

Unusual Beaver, *Castor canadensis*, Dams in Central Yukon

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North American Beavers (*Castor canadensis*) are remarkable for their ability to build dams and modify their habitat. Dams are typically made of the boles and branches of trees and large shrubs, and reinforced with mud and rocks. Here, we report two unusual Beaver dams in central Yukon, Canada, that are made primarily of medium-sized rocks. This observation points to the adaptability of Beavers in using available materials to build their dams.

Key Words: Beaver, *Castor canadensis*, dam construction, Yukon.

One of the more remarkable aspects of the natural history of North American Beavers (*Castor canadensis*) is their ability to alter the landscape through the construction of dams. Dams raise water levels and create reservoirs (Beaver ponds) upstream of the dam, which ensures the entrance to their house is underwater, offers relative protection from terrestrial predators, and provides safe access to terrestrial or cached foods such as willows (*Salix* spp.) and poplars (*Populus* spp.). Beaver dams and ponds have a large impact on the local hydrology (e.g., Woo and Waddington 1990; Gurnell 1998), they alter local ecosystems (Naiman et al. 1986, 1994; Rosell et al. 2005), and they appear to increase local biodiversity (e.g., Wright et al. 2002; Cooke and Zack 2008). As such, Beaver dams are important ecological features in temperate and boreal landscapes and their characterization has received considerable attention (e.g., McComb et al. 1990; Barnes and Mallik 1997).

Typically, Beaver dams are primarily made of wood, including the boles and branches of willows, alders (*Alnus* spp.), and poplars (Doucet et al. 1994; Barnes and Mallik 1996), that Beaver transport by carrying in their mouth. These wooden dams are reinforced with mud and rocks that Beavers transport and put into place with their forepaws. Here, we report unusual Beaver dams found in central Yukon, Canada, that are primarily made of rocks.

On 23 September 2010, we observed three Beaver dams on Swamp Creek, about 72 km north of Beaver Creek, Yukon (62.383°N, 140.876°W), close to the Alaska-Yukon border. The area is the site of an active gold placer mine. Swamp Creek is located in the Klondike Plateau Ecoregion, an area that was unglaciated during the Last Glacial Maximum. Spruce (*Picea mariana*; *P. glauca*) forests, interspersed by stands of Alaskan Birch (*Betula neoalaskana*), Trembling Aspen (*Populus tremuloides*), or Balsam Poplar (*Populus balsamifera*), are the dominant vegetation types at lower elevations. However, placer mining had removed much of the original forest near the creek, allowing for new deciduous growth, and creating settling ponds. The dams were built in an area that was previously mined,

downstream of a settling pond in the small creek. The immediate area was dominated by gravel and rock, with some regeneration of willow, alder, and poplar.

Dam A (Figure 1A) was located about 50 m downstream from a settling pond. This dam was about 2.8 m wide and 0.8 m tall and composed of 90% rocks and 10% woody material. The rocks used to build the dam were generally 20–30 cm across, with the larger ones weighing approximately 4–5 kg. A second dam, Dam B (Figure 1B), was located about 32 m upstream from Dam A. This dam was about 5.5 m wide and 1.5 m tall, and composed of about 60% rock and 40% woody material. Dam C was located near another settling pond, about 900 m downstream of Dam A, and was more typical of Beaver dams, being largely composed of woody material with a small amount of mud and rocks.

Two Beaver families lived in the two settling ponds. The surveyed portion of the creek was first occupied by Beavers in 2002, and Dams A and B were built in 2006 by a family of Beavers with kits (K. Warrick, Moosehorn Exploration Ltd., personal communication). This Beaver family may have dispersed from the Beaver family that colonized the settling pond immediately downstream (near Dam C) in 2002. Dams A and B were damaged by a Grizzly Bear (*Ursus arctos*; K. Warrick, Moosehorn Exploration Ltd., personal communication) in 2008, but they were still functional in late 2010.

We are not aware of any other Beaver dams that are made primarily of rocks. Given that the site was an active placer mine, woody vegetation of suitable diameter for building dams was relatively scarce close to the creek, while rocks were plentiful. We believe that the Beavers simply made use of the local building materials in proportion to their availability. Perhaps the Beavers were willing to travel far from the creek for forage, but used materials close to the creek to build their dams. In addition, the available woody vegetation was young and was likely too small to be useful as dam-building material. Alternatively, because willows and Trembling Aspen, favored foods of Beaver (Slough 1978), were not abundant near the creek, per-



FIGURE 1. Photographs taken in 2006 of two Beaver dams made primarily of rocks in central Yukon. Photographs courtesy of Kate and Ian Warrick.

haps the Beavers used rocks to build their dam so that the available woody vegetation could be used for food, rather than dam-building materials. Regardless, we believe that these unique dams are of interest because they point to the adaptability of Beavers in using available materials to build their dams.

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