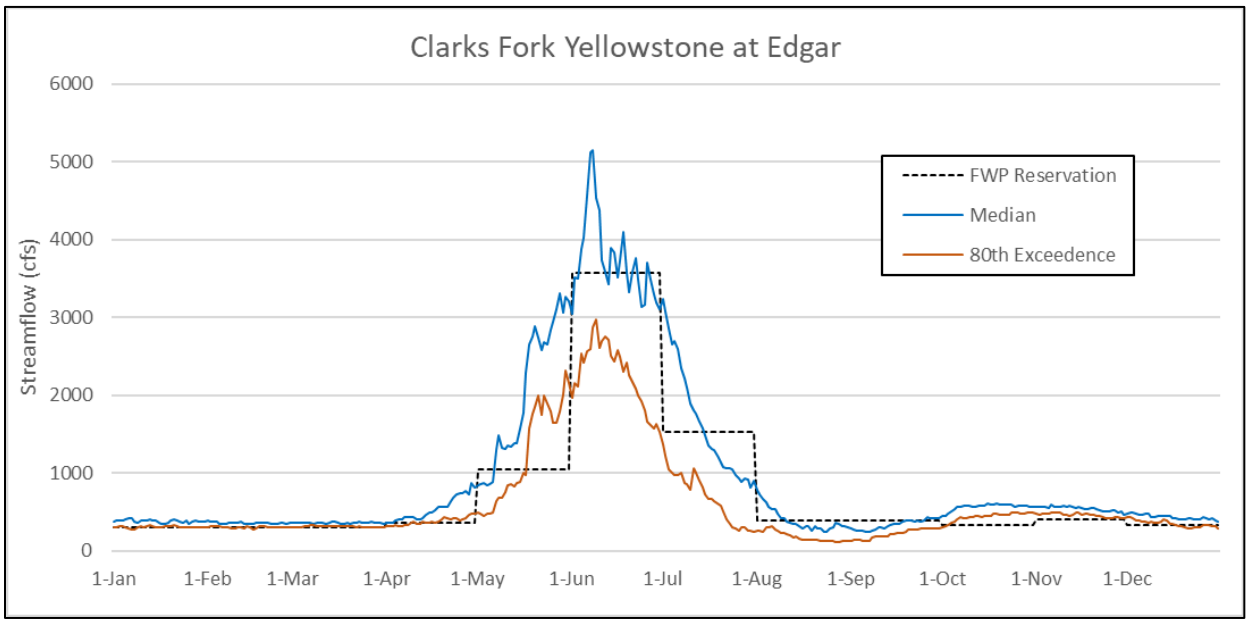
Basis of Call
FWP calls on junior water rights in the Clarks Fork basin are predicated on FWP's instream flow reservation for the Clarks Fork at its mouth as measured at USGS Gage 06208500 (Clarks Fork Yellowstone River at Edgar MT). The priority date of this instream flow reservation is **December 15, 1978**.

FWP's instream flow reservation varies by month as follows:

Month	Flow (cfs)	Month	Flow (cfs)
January	300	July	1537
February	299	August	399
March	308	September	393
April	357	October	332
May	1051	November	401
June	3569	December	330

Exhibit 1

A call would not be made late in a month when the instream flow for the subsequent month is substantially lower. For example, if flow was 1200 cfs the last week in July, a call would not be made because on August 1 the instream flow value would decrease to 399 cfs which is substantially lower than flow would likely be at that time.



The preceding hydrograph compares FWP's instream reservation (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06208500 based on 34 years of record (1987-2021). In 5 out of 10 years (median shown in blue), streamflow generally meets or exceeds the instream reservation except for late summer. The 80th percentile exceedance (shown in brown) which represents the streamflow met or exceeded in 8 out of 10 years mostly falls below the instream reservation from July through September. This data indicates that over the period of streamflow record, a call on junior water rights may occur about half of the years. However, with the cyclical nature of drought, calls may occur many years in a row. Since 2000, FWP has called junior water rights in the Clarks Fork Yellowstone River basin in 2006 and 2007.

Junior Water Rights

DNRC's water rights database includes 115 junior water rights in the basin. The following table lists the water rights by general purpose category.

Purpose	**Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	60	37.82 cfs
Irrigation	41	34.31 cfs
Stock	6	-
Domestic	2	-
Other	6	52.66 cfs*
Total	**115**	**124.79 cfs**

*Includes 50 cfs in hydropower that impacts bypass reaches

Exhibit 1

The following map shows the location of all the junior water rights. The green square is the location of USGS Gage 06208500.

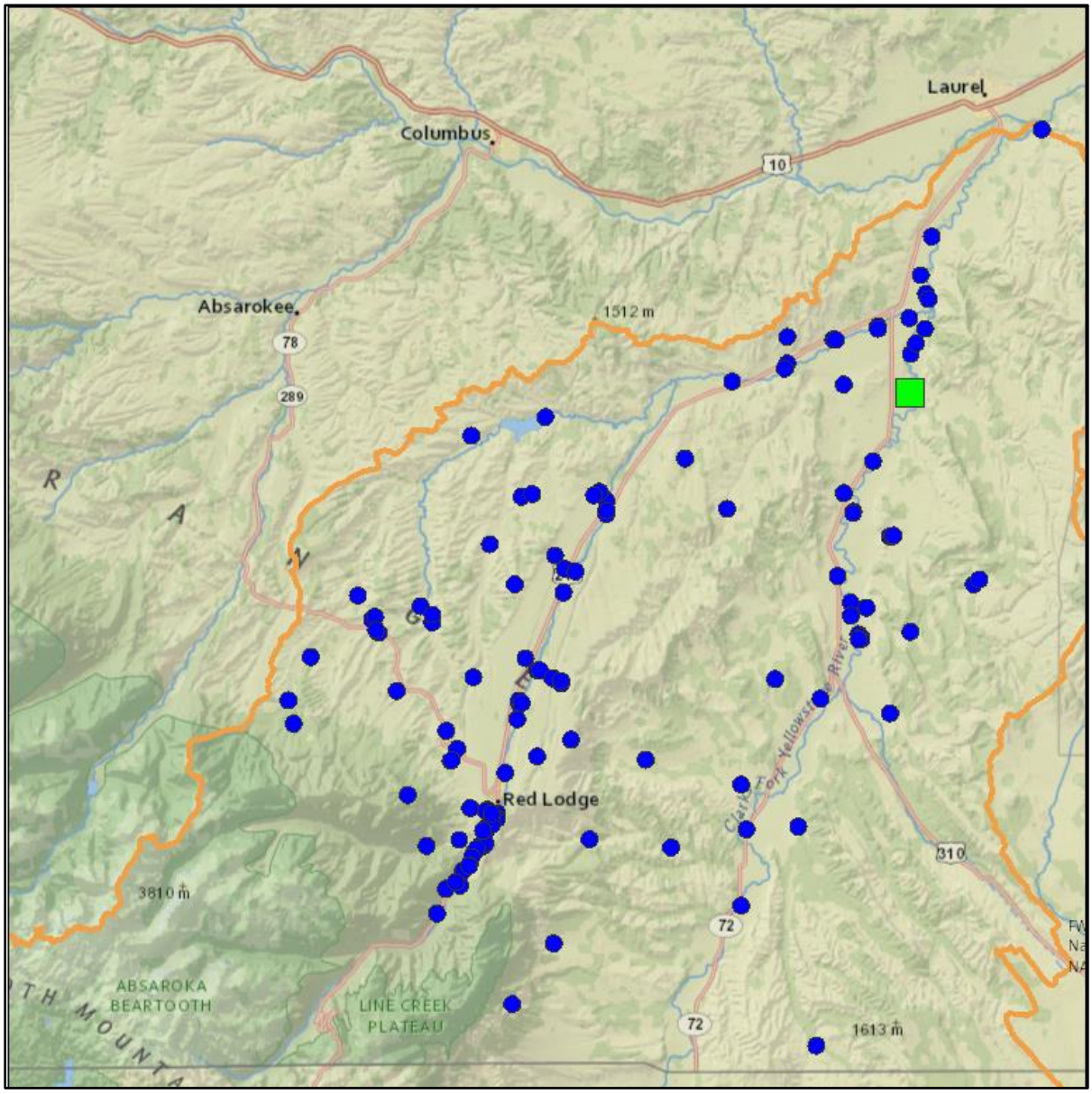


Exhibit 1

Tongue River

The Tongue River is a major tributary to the lower Yellowstone River and is home to many warmwater fish species along with rainbow and brown trout in the tailwater of Tongue River Reservoir. FWP has worked with irrigators, agencies, and other organizations to improve fish passage and reduce fish entrainment, opening 165 miles of previously fragmented habitat. Dewatering routinely impacts the fishery of this basin. In 2006, DNRC used emergency funding to purchase water from the Northern Cheyenne Tribe to prevent the river from drying up. The Tongue River was also the subject of suit between Montana and Wyoming specifically, Wyoming's over-use of water under provisions of the interstate compact. Instream rights are not considered a beneficial use under the compact, and FWP is precluded from issuing a call if the State of Montana has made call on Wyoming. However, a call from Montana on Wyoming ultimately affects more junior Montana users than a FWP call would.

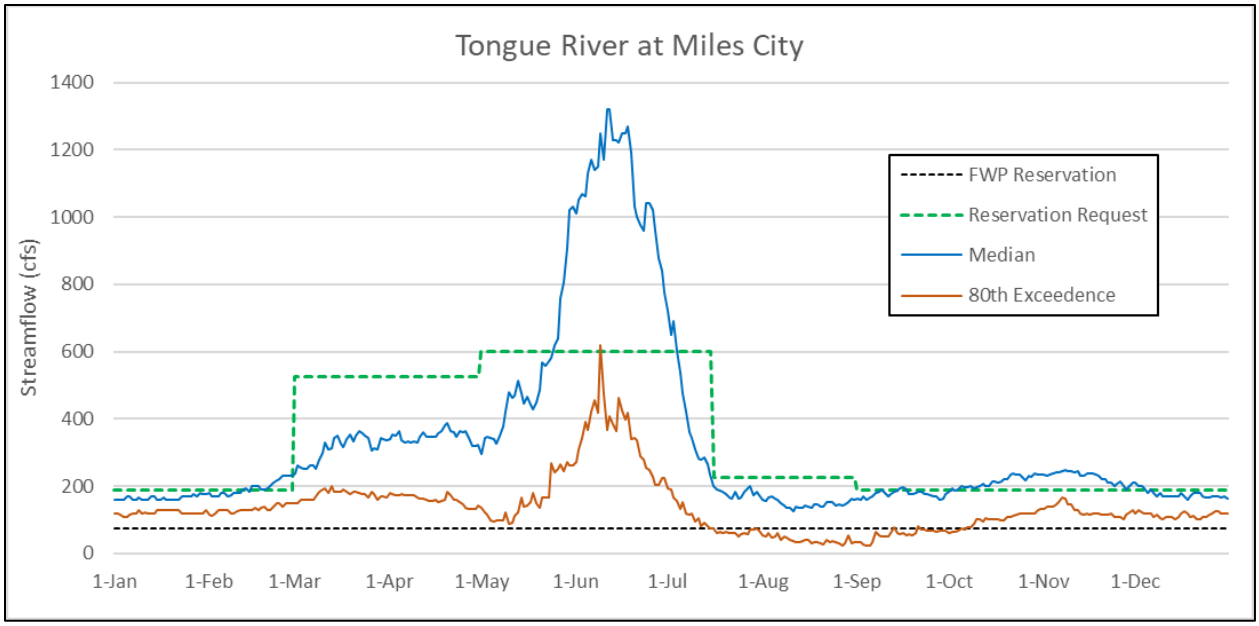
Drought Planning
Currently there is no active watershed group in the Tongue River basin to take on drought planning.

Water Commissioners
According to DNRC's January 20, 2021 water commissioner list, there are no water commissioners operating within the Tongue River basin. Tongue River Reservoir is located near the Wyoming line, owned by DNRC, and managed by the Tongue River Water Users Association which regulates releases of water to contract holders.

Necessity of Call
With dewatering negatively impacting fisheries, and assuming no interstate call is in effect, a call on junior water rights would likely result in improved or less rapidly declining streamflow. As explained previously, FWP cannot place call on junior Montana users if an interstate call exists.

Basis of Call
FWP calls on junior water rights in the Tongue River basin are predicated on FWP's instream flow reservation at its confluence with the Yellowstone River as measured at USGS Gage 06308500 (Tongue River at Miles City, MT). The priority date of this instream flow reservation is **December 15, 1978,** with a year-round flow rate of **75 cfs.**

Exhibit 1



The preceding hydrograph compares FWP's instream reservation (dotted black line) with the median and 80th percentile exceedance flow for USGS Gage 06308500 based on 79 years of record (1939-2021). In 5 out of 10 years (median shown in blue), streamflow exceeds the instream reservation. The 80th percentile exceedance (shown in brown), which represents the streamflow met or exceeded in 8 out of 10 years, falls below the instream reservation during the summer. This data indicates that over the period of streamflow record, a call on junior water rights may occur about 2 out of 10 years. However, with the cyclical nature of drought, calls may occur many years in a row. Since 2000, FWP has called junior water rights in the Tongue River basin 3 times. As stated above, FWP cannot place call on Montana junior water rights if Montana has placed call on Wyoming rights.

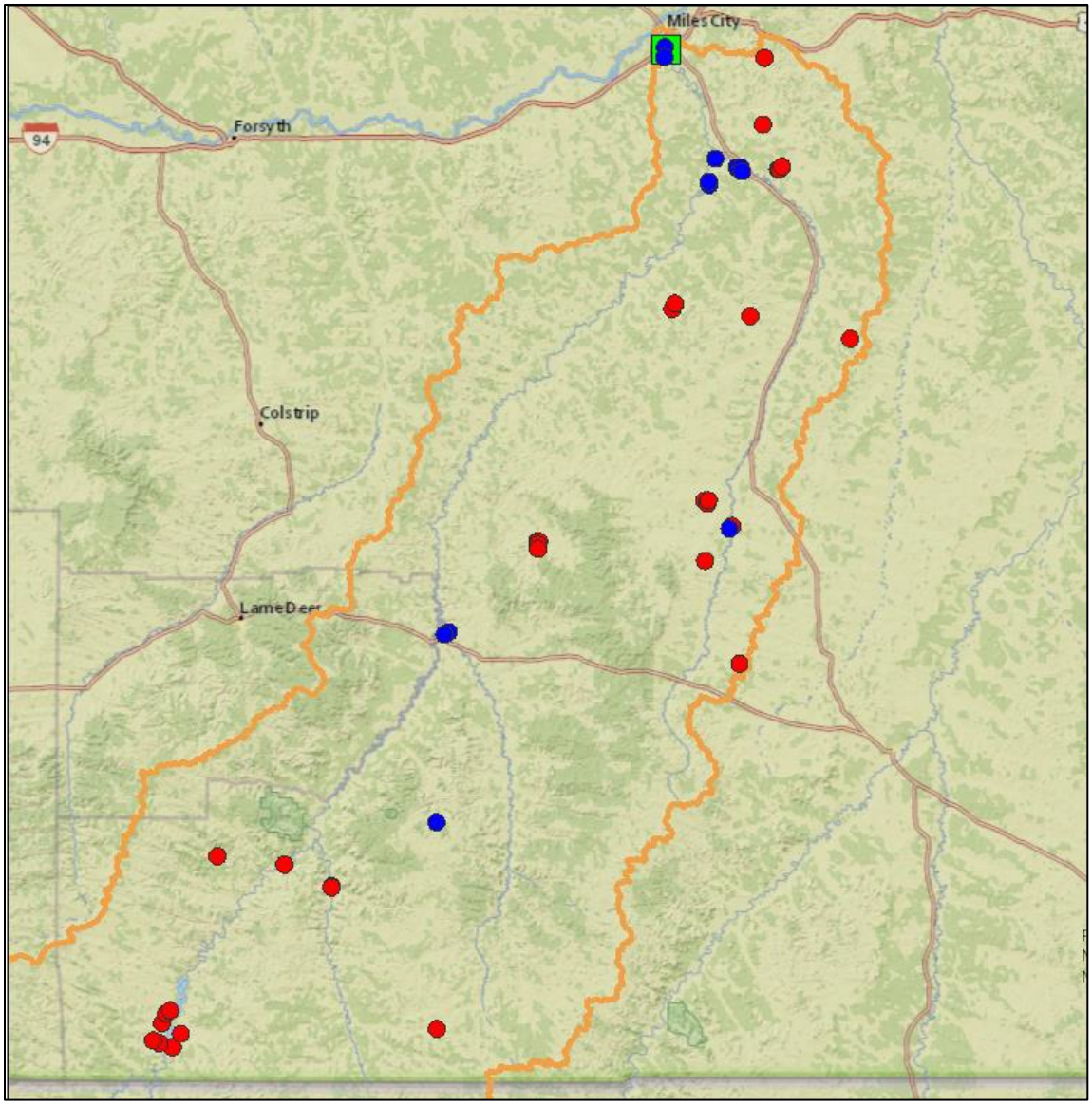
Junior Water Rights

DNRC's water rights database includes 35 junior water rights in the Tongue River basin. Each water right was reviewed to determine if cessation of water use would likely result in additional flow reaching the Tongue River. The following table lists the water rights by general purpose category.

Purpose	**Call**	**No Call**	**Total Called Flow Rate**
Fish, Wildlife, Recreation Ponds	2	3	6.68 cfs
Irrigation	10	8	14.58 cfs
Stock	0	7	-
Industrial	0	5	-
Total	**12**	**23**	**21.26 cfs**

The following map shows the location of all the junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green square is the location of USGS Gage 06308500.

Exhibit 1



DETERMINATION OF THE AMOUNT OF THE RESERVATIONS

This section discusses in detail the methods used to derive the flow quantities requested for each stream reach in the application. The Wetted Perimeter Inflection Point Method was the primary method used. Several alternative methods were also used in situations where the primary method could not be used or where special circumstances required another approach. This volume does not contain the flow requests themselves. Those requests are contained in Volumes 2 and 3 of this application. The specific method used is described under each individual stream reach.

Also discussed in this section is the Water Availability information required by ARM 36.16.105B(2).

Primary Instream Flow Method

Numerous techniques have been developed for determining the instream flow requirements of fish and other aquatic life forms. These range from relatively simple office methods that base their recommendations on some flow quantity derived from the historic flow record, to the derivation of the actual biological-flow relationships from long-term field data collected in drought, normal and above normal water years.

The former approach was not chosen as DFWP's primary means for determining instream flows because DFWP believes that instream flow recommendations should, wherever possible, reflect stream-specific habitat and discharge relationships rather than a flow quantity derived solely from the flow record. Furthermore, the lack of sufficient flow data for the vast majority of Montana's streams precluded the use of almost all office methods. Moreover, the consensus among professionals is that this approach is most appropriate for deriving preliminary or reconnaissance-level recommendations (Estes and Orsborn 1986; Stalnaker and Arnette 1976).

Use of biological-flow relationships was impractical due to the extensive commitment of time, money and manpower that are needed to collect the ten or more years of field data that could be required to define these relationships for each stream or stream reach. The large number of streams in this application precluded the development of biological-flow relationships except in a few cases.

DFWP, recognizing the shortfalls of these approaches for this application, adopted the Wetted Perimeter Inflection Point Method to determine fishery flow needs. This method focuses on the well-founded assumption that the food supply can be a major factor

influencing a stream's carrying capacity (the total number and pounds of fish that can be maintained by the aquatic habitat). The principal food of many of the juvenile and adult game fish inhabiting the streams of Montana is aquatic invertebrates, which are produced primarily in stream riffle areas. The method assumes that the game fish carrying capacity is related to food production, which, in turn, is a function of the amount of wetted perimeter in riffles.

Wetted perimeter is the distance along the bottom and sides of a channel cross-section in contact with water (Figure 1-2). As the flow in a stream channel increases, the wetted perimeter also increases, but the rate of gain of wetted perimeter is not constant throughout the entire range of flows.

A plot of wetted perimeter versus flow for stream riffle cross-sections generally shows two points, referred to as inflection points, where the rate of gain of wetted perimeter abruptly changes. In the example, (Figure 1-3), these inflection points occur at approximately 8 and 12 cfs. Below the lower inflection point, the stream flow is spreading out horizontally across the bottom, causing the wetted perimeter to increase rapidly for very small increases in flow. A point is eventually reached (at the lower inflection point) where the water starts to move up the sides of the active channel and the rate of increase of wetted perimeter begins to decline. At the upper inflection point, the stream is approaching its maximum width and begins to move up the banks as flow increases. Large increases in flow beyond the upper inflection point cause only small increases in wetted perimeter.

The area available for food production is considered near optimal at the upper inflection point because almost all of the available riffle area is wetted. At flows below the upper inflection point, the stream begins to pull away from the riffle bottom until, at the lower inflection point, the rate of loss of wetted bottom area begins to rapidly accelerate. Once flows are reduced below the lower inflection point, the riffle bottom is being exposed at an even greater rate and the area available for food production greatly diminishes. The method is intended to describe a threshold below which a stream's food producing capacity begins to decline (upper inflection point) and a threshold at which the loss is judged unacceptable (lower inflection point).

While the inflection point concept focuses on food production, there are indications that wetted perimeter relates to other factors that influence a stream's carrying capacity. One such factor is cover (or shelter), a well-recognized component of fish habitat.

In the headwater streams of Montana, overhanging or submerged bank vegetation and undercut banks are important components of

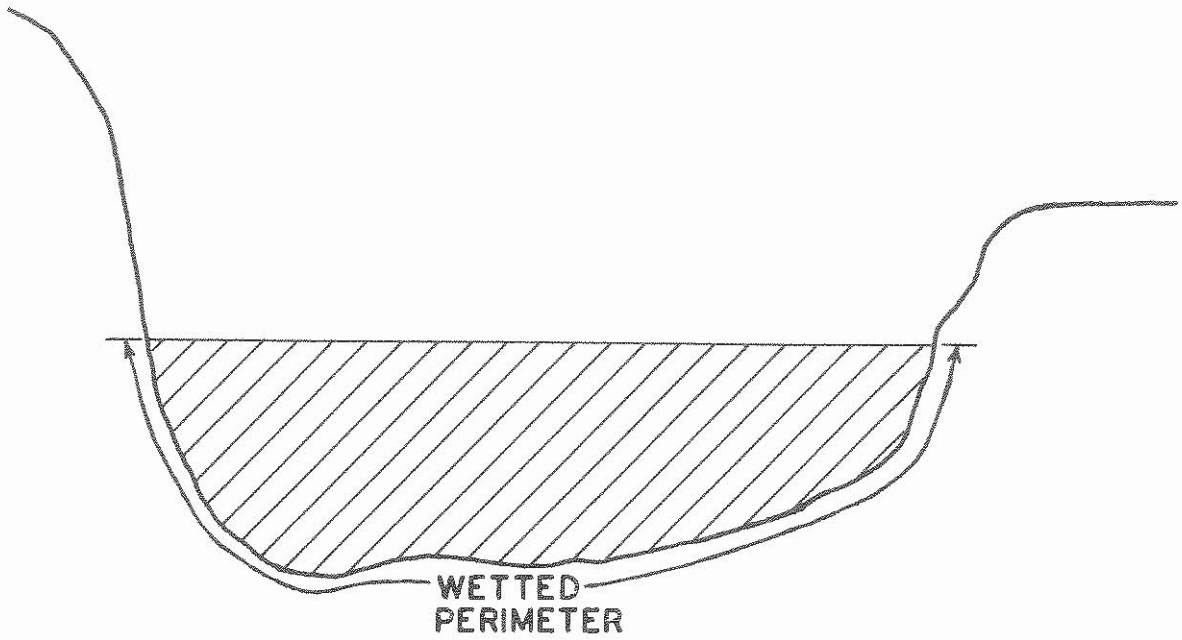


Figure 1-2. The wetted perimeter in a channel cross-section.

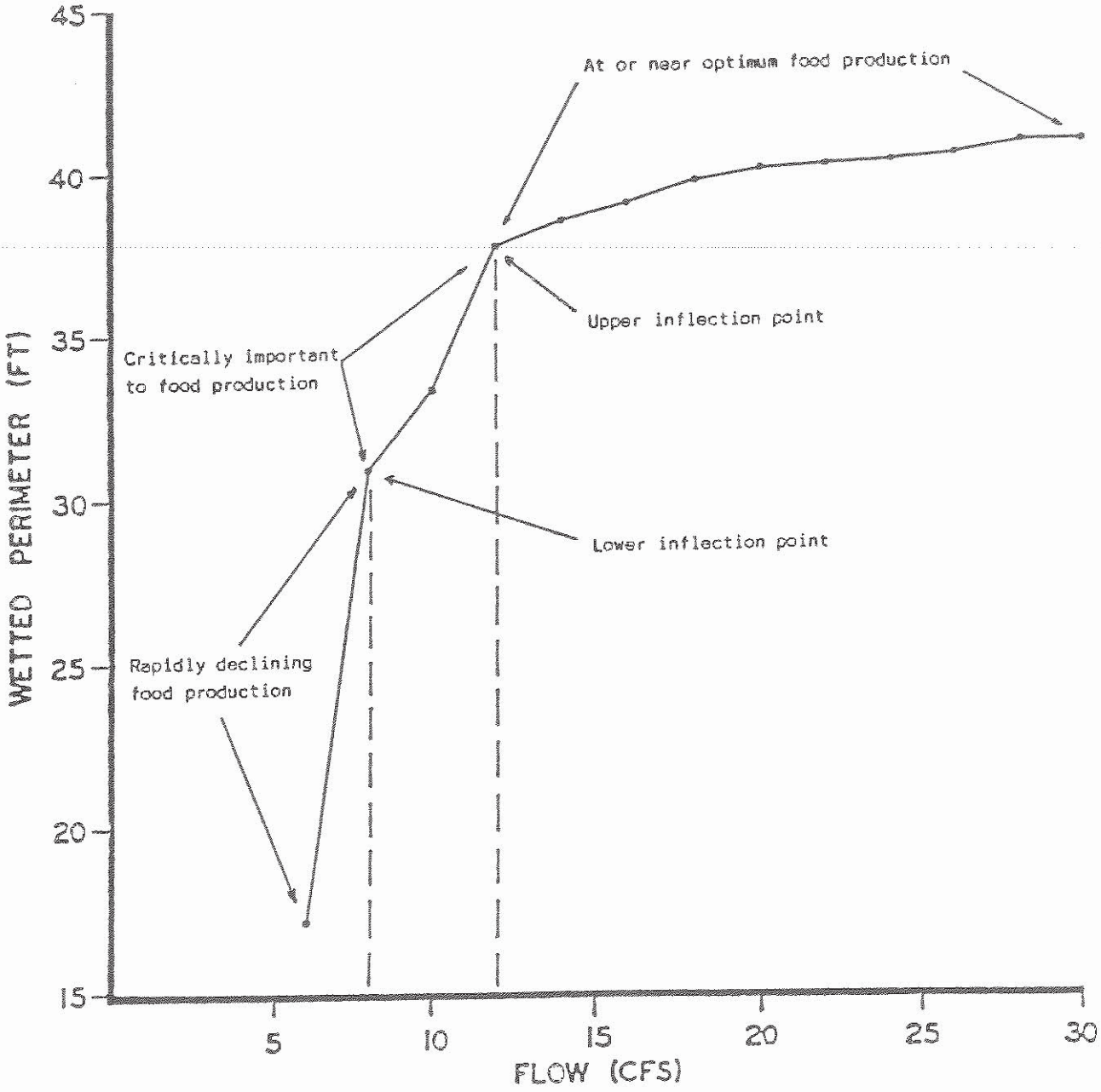


Figure 1-3. An example of a relationship between wetted perimeter and flow for a stream riffle cross-section showing upper and lower inflection points and their relationship to fish food production.

cover. The wetted perimeter-flow relationship for a stream channel is, in some cases, similar to the relationship between bank cover and flow. Flows exceeding the upper inflection point are considered to provide near optimal bank cover. Below the upper inflection point, the water pulls away from the banks, decreasing the amount of bank cover associated with water. At flows below the lower inflection point, the water is sufficiently removed from the bank cover to severely reduce its value as fish shelter. Support for this relationship is provided by Randolph (1984), who found a high correlation between riffle wetted perimeter at various flows and the total area of overhanging bank vegetation (r=0.88-1.00) and undercut banks (r=0.84-0.97) for three study sections in a small Montana stream.

In addition to producing food, riffles are used by many game fish species for spawning and the rearing of their young (Sando 1981 and Loar et. al. 1985). Consequently, the protection of riffles helps ensure that the habitat required for these critical life functions is also protected.

Riffles are the area of a stream most affected by flow reductions (Bovee 1974, Nelson 1977 and Loar et al. 1985). By requesting a flow that covers a large portion of the available riffle area, we are, at the same time, protecting both runs and pools--areas where adult fish normally reside.

The Wetted Perimeter Inflection Point Method provides a range of flows (between and including the lower and upper inflection points) from which a single instream flow recommendation is selected. Flows below the lower inflection point are judged undesirable based on their probable impacts on food production, bank cover, and spawning and rearing habitats, while flows at and above the upper inflection point are considered to provide near optimal conditions for fish. The upper and lower inflection points are believed to bracket those flows needed to maintain high and low levels of aquatic habitat potential. These habitat levels are defined as follows:

(1) <u>High Level of Aquatic Habitat Potential</u> -- That flow regime which will consistently produce abundant, healthy and thriving aquatic populations. In the case of game fish species, these flows would produce abundant game fish populations capable of sustaining a good to excellent sport fishery for the size of stream involved. For rare, threatened or endangered species, flows to accomplish the high level of aquatic habitat maintenance would: (a) provide the high population levels needed to ensure the continued existence of that species, or (b) provide the flow levels above those which would adversely affect the species.

(2) Low Level of Aquatic Habitat Potential -- That flow regime which will provide for only a low population of the species present. In the case of game fish species, a limited sport fishery could still be provided. For rare, threatened or endangered species, their populations would exist at low or marginal levels. In some cases, this flow level would not be sufficient to maintain certain species.

The final flow recommendation is generally selected from this range of flows by a consensus of the biologists who collected, summarized and analyzed all relevant field data for the stream of interest. The biologists' analyses of the stream resource form the basis of the flow selection process. Factors considered in the evaluation include: (1) level of recreational use, (2) existing level of environmental degradation, (3) water availability, and (4) size and composition of existing fish populations. Fish population information is a major consideration for all streams. A marginal or poor fishery may only justify a flow recommendation at or near the lower inflection point unless other considerations, such as the presence of "Species of Special Concern" (arctic grayling and westslope cutthroat trout, for example) warrant a higher flow. In general, streams with exceptional resident fish populations, those providing crucial spawning and/or rearing habitats for migratory populations, and those supporting significant populations of "Species of Special Concern" should be considered for flow recommendations that are at or near the upper inflection point. The Missouri Basin streams in this application are generally those with the highest resident fishery and/or spawning values and, consequently, for most of these streams upper inflection point flows are requested.

Other streams considered for upper inflection point recommendations are streams that have the capacity to provide an outstanding fishery, but are prevented from reaching their potential because of stream dewatering. Flows at the upper inflection point provide a goal to strive for should the means become available to improve streamflows through such measures as water storage projects or the purchase and/or lease of irrigation rights. Streams that are subjected to other forms of environmental degradation, such as mining pollution, and which have the potential (assuming other habitat factors are suitable) to support significant fisheries if reclaimed, are additional candidates for upper inflection point recommendations. Both of these categories describe some streams in this application.

The wetted perimeter-flow relationships for the streams of the Missouri Basin were derived using a wetted perimeter predictive (WETP) computer program developed in 1980 for the DFWP. WETP is a relatively simple computer model that eliminates the more complex data collecting and calibration procedures associated with similar

computer programs in current use, while at the same time providing more accurate and reliable wetted perimeter predictions. An in-depth description of the WETP computer program and data collection procedures is provided in a publication titled "Guidelines for Using the Wetted Perimeter (WETP) Computer Program of the Montana Department of Fish, Wildlife and Parks" (Nelson 1989) (see Attachment 1).

When deriving instream flow recommendations for the rivers and streams of Montana, DFWP normally divides the annual flow cycle into two separate periods: (1) a relatively brief snow runoff or high flow period, when a large percentage (about 75%) of the annual water yield is passed through stream channels and (2) a non-runoff or low flow period which is characterized by relatively stable base flows maintained primarily by groundwater outflow. For headwater rivers and streams, the high flow period generally includes the months of May, June, and July, while the remaining months (approximately August through April) encompass the low flow period.

The Wetted Perimeter Inflection Point Method is normally applied only to the low flow period, and a separate method that addresses the high flow functions of channel maintenance and flushing of bottom sediments is applied to the high flow period. However, because most water users, particularly irrigators, are unable to divert a significant portion of the high runoff flows and, therefore, are incapable of materially impacting the high flow functions of bedload movement and sediment transport, the need for high flow recommendations may be unnecessary in most cases. The most probable causes for high flow reduction in most of Montana's unregulated streams would be mainstem impoundments. Therefore, extending the wetted perimeter recommendations through the high flow period -- a practice applied to the streams in this application -- should not jeopardize the maintenance of adequate high flows for most streams. Furthermore, Montana law [85-2-316(6), MCA] limits the granting of instream flows to no more than 50% of the average annual flow on gauged streams, thus eliminating (in many cases) flushing and channel maintenance flows from consideration in a reservation application.

Attachment 2 to this application is a comprehensive survey of the instream flow methods literature (Leathe and Nelson 1989), which relates the significance of existing methods to Montana's Wetted Perimeter Inflection Point Method. This synopsis includes the history of instream flow development, the relationship between streamflows and fish populations, a survey and analysis of instream flow methods (including available techniques, advantages and limitations, evaluation studies, and criteria for selecting an instream flow method), and finally, a discussion of why Montana chose to use the Wetted Perimeter Inflection Point Method in its instream flow program. This synopsis is an important component of DFWP's method and justification for the flows requested in this

application and should be used in conjunction with the above method discussion.

In summary, the primary method used to determine the requested instream flows for streams and stream reaches in this application is the same -- the Wetted Perimeter Inflection Point Method combined with a knowledge of flow conditions and the fishery gained through field observations and electrofishing surveys. For a relatively few remaining waters, other methods, which are discussed in the following section, were used to derive recommendations.

Alternative Instream Flow Methods

While most of the flow requests in this application were derived from the Wetted Perimeter Inflection Point Method, some were based on the following four approaches:

1. Fixed Percentage Technique

Various non-field or office methods that use existing hydrologic information to derive instream flow recommendations are described in the literature. These methods are similar in that they are usually performed in the office with few, if any, on-site visits required. Office methods are generally deemed most appropriate for deriving preliminary or reconnaissance-level recommendations. Final recommendations are typically derived using various field methods. In Alaska, however, levels of instream flow protection granted by the governing authorities were based solely on office methods (Estes 1988), indicating that such methods are being accepted as primary instream flow methods in certain situations.

One of the better known office methods is the Tennant Method, sometimes referred to as the Montana Method (Tennant 1975). Recommendations of the Tennant Method are based on a fixed percentage of the average annual flow. Tennant describes 30% of the average annual flow as necessary to sustain good survival habitat for most aquatic species, and 60% as providing excellent to outstanding habitat for most aquatic species during their primary periods of growth and for the majority of recreational uses. Ten percent of the average is suitable only for sustaining short-term survival habitat, according to Tennant. The percentage selected as a recommendation depends on the stream's numerical rating in a fisheries classification system. The higher the rating, the greater the percentage recommended.

The purpose of this section is to describe the fixed percentage method used in this application to derive instream flow recommendations for the relatively few (27 total) streams in which

Exhibit 3

OFFICE OF THE GOVERNOR
STATE OF MONTANA

GREG GIANFORTE
GOVERNOR

KRISTEN JURAS
LT. GOVERNOR

July 7, 2021

Hank Worsech
Director
Montana Fish, Wildlife, and Parks
1420 East Sixth Avenue
P.O. Box 200701
Helena, MT 59601-0701

Director Worsech,

I understand that Montana Fish, Wildlife and Parks (FWP) seeks approval to issue "calls," based on its water rights, to junior users on both the Smith and Shields Rivers. Thank you for bringing this matter to my attention and for the quick efforts your team made last week as we gathered and processed the relevant information. Montana is currently experiencing a historic drought, and both the Smith and Shields Rivers are facing historic lows. However, based on the analysis provided by FWP and subsequent discussion, it is apparent that a call would provide questionable, if any, measurable benefit to the resources in question. As such, I am directing FWP to forego a call for water on the Smith and Shields Rivers.

It is my understanding that FWP maintains two rights at issue. The right on the Smith River is an instream "Murphy Right" with a priority date of December 17, 1970. The right on the Shields River is an instream flow reservation with a priority date of December 15, 1978. Both rights appear to be relatively junior as compared to a majority of users on each stream. That said, FWP's rights are also "senior" to a number of other water rights.

Upon receiving the request to make calls, my office inquired as to 1) whether a call would result in a demonstrable increase sufficient to satisfy FWP's objectives, 2) which junior water rights FWP anticipated calling, and 3) whether these sources were already being administered by a water commissioner. Your team provided a quick and helpful response, noting that the actual benefit of a call would be difficult to quantify. Indeed, given the flow rates associated with the junior rights proposed for call, the fact that a number of these junior rights may have already been "shut off" by commissioners, and the likelihood that any water released by a call would be consumed by other senior users on the sources, it seems a call would be ineffective at best and futile at worst.

Exhibit 3

While we are unable to responsibly call upon junior users at this time, I believe this year has presented us the opportunity to launch measures that improve our ability to make calls and which better protect our fisheries. To this end, I direct FWP to establish a protocol for evaluating and issuing calls that yield measurable benefits. We need to develop protocols that allow us to make informed, measured decisions with ample data and well in advance of a potential call. I would ask that FWP develop a clear protocol that creates parity during calls and ensures, to the extent practicable, that FWP obtains its objectives when making calls. This protocol would include communicating with water commissioners to stay apprised of current source conditions, administrative actions, and usage levels.

I also direct FWP to engage stakeholders in the Smith and Shields River communities for the purpose of creating drought management plans. As FWP staff pointed out last week, senior users may capitalize upon water released during an FWP call, as is their right. If FWP is to adequately and effectively protect fisheries, it must develop collaborative strategies that engage junior ***and*** senior users. I would also ask that FWP begin identifying and working with other communities across the state, to establish similar drought management plans as appropriate.

While this year is proving to be a difficult water year, it has given us the opportunity to develop effective, long-term strategies that ensure the protection of fish and wildlife. I know the tasks before us are not simple, but by developing these protocols and engaging with our fellow water users, I remain confident that we can make lasting change that benefits us all.

Sincerely,

Greg Gianforte
Governor

Exhibit 4

The Montana Department of Natural Resources & Conservation

Montana Drought Outlook Report

Summer 2025

Cumulonimbus cloud over the prairie, near Augusta, MT **Photo: Michael Downey**

Exhibit 4

This report was prepared by the Montana Department of Natural Resources and Conservation (DNRC) on behalf of the Montana Drought & Water Supply Advisory Committee (DWSAC). Under § 2-15-3308(6), MCA, DWSAC must submit a report to the Governor's Office by July 1 each year evaluating the potential for drought for the remainder of the calendar year.

Key Takeaways

- Many regions in Montana are entering the fifth consecutive summer with abnormally dry or drought conditions. Exceptionally dry and hot conditions last fall greatly depleted soil moisture, leaving many areas with a significant moisture deficit entering the spring and early summer months.

- Above average temperatures and below average precipitation in April and May diminished snowpack at high elevations and accelerated run-off. Below average precipitation in June in western and north central Montana has resulted in the onset of drought conditions with abnormally dry and severe to extreme drought conditions advancing in these areas prior to the onset of the dry season.

- Streamflows in western and northern Montana are predominantly below to much below average at the end of June. Streamflows in the south central and southeastern regions are closer to average and are indicative of better snowpack and above average precipitation in April and May in those areas. The winter's low snowpack and drier than average spring in western Montana has greatly diminished streamflows by late June. Local conditions moving forward will depend on the influence of regional temperatures and summer precipitation.

- Surface water storage levels at state reservoirs are mostly average. Conditions at private reservoirs and dugouts vary by location. The area east of the Continental Divide along the Rocky Mountain Front is the most compromised and is already suffering shortages in most stock ponds and reservoirs including state and federal facilities.

- The outlook for significant wildfire potential is above normal across Montana. Lack of precipitation in April, May and June has accelerated the onset of significant fire potential in the Northern Rockies and Northern Great Plains. Continuing heat and dryness through the summer and early fall months is expected to extend the fire season through September.

- Approximately 59 percent of the state is currently in moderate to extreme drought and 15 percent indicate abnormally dry conditions at the onset of the dry season. With a high probability of above average temperatures and below average precipitation over the next three months, continued development of severe to extreme drought conditions during the summer and early fall is likely.

- These combined drought indicators offer a negative drought outlook for the remainder of the summer and early fall. Conditions could worsen quickly in the event of much above average temperatures and below average precipitation in the coming weeks.

Exhibit 4

Summary of Recent Conditions

The 2024 water year (Oct. 1, 2023 – Sept. 30, 2024) closed following a drier than average and record hot summer that resulted in extreme (D3) and exceptional (D4) drought conditions in western and eastern Montana. The year's record low snowpack translated into record low streamflow in the west, and low water coupled with high temperatures led to widespread fishing closures that lasted into the fall. Late summer rains in August and September brought relief to some; however, record heat and below average precipitation in October led to worsening conditions across Montana through the fall and early winter. The period from September through December was the warmest on record with temperatures exceeding the average by 5.5 degrees Fahrenheit statewide, with some areas reaching more than 10 degrees Fahrenheit above normal. The southeast was particularly hard hit, with a broad expansion of severe (D2) and extreme (D3) drought conditions that worsened through November and remained through late January.

Water levels in storage facilities on Dec. 31, 2024 varied widely with snowpack dependent reservoirs in the west, like Nevada Creek Reservoir, falling much below average at 47 percent of normal for that date. Other facilities, like Deadman's Basin in central Montana, were holding 120 percent of normal by year's end. Delay of the first killing freeze until late October extended last year's growing season. The extended growing season, coupled with hot and dry weather, severely depleted soil moisture. The impacts of the hot and dry fall and early winter were important precursors to the current low soil moisture values particularly in north central and eastern Montana this spring.

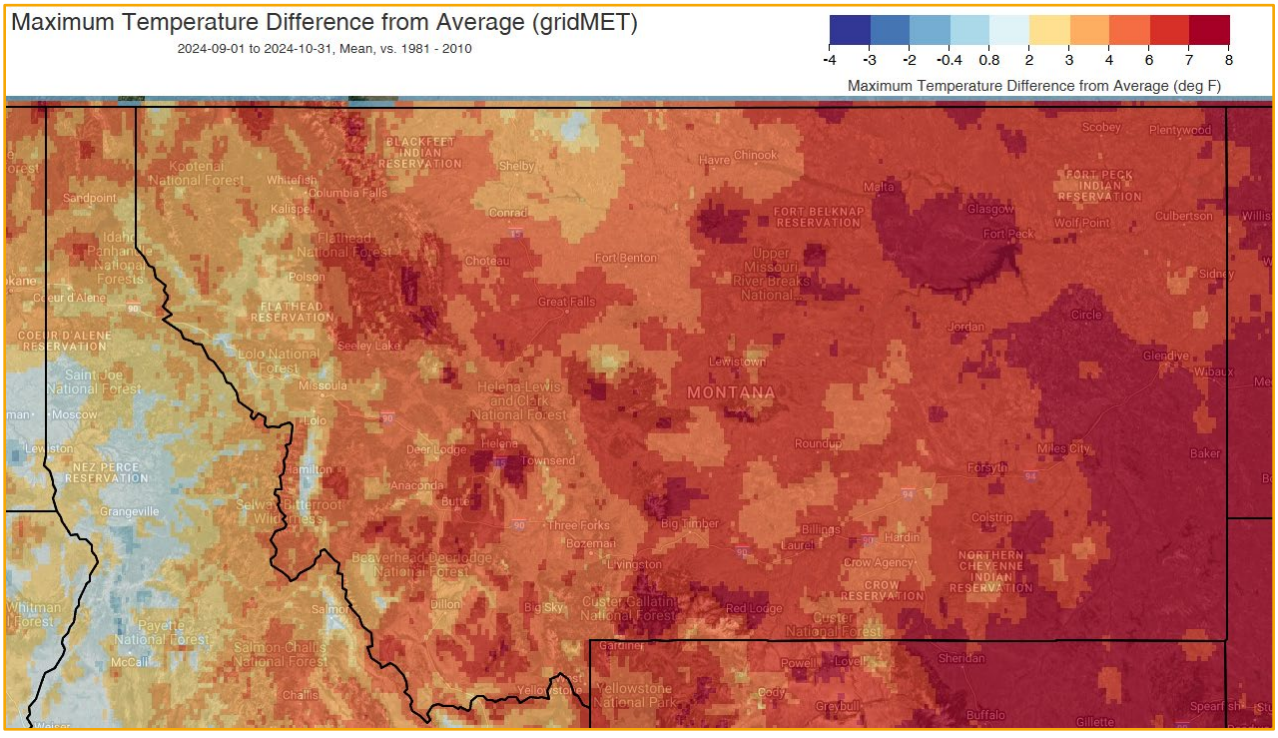


Figure 1- Temperature – Difference from Average 9/1/24 – 10/31/24 **Map generated by Climate Engine**

Precipitation at the beginning of 2025 got off to a slow start, with less than normal amounts in the west and east. Central Montana was the outlier with record accumulations in the Little Belt, Snowy, and Bears Paw ranges. Heavy snowfall on Jan. 13 and 14 brought more than two feet of snow to some areas.

Exhibit 4

February brought bitterly cold temperatures and above average snow accumulations to most of the state. Basins in the southwest received upwards of 180 percent of normal precipitation. The Upper Yellowstone basin, for example, typically receives about two inches of snow water equivalent (SWE) in the month of February. This February, the Upper Yellowstone received four inches of SWE. Accumulations in the northwest were closer to average.

Current Drought Conditions

Warm and dry conditions that persisted through December 2024 prevented widespread improvements in drought until late January and early February 2025, leaving central Montana mostly drought free by late February.

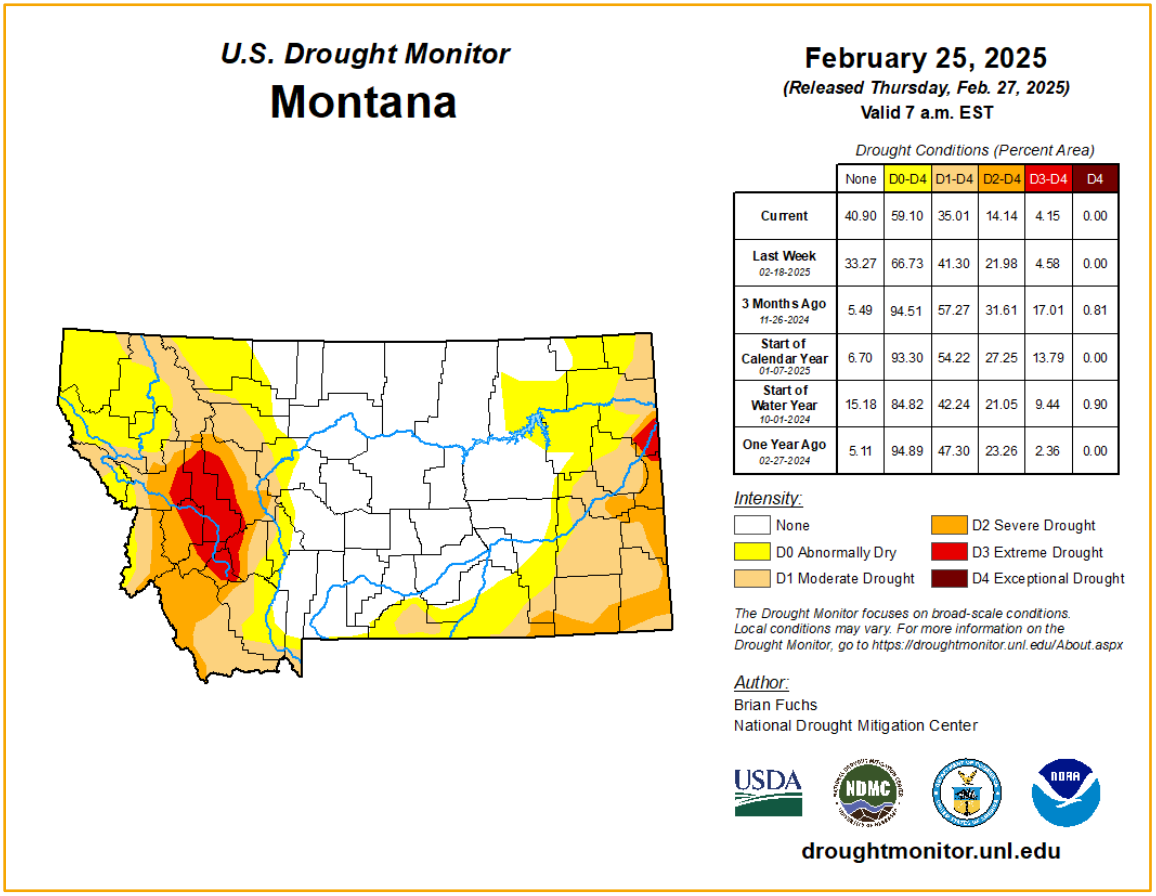


Figure 2 – Drought Categories, February 25, 2025

April, May and June are typically some of Montana's wettest months, and the hope was for above average precipitation and cooler temperatures during this period to prevent the onset and spread of severe drought. Unfortunately, April, May and June were warmer and drier than average in most areas leading to worsening drought conditions across the state. A large storm system in mid-May and again in late June eased extreme drought conditions in the Blackfoot watershed and severe drought conditions in the west from Helena to Dillon. Unfortunately, the benefits of this event were regionally limited. The combination of deficits in April, May and June has left western and northern Montana much behind average and unlikely to catch up. Carbon, Big Horn, Stillwater and Yellowstone counties are the outliers receiving above average precipitation for this period. The widespread variability in

storm extent and precipitation this spring and early summer have complicated this assessment. For example, Helena had its fourth driest April on record followed by its fourth wettest May, followed by zero measurable precipitation in the first ten days in June, Helena's wettest month of the year.

By the end of June, abnormally dry (D0) to severe (D2) and isolated extreme D3 drought conditions have taken hold in western and north central Montana with conditions improving in the southeast. July, August and September are typically hot and dry months. Apart from locally significant summer rain showers, after July 15 Montana is unlikely to receive a season-changing weather event until September or October. Figure 3 shows current drought conditions as of June 24, 2025. Figure 4 shows the change in drought categories since October as compared with current conditions.

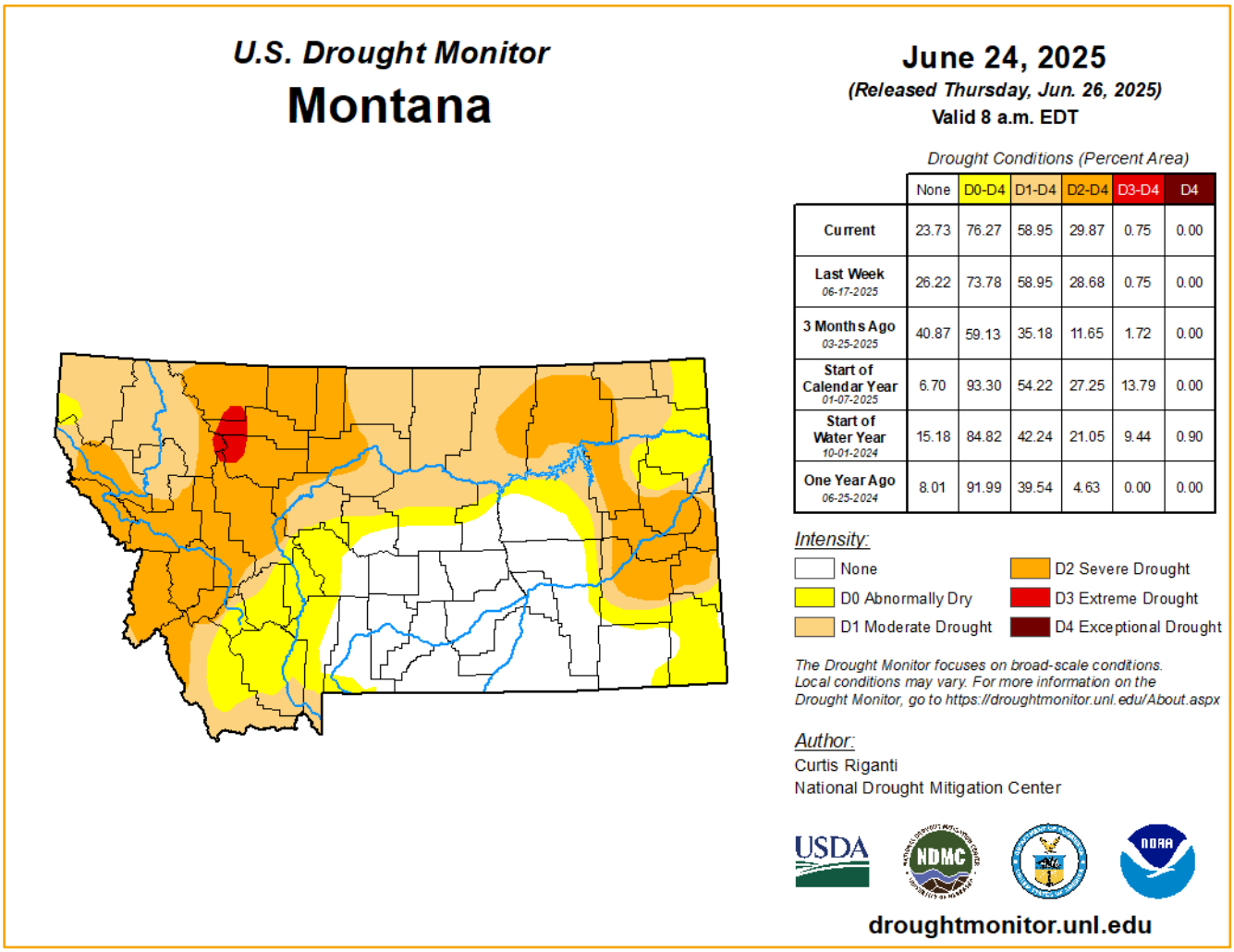


Figure 3 – Current Drought Categories

Exhibit 4

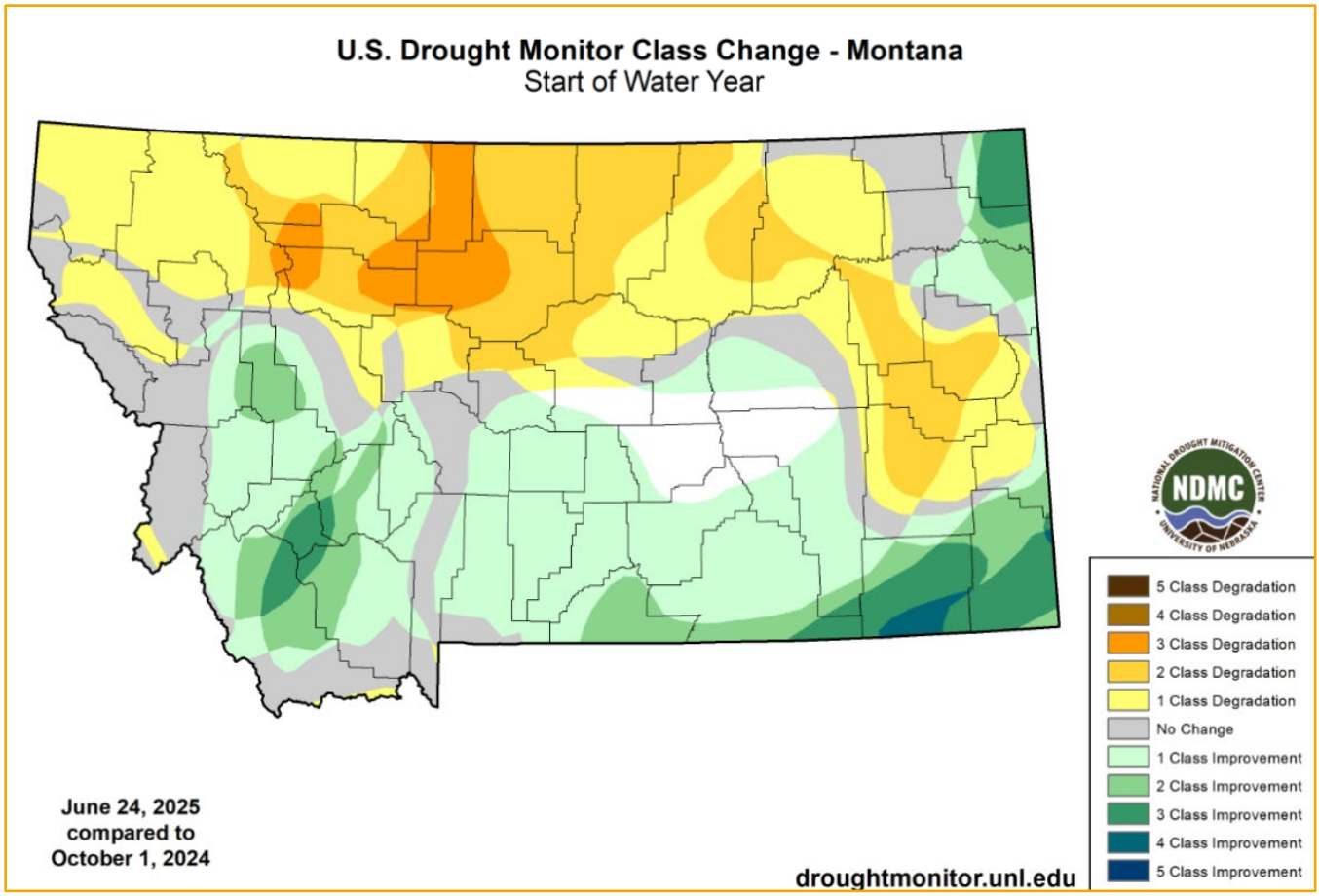


Figure 4 – Change in Drought Categories since the end of September 2024

Near-Term Drought Forecast

Late June to early July typically marks the end of Montana's high precipitation months with the onset of the hot and dry summer season. Above average temperatures in April and May quickly stripped the high elevation snowpack and increased evaporative demand, particularly in the northwest. Some basins like the Two Medicine, Teton, Marias, Sun and Dearborn watersheds lost snowpack even more quickly this year than 2024's record low.

The period from mid-May through the middle of June was exceptionally dry and warmer than average. The western half of Montana received only 25 to 50 percent of normal precipitation as shown in Figure 5. Dry soil and below average precipitation throughout June have all but assured the continuation of widespread drought across Montana this summer. With a July forecast trending hotter than average with below average precipitation, the probability for improved conditions in the next month is waning by the day. Approximately 59 percent of the state is currently in moderate to extreme drought and 15 percent indicate abnormally dry conditions at the onset of the dry season. With a high probability of above average temperatures and below average precipitation over the next three months, continued development of severe to extreme drought conditions during the summer and early fall is very likely.

Large areas of Montana have experienced nearly continuous drought since the spring of 2020. The extended depletions in these areas are expected to deepen this summer's drought and worsen impacts. Likely impacts include diminished forage and crop production, declining surface water

availability, increased grasshopper infestations, wildfire risk, health impacts due to excessive heat and smoke, reduced recreational opportunities due to forest and fishing closures among others. Montanans could experience a dry challenging summer.

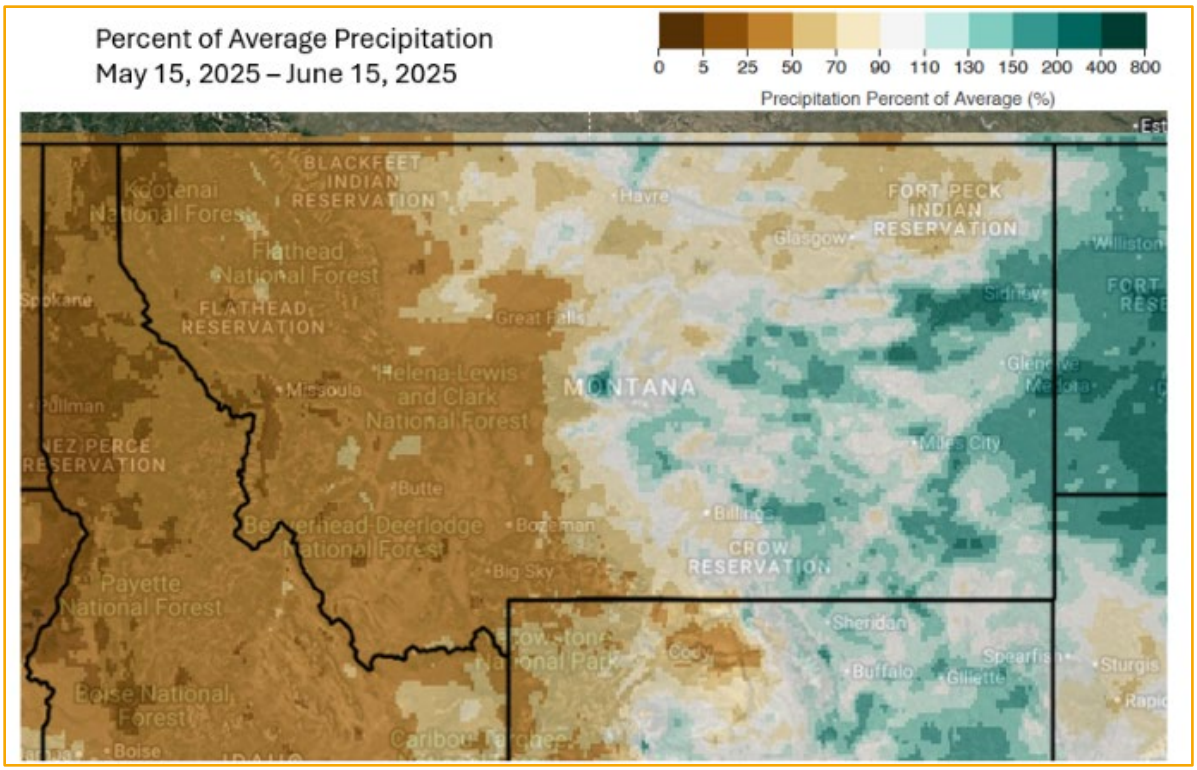


Figure 5 – Percent of Average Precipitation 5/15/25 – 6/15/25 **Generated by Climate Engine**

While the potential for significant summer precipitation diminishes in the coming weeks, regionally significant summer precipitation can materialize as late as mid-July. After that, summer precipitation is mostly limited to smaller storm cells which can be locally significant. The abundance or absence of summer rainstorms and the prevalence of daytime temperatures exceeding 90 degrees Fahrenheit will play an important role in determining the severity of drought conditions locally this summer. July and August are typically hot and dry in Montana, but late summer storms are important for sustaining crops, wildlife, stockwater ponds and for suppressing wildfires.

On June 19, Montana Fish Wildlife and Parks (FWP) instituted its first Hoot Owl Fishing Restriction of the season, restricting fishing between the hours of 2 p.m. to 12 a.m. on the Madison River between Hebgen Reservoir and the Yellowstone River National Park Boundary. Increasing summer temperatures and declining streamflows suggest additional management measures ahead. Stay up to date on current restrictions on FWP's website at: https://fwp.mt.gov/news/current-closures-restrictions/waterbody-closures

Last year's hot and dry summer and fall, average to below average winter, and below normal precipitation in April, May and June have resulted in diminished greenness as evidenced by the Vegetative Health Index (a satellite-based product) which shows a negative response statewide. While not as severe as in 2021 at this date, the indicator, in Figure 6, shows substantially diminished vegetative health on this date as compared with 2019, 2020, 2022, 2023. Figure 7 shows last year's reading on this date. Green to blue colors indicate a positive trend and yellow to pink colors indicate more compromised conditions.

Exhibit 4

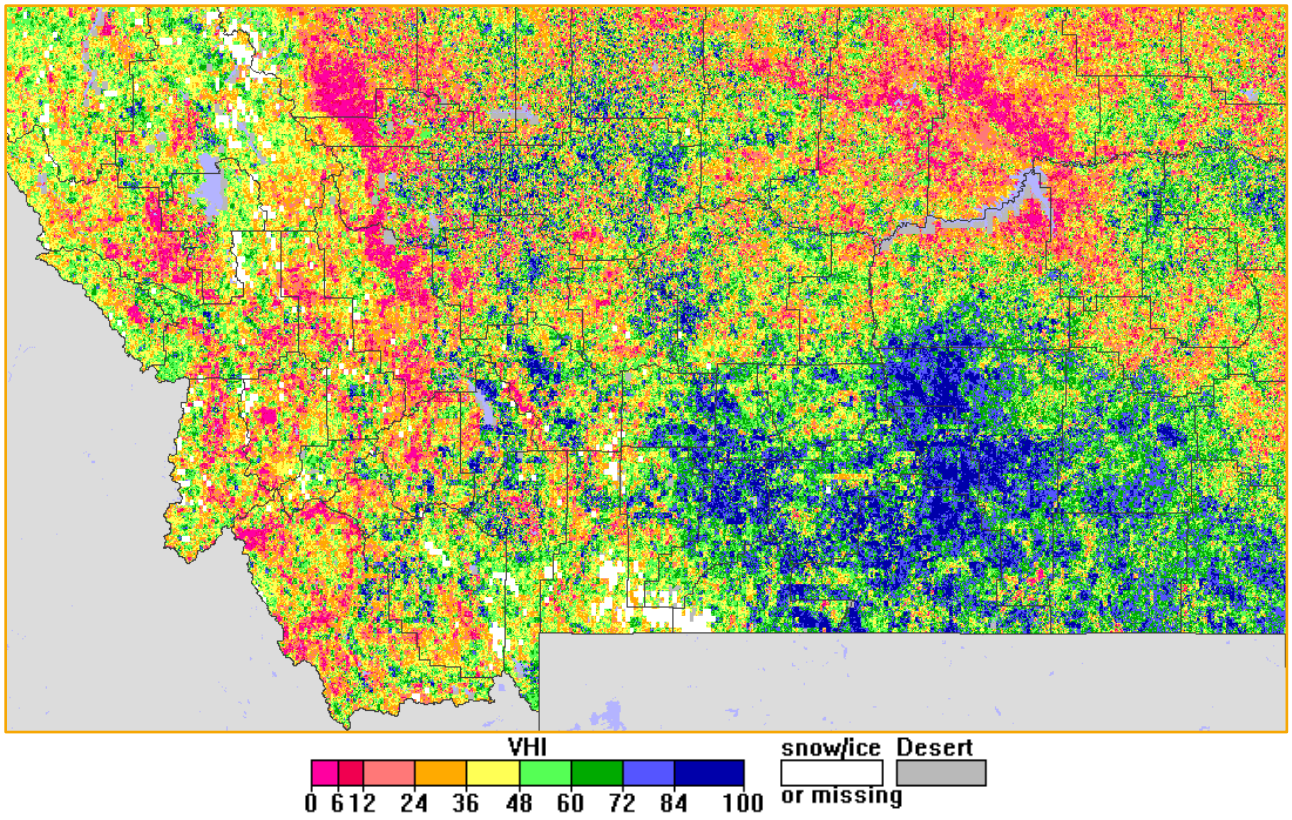


Figure 6 - Montana, Vegetative Health Index, week 24 – June 17, 2025 - Center for Satellite Applications and Research, NOAA

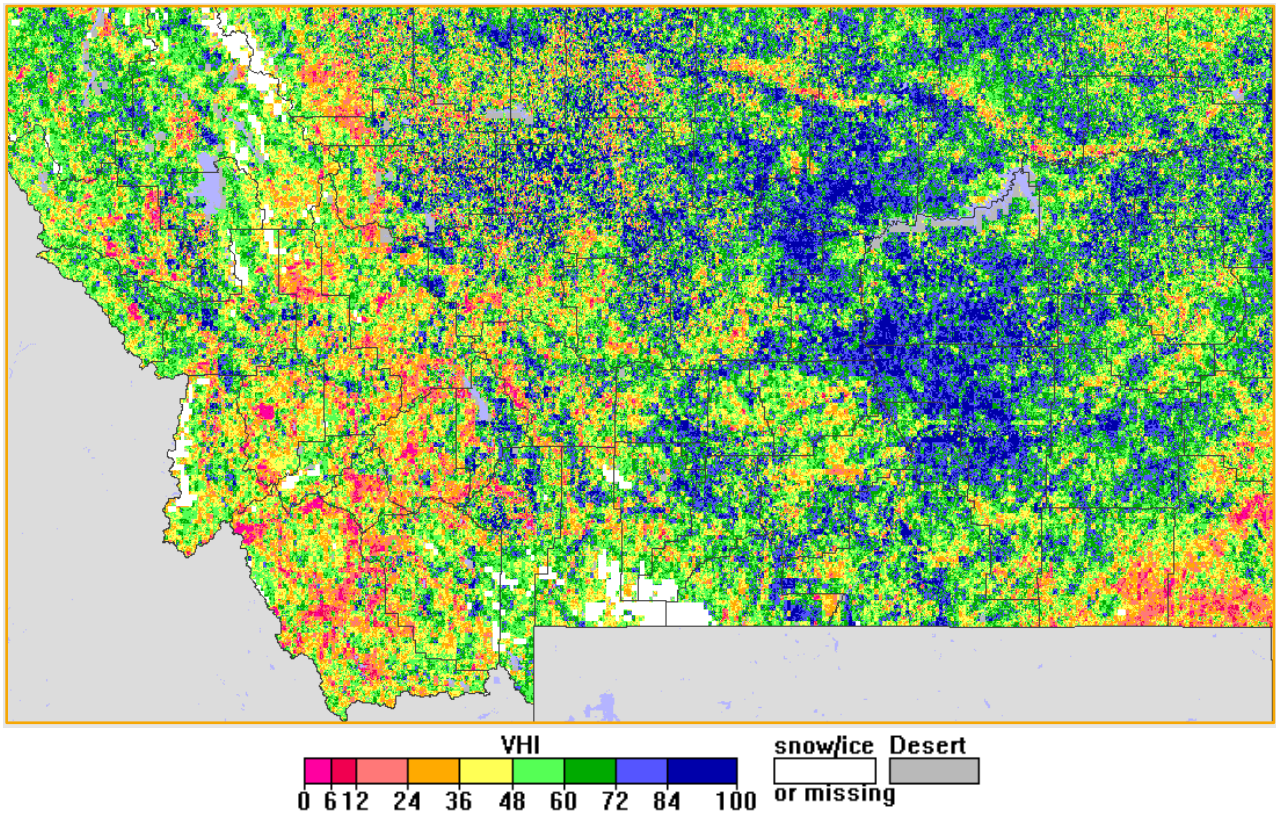


Figure 7 - Montana, Vegetative Health Index, week 24 – June 16, 2024 - Center for Satellite Applications and Research, NOAA

Exhibit 4

As we enter Montana's dry period, the drought outlook has degraded since spring. As shown in the map in Figure 8, drought is likely to persist in much of western, north central and eastern Montana with drought expanding in all areas except central Montana.

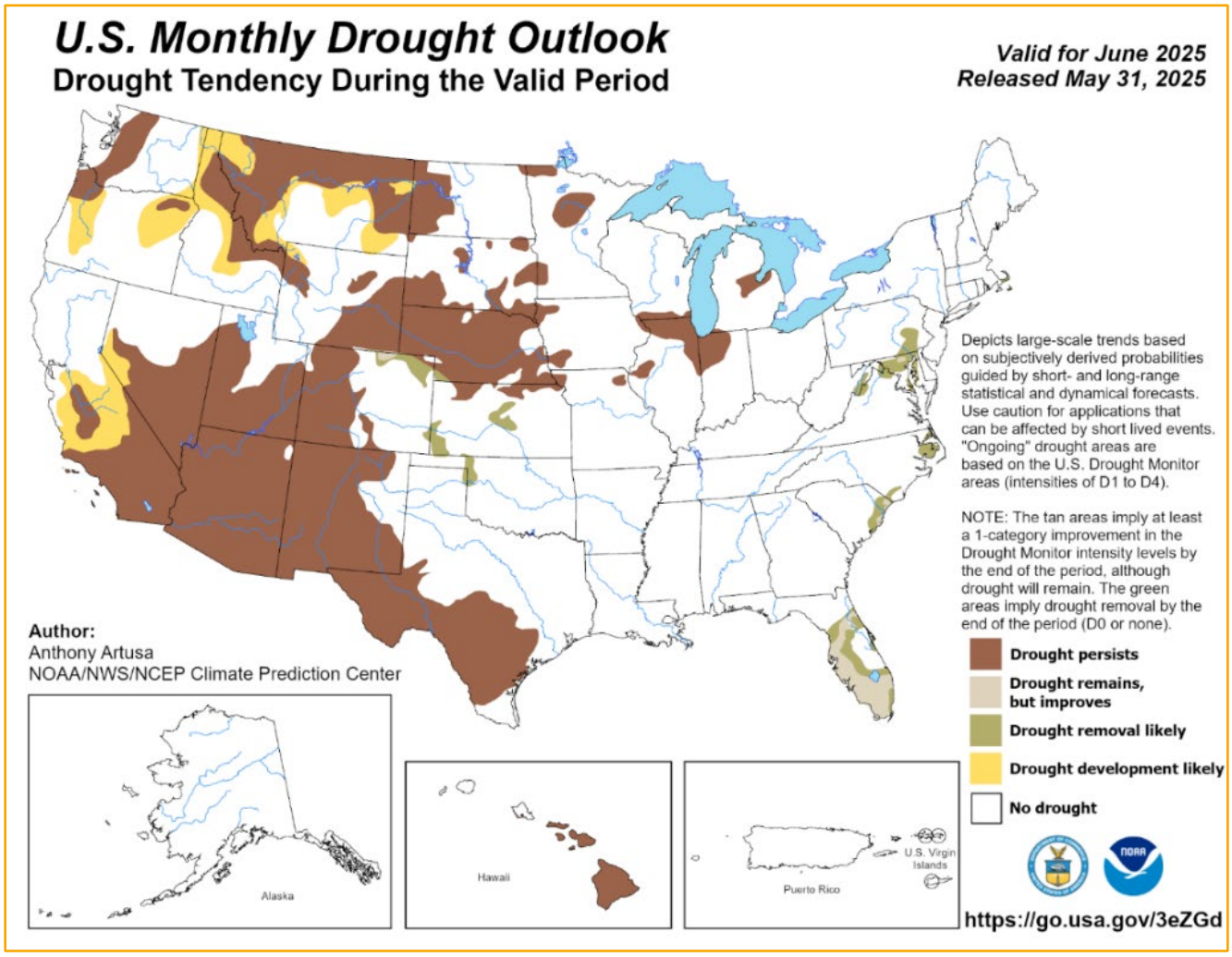


Figure 8 – U.S. Monthly Drought Outlook – Climate Prediction Center, NOAA

Exhibit 4

Spring Snowpack and Precipitation Overview

The June, Natural Resources Conservation Service (NRCS) Snow Survey Report offers a good summation of the conclusion of the season's snowpack. Several storms brought significant snow accumulations to the mountains in early May, although much of it melted as quickly as it arrived. Above average May temperatures led to earlier than normal snowmelt statewide. Snowpack percentages decreased from approximately 75 to –110 percent of median statewide on May 1 to around 50 to 70 percent of median on June 1. The Upper Missouri Basin near Helena and the Sun/Teton/Marias and Shields watersheds were completely melted out on June 1 with 0 percent of normal. By June 1, near normal snowpack was limited to the highest elevations in only a handful of watersheds. While the 2025 snowpack was substantially better than in 2024, only a few basins achieved peak snowpack this year and warmer temperatures in May resulted in an earlier melt-out than we have seen since 2021. The maps in Figures 9 and 10 show snow water equivalent on April 15 and June 1 as compared to the median for that day. The percentages displayed do not represent the snowpack percentage for the season.

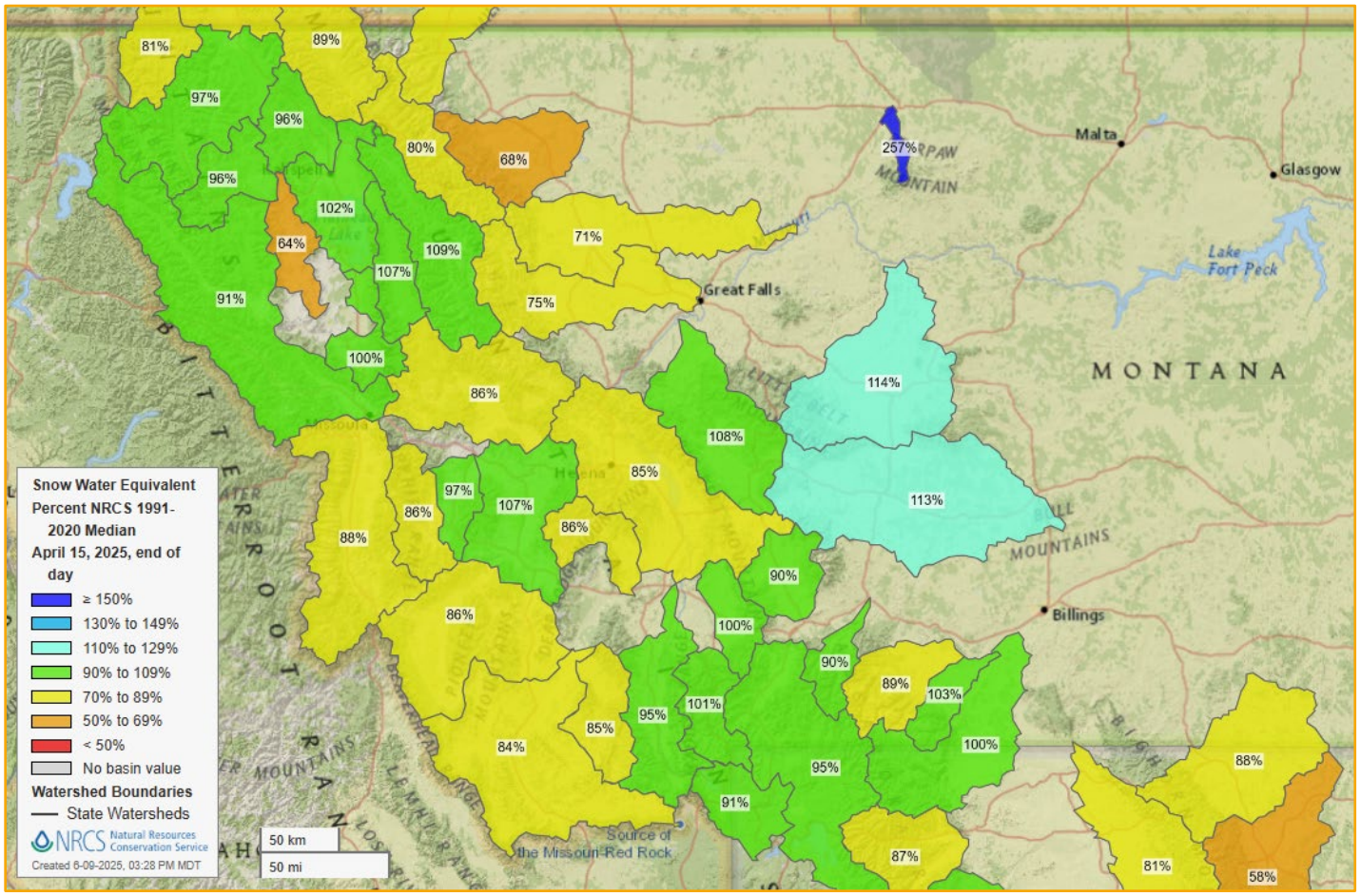


Figure 9 – Snow Water Equivalent as a percentage of median by basin on April 15, 2025, USDA – NRCS – Snow Survey Program

Exhibit 4

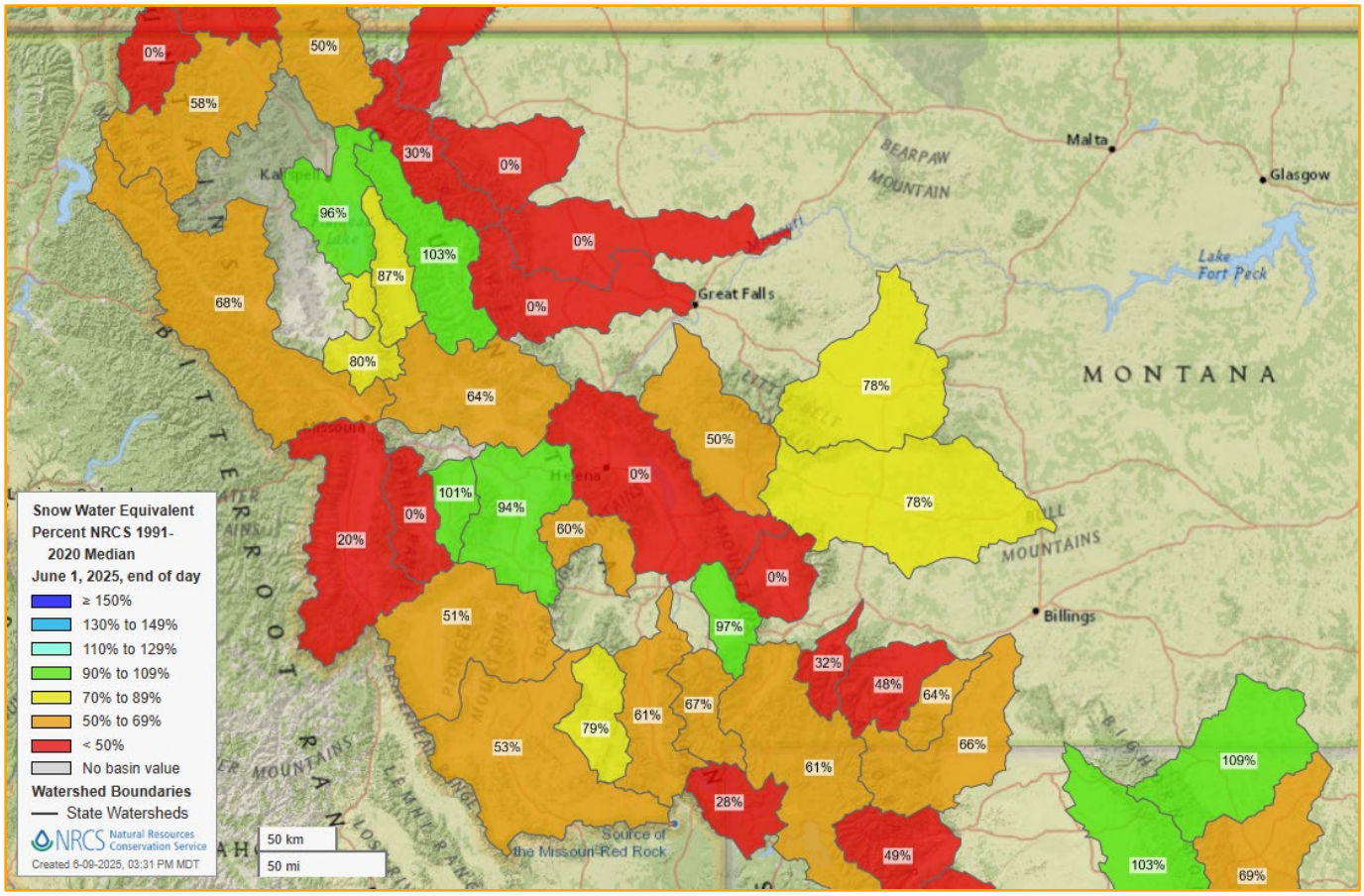


Figure 10 – Snow Water Equivalent as a percentage of median by basin on June 1, 2025, USDA – NRCS – Snow Survey Program

Streamflow (DNRC/USGS/Gaging Stations, USGS Water Watch, Missouri Basin River Forecast Center)

According to the NRCS, the water supply forecasts for June 1 fell at almost all forecast points in Montana and northern Wyoming compared to May 1. Warm temperatures accelerated snow melt leaving little snowpack to support streamflow later into the summer. Only the Little Bighorn River near Hardin remains forecasted above median due to higher-than-average May snowfall in the northern Bighorns. The Little Bighorn expects 120 percent of normal streamflow volumes in June and July. All other forecast points in the region are predicted to be near or below median. Forecast points around the Mission and Swan Ranges are the most likely to experience near normal stream flow with forecasts ranging from 89 to –95 percent of normal. However, the Flathead River, near Polson, will likely fall much below median streamflow due to low precipitation and snowpack totals along the headwaters of the North and Middle Forks of the Flathead. To the east of the continental divide, the Dearborn, Sun, Teton, Marias and Two Medicine drainages are all expected to produce extremely low runoff values with forecast points ranging from 30 to 50 percent of normal. The Yellowstone region ranges from 70 to –100 percent of median stream flow in June and July. Southwest Montana can expect a wide range of run-off values with the Blackfoot and Bitterroot rivers running particularly low and currently approaching 30 percent of the median. Figure 11 shows the 14-day average streamflow for June 25, 2025. The map indicates that the Teton, North Fork of the Sun, and Dearborn rivers were all at record low flows on that day.

Exhibit 4

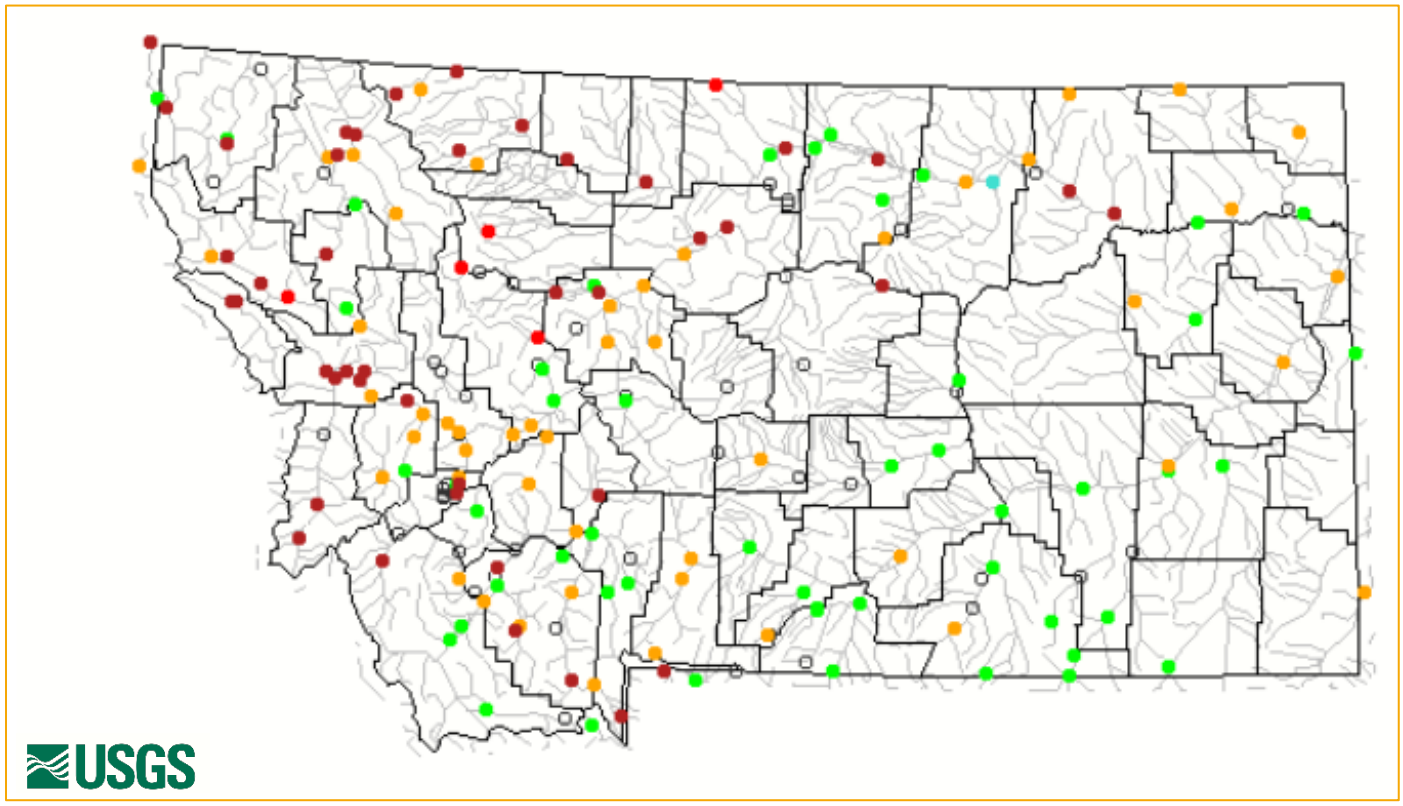


Figure 11 – 14-day average streamflow as compared to historical streamflow for Tuesday June 24, 2025, USGS, WaterWatch

Reservoirs (Bureau of Reclamation Reservoirs, State Reservoirs)

Water elevations at most state operated reservoirs across Montana are close to average for this time of year. Reservoirs in central Montana are currently above average while some in the west, like Nevada Creek, and Nilan reservoirs on the Rocky Mountain Front, are considerably below average. Some of the higher reservoir pools this spring are partly due to warmer than average temperatures in March and April, and early May that accelerated spring run-off. As we enter the fifth consecutive year of drought, water managers have become adept at shifting management strategies to accommodate uncertainties presented by a low water year amid an ongoing drought. This spring, dam tenders have been effective at retaining run-off in anticipation of diminished inflows due to last summer and fall's hot temperatures and diminished inflows.

The Bureau of Reclamation (USBOR) and Army Corps of Engineers (USACE) are actively managing large reservoir projects across the state. Hungry Horse, Lake Kootenai, and Flathead Lake should see improved inflows as compared to last year, but below average run-off of 70 to 75 percent is forecasted for the region. The Missouri headwaters and mainstem reservoirs are average to below average given the low snowpack and poor accumulations this spring. Despite the siphon failure on the St. Mary's diversion last summer, the mild winter along the Rocky Mountain Front enabled the United States Bureau of Reclamation (BOR) to make continued progress on those repairs through the winter. Barring unforeseen obstacles or setbacks, the BOR anticipates completing repairs by late July which would enable water transfers in 2025 to support the irrigation season in 2026.

Exhibit 4

Soil Moisture

Soil moisture indicators from satellite generated soil moisture maps and station data from Montana's Mesonet Soil Moisture Monitoring Network indicate diminishing soil moisture values in all but a handful of locations. Summer soil moisture values are heavily influenced by carry-over from last summer and fall, in addition to accumulations this spring. Not surprisingly, conditions in central Montana are the most promising with the western, northern and eastern regions of the state falling short to extremely short for this time of year. Last year's poor snowpack, a record hot and dry summer and fall have combined to leave large areas of Montana severely depleted of soil moisture as shown in Figure 12. Near surface soil moisture has improved somewhat since early June, but mid-depth levels remain compromised. The Mesonet network is still in the early stages of build-out, and many stations have less than five years of monitoring data. This shorter period of record means those sites are less reliable as indicators of average soil moisture but are useful as near-term indicators of changes in soil moisture due to factors such as recent precipitation and the impacts of evaporation from wind, temperature and plant transpiration. Upon completion in 2027 the Montana Mesonet Network will host the densest collection of soil moisture monitoring stations anywhere in the world.

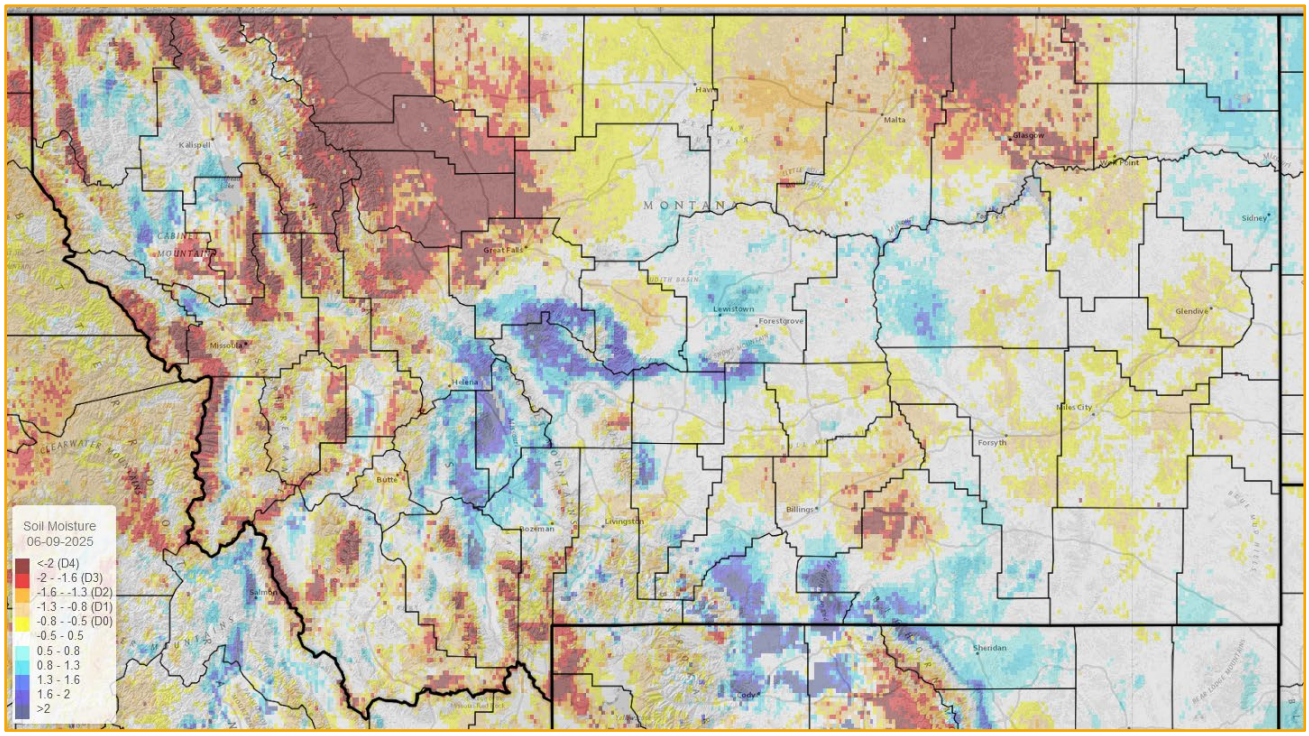


Figure 12 – SPoRT Soil Moisture Model – 6/9/25 **UMRB Drought Indicators Dashboard - MT Climate Office**

Seasonal Drought Outlook

Extreme variability in temperature, precipitation accumulation, and spatial extent over the last 12 months have diminished Montana's water supply and increased the severity of drought as we enter the summer season. This variability coupled with four years of above average temperatures and below average precipitation in many locations has resulted in drought conditions that vary from abnormally dry (D0) to extremely dry (D3) statewide. While conditions improved considerably across central Montana in 2024 and 2025, the onset of drought conditions in western, north central, and eastern Montana started earlier than usual this year due to multi-year precipitation deficits and highly variable winter temperatures that depleted the low and mid-elevation snowpack. Looking ahead, record high

temperatures and much below average precipitation last fall may prove critical as the impacts of depleted soil moisture and diminished shallow aquifers have reduced the water supply and suppressed forage and crop growth. These short-term deficits are compounded by long-term shortages as Montana enters its fifth consecutive year of drought. Below average precipitation in April, May and June has assured the onset and continuation of severe to extreme drought in western, north central and northeast regions of Montana. As Montana enters the dry summer period, temperature becomes the primary variable affecting drought severity. Current forecasts indicate a 50 to 60 percent chance of above normal temperatures through August.

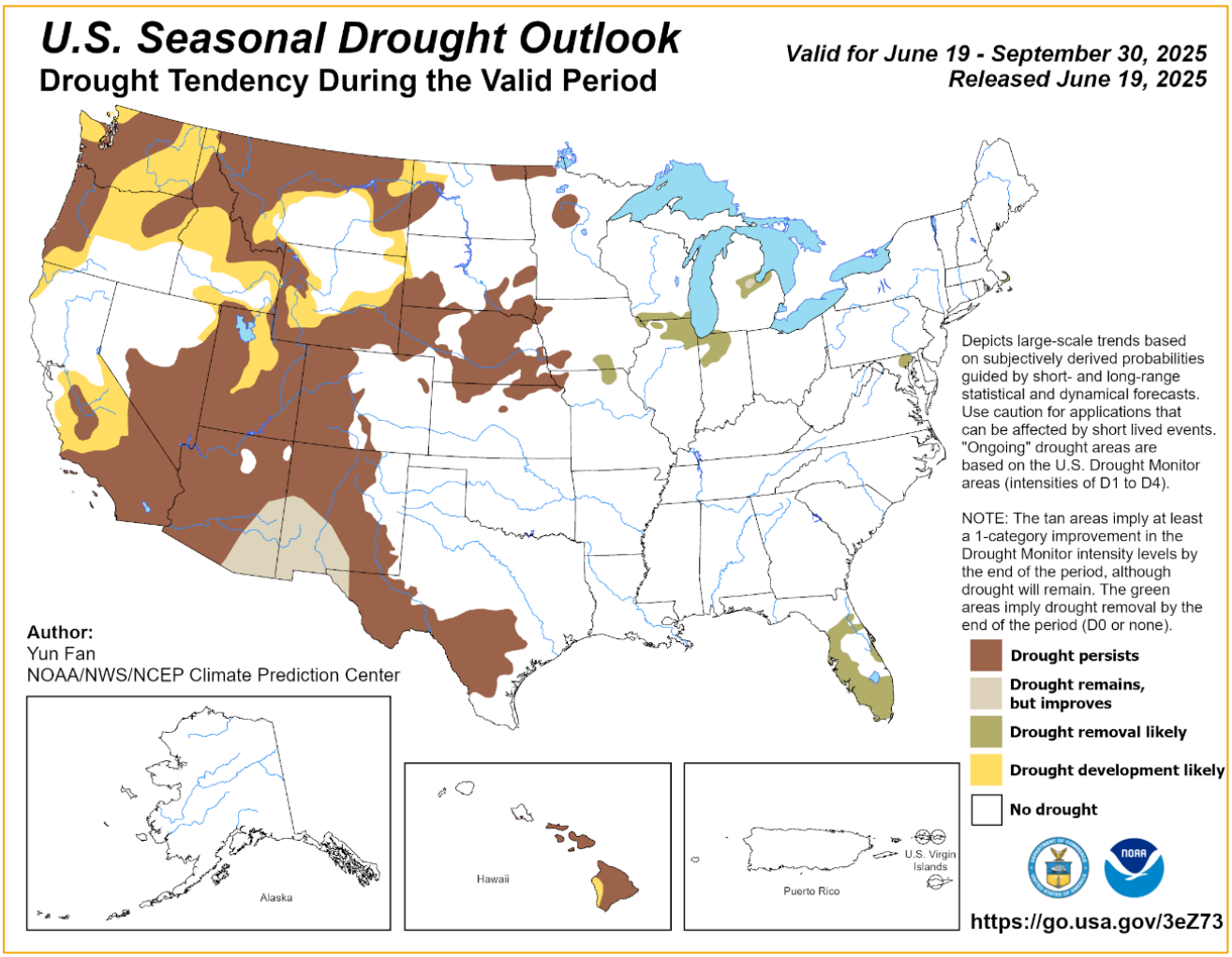


Figure 13 – Seasonal Drought Outlook June 19 – September 30 **Climate Prediction Center-NOAA**

Long-term Forecast

Climate Prediction Center's monthly weather forecast for July indicates a 50 to 70 percent chance for above average temperatures and a 50 to 70 percent chance for below normal precipitation. The three-month outlook also indicates probabilities for above average temperatures and below average precipitation across most of Montana. The three-month outlook offers a 40 to 60 percent chance for above normal temperatures across Montana this summer. The long-term precipitation forecast indicates a 40 to 50 percent chance for below average precipitation. This forecast is a slight improvement over guidance issued on May 31, 2025, that indicated a chance of even drier conditions in north central Montana.

Exhibit 4

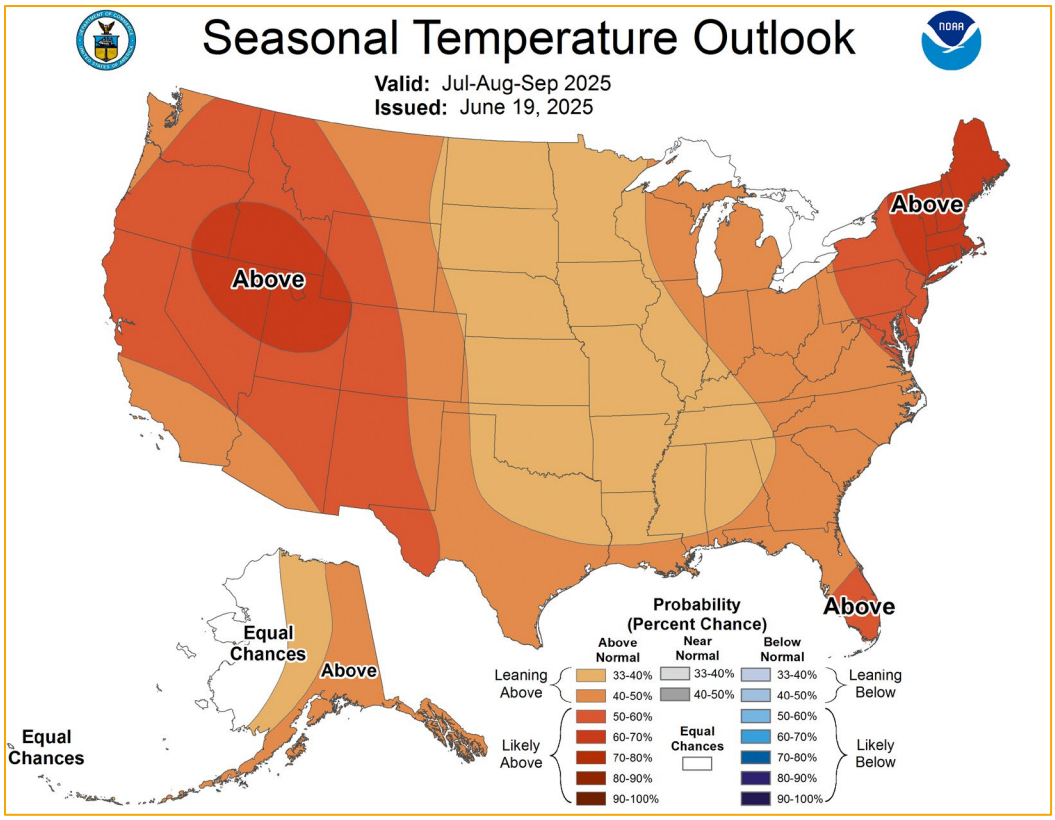


Figure 14 – Seasonal Temperature Outlook July 1 – August 31 Climate Prediction Center, NOAA

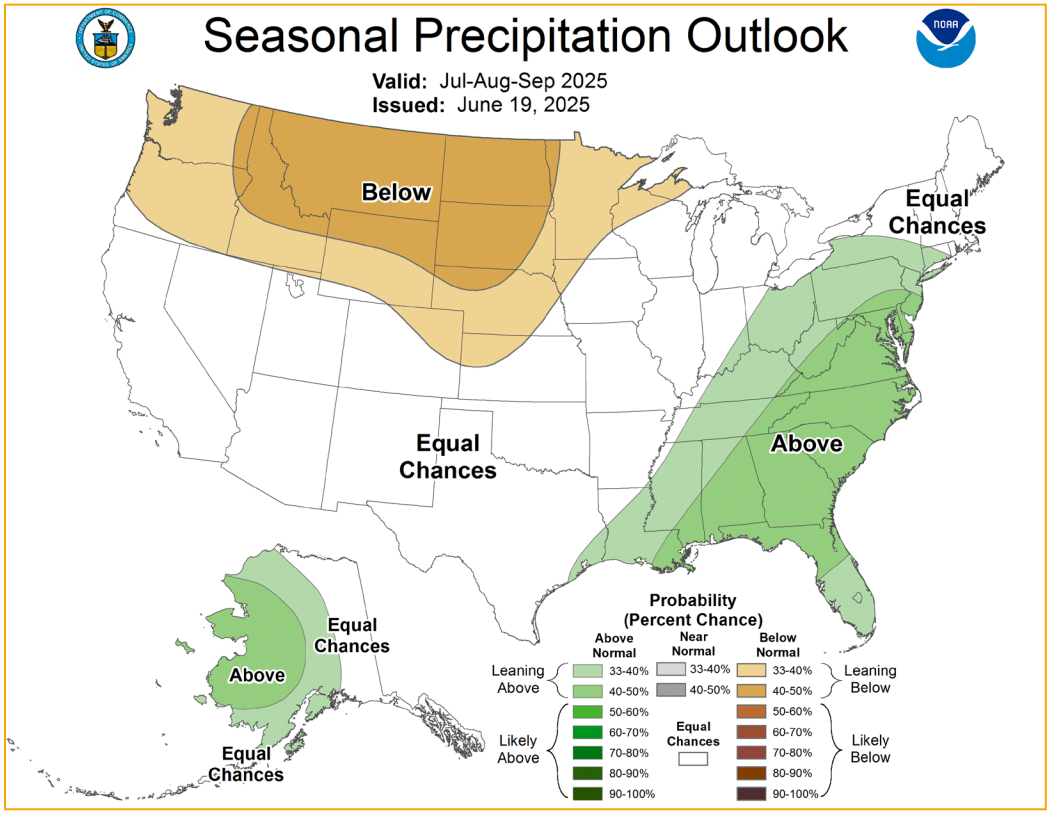


Figure 15 – Seasonal Precipitation Outlook July 1 – August 31 Climate Prediction Center, NOAA

Exhibit 4

Wildfire Outlook

The combination of multi-year drought, below average precipitation in April, May and June and a weather forecast for hot and dry conditions has resulted in above normal wildfire potential for Montana this summer. This area is forecasted to expand in August and September across all the Northwest, the northern Great Basin, much of Idaho and nearly all of Montana.

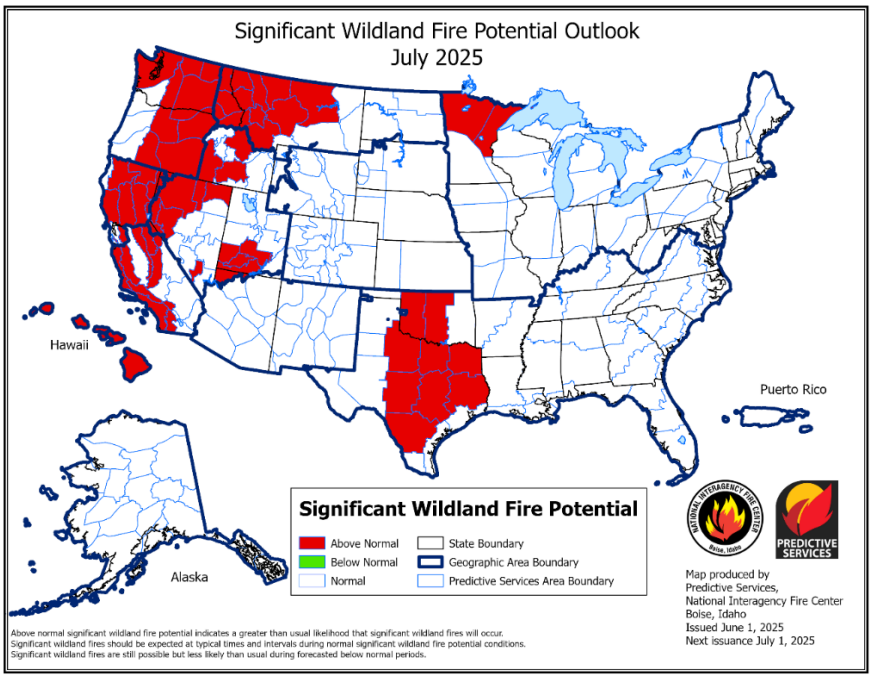


Figure 16 – Significant Wildland Fire Potential Outlook, July National Interagency Fire Center

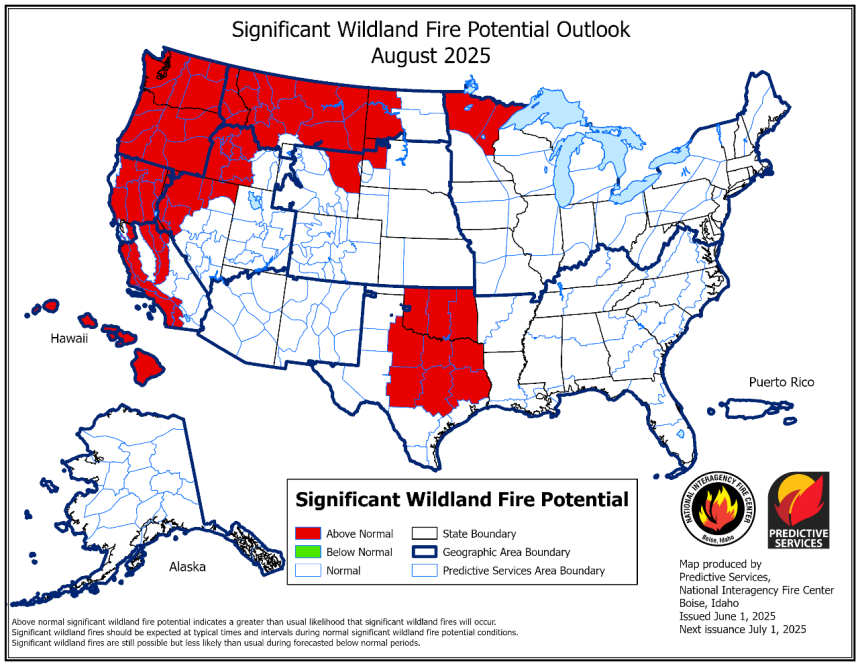


Figure 17 – Significant Wildland Fire Potential Outlook, August, National Interagency Fire Center

Exhibit 4

USDA Drought Disaster Declarations:

The secretarial natural disaster designation allows the United States Department of Agriculture (USDA) Farm Service Agency (FSA) to extend much-needed emergency assistance to producers recovering from natural disasters through emergency loans and other aid. Assistance can be used to meet various recovery needs including the replacement of essential items such as equipment or livestock, reorganization of a farming operation, or to refinance certain debts. Producers should contact their local FSA representative for more information.

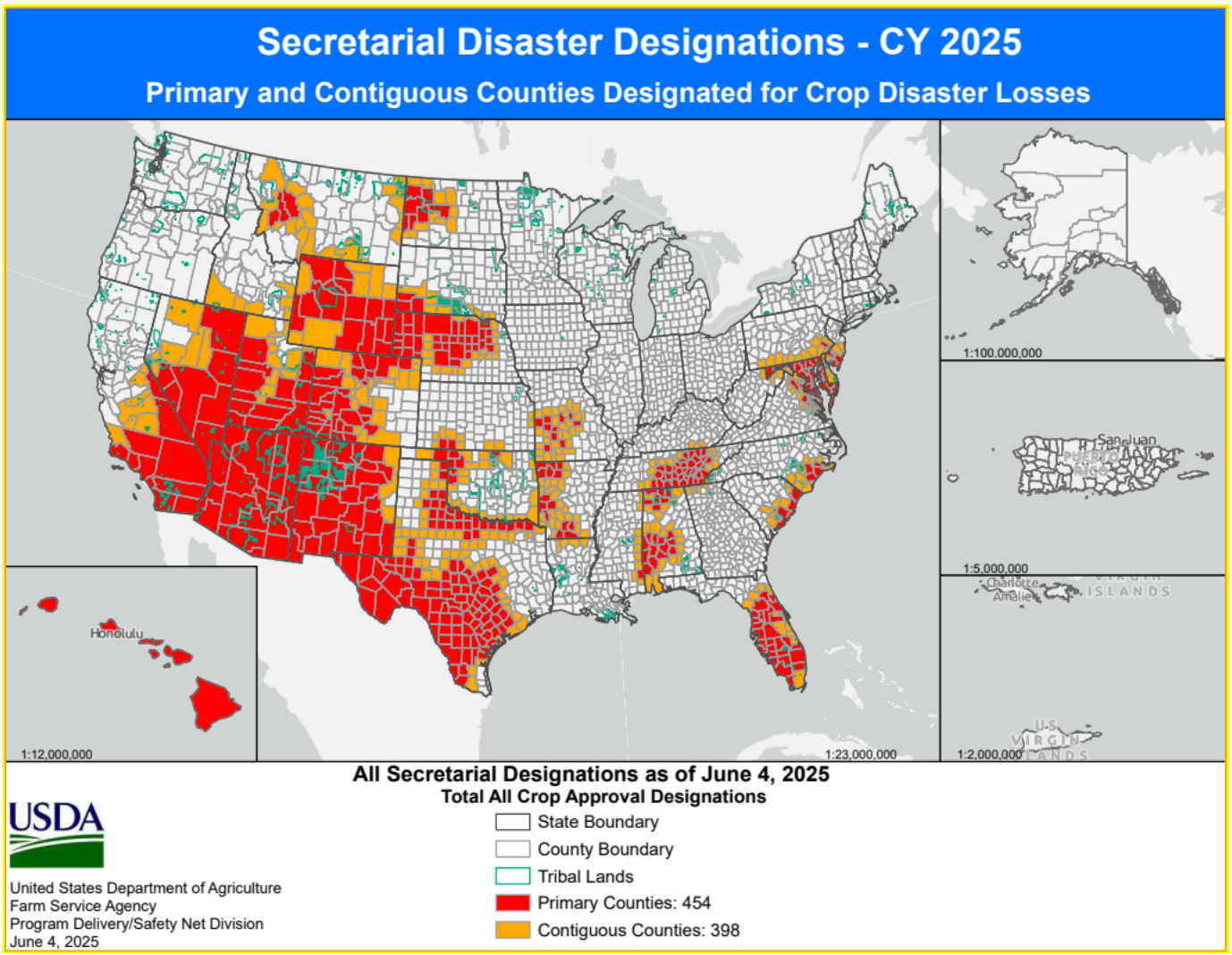


Figure 18 – Drought Disaster Declarations as of June 4, 2025. **Farm Services Agency, USDA**

Montana counties designated as a drought disaster area for Crop Year 2025 as of June 4, 2025. Primary: Granite, Powell and Lewis and Clark.

Secondary: Big Horn, Broadwater, Carbon, Cascade, Deer Lodge, Fallon, Flathead, Gallatin, Jefferson, Meagher, Missoula, Park, Ravalli, Richland, Roosevelt, Sheridan, Teton and Wibaux.

Exhibit 4

Drought Evaluation Tools and Resources

The following resources provide useful tools that DNRC and their partners use to evaluate drought and water supply conditions on a weekly basis across Montana.

- Upper Missouri River Drought Indicators Dashboard
- Montana Drought Impacts Reporter
- NRCS Interactive Precipitation Portal
- NOAA/Climate-At-A-Glance
- USGS Water Watch Dashboard
- Montana Mesonet Dashboard

The DNRC has compiled this Summer Water Supply and Drought Outlook on behalf of the Montana Drought and Water Supply Advisory Committee (DWSAC). This report provides a synopsis of statewide conditions gleaned from multiple sources and offers links to additional resources with more in-depth information.

In partnership with other state and federal agencies and Tribes, experts in climate science, snowpack, streamflow and weather information collect and evaluate drought and water supply data on a weekly basis year-round. This information is distilled into weekly recommendations to the U.S. Drought Monitor which tracks drought conditions nationally. Much of the information contained in this report comes from the Montana Climate Office, NRCS Water Supply Outlook Reports, U.S. Drought Monitor, Climate Prediction Center, National Integrated Drought Information System and others. Please contact Michael Downey, at DNRC (mdowney2@mt.gov) if you have any questions or feedback about any of the information contained in this report.

This report would not be possible without the ongoing participation and contributions of our local, university, state, Tribal and federal partners, some of which are listed below:

This report was developed by DNRC on behalf of the Drought & Water Supply Advisory Committee pursuant to MCA 2-15-3308(5).