Henry's Fork Salinity Control Area

M & E Report

2017

Wildlife/wetland replacement assessments and replacements projects

Wetland Assessments- Prior to Irrigation System Installation

- Beck Pivot- 100 irrigated acres assessed and 83.5 wetland acres found in June 2016. Two center pivots will be installed on a total of 100 acres. The pasture consists of various hay grasses, alfalfa and sweet clover. White-top was present in the upland areas on the north-western edge of the pasture. Standing water was present in approximately 20 acres, mostly located on the toe end of slopes and depressions. In the saturated areas and along ditches, sedges, rushes, timothy grass, wild pea, elephanthead and common arrowgrass are abundant. Soil appears to be saturated for most of the growing season. The outskirts of the pasture and some raised hills within contain dry upland habitat with sagebrush, rabbitbrush, white-top and prairie dog colonies.
- **292.25** total wetland habitat values prior to irrigation improvement.

Photo 1: Northwest corner of Beck assessment area proposed for center pivot, June 2016.

Photo 2: Ditch on north end of the pasture and surrounding vegetation, June 2016.

Photo 3: Pond located on north end of pasture at the end of the ditch, June 2016.

Photo 4: Overview of northeast pasture where the second pivot is proposed to be installed, June 2016.

2016 Completed Habitat Replacement Projects

- Beaver Creek Diversion Improvement- A recent study found that the lowest diversion on Beaver Creek was a fish barrier in the late-summer months. The structure was a push-up dam that required frequent maintenance by the landowner and diverted water into an open ditch. This project improved the diversion to a low-maintenance and fish passable rock vane structure. A head-gate was installed to allow the landowner more efficient control of his irrigation water. This project benefits native fish and the landowner by improving connectivity between populations of Colorado River cutthroat trout and improving the producer's irrigation infrastructure. This project also eliminates the need for the landowner to use large equipment instream to restructure his diversion several times a year. This project seasonally reconnected an estimated 6 stream miles. Project was completed in November 2016.
- **14.9** Total habitat replacement values (Reference Replacement Value Calculator)

Photo 5: Beaver Creek Diversion across Beaver Creek, June 2016.

Photo 6: Improved rock vane structure and new head-gate on Beaver Creek, November 2016.

Planned Habitat Replacement Projects

- Blue Bell Diversion Improvement- The Blue Bell diversion is one of the largest push-up dams on the Henry's Fork River. The landowner has to restructure the dam several times during the year, usually in the spring and early-summer. Restructuring involves operating large equipment in the river, often during spring run-off and critical native fish spawning periods. If river flows are low, the Blue Bell dam becomes a seasonal fish barrier. Improving this diversion will allow native fish to access habitat needed during different life history stages and will promote connectivity between populations, thereby improving genetic integrity and the likelihood of persistence. This project will replace the push-up diversion with a low-maintenance and fish-passable rock vane structure. A second rock vane structure will be placed below the first to help stabilize the river channel bed and prevent erosion further downstream. Rip-rap will be placed above the diversion to stop the current head-cut from further bank erosion. An open-topped, steel head-gate will be placed a few yards upstream of the existing point of diversion and a new canal will be constructed to the confluence with Burnt Fork Creek. One head-gate and a rock vane structure will be placed at the confluence of Burnt Fork and the Blue Bell ditch to help producers better manage their ditch operations. This project will seasonally reconnect an estimated 35 river miles. Anticipated completion is fall 2017.
  87.3 estimated total habitat replacement values (Reference Replacement Value Calculator)

Photo 7: Blue Bell push-up diversion, October 2015.

- Beaver Creek Riparian Fencing- Beaver Creek is a tributary to the Henry's Fork River. The Lonetree Ranch plans to install riparian fence along approximately 4 stream miles of Beaver Creek. An estimated 90 acres will be fenced from cattle grazing with this project. Currently, these sections of Beaver Creek are straight, widened and have incised banks, which provide higher water temperatures in the summer and little in-stream structures for trout. The bank erosion also contributes to a higher sediment load in the creek. These improvements will help restore native trout to the lower sections of Beaver Creek. It will also help other riparian species, such as the yellow-billed cuckoo, mule deer, moose and waterfowl. The landowner would like to install two-strand, high-tensile electric fence with occasional water gaps to exclude cattle from the creek and promote natural re-vegetation along the riparian corridor. This is an ongoing project that is anticipated to begin summer 2017 and continue through 2018, as funds become available for the project.
  270.0 estimated total habitat replacement values (Reference Replacement Value Calculator)

Photo 8: Proposed section of Beaver Creek that will be fenced from grazing, July 2013.

Considerations and Conclusions

There was one irrigation improvement project that required a wetland assessment for 83.5 acres in 2016 in the Henrys Fork Salinity Control Program area. The wetland assessment was performed during the irrigation season to best identify all wetland characteristics possible. The pastures assessed were on sloped fields. This project had more wetland values present than past projects due to the project location being in a valley with little drainage. The wetland values found were located along ditches, in depressions and on the toe end of slopes. There was upland vegetation present along the higher, outer edges of the assessment area. White-top was present in the upland areas.

Of the 83.5 wetland acres assessed, moist soil characteristics were found, along with sedges, rushes and other hydrophytic plants. Many of the areas had standing water present, with a small pond located at the northern end of the assessment area. The wetlands found appear to be seasonal irrigation induced wetlands. They have little structural diversity and will likely provide no more than incidental habitat for most wildlife in the area. Some of the acres had standing water and may provide some groundwater recharge potential. There appears to be between 1.1- 5 acre-feet of water contained in the wetlands that are subject to flooding or ponding, so this area received a medium ranking for surface water storage. The characteristics found in these wetlands are common in irrigated lands found in the Henry's Fork drainage, so they received low uniqueness rankings. No recreational or education potential was found. The table below summarizes the habitat values present for all Salinity Control Program projects in the Henry's Fork area, based on the Montana Wetland Assessment Method.

Name	Irrigated acres Assessed	Wetland Acres Assessed	Total Habitat Values
Pallesen Pod-line	2	0	0
Thomas Pod-line	27.6	1.3	3.77
Crowther Pivot	40	2.95	7.67
S. Slagowski Pivot	25.1	1.02	1.84
B. Slagowski Pivot	48.4	5.0	15.00
Beck Pivot	100	83.5	292.25
Total	**243.1**	**93.77**	**320.53**

Table 1: Henry's Fork Salinity Control Program projects and habitat values assessed.

There have been two habitat replacement projects completed, the Peoples Canal Fish Barrier (summarized in previous report) and the Beaver Creek diversion improvement project. There are two other planned projects, which are summarized in the table below.

Name	Habitat Value	Replacement Value Totals
Peoples Canal Fish Barrier	100 stream miles protected	178.2 completed
Beaver Creek Diversion Improvement	6 stream miles seasonally connected	14.9 completed
Beaver Creek Riparian Fencing	90 riparian acres excluded from grazing	270 estimated
Blue Bell Diversion Improvement	35 stream miles seasonally connected	87.3 estimated
		193.1 Total Completed

Table 2: Henry's Fork Salinity Control Program habitat replacement projects and values.

References

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U.S. Army Corps of Engineers 2014. National Wetland Plant List, version 3.2. http://wetland_plants.usace.army.mil