COLORADO
Division of Water Resources
Department of Natural Resources
Water Division 6 - Main Office

MEMORANDUM

To: Kevin Rein, State Engineer
From: Erin Light, Division Engineer Water Division 6
Date: March 17, 2021

Subject: Designation of Yampa River as Over-Appropriated

I am writing this letter to request that you designate the Yampa River Basin and all of its tributaries upstream of its confluence with the Little Snake River as over-appropriated. Below is my report that provides a description of the basin, hydrographic records, and the history of water administration. The information provided in the report is consistent with the Division of Water Resources' Internal Guidelines for Designation of Stream Systems as Over-Appropriated dated May 8, 2013 (Guidelines).

The effect of this designation will be that exempt well permits will no longer be issued under section 37-92-602(3)(b)(I), C.R.S., under a finding of no material injury, and can only be issued under section 37-92-602(3)(b)(II)(A), C.R.S., the application of which is limited to certain circumstances . If a permit is sought for uses and in circumstances beyond those provided for in 37-92-602(3)(b)(II)(A), a permit may be issued pursuant to 37-90-137(2) which, based on a finding of water not being available for appropriation and the potential for material injury, triggers the need for an augmentation plan designed to replace depletions associated with the use of water from the well.

In September 2018, pursuant to section 37-92-502(2)(a), C.R.S., I determined as the Division Engineer that conditions on the Yampa River required the setting of a call in order to curtail undecreed and junior uses to satisfy the senior water right at the Lily Park Ditch No. 1 Pump Station No. 1 (referred to herein as Lily Park Pump Station No. 1). Conditions on the Yampa River in 2020 resulted in a call again being set at the same location. The combination of continued diversions by senior water rights and recent appropriations, along with recent climatic conditions, indicates a strong potential that the mainstem of the Yampa River could go on call again. Therefore, the mainstem of the Yampa River appears to satisfy the criteria for an over-appropriated stream as defined in the Guidelines. An over-appropriated stream system is one in which at some or all times of the year, the water supplies of said stream system are insufficient to satisfy all the decreed water rights within that system. I believe it is our duty and responsibility to ensure that we protect senior water right holders from new appropriations that

cannot be instantaneously curtailed to meet the needs of water right holders, most particularly through the development of wells.

Between January 1, 2011 and January 1, 2021, there have been 53 general purpose, 12 gravel pit, and 345 residential well permits issued within water districts 44 and 57. Since January 1, 2018 (the year I first administered a call on this reach of the river), there have been 3 general purpose and 43 residential well permits issued within these two Districts. Water districts 44 and 57 will be most affected by the change in well permitting. Practically all of water district 58 is already considered over-appropriated.

Per the Guidelines, notification of a stream system being designated as over-appropriated will be provided to all subscribers to the Substitute Water Supply Plan Notification List for the division in which the stream system is located. I may also provide notice in other manners if I determine such notice is warranted. This notification will be provided at least 30 days before the designation takes effect. For this particular request, however, I recommend I provide notification now prior to your decision and allow for comments to be received from the public. Once you and I have had the opportunity to review the comments, you can then further consider my recommendation.

COLORADO
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Request for Designation of Stream as Over-Appropriated

Stream Name
Yampa River

Description of Basin
The basin for which the designation is requested is the drainage basin upstream of the confluence of the Yampa and Little Snake Rivers, which is located at UTM coordinates of approximately 207111mE and 4483807mN (NAD 83). The calling structure on the Yampa River in 2018 and 2020 was the Lily ParkPump Station No. 1 (4400687). This structure is located immediately upstream of the confluence of the Yampa and Little Snake Rivers and there are no structures or water rights located between the Lily Park Pump Station No. 1 and this confluence. Figure 1 below shows the location of the Lily Park Pump Station No. 1 in relation to the Yampa River and Little Snake River confluence and Figure 2 shows the area that would be changed from a status of not over-appropriated (referred to as non-critical in Figure 2), to over-appropriated as shown in yellow.

Figure 1 - Location of Lily Park Pump Station No. 1 in relation to confluence with Little Snake River

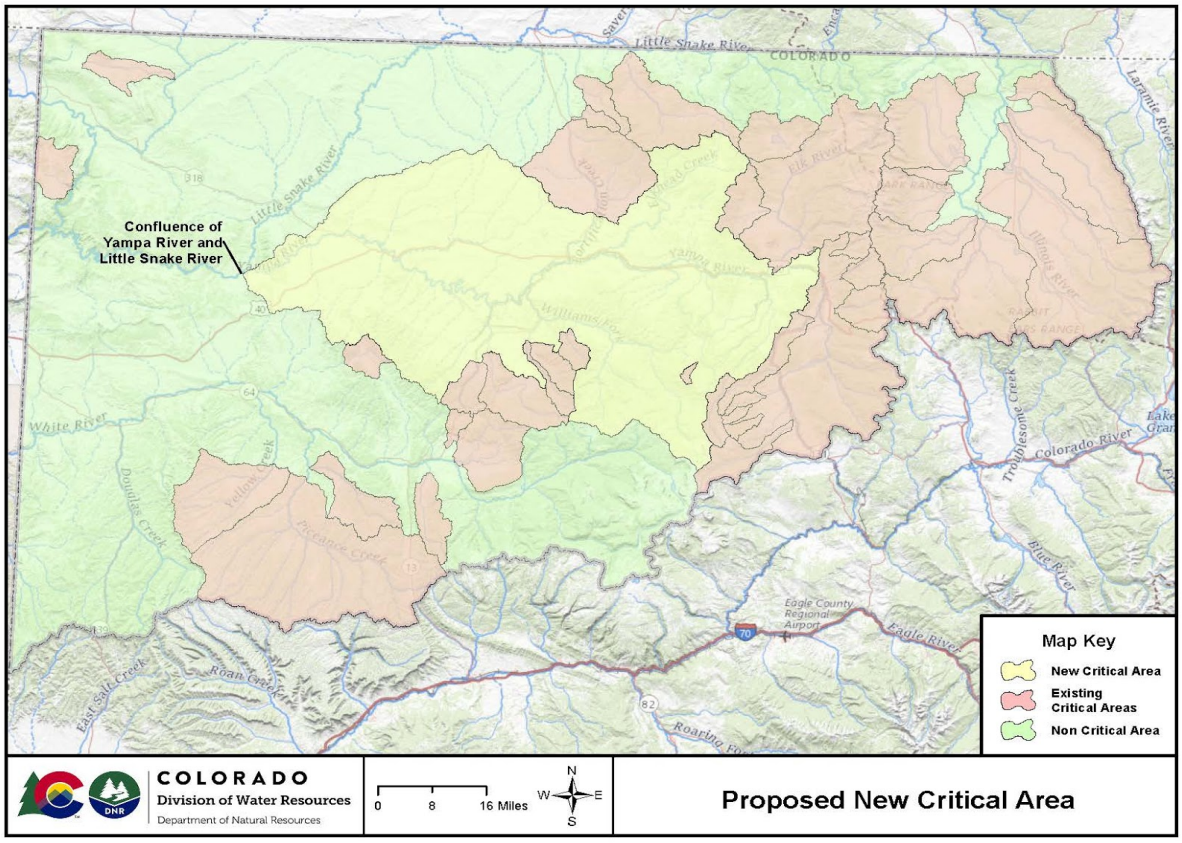


Figure 2 - Area being considered for designation as over-appropriated

There may be administrative circumstances that would result in a call by a structure upstream of the Lily Park Pump Station No. 1 and it is unlikely there would be administrative circumstances that would result in a call from a point downstream of this structure. There are five active structures located downstream of Lily Park Pump Station No. 1. These structures and associated water right information is provided below:

Structure Name	Water Right Adj. Date	Decreed Amount (cfs)	Status
Reds Folly #2	12/31/1995	0.033	Active with no records maintained
Reds Folly #4	12/31/1995	0.033	Active with no records maintained
Haystack Pump*	12/31/1982	6.7	Active with records maintained
Studebaker Pump	12/31/1982	2.0	Active with records maintained
Turner Pivot	Unadjudicated	N/A	Active with records maintained

* - On 2020 Abandonment List for 4.15 cfs.

Introduction

In the past 20 years, the Yampa River has experienced four years of extreme drought. Those years were 2002, 2012, 2018 and 2020. The degree of each drought varied and what occurred in each of those years is described below.

In 2002, the Yampa River neared hydrologic/administrative conditions where its first call could have occurred at either the Maybell Canal or Lily Park structures (Lily Park Ditch No. 1, Lily Park Ditch No. 1 Pump Station No. 1 and Lily Park Ditch No. 1 Pump Station No. 2). However, communication between the water commissioner and upstream water users, including with Tri-State Generation and Transmission (Tri-State), resulted in water users electing to reduce diversions. In the case of Tri-State, water was released from Stagecoach Reservoir and Elkhead Creek Reservoir for their use. These actions provided enough water to the Maybell Canal to avoid a call at this structure. Additionally, the flows got so low at the Lily Park structures that they had to cease their diversions or risk damaging their pumps; and though the owner of these structures and the associated water rights could have placed a call to satisfy their water rights, they opted to not pursue this. As reported in the 2002 Division Engineer's annual report:

> *In July, the Division of Wildlife and the City of Steamboat Springs requested the public to voluntarily stop any use of the Yampa River through Steamboat Springs, and cease all fishing activity from the outlet of Stagecoach Reservoir down to the confluence with the Elk River*

below Steamboat Springs. This voluntary closure lasted into August. During this time, flows in the river in Steamboat got as low as 17.0 cfs in the middle of July. At this critical time, the Upper Yampa Water Conservancy District began to release water from Stagecoach Reservoir to help the conditions in the river. These voluntary releases continued until contract holders called for reservoir releases.

During the latter part of the summer, stream flows became so low that the power station in Craig was unable to obtain sufficient water from the native flow in the Yampa River to satisfy their needs. On July 12, releases began from Elkhead Creek Reservoir to insure that adequate water was available to the Craig Station pumping plant. These releases continued until July 24. As late summer river flows continued to drop, the Craig Station again began releases from Elkhead Creek Reservoir in the middle of August. Additional releases were also made from Stagecoach Reservoir to supplement the Elkhead Creek Reservoir releases. These releases continued until September 18, when rain in the basin increased the native river flows.

During this period of [Stagecoach] reservoir releases, our office monitored conditions on the river to ensure delivery of the storage water to the power plant. As the native flows in the Yampa River decreased during the later part of August, it became apparent that the reservoir water was not reaching the owner's diversion structure. Transit losses were much higher than expected and ditches on the mainstem were continuing to divert as much water as they could given the extreme drought conditions. On August 30, Excel Energy started releasing water from Steamboat Lake to provide an adequate supply of water to their Hayden Power Station. Shortly thereafter, on September 5, the Division 6 staff started curtailing diversions on the mainstem of the Yampa River between the reservoirs releasing water and the Craig Power Plant. The curtailment insured the delivery of the water released from storage. While there was no formal call for administration on the river, the only way to deliver the reservoir water was to limit diversions to the amount of available native flow. The curtailment remained in effect until September 18, when reservoir releases ceased.

In 2006, the enlargement of Elkhead Creek Reservoir was completed and in the spring of 2007 Elkhead Creek Reservoir filled to its new enlargement capacity. Five thousand acre-feet of the water stored in the enlargement is dedicated to the recovery of endangered fish, with an option to lease an additional two thousand acre-feet for this purpose. Water was first released from the reservoir for in-river fish habitat and flow maintenance and enhancement in 2007 and has been released for such purpose every year since, with the Division Engineer protecting such flows every year with the exception of two years.

This is important when considering this designation because these releases change how water administration looks on the Yampa River. Absent these releases a water user requesting that a call be placed would have been required to sweep the river; now they cannot sweep the stream at times when water is released from Elkhead Creek Reservoir that must be protected to and through the endangered fish critical habitat reach.

In 2012, once again, the Yampa River through the City of Steamboat Springs was closed to recreational use despite a substantial amount of water introduced into the system from Stagecoach Reservoir (913 AF in July, 2409 AF in August and 1043 AF in September all for non-consumptive purposes).

For a short portion of time in 2018, there was no water flowing past the Lily Park Pump Station No. 1. The owner of the water right had pushed up a gravel dam to allow for the diversion of his water right even though there was no native water available in the river. Incidentally, during this time, Elkhead Creek Reservoir water was being released for the recovery of the endangered fish through a reach upstream of the Lily Park structures and below. Accordingly, the Division Engineer was to

protect those releases by shepherding them past diversions upstream of and past the Lily Park structures to keep the water in the river.

One thing to take particular note of when looking at the hydrology and graphs below, is that the stream between the Lily Park Pump Station No. 1 and the Yampa River at Deerlodge Park gaging station (Deerlodge gage) is a gaining stream. This became very evident in 2018 when the river was dry below the gravel dam at the Lily Park Pump Station No. 1 but was running over 30 cfs at the Deerlodge gage located approximately 5 miles below the gravel dam.

Yampa River below Lily Park Pump Station No. 1

In 2020, similar conditions on the Yampa River mainstem resulted in the Division Engineer setting a call for a second time. In this instance, the Division Engineer set the call before the Yampa River below Lily Park Pump Station No. 1 gravel dam had gone dry, yet there was no natural flow in the Yampa River; rather only a portion of the Elkhead Creek Reservoir water that had been released was in the River.

Water Right Information

There are thousands of decreed water rights within the Yampa River Basin. The absolute surface water rights decreed within the basin upstream of the confluence with the Little Snake River total approximately 5,600 cfs. The absolute surface water rights within the entire basin including the Little Snake River total approximately 6,600 cfs. These numbers do not include water rights decreed for a non-consumptive purpose such as hydropower and instream flow. In addition to this, there are many absolute water storage rights, which total approximately 145,500 AF and 147,700 AF, respectively. Flows in the Yampa River drop considerably during the months of June and July. Historic average flows in the Yampa River at the Yampa River near Maybell gage station (Maybell gage) drop from approximately 560 cfs to 230 cfs through the month of August and range between 200 cfs and 290 cfs in September; while historic average flows in the Yampa River at the Deerlodge gage drop from approximately 670 cfs to 270 cfs through the month of August and range between 230 cfs and 500 cfs in September. These flows are considerably lower than the total decreed surface water rights.

In addition to the already decreed water rights, new appropriations are decreed every year. In fact, over the last ten years, there have been approximately 70 water court applications filed on average each year in Division 6. The majority of the cases are associated with water rights located in the Yampa River Basin. In the last ten years, there have been just over 200 water right applications for one or, more commonly, multiple new surface, underground and storage rights filed. The remaining applications are for change of water rights, findings of diligence, to make absolute, appropriative rights of exchange and plans for augmentation.

Hydrographic Information

The following evaluation of the hydrologic records is based on flows at the Maybell gage, which is located just downstream of the Maybell Canal and upstream of the Lily Park Pump Station No. 1, and the Deerlodge gage, which is located downstream of the Lily Park Pump Station No. 1 and the confluence of the Little Snake River.

As stated above, water was first released from Elkhead Creek Reservoir for the recovery of the endangered fish in 2007. Between 2007 and 2017, the Division Engineer assessed a transit loss of 0.5% per mile to the water released from this reservoir as well as water released from Stagecoach Reservoir. Owners of and contractees for water in Elkhead Creek Reservoir and Stagecoach Reservoir expressed concerns that 0.5% per mile was too high, which after shepherding Elkhead Creek Reservoir water for many years, the Division Engineer agreed with. Consequently, in 2018 and 2019, a transit loss of 0.1% per mile was assessed. After a detailed evaluation by the CWCB in concert with

DWR, in the fall of 2019 and spring of 2020, it was determined that the appropriate loss to assess from 2020 going forward is 0.16% per mile.

Summer 2002

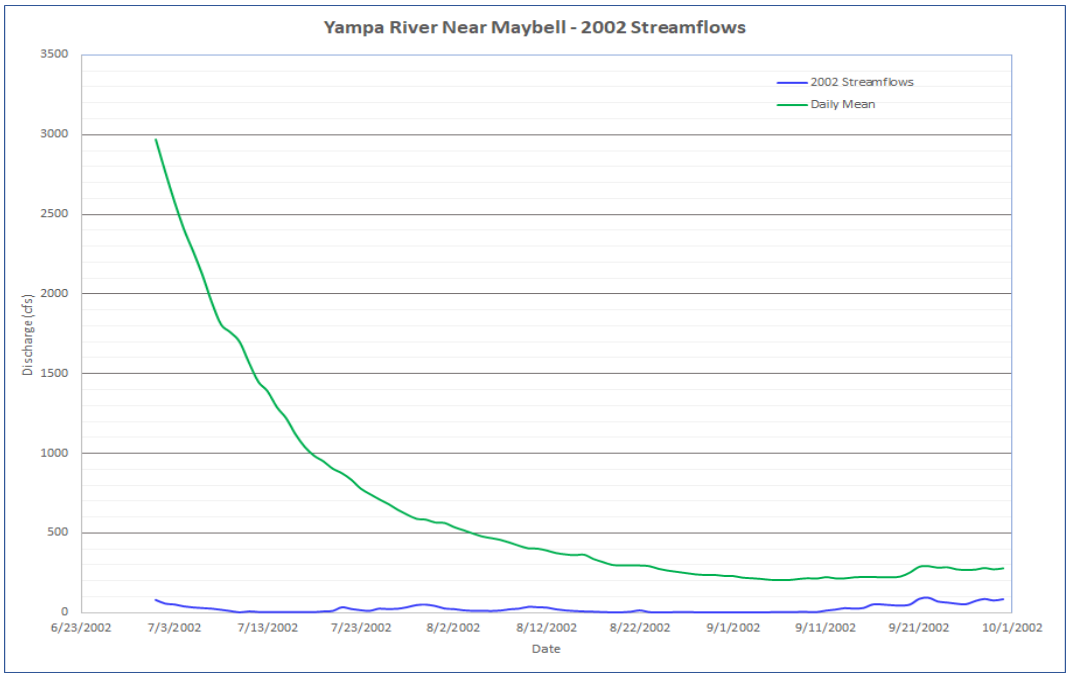
On April 1, the snow water equivalent in the Yampa River basin was 73% of median and on May 1, it was 44% of median. The annual volume of flow at the Maybell gage station was 363,900 AF for the water year compared to the average annual volume of flow of 1,127,000 AF or 32% of average. The total precipitation for the water year at Steamboat Springs was 17.09 inches or 71% of average. The below table shows the precipitation at Steamboat Springs for water year 2002.

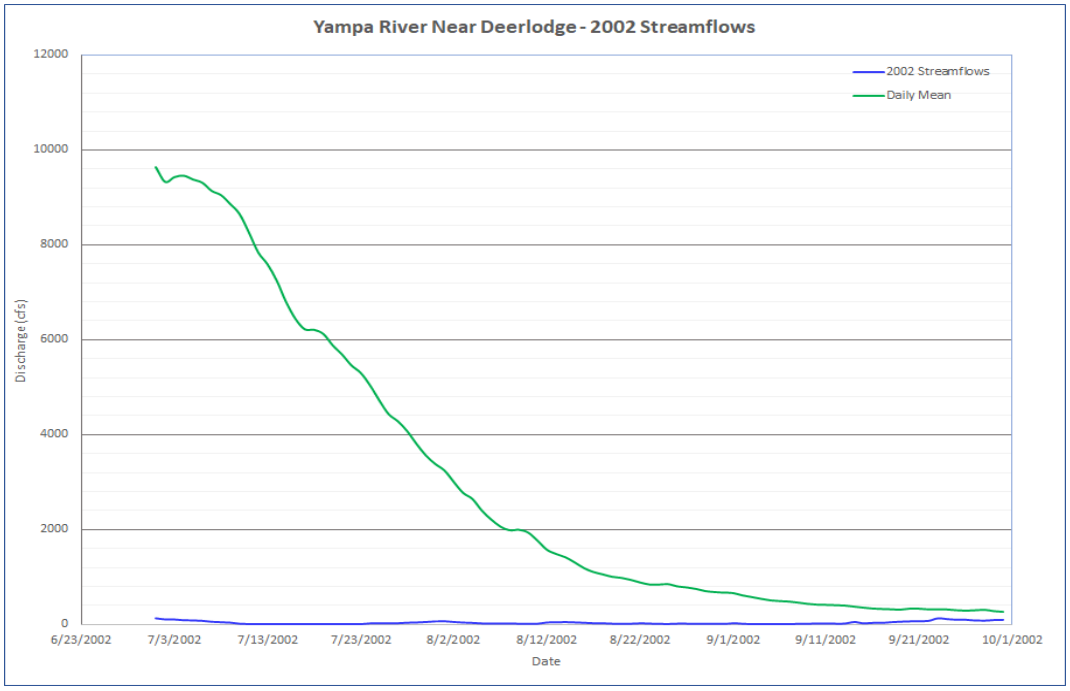
2002 Precipitation in inches at Steamboat Springs

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total
2002	1.71	2.02	1.50	1.43	0.95	1.61	1.72	0.52	0.61	1.09	1.86	2.07	17.09
Avg	2.17	2.24	2.49	2.30	1.90	1.80	2.41	2.24	1.77	1.52	1.60	2.19	24.63
% Avg	79%	90%	60%	62%	50%	89%	71%	23%	34%	72%	116%	95%	69%

Below is a graph of the flows in 2002 at the Maybell gage and Deerlodge gage. As mentioned above and as reported in the Division Engineer's 2002 Annual Report, the Upper Yampa Water Conservancy District began voluntarily releasing water from Stagecoach Reservoir in July and did so until contract water was needed by Tri-State at the Craig Station Power Plant. Though the Division Engineer's annual report indicates that this contract release began in the middle of August, our records show a release to Craig Station from July 22 through July 25 for a total of 198 AF and from August 2 through September 18 for a total of 1,274 AF. Because the reservoir water voluntarily released from Stagecoach Reservoir in July totaled only 224 AF or on average 8 AF per day, and because the reservoir water released from Elkhead Creek Reservoir, Stagecoach Reservoir and Steamboat Lake was for direct delivery to power generation facilities, the actual flows at the Maybell and Deerlodge gages were assumed to be the natural flows with no influence from reservoir water.

The following graphs show that the flows at both the Maybell and Deerlodge gages were extremely low and well below the average flows at these gages. Of particular note, at the Maybell gage, there were 35 days with flows below 10 cfs with a minimum discharge of 1.79 cfs, and at the Deerlodge gage there were 27 days with flows below 10 cfs with a minimum discharge of 1.9 cfs.


Yampa River Near Maybell - 2002 Streamflows
2002 Streamflows
Daily Mean
Discharge (cfs)
3500
3000
2500
2000
1500
1000
500
0
6/23/2002
7/3/2002
7/13/2002
7/23/2002
8/2/2002
8/12/2002
8/22/2002
9/1/2002
9/11/2002
9/21/2002
10/1/2002
Date


Yampa River Near Deerlodge - 2002 Streamflows
2002 Streamflows
Daily Mean
Discharge (cfs)
12000
10000
8000
6000
4000
2000
0
6/23/2002
7/3/2002
7/13/2002
7/23/2002
8/2/2002
8/12/2002
8/22/2002
9/1/2002
9/11/2002
9/21/2002
10/1/2002
Date

Summer 2012

On April 1, the snow water equivalent in the Yampa and White River Basins was 56% of median and on May 1, it was 28% of median. The annual volume of flow at the Maybell gage was 541,900 AF for the water year compared to the average annual volume of flow of 1,129,000 AF or 48% of average. The total precipitation for the water year at Steamboat Springs was 14.61 inches or 59% of average. A saving grace for the summer was a fair amount of rain in July: 3.23 inches, 213% of average. The below table shows the precipitation at Steamboat Springs for water year 2012.

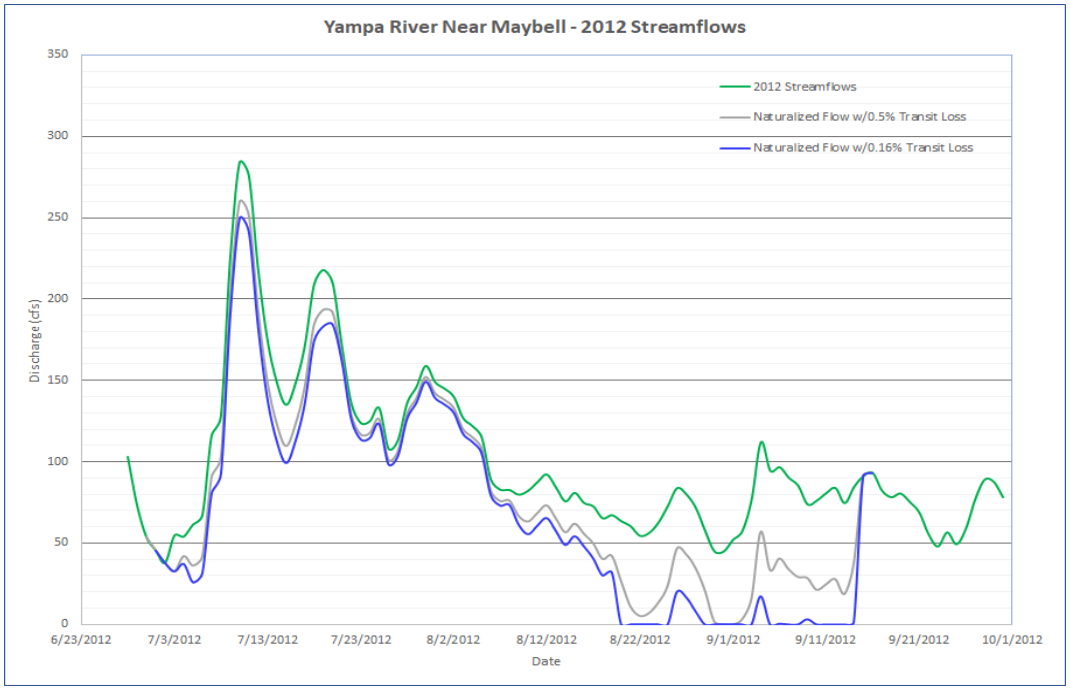
2012 Precipitation in inches at Steamboat Springs

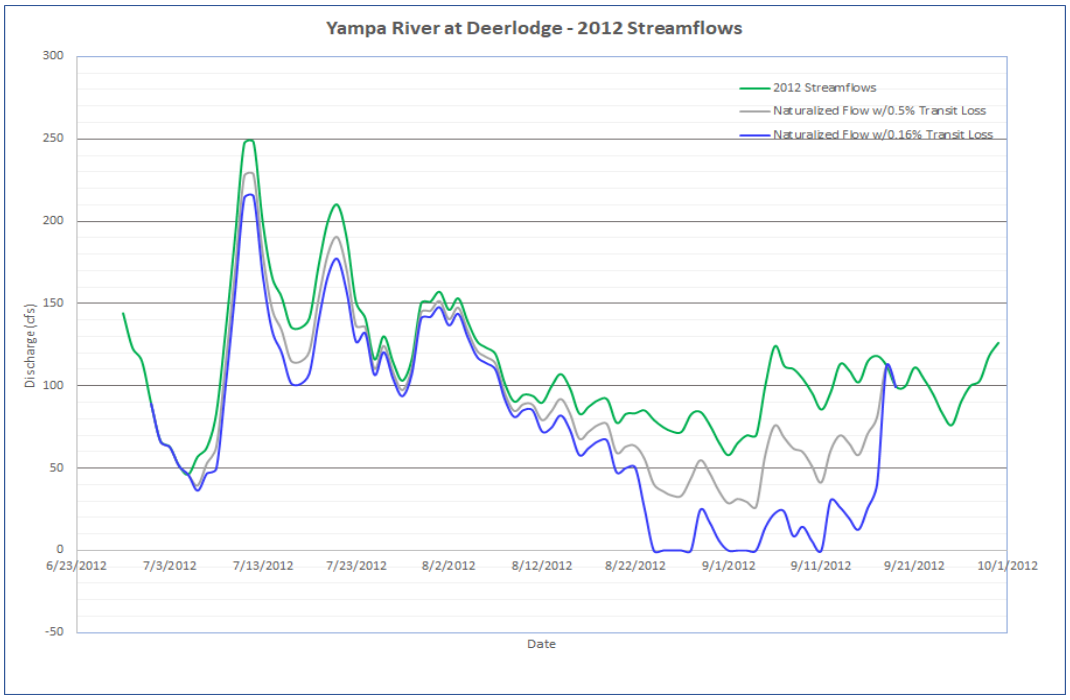
Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total
2012	2.08	1.24	0.25	0.87	2.93	0.22	1.23	0.75	0.18	3.23	0.58	1.05	14.61
Avg	2.17	2.24	2.49	2.30	1.90	1.80	2.41	2.24	1.77	1.52	1.60	2.19	24.63
% Avg	96%	55%	10%	38%	154%	12%	51%	33%	10%	213%	36%	48%	59%

In 2012, water was released from Elkhead Creek Reservoir for the recovery of the endangered fish, from Stagecoach Reservoir under a 3 in 10 year temporary loan agreement between the CWCB and Colorado Water Trust, and from Stagecoach Reservoir at the request of Tri-State. Water was released at the request of Tri-State to give them assurance that if a call occurred, they would not be curtailed, rather they would divert the water in the river released from Stagecoach Reservoir. Ultimately, there was no call and DWR assumed that this water was not picked up by Tri-State at the Craig Station Power Plant but rather left in the river. Unlike the 2002 data, the recorded gaged flows at the Maybell gage and Deerlodge gage were reduced by this reservoir water amount to determine the naturalized flows in the river. The actual flows and the naturalized flows are shown in the following graphs. Because there was such a significant change between the loss assessed in 2012 and what is assessed today, the below graphs also show the naturalized flow at these two gages based on the loss actually assessed at the time (0.5%/mile) and the loss assessed today (0.16% per mile).

When assuming a transit loss of 0.5% per mile for water released from a reservoir, there are two days when the natural or native flow in the river dropped to 0.0 cfs at the Maybell gage and no days at the Deerlodge gage. On the other hand, when the 0.16% per mile is assessed, there are 19 days when the natural flow drops to 0.0 cfs at the Maybell gage and 10 days when flow drops to 0.0 cfs at the Deerlodge gage.

It is also important to note that in 2012, the owner of the Lily Park structures had to cease their diversions due to complaints by the BLM of their backhoe being in the river pushing up gravel dams. This resulted in a complaint to the Army Corp of Engineers who ultimately approved the gravel dams under an ag exemption. This process of approval however took a month during a critical time in their irrigation schedule. Had they been able to continue to divert water, the gage at Deerlodge would have recorded lower flows.





Summer 2018

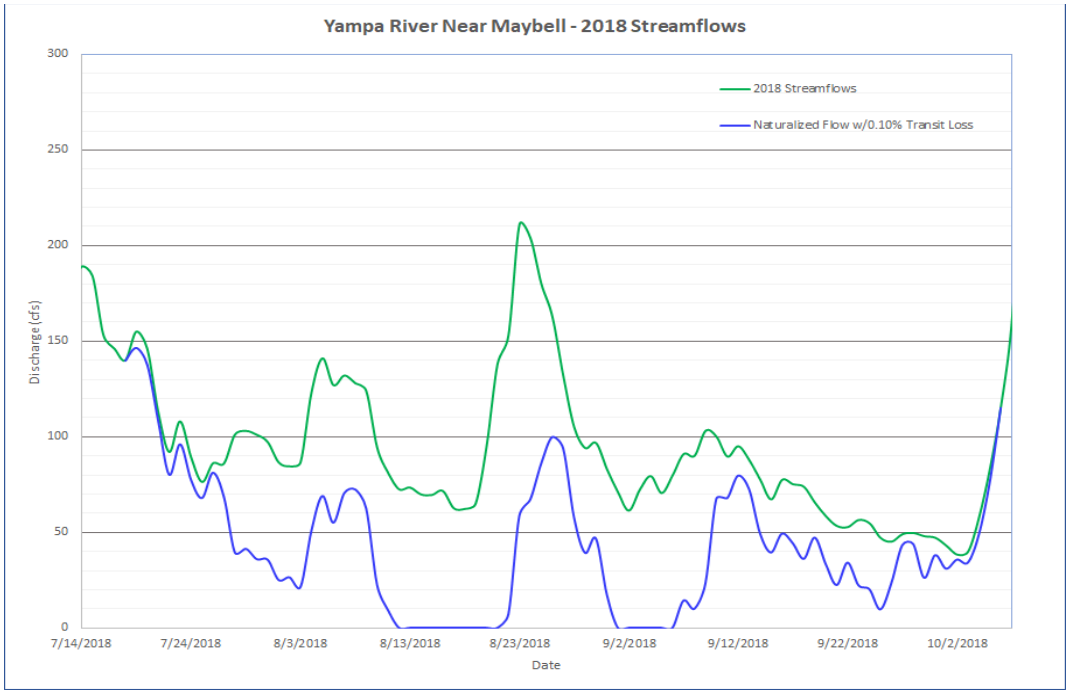
On April 1, the snow water equivalent in the Yampa and White River basins was 82% of median and on May 1, it was 74% of median. The annual volume of flow at the Maybell gage station was 727,600 AF for the water year compared to the average annual volume of flow of 1,120,000 AF or 65% of average. The total precipitation for the water year at Steamboat Springs was 16.85 inches or 75% of average. With these early indications from snowpack, it appeared that 2018 would not have been as bad of a "water supply year" as it turned out to be. However, the lack of summer and early fall precipitation, as shown in the table below, resulted in substantially reduced streamflows.

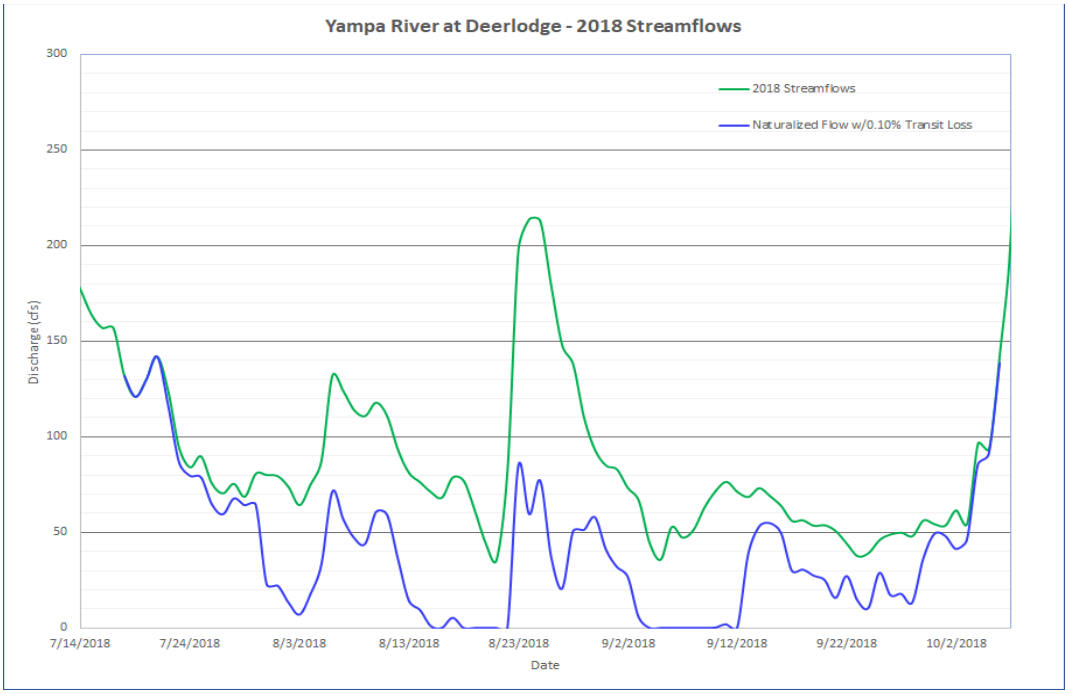
2018 Precipitation in inches at Steamboat Springs

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total
2018	2.76	1.84	0.17	1.47	1.41	1.29	2.82	1.47	0.24	1.06	2.32	0.89	16.85
Avg	2.17	2.24	2.46	2.28	1.89	1.81	2.39	2.24	1.76	1.54	1.61	2.20	22.44
% Avg	127%	82.1%	6.9%	64.5%	74.6%	71.3%	118%	65.6%	13.6%	68.8%	144%	40.5%	75.1%

In 2018, a transit loss of 0.1% per mile was assessed for all reservoir water released from both Elkhead Creek Reservoir and Stagecoach Reservoir. A separate analysis was not performed using a loss of 0.16% per mile, as used today, since the difference does not result in a significant change to the actual amount of flow.

Below are graphs showing the flows in 2018 at the Maybell gage and Deerlodge gage. In 2018, water released from Elkhead Creek Reservoir was primarily for the purpose of the recovery of the endangered fish, and water was released from Stagecoach Reservoir to assist with streamflow temperature at the City of Steamboat Springs waste water discharge outfall as well as under the third year of the 3 in 10 year temporary loan agreement mentioned above. Since the water released was for non-consumptive purposes and could not be diverted in priority, for the purposes of the graph, the recorded flows at the two gages were reduced by the amount of reservoir water in the system on any given day to arrive at what the natural flow would be in the River had the releases not been made. Doing this shows that there are 16 days when the natural flow in the River drops to 0.0 cfs at the Maybell gage and 13 days at the Deerlodge gage.





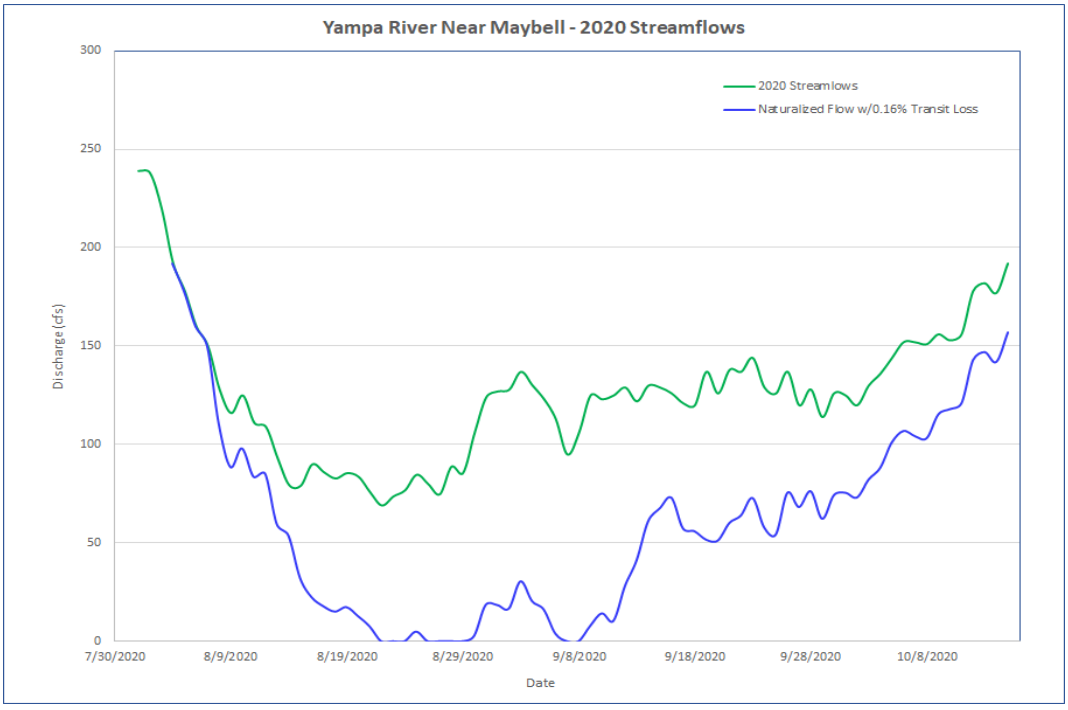
Summer 2020

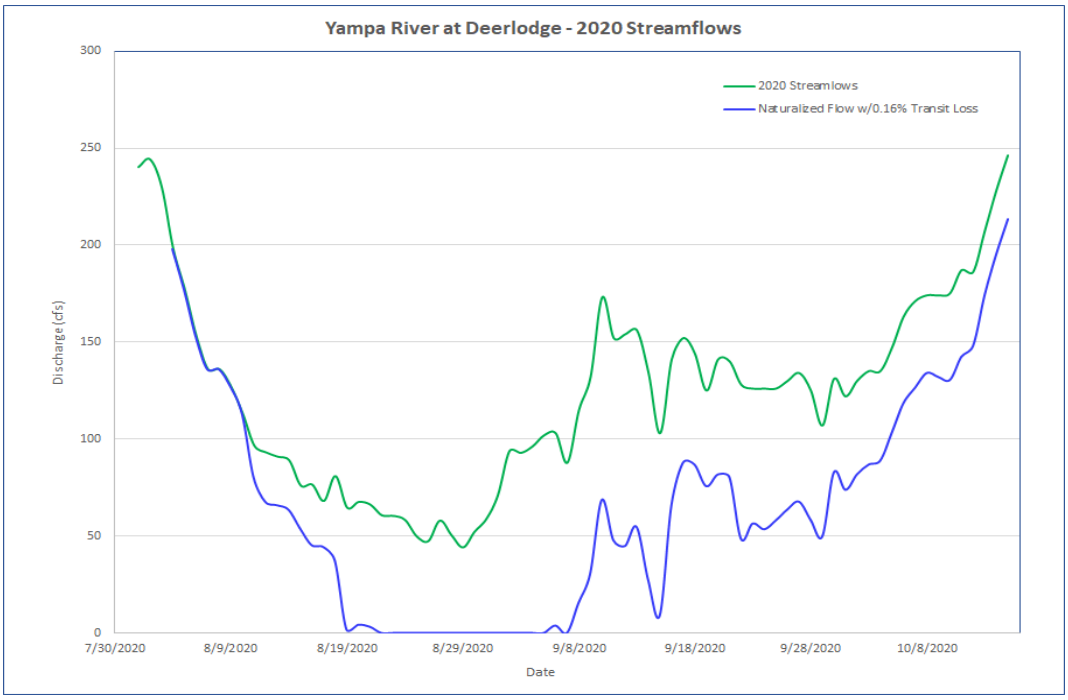
On April 1, the snow water equivalent in the Yampa and White River Basins was 113% of median and on May 1, it was 102% of median. The annual volume of flow at the Maybell gage station was 969,700 AF for the water year compared to the average annual volume of flow of 1,121,000 AF or 86% of average. The total precipitation for the water year at Steamboat Springs was 18.99 inches or 77% of average. Given the snowpack and the annual volume of flow at the Maybell gage compared to 2002, 2012, and 2018, one would have thought that the chances for a call on the Yampa River were unlikely in 2020. However, the lack of summer and early fall precipitation resulted in extremely low streamflows. The below table shows the precipitation at Steamboat Springs for water year 2020.

2020 Precipitation in inches at Steamboat Springs

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total
2020	2.24	1.12	2.54	2.13	2.65	1.16	1.86	2.1	1.04	0.87	0.96	0.32	18.99
Avg	2.17	2.24	2.49	2.3	1.9	1.8	2.41	2.24	1.77	1.52	1.6	2.19	24.63
% Avg	103%	50.0%	102%	92.6%	140%	64.4%	77.2%	93.8%	58.8%	57.2%	60.0%	14.6%	77.1%

Below is a graph of the flows in 2020 at the Maybell gage and Deerlodge gage. The transit loss assessed to all reservoir water released was 0.16% per mile. Water was released from Elkhead Creek Reservoir, Stagecoach Reservoir and Steamboat Lake. It is also my understanding that a great deal of water was released from Sheriffs Reservoir for a construction project, but the below graphs do not take this into account. Water released from Elkhead Creek Reservoir was for the purpose of the recovery of the endangered fish and to assist with streamflows in the River. Stagecoach Reservoir water was released to assist with streamflow temperature at the City of Steamboat Springs waste water discharge outfall. Steamboat Lake water was released later in the season in hopes of also helping the endangered fish as well as to lower the reservoir for planned construction projects. Had all the various reservoirs not released water, the Yampa River at the Maybell gage would have dropped to 0.0 cfs for 9 days and at the Deerlodge gage it would have dropped to 0.0 cfs for 16 days.





Water Administration

The Yampa River upstream of the Lily Park Pump Station No. 1 went on call in 2018 and 2020. In 2018, the call ran from September 4 through September 26 and in 2020 the call ran from August 25 through September 3. The call in 2020 was shorter lived than in 2018 as a result of the Colorado River District electing to release water from Elkhead Creek Reservoir and Tri-State electing to continue their reservoir releases after their direct flow water rights came into priority.

The Lily Park Pump Station No. 1 is an alternate point of diversion for the Lily Park Ditch No. 1. The Lily Park Ditch No. 1 water right is an original water right adjudicated on September 22, 1894 with an appropriation date of April 10, 1886 (Admin No. 13249.00000). There are only 45 water rights in the entire Yampa River basin that are more senior than this water right.

In 2018, the calling priority[1] ranged from a water right with a Priority Date[2] of August 24, 1950 (Admin. No.[3] 36760.00000) to January 9, 1955 (Admin. No. 38359.00000). In 2020 the calling priority ranged from September 17, 1951 (Admin. No. 37149.00000) to May 10, 1963 (Admin. No. 41402.00000).

It is important to try to understand why a call occured in 2018 and 2020. The snowpack, though low in 2018, was higher than the snowpack levels of 2002 and 2012 and the snowpack in 2020 was right at or just above median. However, as noted above, during 2018 and 2020, we had lower than average precipitation in July, August and September. Even in 2019, these months had well below average precipitation, as shown in the table below. Fortunately, the snowpack in 2019 was substantially above average. The snow water equivalent on April 1 in the Yampa and White River Basins was 120% of median and on May 1 it was 111% of median in 2019 - so the low summer precipitation did not have the same detrimental effect.

2019 Precipitation in inches at Steamboat Springs

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total
2019	3.10	3.12	1.80	2.31	2.05	3.51	2.07	4.38	4.94	1.06	1.21	1.31	30.86
Avg	2.17	2.24	2.49	2.30	1.90	1.80	2.41	2.24	1.77	1.52	1.60	2.19	24.63
% Avg	143%	139%	72%	100%	108%	195%	86%	196%	279%	70%	76%	60%	125%

Justification for Designation

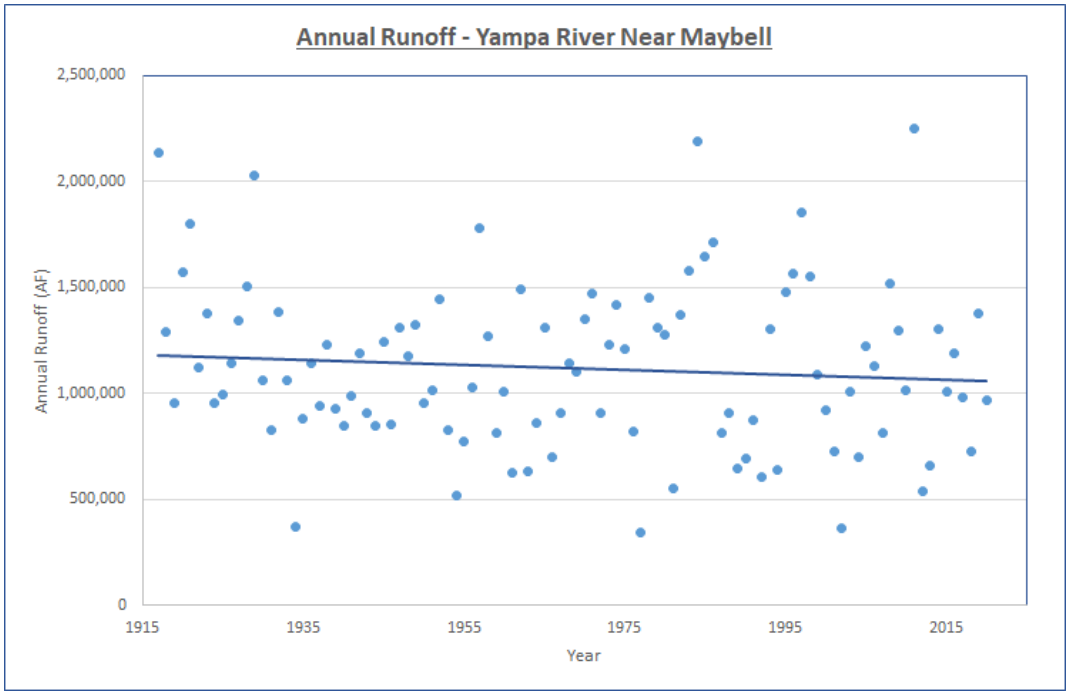
As provided above, applications for new water rights are being filed every year with the water court. Due to the trend of demand becoming greater and water supply declining, as evidenced by the data I have presented above, which includes the extremely low flows in 2002 and 2012 and the details of calls we saw in 2018 and 2020, I have very little confidence that these water rights will be satisfied each year during their decreed period of use. Furthermore, during the call on the Yampa River in

[1] The calling priority is defined in Section 1.1.3 of the Administrative Call Standard as the Admin. No. of the most junior priority that is able to divert in the call reach.
[2] The priority date is either the appropriation date or the previous adjudication date, whichever is later, and is the left side of the Priority Admin No.
[3] The Admin. No. is calculated using the previous adjudication date and appropriation date for a subject water right; the definition of which can be found in Appendix A of the Administrative Call Standard.

2018 and 2020, the water commissioners witnessed many streams going dry and unable to meet already-decreed water rights of water users in the Yampa River Basin. Extreme dry year or not, we have many stream systems where water rights are not fully met but owners opt to not request our office to place a call. While their cooperative approach to "make do" with water they have and/or share it among their neighbors is admirable, it is yet one more indicator that more and more frequently, the water supply of the Yampa River Basin cannot support the decreed demand. These systems have had periods where the water supply has not satisfied the decreed demand; however, because there has been no call placed on these systems, the Division Engineer has not made a recommendation to the State Engineer to designate them over-appropriated.

In 2002, a call on the Yampa River was averted through efforts made by the community. But without such efforts there would have likely been a call. The data shows that in 2012, 2018, and 2020, had reservoir water not been introduced into the system, much of which was released for legally recognized non-consumptive purposes, natural flows in the Yampa River would have dropped to zero on several occasions at both the Maybell gage and Deerlodge gage. These releases also demonstrate an admirable spirit of cooperation, however, they are not formalized actions and water users cannot rely on them to be used each year. With 2021 snowpack levels below median even after a considerable amount of snowfall in February, it is evident that a call could once again occur this year. With four years in the last 20 resulting in extremely low stream flows and another year looming upon us, it is evident that we are seeing a trend in summer and late fall flows.

The following graph shows the trend in Yampa River flows at the Maybell gage, which has been in operation since 1917. The annual volume of flow has declined from approximately 1.5 million acre-feet to 1.12 million acre-feet. Additionally, the hotter, drier climate that has occurred more frequently during the past 20 years results in greater crop and phreatophyte consumptive use and based on available climatological information, it appears that the trend toward a hotter, drier climate will continue. The combination of continued adjudication of new water rights, and the potential for a hotter, drier climate, will likely cause the trend of declining streamflows to continue.



All the evidence suggests, from the anecdotal evidence provided by water commissioners, to streamflow information, to calls on the Yampa River, that there is no longer sufficient water supply to satisfy all the decreed water rights within the system above the Lily Park Pump Station No. 1. For this reason and the evidence provided above, I recommend the Yampa River upstream of its confluence with the Little Snake River be designated over-appropriated for those areas not already recognized as such.