

United States Department of Agriculture



Natural Resources Conservation Service  
Federal Building, Room 443  
10 East Babcock  
Bozeman, MT 59715

*Steve Becker*  
*I think we need an on-site visit with the Tribal Council to discuss the complete project -*  
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**SUBJECT:** ECS – Trip Report for Wildlife Resources  
Using Lake-17

November 17, 2010

**TO:** Ronald J. Nadwornick  
State Resource Conservationist  
Natural Resources Conservation Service  
Bozeman, Montana

*including the ESA*  
**File Code:** 190-7-5  
*implications of raising the dam, etc.*

**Date(s) of Assistance:** October 18-21, 2010.

*I'd like to be there.*

**Participants:** Mike Garverich, State Geologist; Karen Hoffman, Hydrology and Water Quality Engineer; Mark Yerger, State Design Engineer; and Bruce Kruger, Survey and Software Engineer from the State Office Engineering Staff.

*Lape*

**Purpose:** Identify and review the wildlife habitat, wetlands, and the ecological effects of the proposed renovation of the existing diversion, principle spillway and auxiliary spillway infrastructure for Lake-17 that is located on the Fort Belknap Indian Community in Blaine County, Montana.

**Activities:** The NRCS is providing technical assistance to the Fort Belknap Indian Community for infrastructure for an existing water diversion project. The diversion infrastructure was reported built in the 1930s; no-one seems to know exactly when. It was mentioned that the project was initially constructed and intended as an irrigation and stock water project; there have been no irrigation activities since the 1970s. The diversion structure has historically diverted the flows of Little Suction Creek and channeled them into Lake-17. The infrastructure for this project has failed repeatedly over time: 1) the diversion in Little Suction Creek, 2) the outlet water control structure, and 3) the auxiliary spillway. The diversion infrastructure is currently damaged and does not function accordingly (see attached Mark Yerger's Trip Report dated November 17, 2009 to Steve Becker, State Conservationist Engineer for additional information regarding the history, objectives, and infrastructure recommendations for this project).

The wildlife habitat in the vicinity (approximately 2-mile radius) of the lake were identified, classified and visually assessed during the site visit. The wetlands habitat types located within a couple of miles of the project include the permanent lacustrine/palustrine (i.e., Lake-17), a drained semi-permanent palustrine wetland, an artificial permanent palustrine wetland, and several manipulated or naturally temporary/seasonal palustrine wetlands (Cowardin et al., 1979). The upland habitat is primarily rangeland with approximately 800 acres of CRP located to the south of the project.

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Lake-17 has been artificially raised by diverting the flows of Little Suction Creek out of its former watershed to the "lake". Once the project is completed and the water levels are at full pool, the lake will be approximately 970.00 acres in size, with depths ranging from saturated soils to approximately 12 feet deep. Assuming the elevation of the lake was 3,013, the natural surface area of the lake would have been approximately 280 acres with a depth of approximately 4 feet. The additional storage resulting from the wetland enhancements has increased the length of shoreline, water depths, and surface area of the lake. The gradual topography of the northern arm of the lake may provide additional acres of shallow water in several "bays" (West-Northwest, South-Southwest, and East-Southeast Arms) of the lake. This includes the lower inlet South-Southwest Arm that is flooded during the spring runoff events. The South-Southwest Arm is approximately 312 acres in size and was dominated by foxtail barley and minor components of smartweed. However, when the lake is at full pool most of the cobble shoreline may be inundated. This would reduce the nesting opportunities for avian species such as the piping plover (U.S. Fish, Wildlife Service, Federal-Listed Species), along these shorelines. During a telephone conversation, Tom Jones (Tribal Fish and Wildlife Biologist) could not confirm with me that piping plovers (*Charadrius melodus*) used Lake-17 or any of the wetland sites around the lake either.

The lake provides migration resting and foraging opportunities for waterfowl, shorebirds, and wading birds. The lake has abundant aquatic vegetation such as smartweed (*Polygonum* spp.). There were small isolated patches of bulrush (*Scirpus* sp.) located along the south shoreline of the lake. These patches do not provide sufficient cover brood rearing or escape cover. In addition, diving ducks require emergent vegetation for nesting; again the amount of bulrush was not sufficient for this purpose. There is no obvious reason for the absence/infrequent occurrences of emergent vegetation along the shallow fringe areas of the lake, but interestingly, Benson Lake located nearby (approximately 0.75 miles northwest) does not have any emergent vegetation either.

There is a drained semi-permanent palustrine wetland of approximately 237 acres that lies just to the north of the lake (see Figure A). The seasonal waters that supported this wetland have been partially diverted into the northern end of Lake-17. The shoreline is composed of fine material, pebbles, cobbles, and large stones. This wetland does not support any emergent wetland vegetation such as cattail (*Typha* sp.) or bulrush (*Scirpus* sp.), but there was saltgrass (*Distichlis spicata*) smartweed (*Polygonum* sp.), glasswort (*Salicornia rubra*), foxtail barley (*Hordeum jubatum*), and spikerush (*Eleocharis* sp.) in the perimeter of the wetland. There is also a temporary wetland that is approximately 18 acres in size and a couple of feet deep at full pool that drains into this semi-permanent palustrine wetland.



**Figure A. Approximately 237 acres semi-permanent partially drained wetland that drains into Lake-17**

There are also several temporary/seasonal terminal basin wetlands located to the west of Lake-17. They are both within ½-mile of the open water habitat provided by the lake. One basin drains to the west and is approximately 11 acres in size. And the other, is a large kidney-shaped terminal basin (i.e., depressional wetland) that is approximately 73 acres size. None of these wetlands appear to be hydrologically manipulated. But, they are all heavily grazed by livestock and wildlife species.

The temporary, seasonal, and semi-permanent wetlands near Lake-17 function as a wetland complex that is important for wildlife. For example: shallow temporary/seasonal wetlands water temperatures will warm earlier in the spring providing favorable conditions for invertebrate life such as Diptera (flies, midges, and mosquitoes), Coleoptera (adult and larva beetles), Odonata (damselfly and dragonfly larvae), Trichoptera (caddisfly larvae), Hemiptera (larva and adults of true bugs), Ephemeroptera (mayfly larvae) from the class Insecta; Cladocera (water fleas), Anostraca (fairy shrimp), Amphipoda (amphipods), Ostracoda (seed shrimp), Isopoda (isopods), Conchostraca (clam shrimp), and Copepoda (copepods) of the crustacean taxa; and important snail families are Lymnaeidae, Planorbidae, and Physidae. Waterfowl and shorebirds use these wetlands to forage on the invertebrate life which is critical for egg production; invertebrates can

make up a significant portion of the diet of ducklings. Diverse wetland depths also provide security for years of drought; ensuring that there are wetlands in the area when the temporary or seasonal wetlands are dry.

The open water of Lake-17 and Benson Lake (located less than a mile and to the north of Lake-17) is an important habitat component of the wetland complex. The large amount of open water and varied depths provide safety net for surface area lost to evaporation, habitat for aquatic vegetation, and open areas for waterfowl resting and loafing. Dabbling and diving ducks along with tundra swans were observed resting and foraging on Lake-17. There were over 10,000 ducks on Lake-17 on the afternoon of October 19, 2010.

The upland vegetation is composed of grasses, forbes, moses and also a frequently found low shrub: broom snakeweed (*Gutierrezia sarothrae*) (see Figure B).



**Figure B. Broom snakeweed and clubmoss**

Most of the upland vegetation around Lake-17 was composed of clubmoss (*Selaginella densa*), blue grama (*Bouteloua gracilis*), fringed sagewort (*Artemisia frigid*), broom snakeweed (*Gutierrezia sarothrae*, Figure B), Sandberg's bluegrass (*Poa secunda*), prairie junegrass (*Koeleria pyramidata*), western wheatgrass (*Agropyron smithii*), crested wheatgrass (*Agropyron*

*cristatum*) near CRP fields)), and a few others occurring infrequently that I did not recognize. The site was absent of shrub vegetation such as, snowberry (*symphoricarpos* spp.), wildrose (*Rosa* spp.), current berry (*Ribes* spp.), juniper (*Juniperus* spp.), rabbitbrush (*Chrysothamnus* spp.), and sagebrush (*Artimisia* spp.). A Conservation Reserve Program (CRP) site located to the south and southwest of Lake-17 and the stream course of Little Suction Creek have sagebrush (*Artimisia* spp.) and greasewood (*Sarcobatus vermiculatus*), alfalfa, and crested wheatgrass within a couple of miles of Lake-17. The CRP fields are approximately 800 acres in size and likely provide sufficient cover for wildlife that need thick, dense vegetation structure such as the many passerines and dabbling ducks.

There are also two prairie dog towns located within a couple of miles of the lake to the southwest (see Figure C). The vegetation in the area was grazed heavily by the prairie dogs and livestock. These two prairie dog towns may have ecological significance. Mountain plover (*Charaduis montanus*) require very short "bare" ground for successfully nesting. Tom Jones (Tribal Fish and Wildlife Biologist) could not confirm with me that mountain plovers use the area for nesting or any other aspect of their lifecycle. However, the sites are very characteristic of mountain plover habitat. A spring bird survey would be necessary to confirm mountain plover activity in the area.



Figure C. Prairie dog town located south of Lake-17 and north of the CRP fields

**Recommendations:**

Based on my observations of the habitat components and conditions, wildlife use, existing and proposed infrastructure, and land use management of the area around Lake-17, I offer the following recommendations:

1. The initial diversion of Little Suction Creek was completed approximately 80 years ago, long before environmental assessments were required for federally assisted projects. To my knowledge, the effects of this project have not been considered. I recommend that an environmental assessment/evaluation be conducted to determine the potential environmental effects that would result from proceeding with the rehabilitation project as proposed.

Considering that the infrastructure has been in place for 80 years, Tribal water rights are being addressed, U.S. Army Corp of Engineers 404 permits will likely not be an issue based on past permits; wildlife have been dependent on the water source (see attached Fort Belknap Indian Community letter dated October 20, 2010).

2. Given the propinquity of Lake-17 to Bowdoin National Wildlife Refuge in Phillips County, and the refuge designation as Piping Plover Critical Habitat, I recommend that the NRCS contact the U.S. Fish and Wildlife Service (USFWS) for an informal consultation regarding piping plovers and the possible positive/negative effects of the proposed rehabilitation project.
3. Upon completion and conclusions of the environmental assessment and informal consultation, I encourage the NRCS to provide technical and financial assistance for this water storage/wetland rehabilitation project. I recommend the following wetland restoration/enhancement practices:
  - a. Restore the partially drained semi-permanent wetland locate at the north end of Lake-17 by simply filling the drainage ditch. Filling the drainage ditch would allow the wetland to the function naturally and will add a critical wetland component to the complex. This restoration practice is just as important as providing the additional (enhanced) water volumes to Lake-17 when considering the wetland complex and benefits for wildlife.
  - b. Install the rehabilitation practices including the in-stream diversion, dam, and auxiliary spillway that provide additional water, increased storage capacity, water management capabilities, and enhance the wetland habitat for the site.

I have not made any recommendations for the management of the rangeland. It is important to note that grasslands are critical for nesting birds and other wildlife species. Depending on the condition of the existing plant community, the area will be used by different species of wildlife; including migratory birds. The existing upland conditions around Lake-17 favor small mammals and avian species that select sites consisting of bare ground to sparse vegetative ground cover. Examples of these species would be prairie dogs, ferrets, mountain plovers, long-billed curlews,

Canada geese and pintails. The site could potentially provide the desired vegetation conditions for upland nesting waterfowl, but this would require a change in the current upland management strategy.

NOTE: As with all wetland restoration/enhancement projects in Montana, I encourage the NRCS to ensure that water rights have been legally acquired prior to allocating any federal funding for the project (see attached Fort Belknap Indian Community letter dated October 20, 2010).

Please contact me at (406) 587-6795 if you have any questions or concerns.

JEFF COMBS  
Biologist

Enclosures:

1. Mark Yerger, Lake 17 Diversion, Trip Report, November 17, 2009.
2. Letter addressing tribal water rights from Tracy R. King, President, Fort Belknap Community Council dated October 20, 2010.

cc w/encl:

Phyllis Philipps, Assistant State Conservationist for Field Offices, NRCS, Great Falls, Montana  
Terry Buck, District Conservationist, NRCS, Fort Belknap, Montana

cc w/o encl:

Steve Becker, State Conservation Engineer, NRCS, Bozeman, Montana

**Literature Cited**

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31

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