



Lemhi River at McFarland MSF Protocol

Improving Stream Habitat for Anadromous Fish

Goal: During spring runoff, mimic a natural high flow event



Solution

The mainstem Lemhi River, above the Hayden Creek confluence, is prime salmonid habitat. Maintaining salmonid habitat requires periodic high discharges that flush the overlying fine sediment off the armored layer and mobilizes bed materials to restore and enhance riffle habitat (Pic. 1 and Pic.2).

Background

In 2022, the Lemhi River Basin Settlement Agreement established water rights for the historic practice of diverting high flow. Water users can now obtain a *streamflow maintenance* water right, a protected water right that is ancillary to their decreed base rights. Additionally, the Settlement established a Minimum Stream Flow water right on the Lemhi River at the McFarland Campground is intended to improve channel conditions for Chinook salmon and steelhead. Streamflow maintenance water rights include a condition that requires a pause in high flow withdrawals for three days, and the water is delivered to the Lemhi River at McFarland Minimum Stream Flow.

Lemhi Settlement MSF Protocol Terms

The Idaho Water Resource Board (IWRB) holds the minimum stream flow water right that is the basis for the MSF. The terms of the water right are:

- MSF Volume/Duration:** 420 ft³/s for 72 hours at the Lemhi River-McFarland CG Gage. This can be achieved by
 - Natural flow during a high-water year or
 - Combination of Lemhi River baseflow at McFarland C.G. and the conditioned streamflow maintenance water rights that are delivered to the MSF
- MSF Exercise Frequency:** 2 MSF Exercise in a 5-year period. Events that are considered an MSF Exercise include:
 - Naturally occurring events
 - 72-hour contribution from conditioned streamflow maintenance water rights



Picture 1. Fine sediment overlying gravels



Picture 2. Fines removed, gravels cleaned

Who's Involved

- ▶ IWRB: holds the water right and will exercise the MSF
- ▶ Implementation Committee: advisory group to the IWRB; informs watermasters, irrigators, and agencies of MSF status and activities.
- ▶ Irrigators: hold the streamflow maintenance water rights
- ▶ Watermasters: help manage diversions during the MSF Exercise
- ▶ IDWR/IDFG: Monitor discharge and stream habitat conditions

How it works

Process The annual process for conducting a MSFE is:

Preseason:

1. April 15th: IWRB determines if the conditions are favorable (Fig. 1) and if the MSFE is required to satisfy the 2/5 yr condition (Fig. 2). The Implementation Committee informs stakeholders, agencies of MSF Exercise status
2. May 1st: IWRB determines if the conditions are favorable (Fig. 1). The Implementation Committee informs stakeholders, agencies of MSF Exercise status
3. May 15th: IWRB determines if the conditions are favorable (Fig. 1). The Implementation Committee informs stakeholders, agencies of MSF Exercise status

Implementation

4. If favorable, IWRB coordinates with the Implementation Committee on when MSF Exercise is likely to occur. The Committee informs stakeholders, agencies, and watermasters of execution window
5. Implementation Committee /Watermasters inform irrigators on date to begin MSF Exercise. Watermasters work with irrigators to cease diverting streamflow maintenance water rights and log activities

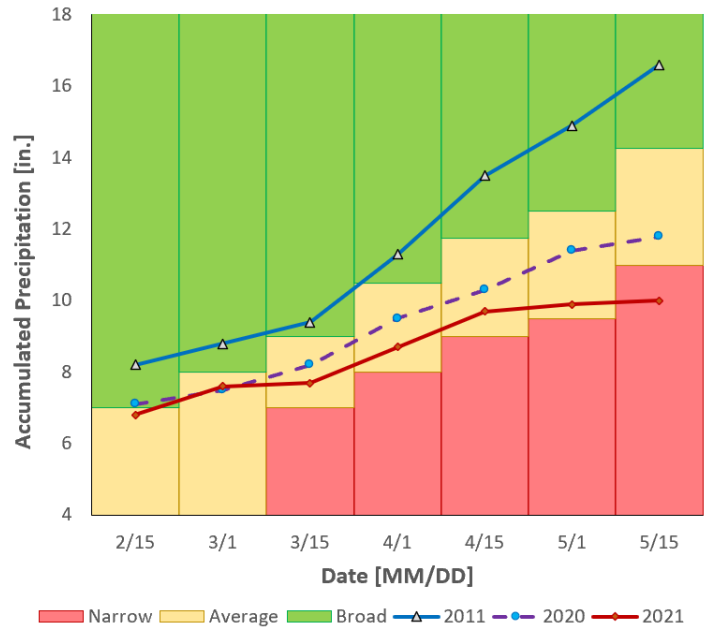


Figure 1. MSF Exercise Favorable Conditions Chart based on accumulated precipitation measured at the NRCS Beagle Springs SNOTEL Station.

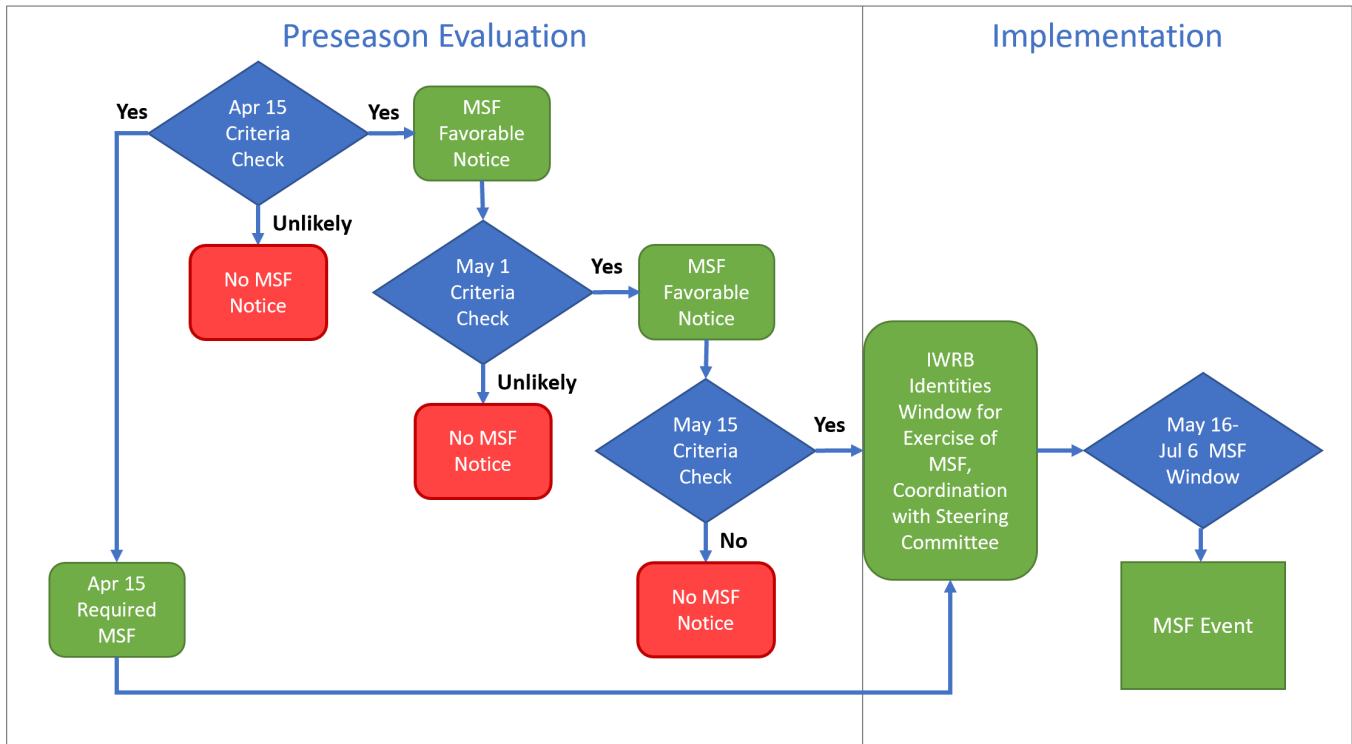


Figure 2. The method for determining if an MSF Exercise will be conducted

Program Information/Resources

- Idaho Water Resource Board: <https://idwr.idaho.gov/iwrp/water-planning/lemhi-settlement/>
- NRCS Beagle Springs SNOTEL: <https://wcc.sc.egov.usda.gov/nwcc/site?sitenum=318>
- USGS Gage at McFarland: <https://waterdata.usgs.gov/monitoring-location/13304700/#parameterCode=00065&period=P7D>