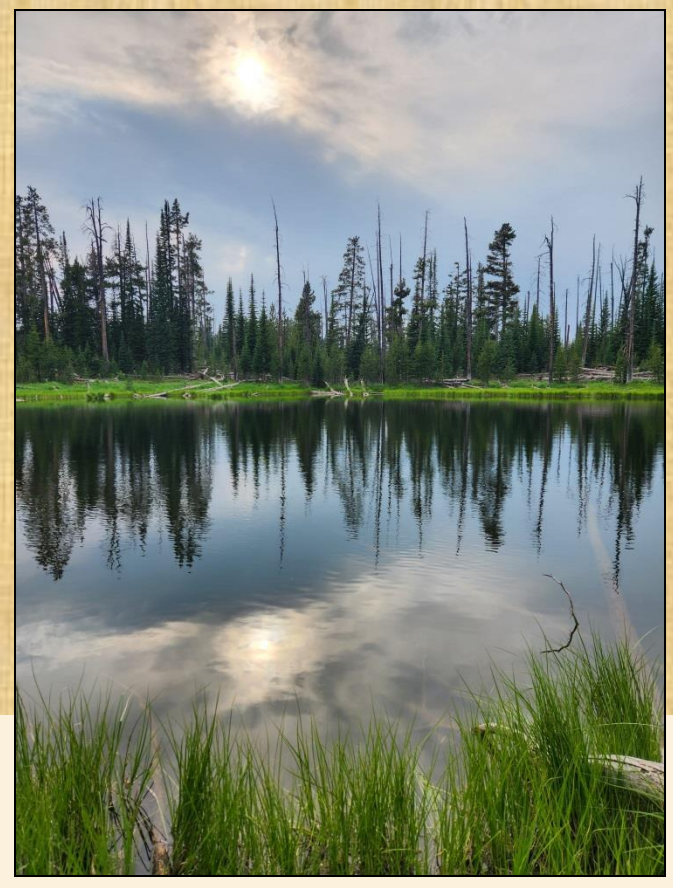


Archaeology of the Thirsty Creek Watershed, Yellowstone National Park



Plateau Lake, Yellowstone National Park, Wyoming (Peterson 2024).



"Lily Pad" Lake, Yellowstone National Park, Montana-Idaho Border (Peterson 2024).

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Introduction

Yellowstone National Park (YNP) contains a rich human history occupying this landscape for at least 11,500 years. Cultural resources in the park, protected since 1872, represent the material embodiment of one of the largest and most complete continua of human occupation in the western United States. In 2023, the YNP Archeology Program and Office of the Wyoming State Archaeologist (OWSA) initiated a partnership research project to inventory and identify significant archaeological resources within the Thirsty Creek Watershed, West District, Yellowstone National Park (YNP), the primary riverine-based transportation corridor for this area. This watershed is situated in rugged and remote backcountry on the rhyolitic Madison Plateau between the Continental Divide and the Summit Lake Trail and includes the western edge of the Yellowstone Caldera. This is the first archaeological resource study conducted in this portion of the Madison Plateau. In 2023 and 2024, OWSA surveyed approximately 2,700 acres, focusing efforts on Summit Lake, Little Summit Lake, Plateau Lake, an unnamed lake (AKA "Lily Pad" Lake) on the Montana-Idaho border, thermal areas, and the southern end of the Thirsty Creek drainage. Data obtained are filling a gap in our knowledge and understanding of pre-park human use not only of hydrothermal, fresh water, and other resources in the Thirsty Creek watershed, but also travel and trade routes across the Greater Yellowstone Ecosystem.

Historical Archaeology

Summit Lake Trail (48YE2324)
The Summit Lake Trail was constructed as a fire lane in 1911, with a total cost of \$504.80 (Rosenberg et al. 2018). It is currently part of the Continental Divide Trail (CDT) and is heavily used by visitors and CDT thru-hikers during the summer months, and we noted moderately dense modern trash along the trail and at the Summit Lake campground (OE1). Field teams located four pieces of aqua glass near Summit Lake that date to ca. 1860s-1920s and the remains of two hole-and-cap cans about a third of the way west of Summit Lake to the western park boundary that date to the 1840s-1920s. These artifacts are associated with construction and/or early use of the fire lane.

Montana-Idaho Border Survey
Between 1904 and 1907, Howard B. Carpenter surveyed the Montana-Idaho state border. His team followed an incorrect bearing and placed iron boundary markers about 3 miles east of the actual state boundary. Shortly after placing these markers a large snow storm forced their departure. They later returned in 1907 to correct their mistake (Carpenter 1906).

In 2024, the OWSA team located remnants of Carpenter's September 1906 camp and three boundary markers incorrectly placed at Plateau Lake (YNP2024-14 to YNP2024-84). Artifacts left at their camp provide a glimpse of the daily lives of the 1906 survey team used in the field, such as food and beverage containers, utensils, and medicinal bottles. These are the only known archaeological sites from this expedition in YNP.



Photos of 1904-1907 survey equipment, upper (Carpenter 1907) and survey marker, lower (Peterson 2024).



Historical photo of what appears to be the northern part of Plateau Lake looking north, left (Carpenter 1907) and overview of that same pond looking south, right (Peterson 2024).



Left: Obsidian flake tool from Lily Pad Lake. Sourced to Bear Gulch (Hughes 2024).



Obsidian biface fragment from Plateau Lake. Sourced to Obsidian Cliff (Hughes 2024).



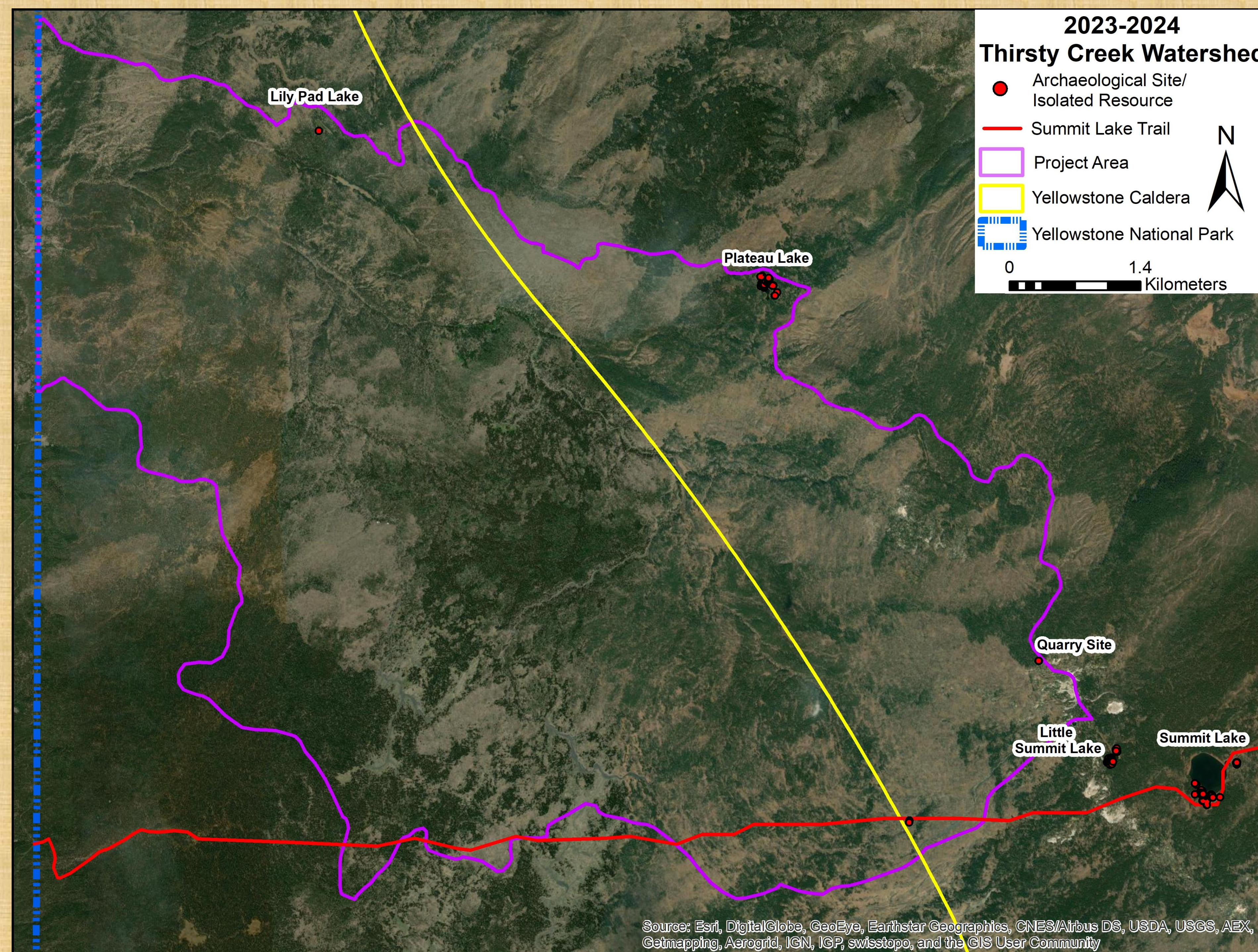
Obsidian tested nodule from a quarry on the Continental Divide. Sourced to Lava Creek Tuff (Hughes 2024).



Mahogany obsidian flake from Little Summit Lake. Sourced to Warm Creek (Hughes 2024).

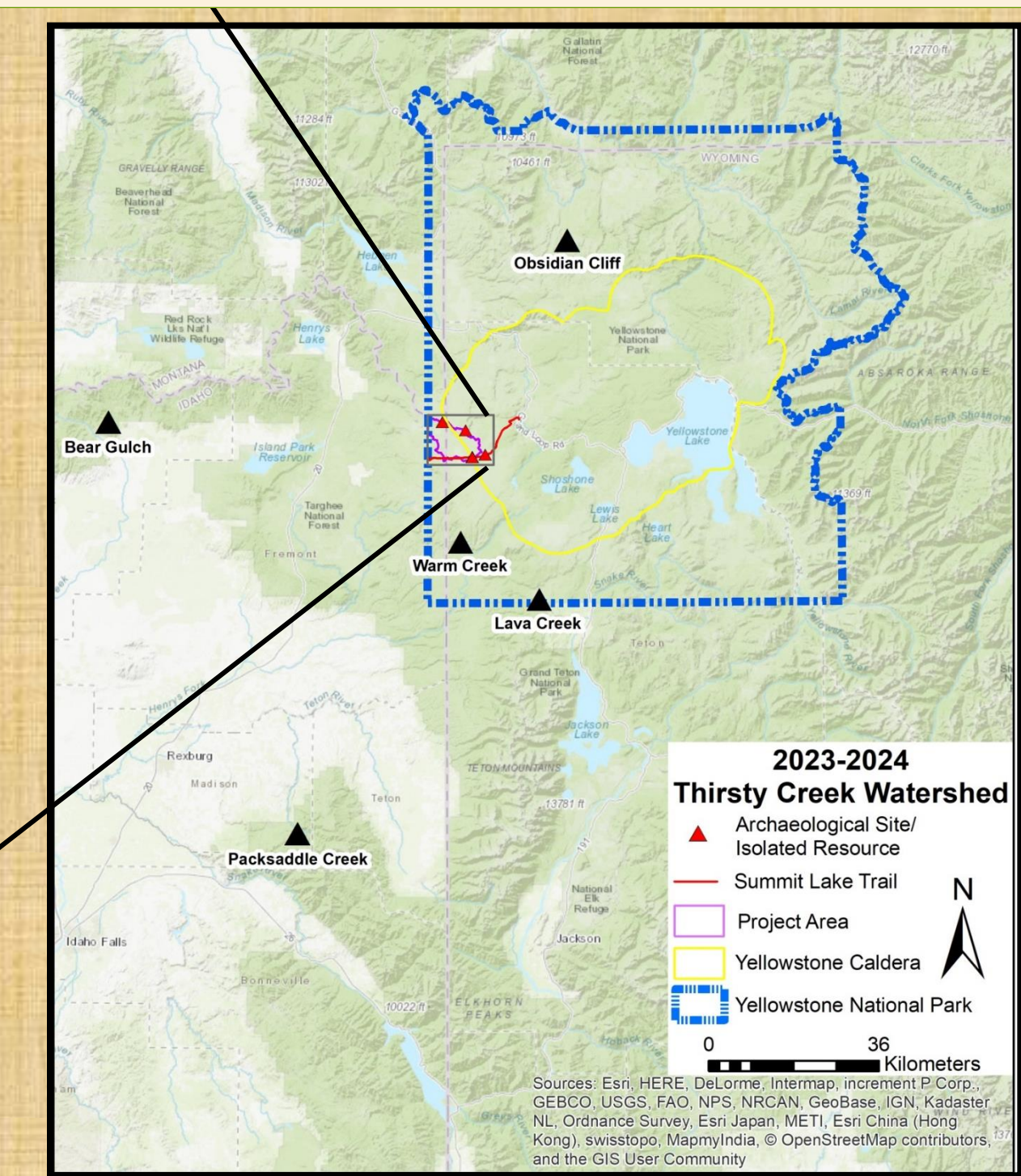


Obsidian biface fragment from Little Summit Lake. Sourced to Packsaddle Creek (Hughes 2024).



Precontact Archaeology

Twelve precontact archaeological sites and seven isolated finds (artifacts clusters with less than 15 objects), were newly identified and documented, including a previously unknown quarry site (Temporary Field ID: YNP2023-8). A total of 253 Native American precontact artifacts consisting of formal tools and debris from tool manufacture (debitage) were recorded. Obsidian is an excellent material for manufacturing stone tools; it is easily worked and predictable in its fracture mechanics and produces a razor-sharp edge. Nineteen obsidian artifacts, including one tested nodule from the quarry site, were collected and subjected to X-ray fluorescence (XRF) analysis to identify the source location. Matching the artifact to natural obsidian sources within the landscape provides data that are used to identify travel and trade routes of pre-park peoples who used these quarries to obtain toolstone. Obsidian was obtained from quarries in Wyoming and Idaho to manufacture tools and flaking debris deposited in the Thirsty Creek Watershed: Bear Gulch (3), Packsaddle Creek (1), Warm Creek (1), Lava Creek Tuff (8), and Obsidian Cliff (6) (Hughes 2024). These data reflect two travel corridors pre-park peoples used to travel to access the Thirsty Creek Watershed and Summit Lake area: 1) a western route from Bear Gulch into Yellowstone then along the Continental Divide, and 2) a northeastern route from Packsaddle Creek to the Little Summit Lake/Summit Lake area. XRF results for the tested nodule analyzed from quarry site YNP2023-08 sourced this artifact to the Lava Creek Tuff type site located along the southern boundary of the park associated with the geologic Lava Creek Tuff formation. Therefore, obsidian artifacts sourced to Lava Creek Tuff quarry type site, currently interpreted as reflecting southern based-trade and travel routes, may instead reflect more extensive use of a western travel route to access the central Madison Plateau and other lands now part of Yellowstone NP.



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Historic Lloyd Bros. Pharmacists, Inc. bottle base and finish ca. 1884-1926 from Plateau Lake (Lockhart et al. 2017).



Historic bottle finish ca. 1885-1920 from Plateau Lake (Merritt 2014).



Historic fork ca. 1906 from Plateau Lake (Carpenter 1906).



Historic aqua glass ca. 1860s-1920s from near Summit Lake. Poss. Atwood's Jaundice Bitters bottle fragment (Fike 1987).



Historic hole-and-cap can ca. 1840s-1920s on the Summit Lake Trail (Merritt 2014).