



**Montana Fish,
Wildlife & Parks**



BIG HOLE
WATERSHED COMMITTEE
Conservation Through Consensus.

25
YEARS

Calling all Volunteers - We Need YOU!

(To help restore a precious wetland area in the Mount Haggin Wildlife Management Area.)

When: Friday, August 13, 2021

Where: Mount Haggin Wildlife Management Area

Time: 9:00am – 4:00pm

Directions:

Coming from Divide, MT or I-15:

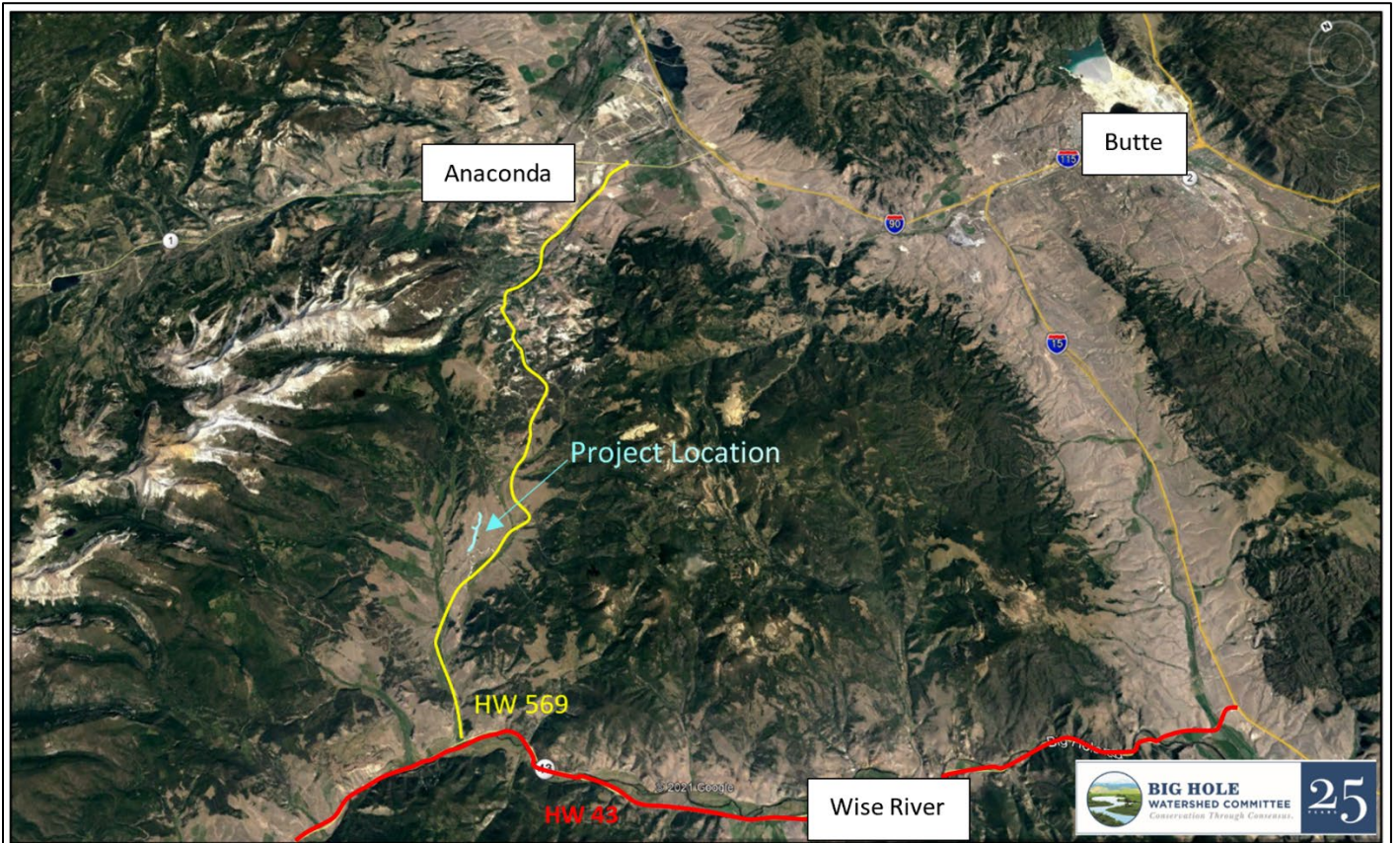
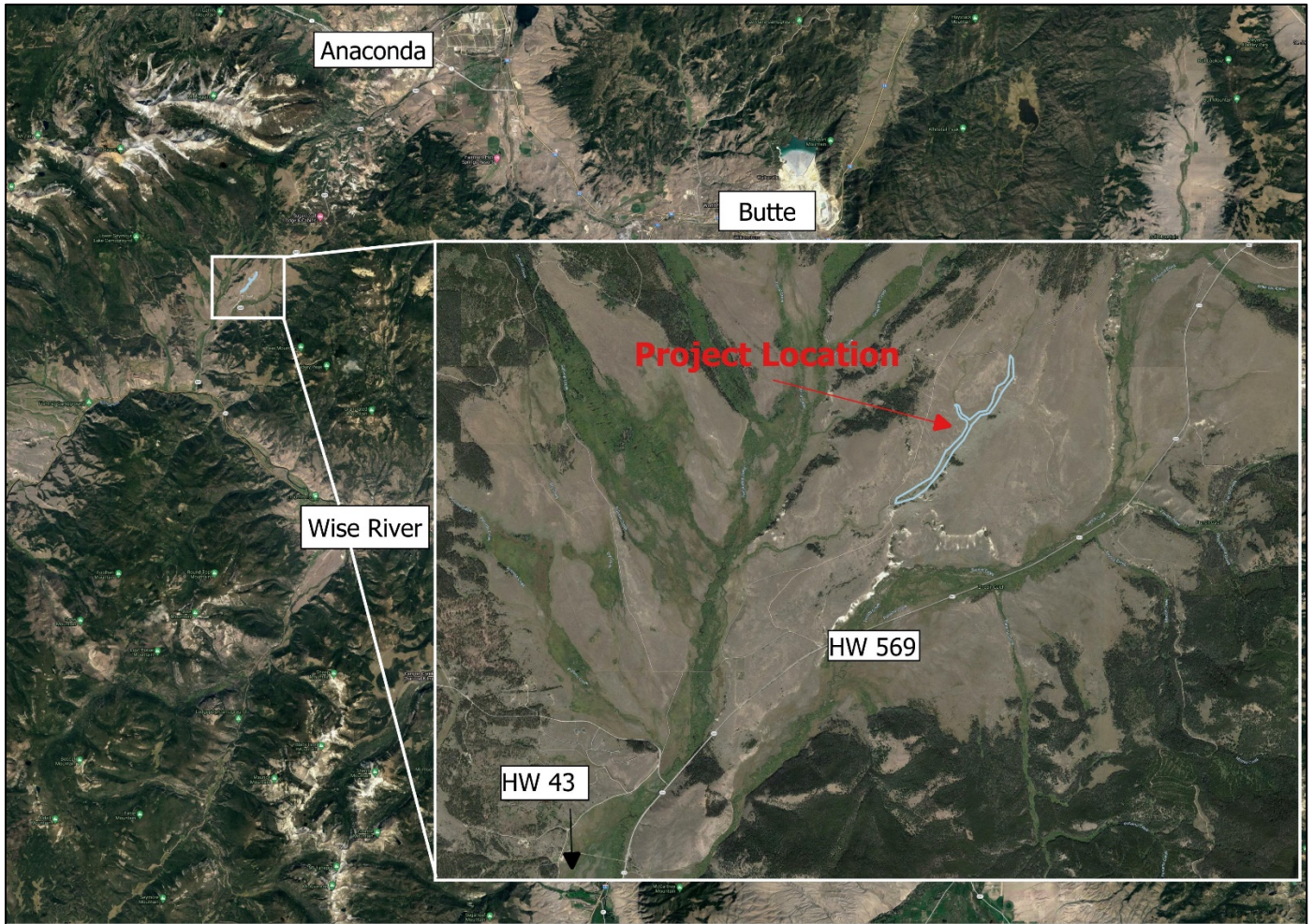
Turn off Interstate I-15 for Divide, MT (Exit 102; MT-43; Divide Wisdom) and head towards Wisdom for 23.2 miles. Turn right on MT-569 (Mount Haggin Scenic Drive) and head north for 4.5 miles. Turn left at the highly flagged stop sign (on your left-hand side). Continue to drive up the dirt road (high clearance vehicles recommended) for 2.5 miles. Stay right at all intersections. Park off the side of the road with other vehicles.

Coming from Anaconda, MT or I-90:

Turn off Interstate I-15 for Anaconda (exit 208 MT-1 N) and continue on MT-1 N for 4.9 miles. Turn left on MT-569 (Wisdom, MT/Mount Haggin Scenic Drive) and continue for 28 miles. Turn right at the highly flagged stop sign (on your right-hand side). Continue to drive up the dirt road (high clearance vehicles recommended) for 2.5 miles. Stay right at all intersections. Park off the side of the road with other vehicles.

Coming from Wisdom, MT (HWY 43):

Continue North on Highway 43 from 28.0 miles. Turn left on MT-569 (Mount Haggin Scenic Drive) and head north for 4.4 miles. Turn left at the highly flagged stop sign (on your left-hand side). Continue to drive up the dirt road (high clearance vehicles recommended) for 2.5 miles. Stay right at all intersections. Park off the side of the road with other vehicles.





Why: Functioning mesic areas capture and store water in the soil, slowly releasing it after runoff events, ensuring continued base flows and maintenance of water tables throughout the growing season. Holding water in the soil later into the summer also results in plant communities that are more productive than the surrounding dry landscape, providing important food and cover for insects, wildlife, and livestock. The hydrological and ecological function of many of these riparian and wet meadow areas have been degraded by past land management, such as improper grazing, roads, invasive plants, and historic flooding events. The result is gully erosion, channel incision, head cutting, and lowered water tables. They are in desperate need of repair!

We will be installing simple, low-tech, hand-built rock “Zeedyk” structures to kickstart the processes in order to heal this ephemeral stream. **The emphasis will be on stabilizing shallow headcuts and counteracting channel incision. Be ready for some good old fashion manual labor-moving and placing rocks and digging in the dirt.**

Agenda:

9:00 am - Meet at meeting location

9:00 – 9:15 am - Introductions and background on project

9:45 to 10:00 am - Hike down to the project area

10:00 am to Noon - Structure building

Noon – LUNCH (**PROVIDED!**) ★

12:30 – 3:30 pm – Structure building

4:00 pm – Depart/Happy Hour

Logistics: Please plan on arriving at the meeting site around 9:00 am. BHWC and FWP will be present at the meeting site and will help direct folks. Once we have everyone gathered, we will hike down to the project site (approximately 0.5 miles). No vehicles are allowed except for four-wheelers to bring tools and lunch down to the site. We will work for a few hours and break for a half-hour lunch (provided!) and resume work until ~3:30 pm. Then we'll hike out, have a celebratory beverage and depart.

Please plan on bringing snacks and water down to the site. In addition, please plan on bringing suitable footwear. We recommend hiking boots/work boots. We will be digging in the dirt and moving and placing rocks all day. It will be SUNNY, SMOKEY and HOT, please be prepared for a full day in the SUN, SMOKE and HEAT.

*** We will continue to assess the smoke and air quality leading up to the work day. Be prepared to work in the smoke. We will be exerting ourselves and moderately active throughout the day. If you are particularly susceptible or sensitive to smoke and low air quality, please take necessary precautions. ***

We will provide new, working gloves for everyone. *There is no cell phone coverage on site, so please call with questions prior to 8:30 am.*

Here is what we will build:

Rock Rundown

The rock rundown structure is used in low energy headcuts (< 1.5 ft tall) in small catchments and off-channel return sites to stabilize them and prevent upstream erosion (Fig. 10). Typically, the headcut is first laid back by shaping it to a stable angle (3:1 slope), and then the slope is armored with rock. In some small headcuts, shaping is not required. See Appendix B for construction specifications.



Figure 10. The center of a rock rundown should be the lowest so water runs down the middle and not around the structure. Photo by: Nathan Seward

Zuni Bowl

The Zuni bowl is a rock-lined, step falls with plunge pools used to dissipate the energy of falling water and stabilize a headcut (Fig. 7, 8, 9). These structures stabilize the progression of a headcut by both stepping down the water in a way that minimizes the erosive and scour potential of falling water, and by protecting and maintaining moisture and vegetation at the pour-over. Hand-built Zuni bowls are typically applied to treat in-channel headcuts (1.5-3 ft tall). See Appendix A for construction specifications.



Figure 7. It is critical to ensure the top rocks of the Zuni bowl wall match the existing elevation of the headcut pour-over (denoted by yellow arrow). This helps irrigate vegetation at the lip, allowing it to become the most vigorous instead of the weakest point subject to erosion. If rocks are too high, they divert water around structure, concentrate flow, and potentially cause new gullies. If rocks are too low, soils and roots are exposed and vegetation dies. Photo by: Nathan Seward

One Rock Dam

The one rock dam (ORD) is one of the most commonly used Zeedyk structures for channel recovery (Fig. 14). It effectively slows the flow of water, increases bank infiltration, captures sediment and helps recruit vegetation which can raise the channel bed elevation in gradual increments over time. An ORD is made of many rocks fit tightly together, but gets its name from being only one rock high (generally no more than a third the height of the bankfull channel).



Figure 14. One rock dams should have a footer for splash apron on the downstream end that extends far enough to intercept water pouring over the structure in a high flow event (denoted by yellow arrow). Photo by: Nathan Seward

RSVP to Ben LaPorte, Program Manager, at blaporte@bhwc.org or (303) 808-5611