

# CONTINUING SOAPSTONE RESEARCH IN MEMORY OF J. D. LOVE, TETON RANGE, WYOMING



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## ♦ ABSTRACT

Operating under grants from the University of Wyoming-National Park Service Research Station and the Wyoming Historical Society, personnel from the Office of the Wyoming State Archaeologist and volunteers spent eight days performing a cultural resource survey of parts of the Jedediah Smith wilderness in the Caribou-Targhee National Forest. Our survey took place on the west side of the Teton Range in the Badger Creek and Bitch Creek drainages. We surveyed more than 350 acres and recorded four sites in the Caribou-Targhee National Forest: an historic mine and cabin, two new prehistoric sites, and a soapstone source. While all the historic sites would benefit from evaluation by an historian, none of the sites is in need of further work.

## ♦ INTRODUCTION

As a direct result of grants from the University of Wyoming-National Park Service Research Station and the Wyoming Historical Society, personnel from the Office of the Wyoming State Archaeologist and eight volunteers surveyed more than 350 acres for archaeological sites in the Jedediah Smith Wilderness in the Caribou-Targhee National Forest in July 2004. We located and recorded four sites: two prehistoric sites, a site with historic features and prehistoric artifacts, and a soapstone source with possible evidence of aboriginal utilization. This work honors the late geologist John

David Love, who mapped the geology of the Tetons and maintained an active interest in the prehistoric inhabitants of Wyoming.

## ♦ ENVIRONMENTAL SETTING

The project took place in the Jedediah Smith Wilderness on the Caribou-Targhee National Forest, in Wyoming. We surveyed two areas on the west side of the Tetons: one on the west side of Rammel Mountain, the other in the Bitch Creek Narrows area.

The first survey took place on a western spur of Rammel Mountain that forms a prominent ridge which can be followed all the way to a pass just south of Rammel Peak at 9800 feet (Figure 1). East of the pass there is easy access to Bitch Creek. South of the ridge, and 1300 feet below, is the Badger Creek valley. To the north are the numerous gullies and streams coming off Rammel Mountain.

The Rammel Mountain survey started at the Rammel Mountain trailhead at the end of Forest Road 254 and continued up the Badger Creek divide along Forest Trail 17 to 48TE1647. Two sites were recorded on the west side of the Tetons in the lower reaches of a cirque-like area at the headwaters of an unnamed fork of Jackpine Creek. This bouldery subalpine area is characterized by whitebark pine and Douglas fir (Figure 2). There is long-lasting snowpack in the spring that gives way to numerous rocky rivulets running through wet meadows interspersed with ribbon forests. We worked in this

area in 2003 (Adams 2004) and wanted to re-examine the area around 48TE1647 in 2004.

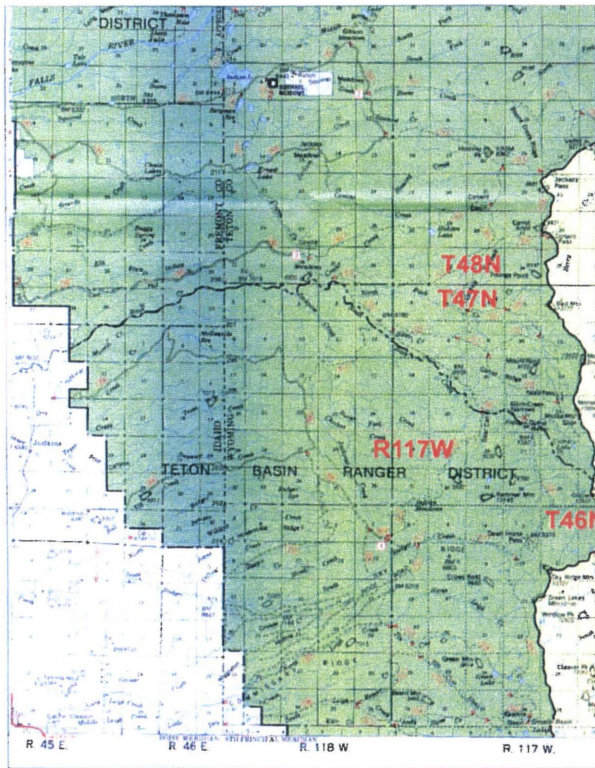


Figure 1. Map showing location of the WY-23-04 project area.

In the second survey, we started at the Coyote Meadows trailhead and followed Forest Trail 002 up the south fork of Bitch Creek past Bitch Creek Narrows. From a base camp in Hidden Corral Basin we surveyed likely areas in Hidden Corral Basin, at Camp Lake, and on Nord Pass. The area is a very dynamic environment characterized by steep slopes, thick vegetation, and lots of water (Figure 2). Ground visibility was poor. Meadows were covered with thigh-high vegetation. Visibility on the slopes was better, but most of the slopes are just a few degrees shy of the angle of repose and the possibility of finding cultural remains was slim.

## ◆ METHODS

The locations of soapstone research areas in the Tetons are shown in Table 1. These areas of inquiry were chosen because soapstone is a ultramafic metamorphic rock, a type of rock with limited distribution in the Tetons. Ultramafic bodies were mapped by the late geologist J. David Love (Love et al. 1992). While other Precambrian rocks may contain soapstone elsewhere in the Tetons, it is almost sure to be found in ultra-mafic rocks.

Place Name	Geology	Site Number	Fieldwork
Owl Creek	Layered gneiss	48TE529	2003
Upper Berry Creek	Ultramafic	48TE1255	2003
Rammel Mountain	Augen gneiss	48TE1646	2003 & 2004
Bitch Creek Narrows	Ultramafic		2004
Bitch Creek	Ultramafic	48TE1679	2004
Columbine Cascade	Ultramafic		
Moran Canyon	Ultramafic		



Rammel Mountain project area



Bitch Creek project area

Figure 2. Representative photographs of the WY-23-04 project area.

An unofficial search of the Cultural Records Office database in Laramie was performed for the project area (T46N, R117W) prior to beginning

fieldwork. No prehistoric sites had been recorded in the sections we worked in prior to beginning this grant.

A search of the CRO database (conducted 11/22/02) searching Teton County for the keyword "quarry" revealed that only one soapstone quarry has been recorded. Site 48TE529 was recorded by C.M. Love in 1971, who called it the "most important steatite quarry in the northern Teton Range" (C.M. Love 1971). Unfortunately, neither site maps nor photographs accompany the site form, and the narrative description is only two sentences long.

The CRO file search also revealed that, other than 48TE529, no prehistoric cultural sites have been recorded in the vicinity of other soapstone sources whose geology was mapped by J. D. Love (Love et al. 1992). Slim Lawrence's historic asbestos mine (48TE1255), is also a source of soapstone, but appears to lack a prehistoric component (Adams 2004). The Rammel Mountain soapstone source is shown on Love's geologic map of the Tetons, but until last year was not a recorded prehistoric or historic cultural resource.

A total of 352 block acres, surveyed at or near Class III standards (SHPO 2002), is comprised of 286 acres of block survey in the Bitch Creek area, about 63 acres of block survey in the Rammel Mountain area, and about 3 acres of block survey on Nord Pass. The amount of linear survey is derived by multiplying the total number of miles walked ( $\pm 13$ ) by 5280 ft/mile by a 30 foot wide survey corridor for a total of about 47 acres. The survey crew consisted of two professional archaeologists and seven volunteers.

Prehistoric cultural resources were recorded in compliance with current State Historic Preservation Office standards. Cultural resources encountered during pedestrian surveys were located with GPS receivers. Individual artifacts and features were located with GPS receivers, photographed, and described.

Isolated finds were located on a USGS 7.5' topographic map with a handheld GPS receiver, photographed, and the environmental context was recorded on Wyoming SHPO isolated find forms. The presence of two or more artifacts or features within 30 m of their nearest neighbor was considered a site. A thorough ground survey covered the site area; colored pin flags were placed to mark the location of each artifact and feature in a site. The locations of artifacts and sites were recorded with a

GPS receiver and plotted on the appropriate USGS 7.5' topographic map using iGage (1999) All Topo Maps: Wyoming software. All pin flagged artifacts were recorded as to material type and general morphology (i.e., primary flake, core, biface, etc.) based on criteria outlined in Appendix A. Time period definitions are in the same table.

A simplified Wyoming Cultural Properties Form was filled out for each site and each site was plotted on the appropriate USGS 7.5' topographic map. The site setting, as well as tools, hafted bifaces, soapstone artifacts, and features were photographed. No subsurface testing was undertaken.

Most sites were evaluated for National Register of Historic Places (NRHP) eligibility as either unevaluated or eligible. The rationale is that, given the brief nature of the field work, we were unable to spend enough time at sites to determine *ineligibility*. Also, most of these sites were in or near the trees, and past experience has shown that timber can easily conceal cultural resources.

All field notes, photographs, maps, etc., are housed at the Office of the Wyoming State Archaeologist in Laramie, Wyoming.

Several artifacts were collected with prior consent from the Caribou-Targhee National Forest archaeologist. These artifacts, all from 48TE1647, were considered to be at risk of disappearing. They are described and illustrated in this report, and will be turned over to the Caribou-Targhee National Forest archaeologist at the earliest possible opportunity. A total of 27 artifacts were collected from 48TE1647. This represents the entire surface artifact assemblage observed in 2004. Total collection is a relatively rare event, and I think it is justified because the assemblage documents the association of soapstone artifacts with chipped stone artifacts. If left alone, the surface assemblage, with its museum-quality preforms, would not remain intact for long. The collected artifacts consist of: nine pieces of low quality obsidian, one large soapstone bowl preform, one small soapstone bowl preform, nine fragments of a soapstone bowl (at least five pieces refit), six ambiguous pieces of soapstone that may be part of the broken bowl or soapstone debitage, and one soapstone flake.

This report was submitted to the Caribou-Targhee National Forest, the SHPO Cultural Records Office, the UW-National Park Service Research Station, and the Wyoming Historical Society.

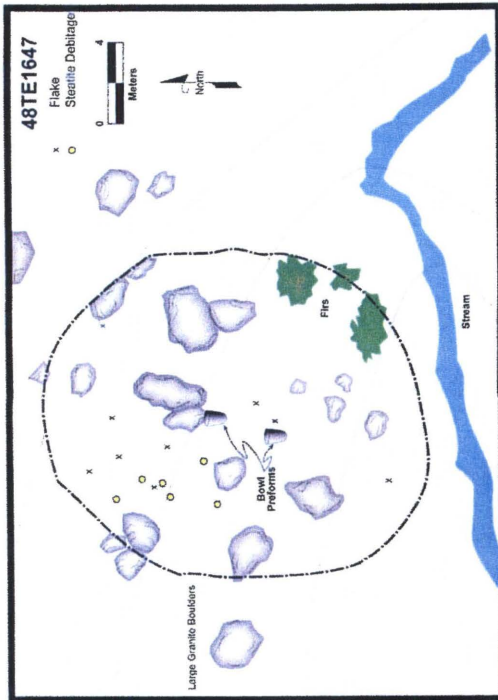


Figure 3. Sketch map of 48TE1647



48TE1647 site photo, looking southeast



Obsidian debitage from 48TE1647

Figure 4. Photographs of 48TE1647

### ◆ SURVEY RESULTS

Four new sites were located and recorded, and new data are added to two sites originally recorded in 2003, as a direct result of the UW-NPS and WHS Homsher grants. All six sites are located on public land administered by the Caribou-Targhee National Forest, in the Jedediah Smith Wilderness on the west side of the Teton Range. Their locations are shown in Figure 1.

#### PREVIOUSLY RECORDED SITES

SITE: 48TE1647 – Rammel Amble Ding Dong Site (Figures 1, 3, 4 and 5).

DESCRIPTION: The site is in the Jedediah Smith Wilderness of the Caribou-Targhee National Forest on the west side of the Teton Range. It is located in a patchy Engelmann spruce and sub-alpine fir forest immediately north of a small spring-fed creek at an altitude of 9010 feet above sea level. Monkeyflower and sedges cling to the sides of a tiny, unnamed tributary of Jackpine Creek. Large granitic boulders dot the landscape. There is quite a bit of barren ground in this drainage, suggesting a dynamic environment. The site is on ground that slopes west-southwest at 15°. It is a small site, only 9 m in diameter.

The site consists of two broken soapstone bowl preforms, a broken soapstone bowl, and nine pieces of obsidian. Surface artifacts are summarized in Table 2.

Material Type	Primary	Secondary	Tertiary	Debris	Other
Obsidian	1	1	1	5	core
Soapstone			5	2 broken bowl preforms and one broken bowl in 9 pieces	

Both preforms and the fragmentary bowl were found in a 7 meter diameter area. All five pieces of the broken bowl were found within a 0.75 m diameter area.

Preform #1 is a broken soapstone bowl preform (Figure 5). It is 20 cm tall. The outside diameter is 19 by roughly 16 cm. The inside diameter is 15.5 by roughly 11.5 cm. The maximum

Adams 1992) flowerpot-shaped vessel with a flanged base. The base diameter is 14 by 12 cm, the flange is about 2 cm high. All the manufacturing marks left on the bowl are consistent with manufacture by stone tools. The bottom of the interior has been pecked, while the interior walls were gouged and chopped by a tool with an irregular working edge. The exterior was chopped circumferentially rather than longitudinally. The manufacturing marks are about 1 cm across by 0.7 cm long.



48TE1647 - Preform 1



48TE1647 - Preform 2



48TE1647 - Reassembled bowl fragments

Figure 5. Photographs of 48TE1647

Preform #2 is a broken soapstone bowl preform (Figure 5). Its height is 9.6 cm. The outside diameter is 16.5 by 10 cm at the top of the wall remnants, and 10 by 7 cm at the base. It split

vertically, but not into even halves. The piece that we found represents about 2/3 of the preform's base. There are no obvious impurities where the bowl split. The preform once had side walls, but only a small amount of wall remains attached to the base. The preform has a classic flanged shape. The flange is about 1.5 cm high. The wall remnants are about 2 cm thick. All the manufacturing marks left on the bowl are consistent with manufacture by stone tools. Both the interior and exterior exhibit peck marks, but both surfaces are more weathered and smoother than preform #1.

Five pieces of a nearly completed, but subsequently broken, soapstone bowl were found in a 75 cm diameter area that was in close proximity to the preforms. Three of the fragments fit together and the other two fit together, but assemblies of the three and two do not fit together in any combination, although it is clear they came from the same bowl. Figure 5 shows the reassembled bowl fragments as if they all fit together. No part of the base is present, but part of an irregular lip is present. There is no evidence of a flange. All the manufacturing marks left on the bowl are consistent with manufacture by stone tools. The manufacturing marks on the interior surface suggest a tool with an irregular edge that was used by a right handed person, because the manufacturing marks go from top right to bottom left. The exterior is more weathered and was chopped with a different tool that had an irregular edge. The height is estimated to be 15 cm. There are four other pieces of a bowl that do not refit. They are too small and indistinct to determine if they are from the partially reassembled bowl. In addition there are five pieces of soapstone debris that may be bowl fragments or may be waste from bowl manufacture. They all lack sufficient distinguishing characteristics and morphological attributes to allow further analysis.

Nine pieces of low grade, glassy, black obsidian debitage were found at the site. Seven of nine of the pieces are larger than 27 mm (Figure 4). They are mostly blocky chunks with little utility, there is no obvious use-wear along any of their edges. INTERPRETATION: In my experience, historic artifacts are usually superimposed over prehistoric assemblage at most soapstone sites; however, in this case the nearest historic artifacts are more than 150 m south of the site. The soapstone artifacts lack obvious metal tool marks and they were found associated with chipped stone. I interpret this to mean that the people who made the bowls were using lithic rather than metal technology. Only a few unequivocally prehistoric sites have been recorded.

Taken together, these sites make an argument for the prehistoric origin of the soapstone bowl industry.

I suspect that the site was a cache rather than a camp or workshop. The ground slopes too much for comfortable camping. It lacks the soapstone "debitage" commonly found at manufacturing areas in the other mountains (Adams 2003, Frison 1982, Schoen 2004).

**TESTING:** No testing was performed.

**COLLECTION:** A total of 25 artifacts were collected from 48TE1647. This represents the entire surface artifact assemblage observed in 2004. Total collection is a relatively rare event, and I think it is justified because the assemblage documents the association of soapstone artifacts with chipped stone artifacts. If left alone, the surface assemblage, with its museum-quality preforms, would not remain intact for long. Artifacts are illustrated in Figures 4 and 5. The collected artifacts consist of: nine pieces of obsidian, one large soapstone bowl preform, one small soapstone bowl preform, nine soapstone bowl fragments, five ambiguous pieces of soapstone that may be part of the broken bowl or soapstone debitage.

**NATIONAL REGISTER STATUS:** Although small and lacking in diversity, this is an important site. It contains soapstone artifacts with manufacturing marks consistent with stone tools in an unequivocally prehistoric context. Further study can be expected to yield significant scientific information. For this reason, 49TE1647 is considered eligible for nomination to the National Register of Historic Places.

**IMPACTS:** No impacts are known.

**RECOMMENDATIONS:** No further work is recommended.

**SITE:** 48TE1648 – Historic Mining area (Figures 1, 6 and 7).

**DESCRIPTION:** New data are added to this site, which we recorded in 2003. While this multi-component site consists of an old cabin, two mining test pits, one mine, and a small amount of prehistoric chipped stone, only the cabin is discussed here. The site is in the Jedediah Smith Wilderness of the Caribou-Targhee National Forest on the west side of the Teton Range. Site size is 50 m N–S by 310 m E–W for an area of 12,175 m<sup>2</sup>. The cabin and prehistoric lithics are at 9080 feet above sea level.

By all indications the cabin is old (Figure 7). The timbers were cut with an axe, not a saw. The logs are V-notched and still fit tightly (Figure 7). Only five courses of logs remain and they are warped

and sunken. Other than a solder-dot can fragment, no identifiable historic artifacts were recorded. Scattered about the flat spot near the cabin is a background noise of rust fragments that may have been from cans, but they are rusted beyond all archaeological utility.



Figure 6. Sketch and photo of the cabin at 48TE1648

**TESTING:** No testing was performed.

**NATIONAL REGISTER STATUS:** From an archaeological perspective, the physical remains of the site are unexceptional. Only the lower portion of the cabin is standing. There is some potential for subsurface artifacts in the O horizon; however, it is unlikely that these would make a significant contribution to our understanding of the area. Therefore, the site is considered ineligible under criterion D (NPS 1990) and unevaluated under criteria A, B, and C.

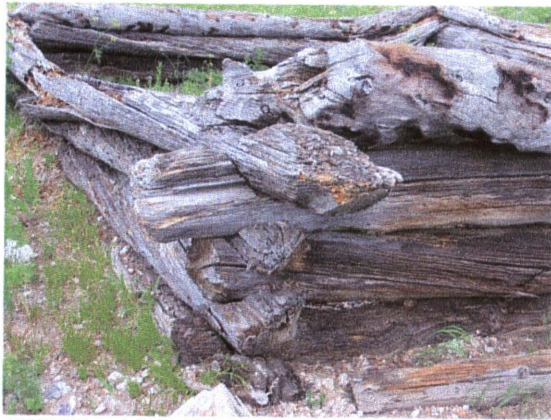
**IMPACTS:** Other than the threat of collection by looters, no impacts are known.

**RECOMMENDATIONS:** No further work is recommended.

#### NEWLY RECORDED SITES

A total of four new sites were located and recorded. Two are prehistoric sites, one site contains both historic features and prehistoric artifacts, and the fourth site is a soapstone source.

**SITE:** 48TE1680 – Rammel 6 (Figures 1 and 8).  
**DESCRIPTION:** The site is in the Jedediah Smith Wilderness of the Caribou-Targhee National Forest on the west side of the Teton Range. Site size is 10 m in diameter for an area of roughly 80 m<sup>2</sup>. The site is at an altitude of 9040 feet (2755 m) above sea level. The site is in an opening, but there are scattered pines, sub-alpine fir, and Engelmann spruce within a few meters on either side of the site. The site slopes to the southwest at about four degrees.



48TE1648, notch detail



48TE1648, cabin remains.

Figure 7. Photographs of 48TE1648.

The site consists of one grey and two black obsidian flakes.

**TESTING:** No testing was performed. The site is located on a dynamic ground surface with little potential for significant, intact buried cultural deposits.

**NATIONAL REGISTER STATUS:** This site is considered to be ineligible for nomination to the National Register of Historic Places. Recording has exhausted its information potential.

**IMPACTS:** Other than the threat of collection by looters, impacts are unknown.

**RECOMMENDATIONS:** No further work is recommended.



Figure 8. 48TE1680—Site photo, looking north.

**SITE:** 48TE1681 – Rammel 7 (Figures 1, 9, 10, and 11).  
**DESCRIPTION:** The site is in the Jedediah Smith Wilderness of the Caribou-Targhee National Forest on the west side of the Teton Range. Site size is 46 m NE-SW by 23 m SE-NW for an area of 831 m<sup>2</sup>. The site is at an altitude of 9120 feet (2780 m) above sea level. The site is located on a minor ridge on the west side of Rammel Mountain. Scattered pine and Engelmann spruce dot the rocky ridge.

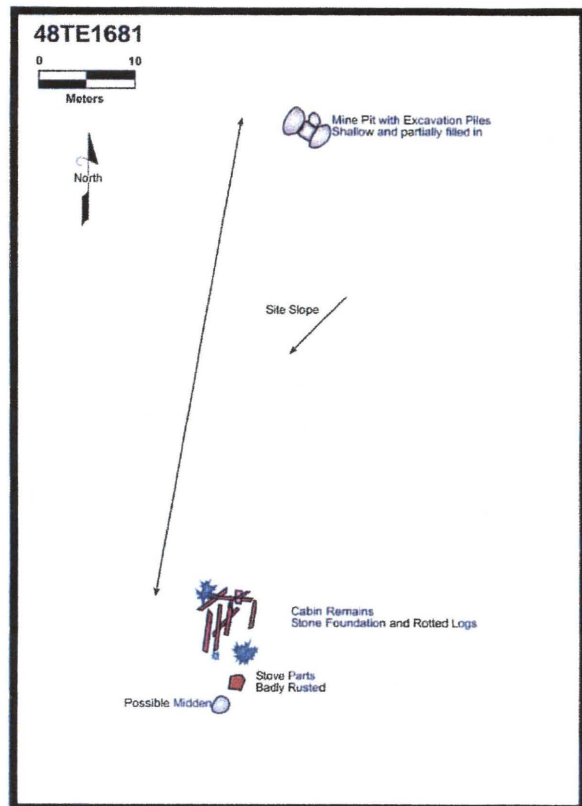


Figure 9. Sketch and map of 48TE1681



48TE1681, shaft area, looking north

Figure 10. Photographs of 48TE1681.



Remnants of a wood stove



Artifacts from 48TE1681

Figure 11. Photographs of 48TE1681.

The site consists of historic features and trash along with a few pieces of prehistoric debitage.

The historic component consists of a collapsed cabin, a mine prospect, and scattered trash. We recorded window glass, wire nails, tar paper, a clear glass screw-top mustard jar, a pressure-fit-cap condiment jar, an enameled metal bowl, a porcelain plate fragment, and purple glass fragments (Figure 11). Near the cabin we found the remains of a cast iron four-burner wood stove.

The cabin consists of rotten logs, lumber, and tar paper in a square shape about 4.5 m on a side. The tar paper suggests a tar paper roof at the very least. There is what could be the remains of a rock chimney on the south side of the building shadow where a vaguely rectangular arrangement of cobbles and boulders about 1.5 m by 1 m by 0.3 m high contains at least 8 rocks.

The mine shaft is 30 m north of the cabin on the crest of the bedrock ridge. The hole is roughly cubical, about 2 m on a side. The shaft seems to explore a vein of grey mafic rock.

The prehistoric component consists of two obsidian flakes that were found about 18 m west of the cabin. One large secondary and one tertiary flake of obsidian were found about 10 meters apart.

TESTING: No testing was performed.

INTERPRETATION: Based on the purple glass and porcelain plate fragment, the cabin was built in the purple glass era (before 1917) and renovated at least once in the clear glass era (ca 1917 to present).

NATIONAL REGISTER STATUS: From an archaeological perspective, the physical remains of the site are unexceptional. The cabin is rotted beyond repair and cannot be stabilized. The prospect pit is unexceptional. There is some potential for subsurface artifacts in the O horizon; however, it is unlikely that these would make a significant contribution to our understanding of the area. Therefore, the site is considered ineligible under criterion D (NPS 1990) and unevaluated under criteria A, B, and C.

IMPACTS: Other than the threat of collection by looters, impacts are unknown.

RECOMMENDATIONS: No further work is recommended.

SITE: 48TE1678 – Nord Pass (Figures 1, 12 and 13).  
DESCRIPTION: The site is in the Jedediah Smith Wilderness of the Caribou-Targhee National Forest on the west side of the Teton Range. Site size is 30 m N-S by 120 m E-W for an area of 2827 m<sup>2</sup>. The site is at an altitude of 9520 feet above sea level.

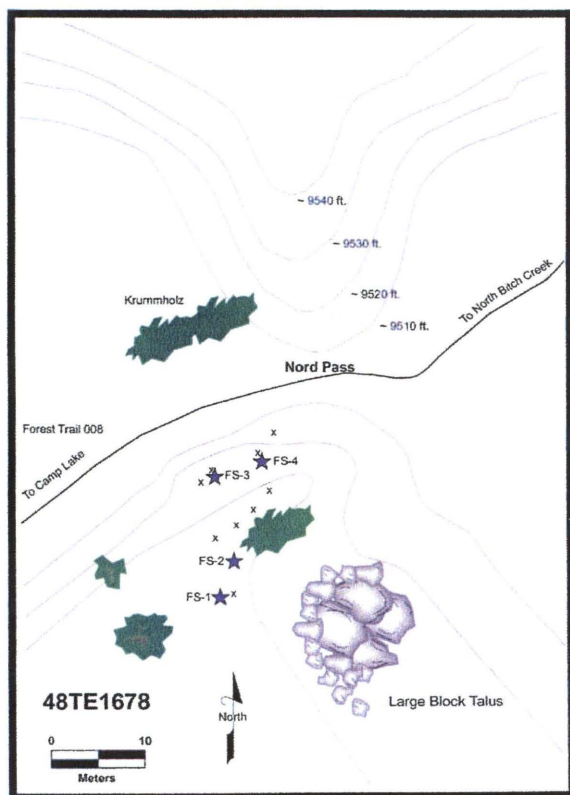


Figure 12. Sketch and map of 48TE1678

The Nord Pass site is about 375 m west of the Grand Teton National Park boundary. In this area, the Park boundary and the crest of the Tetons are the same thing. Nord Pass is created by the junction of the east-west trending Carrot Ridge with the north-south trending crest of the Teton Range. The south side of the pass leads to South Bitch Creek, the north side of the pass leads to North Bitch Creek. Another pass, about one kilometer southeast of the site, leads to the east side of the Tetons.

The site is 60 m east of Forest Trail 008. This trail sees horse and pedestrian use. The site is on the open ridge line, with scattered patches of Engelmann spruce, whitebark pines, and sub-alpine fir Krummholz (Knight 1994). The site occurs amidst boulders and outcrops of limestone.

The site consists of a lithic scatter of more than a dozen pieces of chipped stone. Surface artifacts are summarized in Table 3. Glassy volcanic rocks dominate the assemblage, but cobble and vein quartzite are also present. Four expedient tools were recorded. FS-1 is a utilized flake of low grade, grey ignimbrite. It measures 53 by 34 by 13 mm thick and has about 20 mm of use-wear along one lateral edge. FS-2 is an end scraper made from grey quartzite. It measures 32 by 27 by 11 mm thick. FS-3 is a grey

quartzite utilized flake measuring 60 by 49 by 15 mm thick. FS-4 is a brown chert utilized flake that was neither photographed nor measured.

Material Type	Tertiary	Debris	Other
Ignimbrite, grey	2		FS-1UTF
Ignimbrite, black	2	1	
Obsidian	2		
Red cobble quartzite		1	
Grey quartzite			FS-3 Utilized flake; FS-2 endscraper
Brown chert			FS-4 Utilized flake
Red quartzite	1		
Black chert			chunk



48TE1678 – site photo looking south



FS-1, Ignimbrite scraper



FS-3, quartzite utilized flake (L) and FS-2, scraper (R)

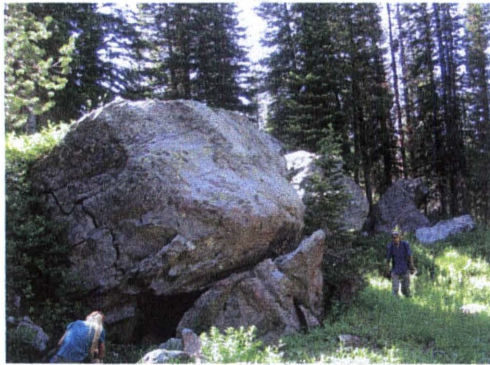
Figure 13. Photographs of 48TE1678—Nord Pass Site.

**TESTING:** No testing was performed. The site is located in a dynamic sub-alpine environment. While there is potential for buried deposits, it is likely that any buried cultural remains would be mixed by frost heave and pocket gophers.

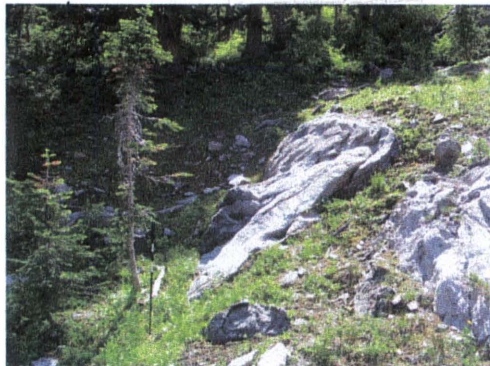
**NATIONAL REGISTER STATUS:** This site is unevaluated. Not enough time was spent at the site to determine its ineligibility.

**IMPACTS:** Other than the threat of collection by looters, impacts are unknown.

**RECOMMENDATIONS:** Additional recording is recommended.



48TE1679 site photo.



More soapstone at 48TE1679



Possible pecked piece of soapstone

Figure 14. Photographs of 48TE1679—the VLB soapstone source.

**SITE:** 48TE1679 – VLB soapstone source (Figures 1, and 14).

**DESCRIPTION:** The site is in the Jediah Smith Wilderness of the Caribou-Targhee National Forest

on the west side of the Teton Range. Site size is about 80 m in diameter for an area of 5026 m<sup>2</sup>. The site is at an altitude of 8720 feet (2658 m) above sea level. There are scattered whitebark pines, sub-alpine fir, and Engelmann spruce. The source occurs on the east side of a rock glacier.

The site occurs about 160 m southwest of the Camp Lake trail. We discovered the site by tracing soapstone boulders in the trail back to their source. The site consists of a secondary source of large soapstone boulders, a large bedrock soapstone outcrop, and possible traces of aboriginal use. A small piece of soapstone, exhibiting marks consistent with prehistoric peck marks, was found along with a small quantity of what could be soapstone debitage on a rocky ledge.

The bedrock exposure occurs at the head of the felsenmeer about 45 m southeast of the VLB source. There is no trace of either historic or aboriginal quarrying at the bedrock outcrop. The secondary source consists of several bus-sized boulders at the base of the rock glacier. There is no trace of either historic or aboriginal quarrying at the secondary source.

**TESTING:** No testing was performed.

**INTERPRETATION:** The evidence for aboriginal use, a possible pecked piece and possible soapstone debitage, is pretty scanty for a source as large as this.

**NATIONAL REGISTER STATUS:** This site is not eligible for nomination to the National Register of Historic Places. It is possible that there is no evidence of aboriginal use. It lacks significant information potential. Recording seems to have exhausted its information potential.

**IMPACTS:** None.

**RECOMMENDATIONS:** No further work is recommended.

## ◆ DISCUSSION

Other archaeologists have made a case for northwestern Wyoming being the epicenter of the Rocky Mountain soapstone bowl industry (Marceau 1982; Wedel 1954), yet until recently, little fieldwork had been done to confirm this. Soapstone quarries and workshops in other Wyoming mountain ranges such as the Big Horns, the Winds, the Laramie Range are much better known and recorded (Adams 2003; Frison 1982; Harris 1995b; Schoen 2004; Schoen and Vlcek 1991).

During the second year of fieldwork in the Tetons, OWSA archaeologists visited another

ultramafic rock outcrop location mapped by Love (et al. 1992). We did not find unequivocal evidence of aboriginal quarrying; however, David Love (personal communication 2001) was emphatic that there was aboriginally worked soapstone in the Bitch Creek area.

The time depth of soapstone artifacts in Wyoming is great: A disc bead, found at the Hell Gap Paleoindian site, came from a level older than 9000 years (Adams n.d.). Steatite beads were found at the Split Rock site in a feature dating to 5500 years ago (Eakin 1987). Soapstone pipes date to at least 4000 years ago (Frison and Walker 1984:38-39).

However, the antiquity of soapstone vessels is hard to prove. One bowl was AMS dated to AD 1848 (Adams 1992) and other bowl fragments have been found at Protohistoric sites. At least one-third of the vessels I have examined have metal tool marks (Adams 1992). The discovery of soapstone bowls and chipped stone at 48TE1647 – where two bowl preforms and a broken bowl exhibit manufacturing marks consistent with stone, not metal, tools – is considered to be unambiguous evidence of prehistoric bowl manufacture.

#### *Discussion of Historic Components*

In the past two years we have recorded five sites with historic components. Two of the historic sites on Rammel Mountain (48TE1646 and 48TE1645) are relatively recent mid-20th century.

But three sites (48TE1648, 48TE1681, and 48TE1255) date from no later than the early 1920s. There may have been a small mining boom in this area some time in the early 1920s. About this time, a nearby asbestos mine (48TE1255) is mentioned in a mineral production handbook (Harris 1995:7).

Frison (personal communication 1991) said that soapstone was considered by old time miners to be an indicator of gold. Soapstone, however, is not as profitable as gold. In 1950, high grade steatite, already ground fine enough to pass through a #200 mesh screen, was selling for \$10 a ton (Ladoo and Myers 1951: 541). At that price, the Rammel Mountain soapstone source would have returned a couple hundred dollars at most.

In the Rammel Mountain project area, we recorded four historic mining prospects. None of these were in soapstone bodies, but it is not clear what mineral was being sought. The mine at 48TE1648 has a thin vein of bright green copper ore

that appears to target mineral.

The remains of two cabins (48TE1648 and 48TE1681) suggests more than casual prospecting in the area. The cabin at 48TE1648 was built in the first part of the 20<sup>th</sup> century, while the cabin at 48TE1681 was also probably built about that time and renovated at least once in the clear glass era. If they had a uses like other abandoned mountain cabins, they continued to be used long after they ceased to be a useful shelter.

#### ◆ **MANAGEMENT RECOMMENDATIONS**

Operating under grants from the University of Wyoming-National Park Service Research Station and the Wyoming Historical Society, personnel from the Office of the Wyoming State Archaeologist and volunteers spent eight days surveying parts of the Jedediah Smith wilderness in the Caribou-Targhee National Forest. Our survey took place on the west side of the Teton Range in the Badger Creek and Bitch Creek drainages. We surveyed more than 350 acres and recorded four sites in the Caribou-Targhee National Forest. We located and recorded a historic mine and cabin, two new prehistoric sites, and a soapstone source. While all the historic sites would benefit from evaluation by an historian, none of the sites is in need of further work.

#### ◆ **ACKNOWLEDGMENTS**

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Appendix A. Definitions	
CHIPPED CRYPTOCRYSTALLINE STONE	
PRIMARY FLAKE	A complete flake with a single ventral surface, a point of applied force, (i.e., striking platform), and intact flake margins. Flake margins are considered intact if the distal end exhibits a hinge or feather termination and if lateral breaks or snaps (if present) do not interfere with accurate width measurements (Sullivan and Rozen 1985:759). It retains cortex on 100 to 75% of its dorsal surface.
SECONDARY FLAKE	Same as above, retaining between 75 and 1% cortex on the dorsal surface.
TERTIARY FLAKE	Same as above, but no cortex on the dorsal surface.
DEBRIS	Debitage lacking a ventral surface, point of applied force, or intact flake margins.
CORE	Any nucleus of raw material which exhibits the removal of two or more flakes of sufficient size ( 2-3 cm) to have been useful as flake tool blanks (Ahler 1986:50).
TESTED COBBLE	A piece of raw material having a minimum number of flakes removed. The flake scars are small ( 2 cm) and the flakes removed are not judgmentally believed to have been useful as tools (Ahler 1986:50).
CHOPPER	A cobble with at least one end exhibiting the removal of flakes. The modified edge usually has been dulled or blunted by battering and use (Sanders 1996:14).
HAFTED BIFACE	Bifacially flaked implement with a pointed distal end and basal modification (Chapman 1977:413). Most hafted bifaces are probably projectile points; larger ones may have had other uses.
BIFACE	Chipped stone objects with flattened cross-sections which exhibit bifacially directed flake removals (Ahler 1986:54).
DRILL	Flakes or bifaces with narrow, elongated, bifacially retouched projections. Projections are generally at least 1 cm long and have diamond-shaped cross-sections.

Appendix A. (cont) Definitions	
MANUFACTURING MARKS	Pecks: small pits made by hitting soapstone with pointy bone, antler or stone tools. Gouges: continuous application of pressure on a sharp tool results in long manufacturing marks. Metal Tools make regular, parallel and consistent marks. Percussion produces pecks, gouges, and hatchet marks. Abrasion produces striae and polish.
HISTORIC	In Wyoming, generally after 1805. European trade goods begin to dominate aboriginal society.
PROTOHISTORIC	The short period between the arrival of the first trade goods and horses (ca 1650) and the arrival of Anglo explorers (ca 1805).
PREHISTORIC	The 12,000 or so years of human occupation of North America before ca 1492 A.D. The prehistoric is further divided into the Paleoindian period (ca 12000 to 7500 BP), the Archaic (7500 to 1500 BP) and the Late Prehistoric (1500 to ca 1650 AD).
RETOUCHED FLAKE	A flake with a modified edge where a series of flakes were intentionally removed. The retouch may extend across the entire surface of one side of the flake. Includes items commonly known as graters, scrapers, and unifaces.
UTILIZED FLAKE	A flake showing a regular series of edge modifications typically due only to use. The edge modifications is generally limited to the removal of microflakes less than 2 mm in length.
GROUNDSTONE	
GROUNDSTONE	Stone artifacts manufactured by pecking and abrading. They are used for refining raw materials from the environment into digestible or utilitarian products; i.e., manos and metates (Shepherd 1992).
HAMMERSTONE	A cobble with evidence of non-random battering generally located on one or more ends.
SOAPSTONE (from Adams 1992)	
WORKED PIECE	Any piece of soapstone with manufacturing marks such as pecks, grooves, hatchet marks.
PREFORM	Although recognizable in shape, a preform has not been carved out to the point of functionality.
BOWL	A completed piece that is generally flowerpot-shaped and holds between 1 and 2 liters