



United States Department of the Interior
FISH AND WILDLIFE SERVICE
Mountain-Prairie Region



IN REPLY REFER TO:
NWRS WTR
UT WR
Mail Stop 69016

MAILING ADDRESS:
P.O. Box 25486, DFC
Denver, Colorado 80225-0486

STREET LOCATION:
134 Union Boulevard
Lakewood, Colorado 80228-1807

Teresa Wilhelmsen, State Engineer
Utah Division of Water Rights
1594 W. North Temple Suite 220
P.O. Box 146300
Salt Lake City, UT 84114-6300

April 19, 2023

Submitted via waterrights@utah.gov

Subject: FWS Comments on Proposed Appropriation Policy for Area 29 and Area 25

Dear Ms. Wilhelmsen,

The U.S. Fish and Wildlife Service (FWS) submits the following comments regarding the proposed appropriation policy changes for Area 29 (Box Elder county) presented on February 26, 2023 and for Area 25 (Cache county) presented on February 22, 2023. The FWS manages the Bear River Migratory Bird Refuge (Refuge) at the terminus of the Bear River and owns numerous water rights that are affected by upstream diversions and new appropriations in Areas 25 and 29. The Refuge encompasses 77,102 acres of the historic Bear River delta and plays a critical role in providing habitat for migratory birds along the Central Flyway. More than 210 species of birds have been documented during migration on the Refuge, and 70 species are known to nest there. The FWS utilizes numerous water rights sourced from the Bear River, including 29-1014 (1,000 cfs diversion rate), 29-3485 (3,481 ac-ft volume), and 29-3698 (2,000 ac-ft volume). Additionally, the FWS is a stakeholder in the ecological health of the Great Salt Lake (GSL), of which the Bear River is the largest tributary.

At the February 22nd and 26th public meetings, the State Engineer proposed the following modification to the existing appropriation policy language for each Area:

“The area will be closed to new consumptive appropriations of any size (including small amounts of water defined under § 73-3-5.6) that fail to include a mitigation plan that offsets depletions.”

The FWS supports this proposed language and commends the State Engineer for recommending a change to the appropriation policy that considers the current hydrologic conditions within the Bear River Basin and the potential impairment of senior water rights. There is significant scientific evidence to support the proposed policy change when considering the ecological health of the Bear River Bay and the GSL and the impairment of senior water rights within the Bear River Basin.

As the largest tributary to the GSL, the Bear River plays a major role in creating and supporting migratory bird habitat and contributing to the ecological health of the Lake. The Bear River Bay provides crucial habitat for migratory water birds within the GSL ecosystem, the Pacific and Central Flyways, and is recognized as a Globally Important Bird Area¹. As detailed in the recent article by Abbott et al. (2023)

¹ Western Hemisphere Shorebird Reserve Network, https://whsrn.org/whsrn_sites/great-salt-lake/#:~:text=Great%20Salt%20Lake%20hosts%20the,estimated%20to%20exceed%20230%2C000%20birds.

immediate action is needed to prevent the collapse of the GSL ecosystem. Wurtsbaugh et al. (2016 and 2017) found that the decline of the GSL is not due to long-term changes in precipitation or water supply, but due to diversions from rivers tributary to the GSL (see Figure 1 below). The authors found that the GSL had declined by about 11 feet (3.6 m) due to diversions and increased consumptive use of water. Closing the Bear River to further new consumptive depletions will increase the chances of maintaining healthy GSL levels that have ecologic, economic, and societal benefits.

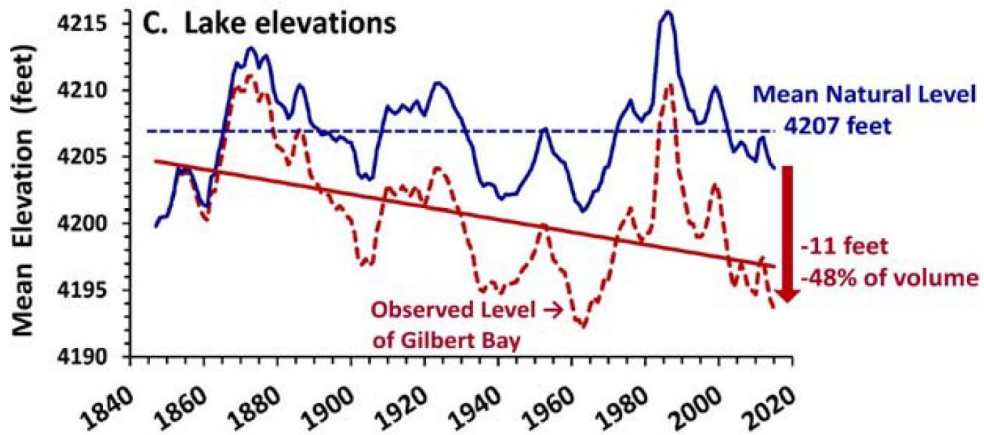


Figure 1: Figure from Wurtsbaugh et al. (2016) describing how their study estimated that the lake level had decreased by about 11 feet due to man-made diversions. Caption reads as follows: “Observed level of Great Salt Lake (dashed red line). The solid blue line shows a model of lake elevation in the absence of consumptive water uses. Averaged over the last 10 years, water use has lowered the lake 11 feet and decreased its volume by 48 percent.”

The FWS and other senior water right holders have protested many new groundwater appropriations and presented information regarding how our senior water rights will be impaired by junior diversions if mitigation is not provided. It is the position of the FWS that there is no excess or surplus water available in the Bear River Basin during the irrigation season because of the low flows that are typically experienced and the need for water from senior water rights holders. Most of the new appropriations within Areas 25 and 29 consist of groundwater well applications. It is well established hydrologic science that groundwater wells can capture water from nearby rivers or streams and lead to depletion of streamflow. The groundwater modeling work conducted by the United States Geological Survey (Stolp et al., 2017) created capture maps that “help water managers and the public understand that all groundwater development will affect surface-water features or areas of groundwater discharge.”

This groundwater development results in depletion and impairment of the Refuge’s senior water rights (most notably 29-1014) during many months of the year when insufficient surface water is available. Without mitigation, the Refuge’s water rights will continue to be diminished/impaired. The cumulative impact from the many small well applications that have been approved will result in injury to senior water rights downstream. In almost all years, the summer and fall availability of water in the Bear River watershed is not sufficient to meet the FWS’s needs at the Refuge. From the enclosed Box & Whisker plot of the Bear River Monthly Discharges from the United States Geological Survey (USGS) Corinne Gage (ID 10126000), the median flows at the gage are below the Refuge’s senior rights during the months of June through December (see Figure 2). The Bear River stopped flowing completely downstream of the Cutler Dam in 2021 for much of the irrigation season and exemplifies that there is no water available to appropriate during this time.

The Bear River flows during the summer and fall months of July through November are especially low where even the 75% quartile is below 1,000 cfs. The FWS believes that water is not legally available in the summer or fall months for additional surface or groundwater diversions because of the intimate connection of groundwater and surface water in this basin and the fully appropriated nature of Bear River during the summer and fall months. For this reason, the FWS has concerns about continued groundwater and surface water development in the Bear River Basin that will lead to out-of-priority appropriations harming senior surface water users. The FWS is not opposed to new appropriations if mitigation can be provided that would replace the injury to senior water rights downstream.

Mitigation has been part of the groundwater appropriation policy in Cache County where “replacement water” has been required since 1999 (see [Interim Cache Valley Ground-Water Management Plan](#)). Additionally, the Bear River Basin within Idaho (Idaho water management areas 11 and 13) has required mitigation of new groundwater appropriations since 2003 (see [Management Plan for the Bear River Ground Water Management Area](#)). Several other prior appropriation states require mitigation of senior water right holders as part of their appropriation policy (e.g. Colorado and Montana). The successful implementation of these mitigation policies throughout other portions of the Bear River Basin, and the West in general, indicates mitigation is a reasonable and prudent measure to adopt within Areas 25 and 29 as well.

We encourage the State Engineer to adopt a policy that would facilitate easier exchanges/purchases of mitigation water than are currently available. The onerous burden to allow for mitigation now largely appears to fall upon senior water right holders to file change applications, allow for mitigation transactions, and ensure the correct administration of mitigation water is followed. This process may also require a change in the bylaws of various irrigation companies, renegotiation of Settlement Agreements, and several other administrative hurdles. We encourage the State Engineer to create a process by which water rights/ irrigation shares can be transferred to an entity of the state for mitigation purposes. Ideally, this would allow for mitigation to happen on a more fluid/as-needed basis without the need for lengthy administrative procedures.

Many questions at the public meeting asked what constituted a mitigation plan, and how would a new application generate such a plan. The FWS recommends that the mitigation policy ensure that depleted water is replaced in the same quantity and at the same time to ensure that the seasonality of water availability is not affected. We recommend that the mitigation occur to the source (e.g. Bear River), rather than to an impacted senior water right. Additionally, to clarify expectations and ease administrative review, the FWS recommends that the State Engineer adopt a policy to standardize mitigation procedures, similar to the Bear River Basins (Area 11 and 13) in Idaho.

Briefly, in these areas, a standard method is used to determine depletion amounts by water use. If an applicant mitigates the amount specified by the standard review method (labeled as the “simplified method”), their mitigation plan does not need a detailed review. If an applicant believes that some amount less than the amount determined from the standard analysis is needed, then they bear the burden of proof to show their calculation method is appropriate. We believe this type of standard analysis can clarify mitigation expectations for new applicants, reduce challenges to different types of mitigation calculations, and ease the administrative burden of the state in reviewing new applications.

There were also several questions related to how much water has been appropriated within the Bear River Basin. There is great concern that the basin has already been overallocated when considering many of the large applications that were filed upon long ago, but have yet to be acted upon by the State Engineer. The FWS requests that the State Engineer's office produce an updated list of water rights within the Bear River Basin that would include:

- 1) Appropriations/applications that have been:
 - a. perfected
 - b. approved but not yet developed/perfected
 - c. unapproved applications that have been submitted but have not yet received consideration from the State Engineer.
- 2) A quantification of how much water has been appropriated/applied for and the estimated consumptive use of all of these water rights.
- 3) Appropriations/applications that count towards the volumetric limitations with the Area 29 Groundwater Management Policy and the Area 25 Interim Groundwater Management Policy.
- 4) We ask that this list include applications/appropriations that are on tributaries to the Bear River as well, in order to consider basin-wide management.

Finally, changes to appropriation policies have been proposed for Areas 29 and 25 of the Bear River Basin, and the Weber Delta Sub-area (Areas 31 and 35), but (as far we know) a change has not been proposed for Area 23 (Rich County). It would be helpful to understand if such an appropriation policy change will be proposed in the near future for this area, or how the State Engineer views this area differently considering it is also part of the Bear River Basin.

We appreciate the ability to comment on the proposed appropriation policy and want to again stress our support for the language that was proposed at the public meetings in February. If you have any questions or need further information, please contact Jaron Andrews on my staff at 303-236-4490 or jaron_andrews@fws.gov.

Sincerely,

Brian S. Caruso, Ph.D., P.E.
Chief, Division of Water Resources

References

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Bear River Monthly Discharge Box and Whisker Plot (1988-2021)

Corinne Gage (USGS ID 10126000)

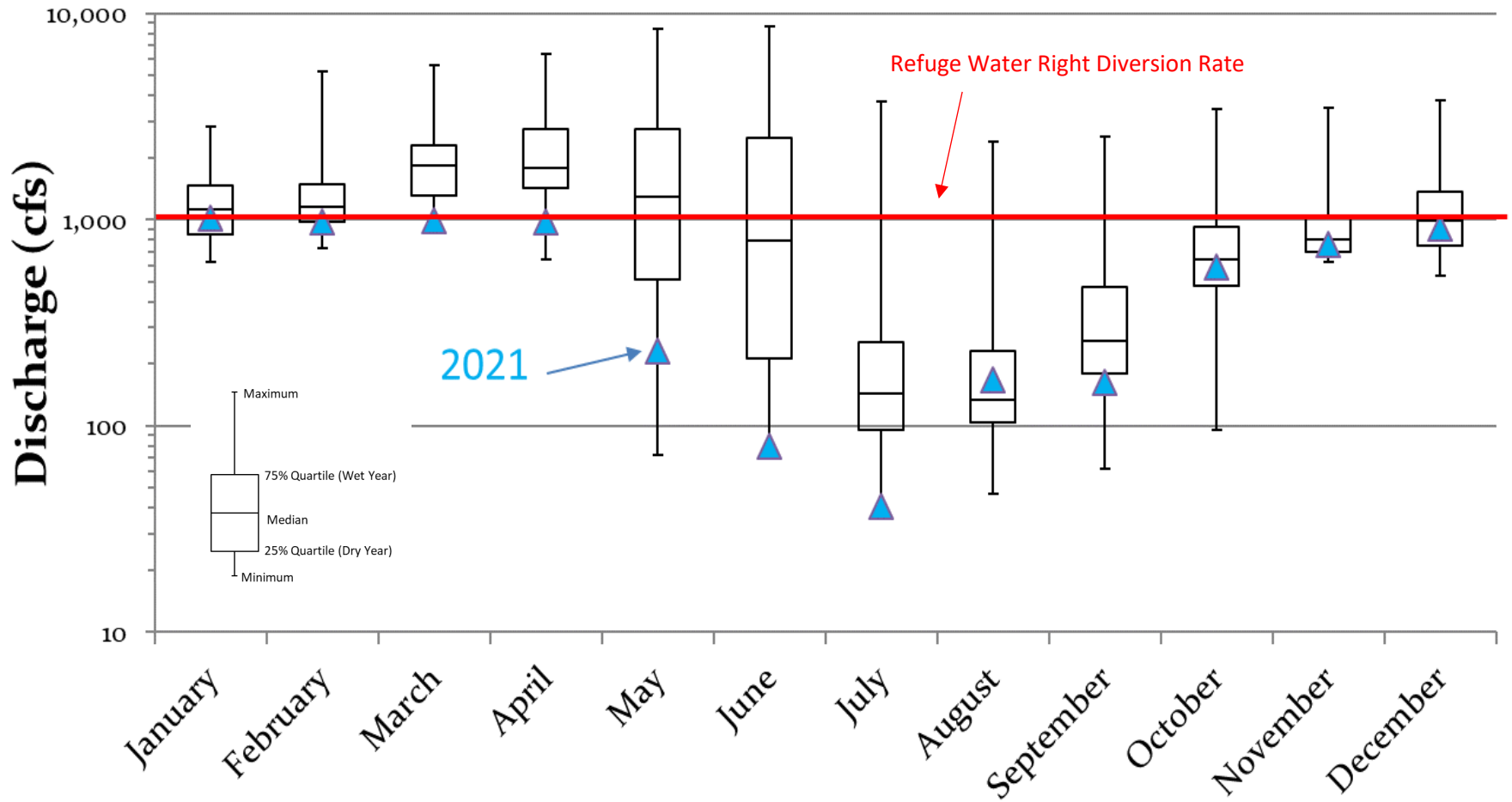


Figure 2: Bear River monthly discharge box and whisker plot at the USGS gage at Corinne, UT (ID 10126000). Note the red line at 1,000 cfs represents the diversion rate of the FWS’s water right 29-1014. The blue triangles represent the measured discharge from 2021 for comparison