# <u>Monitoring</u>-the search for concerns and opportunities

## An example: South Fork Snake River Fish Population Trends at Lorenzo

Prepared for the Environmental Resource Technical Working Group (ERTWG)

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## Purpose of Presentation (and **Discussion**)

- #1 Get us thinking about the future of this group and your role
- Present a perceived **potential problem**
- Present an IDFG Monitoring Approach-SF Snake Fishery at Lorenzo
- Discuss: Identify Biological and other Resource Indicators (water quality)
- Discuss: Can we and should we develop a suite of **Environmental Resources Metrics or Triggers**?

## Perceived problem

- Heise to Lorenzo-losing reach
- Flow loss =bad for fish



USGS 13037500 SNAKE RIVER NR HEISE ID USGS 13038500 SNAKE RIVER AT LORENZO ID 2000 600 second second 590 0 580 cubic feet per 570 feet õ 560 Đcubic œ 550 1000 540 Discharge DAILY Discharge, 530 520 510 DRILY 500 Feb 20 Feb 22 Feb 24 Feb 26 Feb 28 Mar 02 2022 2022 2022 2022 2022 2022 500 Feb 20 Feb 22 Feb 24 Feb 26 Feb 28 Mar 02 ---- Provisional Data Subject to Revision ----2022 2022 2022 2022 2022 2022 Daily mean discharge — Estimated daily mean discharge ---- Provisional Data Subject to Revision ----



## Water Right 01-10613 Condition

 Water may only be diverted under this right when the flow in the Snake River immediately downstream from the Dry Bed bifurcation structure on the Snake River reaches or exceeds 1,422 cfs. In practice, this streamflow is estimated by subtracting the streamflow at USGS gage 13038000 Dry Bed near Ririe from the streamflow at USGS gage 13037500 Snake River near Heise and also subtracting all canal and pump diversions from the Snake River between USGS gages 13037500 and 13038000.

#### Lorenzo Sample Area South Fork Snake River

Annis Little Butte Cemetery

Jefferson County Lake

E LUT LAN

A land

Google Earth

- **5**2

Snake Rule

Lorenzo

Legend

N

mi

William Street House

Lyman

nornton

Yellowstone Bear World







Total trout (1,465/km) stayed above the 10-yr. average (1,249/km). 5<sup>th</sup> highest on record...

2021

BNT estimate (904/km) fell below the 10-yr. average (938/km)

YCT (561/km) was above the 10-yr. average (308/km), 2<sup>nd</sup> highest estimate on record



## Winter Flow and Fish Abundance recap

- 2022 recorded very low flow at Lorenzo (< 500 cfs). Alarming?
- 2019-2022 winter flow (Dec-Feb) is about average since late 80's
- Yellowstone Cutthroat Trout doing OK-2021 above 10-year average and 2<sup>nd</sup> highest estimate on record (since 1987)-Highest in 2020.
- 1,422 cfs Recharge cutoff flow below Great Feeder

## **Conclusion:** Do not need to bring this "perceived" problem to ERTWG and IWRB.

## Future research-

• BOR and IDFG want to look at aquatic habitat in Lorenzo reach-what is driving fish populations in this reach? Winter flow? Habitat?

Opportunity? Can we adjust cutoff flow? (1,422 cfs)

### Future Targeted Monitoring Elsewhere-can we, I, you Identify Concerns or Opportunities?

• Identify and Prioritize monitoring locations

(e.g. downstream of recharge; Locations where we think we see return flow?)

- Understand past and existing conditions of Fish, Wildlife and Habitat (what else? E.g. Water Quality, Quantity, others?)
- Historic Flow conditions VS conditions under MAR
- Can we identify any patterns or insight?
- Other ideas or thoughts? Does monitoring make sense?

Can we and should we develop a suite of Environmental Resources Metrics to help identify concerns and opportunities?

Or do we wait for them to start appearing?

ERTWG Two Prong: 1) Monitor indicators 2) Recommend future recharge