

# Obsidian Sources in the Anahim Peak Area

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## Introduction

Obsidian artifacts are found in archaeological sites in most areas of British Columbia. Since there are only a few geological sources of obsidian in the province, the techniques that have been developed for distinguishing and identifying obsidian from the different flows can yield valuable information on the trade (or travel) routes by which this material was disseminated. In late 1973, a project to characterize the obsidian sources of the Pacific North-West Coast was begun at Simon Fraser University, such that a "library" of obsidian source types could be established. The technique employed is energy-dispersive X-ray fluorescence analysis. The details of this technique are published elsewhere (Nelson et al. 1975). To properly establish these characterizations, it was necessary to obtain a representative sampling of each obsidian flow to test for chemical homogeneity and, where possible, artifacts of known parentage were required to test the technique.

One such source of obsidian that was known to have provided obsidian for tool production is in the Anahim Peak area; this fact was officially noted as early as 1876 in the Geological Survey of Canada Report of Progress for 1876-77. A study by Evans and Wilmeth (1971) using neutron activation analysis on obsidian pebbles and artifacts from the Anahim area indicated that these materials could be characterized by their trace element concentrations. The results of an application of this technique to obsidian artifacts from various sites in British Columbia were subsequently reported by Wilmeth (1973). On the basis of these studies, two types of obsidian were defined from the Anahim Peak area. The first type was found as pebbles in the Dean River, and it was suggested that it derives from an eroded source on Tsitsutl Peak in the nearby Rainbow Mountains. The second type was thought to originate on Anahim Peak itself, as local Indian legend suggested that the Peak contained a source of obsidian.

While individual samples of these types of the Anahim area obsidian were kindly supplied by R.

Wilmeth for the SFU study, a more representative sampling of these materials was required in order to test the flows for chemical homogeneity, and we undertook a field trip to try to locate these sources in September, 1973.

A photo of Anahim Peak is shown in Figure 86; a map of this area is given in Figure 87. The route taken to the Peak is shown by the dotted line on the map. Travel proceeded by Land Rover across a ford on the Dean River and then along a rugged bulldozed trail following an unnamed creek to a point about 2 miles almost due south of the Peak. Pebble-sized pieces of obsidian were taken from the Dean River at the ford. Following the creek upstream, larger and larger pieces were found, many of cobble-size, both in the creek and beside it. (This creek has been appropriately dubbed Obsidian Creek.) The obsidian was quite abundant, and it was relatively easy to find fist-sized pieces.

At a point about mid-way between the creek and trail and approximately half-way to the trail-end from the Dean River, a site was found. On the basis of a cursory examination and a brief surface collection, the site was designated a chipping station. The presence of obsidian cobbles in the nearby creek and the large amounts of obsidian flaking detritus on the surface make this conclusion likely. The absolute limits and other possible features of the site were not investigated due to lack of time. Apart from the unworked flakes, the surface collection included a partial projectile point and one core of obsidian.

Three cobble-sized samples of pitchstone were also found on the surface at this site. These cobbles may have been flaking cores, but as their surface features could conceivably have been caused by natural forces, it was impossible to determine with certainty whether they were artifacts. No other samples of this material were found on this trip.

From the end of the bulldozed trail, the search for the sources continued on foot to the peak itself. This peak is a massive basalt monolith reaching an



*Fig. 86. View of Anahim Peak from the north.*

altitude of 6208 feet above sea level. It is heavily weathered and all its slopes are characterized by slides of scree below steep cliffs. One area on the south-east corner is characterized by several small and one massive slide. As local informants had suggested that the obsidian source was on the east side of the Peak in association with a major slide (Wilmeth, personal

communication) this area was searched with some care. Apart from a very few mm-sized grains, no obsidian (or pitchstone) was found on the entire south or south-eastern portion of the Peak. As the northern section had been visited by a geologist who found no obsidian, it is not likely that the Peak itself is the rumored obsidian source.

### Characterization Analysis

The large set of samples obtained from Obsidian Creek constituted an excellent sampling of this material. Since the obsidian was taken as worn pebbles from the creek, representative samples of the source were naturally obtained. Furthermore, the partial point and flaking detritus provided artifacts of known materials. Analysis of 18 randomly-selected creek pebbles and six or eight flakes has shown that this obsidian has a unique, easily-recognizable finger-print, and that the flow was homogeneous to within the uncertainty limits of the analysis technique (Nelson et

al., 1975). This obsidian is identical with the pebbles found in the Dean River and with the 'Dean River' sample provided by Wilmeth. Further, artifacts recovered from FaSu 2, FbSu 1, EITb 10, EeRk 4 and the Chilcotin River have been analyzed using this technique and are unquestionably made of this material, indicating that it was widely used.

The three pitchstone samples were analyzed and also found to possess a very distinctive finger-print. This material was identical to the sample of material designated "Anahim Peak obsidian" provid-

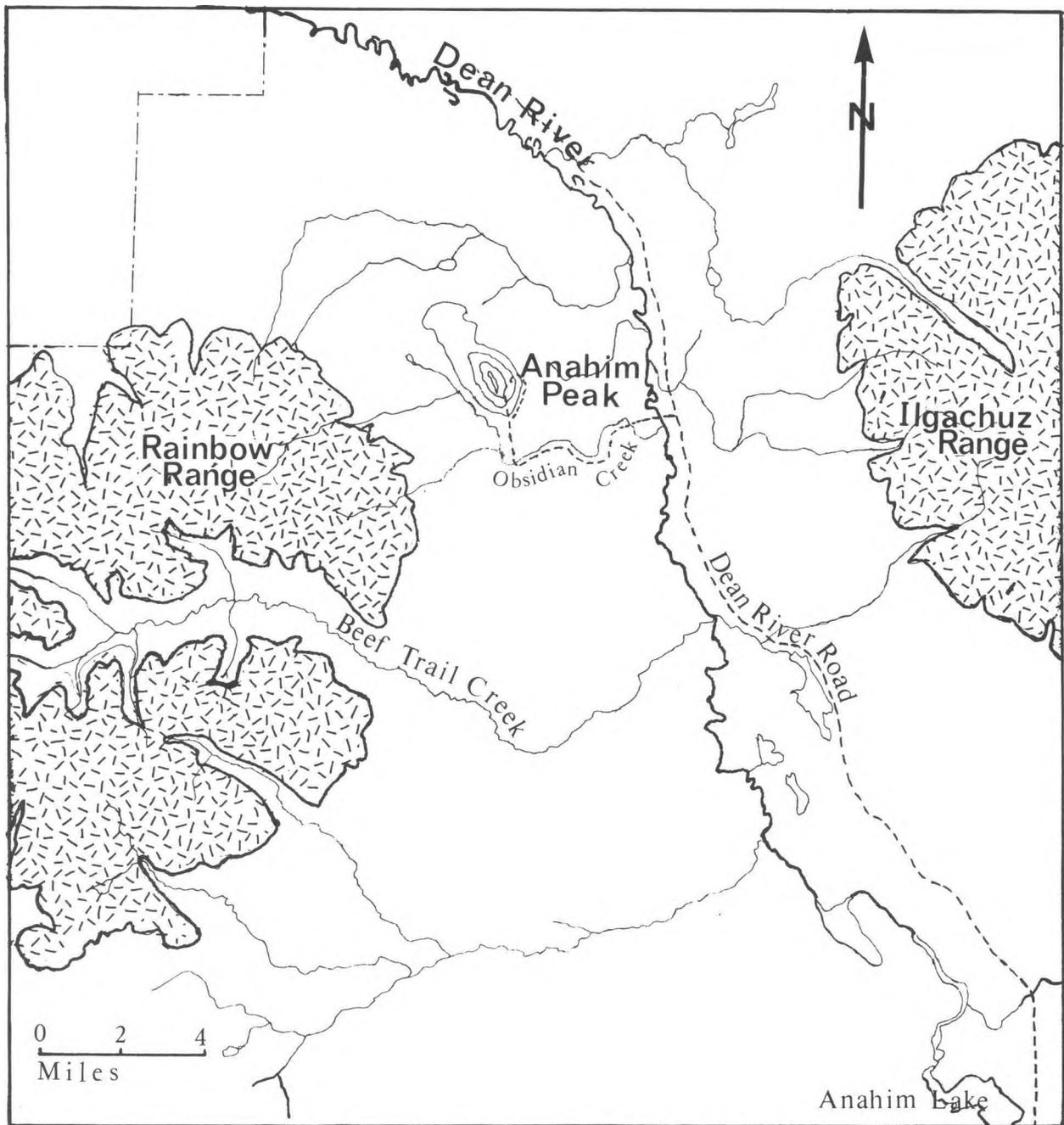


Fig. 87. Map showing the Obsidian Creek obsidian source, and the trail followed to Anahim Peak.

ed by Wilmeth. Since the number of samples is so small, it is premature to make any conclusions on the homogeneity of this pitchstone, but the variance in concentrations is remarkably small. An artifact from FaSu 2 proved to be made of this material, with

the elemental concentrations fitting within the variances found for the three samples above. Wilmeth's study also indicates that this material was widely used locally.

A sample of obsidian reputedly taken from a

source in the Rainbow Mountains area was obtained from a gem collector by R. Carlson and provided for analysis. The results of the analysis show it to be similar, yet distinct from the 'Obsidian Creek' type.

An artifact from FbSu 1 has an identical characterization, indicating that this source was known to ancient man.

### Conclusions

Since the size and quantity of the obsidian found in Obsidian Creek seems to increase as one proceeded upstream, and since this material was very obviously used for tool-making, one may conclude, as Wilmeth has done, that the geological source lies upstream in the Rainbow Mountains and is being (or has been) eroded and washed downstream. The archaeological source is likely the creek itself.

The presence in coastal sites of artifacts made from this material indicates that the obsidian was either obtained in the Obsidian Creek area and transported down the Dean River to the coast, or that the obsidian flow in the Rainbows could be approached directly from the west. The very similar type of

obsidian represented by the sample obtained from R. Carlson suggests that at least two eruptions took place in the Rainbow Mountains area.

The source of the pitchstone is something of a mystery. Only three samples were found on the field trip, and these were possibly artifacts; it is unlikely that the geological source is in the area surveyed. A source of "poor-quality obsidian" is reputed to exist on the high Eastern slopes of the neighbouring Ilgachuz Mountains (Sinkankas 1959). If this is the source of the pitchstone, why were the three samples taken to a plentiful supply of high-quality obsidian?

This area requires much more extensive archaeological survey.

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