LEG G: STATE ROUTE 123

From Cayuse Pass to the Ohanapecosh area and U.S. Highway 12

by Patrick T. Pringle, Paul E. Hammond, and Newell P. Campbell*

This 16-mi (26 km) route descends from Cayuse Pass (elev. 4694 ft or 1432 m) south along Chinook Creek and the Ohanapecosh River to the junction with U.S. Highway (US) 12 (elev. ~1590 ft or 485 m) (Fig. G-1). The Chinook Creek valley is a deep cut into the thick section of Ohanapecosh Formation rocks (late Eocene to mid-Oligocene age) at their type locality. The road passes over Deer, Panther, Laughingwater, and Summit Creeks and crosses at least two large landslides of Ohanapecosh rocks. It is the main route connecting the north, east, and south sectors of Mount Rainier National Park and provides access to many popular hiking trails. Some of the trails, such as the Eastside and Laughingwater Trails, in this part of the national park access spectacular examples of old-growth forests.

This road is closed in winter (typically November to late June) and is subject to closure owing to landslides. SR 123 washed out in four places during the flood of November 2006. Road status can be checked at the Mount Rainier National Park website or by phone. (See "Websites and Phone Numbers", p. 176.)

Distances along the route are given in miles, followed by kilometers in italics. If you take any side trips, you'll have to keep track of and add those miles to all the remaining mileages in the leg. Having a pencil and paper handy, and even a calculator will be helpful.

Mileage

0.0 *0.0* Start south on State Route (SR) 123 at its junction with SR 410 at Cayuse Pass (elev. 4694 ft or 1432 m). This road accesses the Stevens Canyon Entrance of Mount Rainier National Park (Leg B) as well as US 12 (Legs C and H).

The outcrop on the right is porphyritic andesite.

0.5 *0.8* Milepost (MP) 16. Glacial drift.

0.6 *1.0* A gray diamicton (till?) is overlain by yellowish Mount St. Helens(?) tephra.

0.9 *1.4* Beds of the Ohanapecosh Formation crop out here (Fig. G-2).

1.1 *1.8* Small pullout at a sharp curve to the left. Ohanapecosh beds dip 15 to 20 degrees to the north here and strike east–west. A dike related to the Tatoosh pluton (25.8 to14.1 Ma) cuts welded tuff and lacustrine sedimentary rocks (Fig. G-3).

1.3 *2.1* Another dike. According to Fiske and others (1963), the Tatoosh intrusions are chiefly fine- to medium-grained porphyries that range in composition from diorite to quartz monzonite.

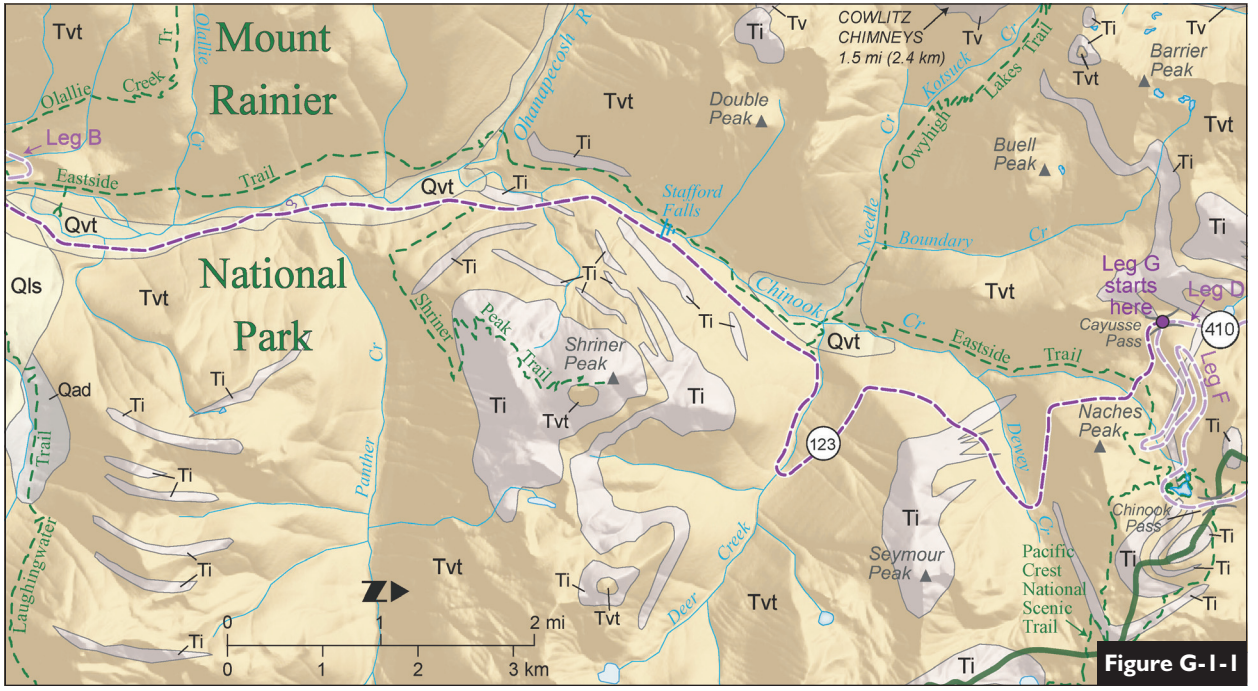
1.5 *2.4* MP 15. Outcrop of Ohanapecosh beds.

1.8 *2.9* Cross Dewey Creek.

2.0 *3.2* Small waterfall and outcrop of Ohanapecosh Formation volcaniclastic rocks (Fig. G-4).

2.1 *3.4* Till on the left.

Figure G-1. Location map for Leg G (two consecutive panels). The geology was adapted from 1:100,000- and 1:500,000-scale digital versions of Schasse (1987b) and Schuster (2005) and has been draped over a shaded relief image generated from 10-m elevation data. The leg maps were constructed using source-map data whose scale is smaller than the leg map scale, thus minor exposures may not appear on leg maps. The numbers in diamonds indicate mileposts. The map explanation is on the inside back cover. *Note:* This leg is run from north to south and the map route is rotated and runs from right to left on each panel.



* See "Contributors", p. ii, for affiliation.

2.3 *3.7* The peaks (6198 ft; 1889 m) ahead are rhyolite and andesite volcanic plugs called the Cowlitz Chimneys, a vent area of Ohanapecosh deposits.

2.7 *4.3* Tunnel in the Ohanapecosh Formation (Fig. G-5).

3.0 *4.8* At a pullout to the right, Ohanapecosh Formation tuffs crop out.

3.2 *5.1* Diamict, probably an alpine till, is exposed sporadically in this area (Fig. G-6).

3.4 *5.4* MP 13.

4.0 *6.4* Cross Deer Creek.

4.8 *7.7* Ohanapecosh Formation and Owyhigh Lakes trailhead.

5.3 *8.5* Pullout to the left (east of the road) and a creek. A trail leads down to Deer Creek campsites and the Eastside Trail, which follows Chinook Creek and the Ohanapecosh River.

5.4 *8.7* MP 11.

5.5 *8.8* Ohanapecosh Formation breccias and andesite dike are in the outcrop here.

5.9 *9.4* This steep gully cuts into the Ohanapecosh Formation.

6.1 *9.8* Alpine glaciers polished and smoothed this bedrock of the Ohanapecosh Formation (Fig. G-7).

6.3 *10.1* Turnout on the right. Falls on the left flow over Ohanapecosh breccias. The creek heads on Shriner Peak.

6.4 *10.3* MP 10.

7.1 *11.4* Landslide to the east (not shown on map) developed on Ohanapecosh rocks that are cut by many Tatoosh pluton dikes and sills.

7.3 *11.7* MP 9 turnout.

7.4 *11.9* Trailhead for Shriner Peak Trail on the east.

8.0 *12.9* Exposures of landslide debris and mounded topography for about the next 0.5 mi (0.8 km) in the Panther Creek area.

8.5 *13.6* Cross Panther Creek.

8.8 *14.1* Outcrops of Ohanapecosh Formation for next 0.3 mi (0.5 km).

10.7 *17.2* Ohanapecosh tuff breccias crop out slightly north of the junction of Stevens Canyon Road.

10.8 *17.3* Stevens Canyon Road and Stevens Canyon Entrance to Mount Rainier National Park (elev. ~2208 ft or 673 m) (see Leg B, p. 68). This road heads to Paradise and the Nisqually River Entrance to Mount Rainier National Park.

11.1 *17.9* Trail to Silver Falls (west) and Laughingwater Trail (Fig. G-8).

photo by Beth Norman

Figure G-2. Beds of Ohanapecosh Formation volcaniclastic rocks along SR 123 near Cayuse Pass.

Figure G-3. Dike cutting faulted Ohanapecosh tuffaceous rocks (west or left) and lacustrine beds (east) along SR 123 about 1.1 mi (1.8 km) south of Cayuse Pass. The dike is about 15 ft (4.6 m) wide. View is to the north.

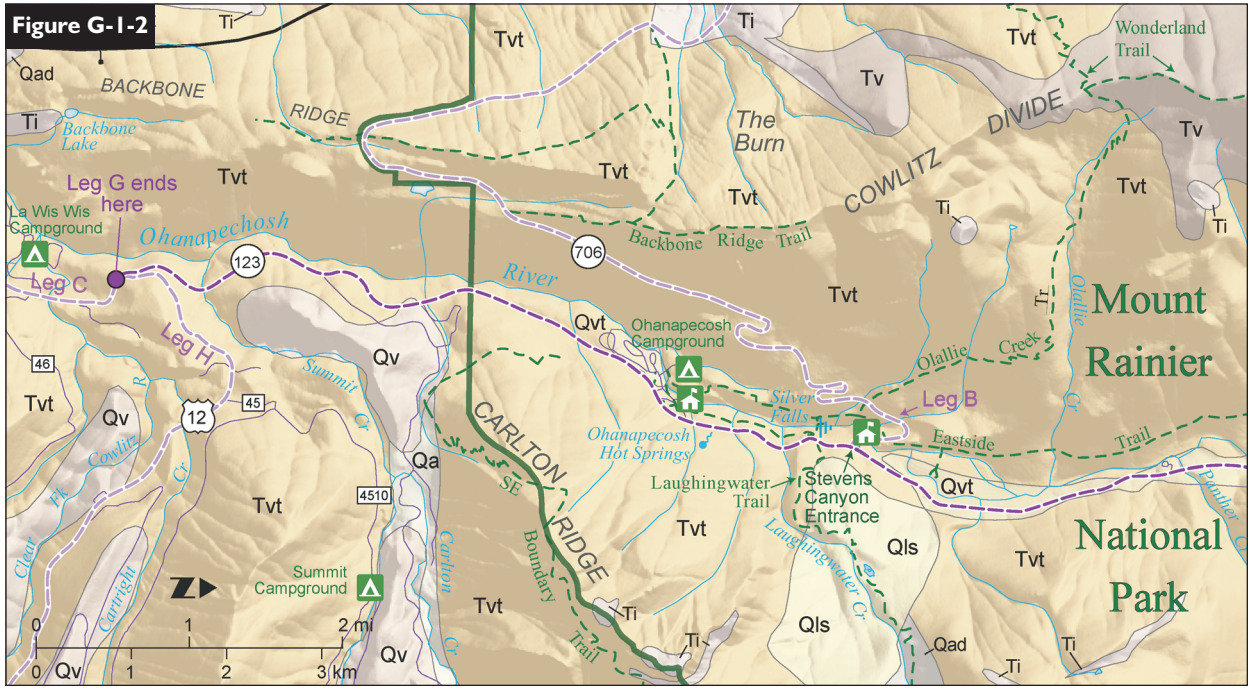


photo by Beth Norman

Figure G-4. Small waterfall and outcrop of Ohanapecosh Formation volcaniclastic rocks about 0.2 mi (0.3 km) past Dewey Creek (southbound).

11.2 *18.0* Landslide on the left and Laughingwater Creek a bit farther (MP 5). The landslide deposit is likely part of the large Laughingwater landslide complex. The landslide evidently dammed the Ohanapecosh River at one time, and this damming may have facilitated deposition of the sediments that compose the flat terrace north of Stevens Canyon Road and west of SR 123. A 6-in. (15-cm) layer of brown pumiceous tephra sits atop the landslide debris adjacent to the road. This light-brown pumice resembles the C layer erupted from Mount Rainier about 2,200 cal yr B.P., which would indicate the landslide deposit was emplaced before that layer was erupted. Yellowish layer Yn pumice from Mount St. Helens, which was erupted 3,800–3,600 cal yr B.P., is not visible, so the landslide may be younger than that pumice. The hummocky terrain of the landslide deposit appears to extend for as much as 1 mi (1.6 km) along SR 123.

11.5 *18.5* Ohanapecosh breccia is exposed on the west side of the highway here.

photo by Beth Norman

Figure G-5. Tunnel in the Ohanapecosh Formation about 2.7 mi (4.3 km) from Cayuse Pass on SR 123.

photo by Beth Norman

Figure G-7. Alpine glaciers polished and smoothed this bedrock of the Ohanapecosh Formation between MPs 10 and 11.

12.6 *20.3* Turn right into the Ohanapecosh Campground. The Ohanapecosh Campground is an excellent 'base camp' from which to explore the trails on the east side of Mount Rainier National Park or in the White Pass area. Travertine mounds deposited by mineral springs are only a short distance up the Hot Springs Nature Trail from the campground (Fig. G-9). (See the "Ohanapecosh Hot Springs" sidebar on p. 123.)

13.5 *21.7* Large boulders on the west side of the road could be glacial erratics or landslide debris.

photo by Beth Norman

Figure G-6. Diamict, probably an alpine till, on the east side of SR 123 slightly north of MP 13.

Figure G-8. Silver Falls, from the Eastside Trail near its junction with the Three Lakes Trail. The falls are about 60 ft (18 m) high and are controlled by a complex interplay of dikes, joints, and bedding. View is to the north.

13.6 *21.9* Outcrops of green Ohanapecosh volcaniclastic rocks for next 0.2 mi (0.3 km) (Fig. G-10). The green color results from chlorite and other clay minerals produced by low-grade metamorphism during burial.

Leaving Mount Rainier National Park; pullout on the right. Ohanapecosh tuffs and breccias are exposed for the next 2.5 mi (4.0 km).

Ohanapecosh Hot Springs

by Rebecca A. Christie and Katherine M. Reed

To Native Americans, Ohanapecosh meant "looking down on something beautiful", "deep blue stream", or perhaps "clear water". (As with many Native names, the original meaning seems to have been lost.) The Ohanapecosh River originates at the inactive Ohanapecosh Glacier (southeast of Whitman Glacier) on the east side of Mount Rainier.

As many as 25 thermal springs in this area feed the river. Reports about the waters differ—some sources note at least one cold spring, while others describe water as hot as 124ºF (51º C)(U.S. National Park Service, 1934?) and flows as great as 250 liters/minute (about 66 gallons/minute) (Graham, 2005). Glover (1936, p. 72) mentioned "The water has a moderate soda and sulphur content."

The hot springs were a popular tourist destination, and after a few years of operation, more than 1000 visitors annually came from afar to camp and partake of the mineral waters. In the early 1900s, access was by way of a 12+-mi (~20 km) trail from Packwood or a somewhat longer trail from Narada Falls below Paradise. There was a tent camp facility at the hot springs by 1913. A Tacoma partnership picked up development in 1925, constructing a road and several buildings, in hopes that the therapeutic reputation of the springs would spread. The springs were just outside the initial park boundary, on Forest Service land. The Park Service had an early interest in acquiring the hot springs land and, in spite of the opposition of local residents, the area was incorporated into the park in 1931. The action was primarily an effort to protect the natural feature, although there was some concern about the activities of the numerous visitors so close to the park.

The Civilian Conservation Corps built a campground at the springs in the late 1930s. Eventually the springs facilities boasted a lodge, as well as bathhouses and cabins. In 1939, one could stay at Ohanapecosh Lodge for $4 a day, and dinner cost $1. In that year, the Ohanapecosh Hot Springs Company increased the number of cabins to 25 and even built a garage. Several more cabins were added in 1941 (Catton, 1995); the resort was privately operated through the 1950s.

Although the springs were now located within the park, the Park Service was ambivalent about how or whether to manage the concession and facilities, finally deciding to close them in 1960. The original buildings have been removed. Today, the Ohanapecosh Campground has about 200 campsites, nature trails, and facilities. The springs remain as wet areas and seeps. ■

Figure G-9. A travertine mound along the Hot Springs Nature Trail near Ohanapecosh Campground. This mound is about 7 ft (2 m) high.

photo by Beth Norman

Figure G-10. Outcrops of Ohanapecosh volcaniclastic rocks are common along SR 123. Note vertical and subvertical joints.

photo by Dave Norman

Figure G-11. Geologist Beth Norman stands next to an outcrop of a poorly sorted lahar deposit exposed east of the road. The hammer is across a hardened cavity created where a rock dropped out of the outcrop; a second cavity is higher and to the left. The lahar has been compacted by the weight of an alpine glacier, now melted away. The outcrop is east of the road, slightly south of MP 1.

14.3 *23.0* Poorly sorted lahar deposit with large rounded blocks.

15.2 *24.5* Poorly sorted Ohanapecosh beds dip ~45 degrees to the west and may be lithified lahar deposits.

15.3 *24.6* MP 1.

15.4 *24.8* A poorly sorted lahar deposit exposed east of the road here has hardened cavities where rocks have fallen from the outcrop (Fig. G-11). These molds are common in fragmental deposits that have experienced what geotechnical experts call 'overconsolidation' due to the ice load from glaciers. Here the deposit overlies Ohanapecosh volcaniclastic rocks, but you can't see them.

15.7 *25.3* Bridge over Summit Creek. This area is part of a post-Evans Creek recessional moraine complex. On the left (west) is an outcrop of Ohanapecosh Formation.

16.3 *26.2* Junction of SR 123 and US 12. From here you could take US 12 east via Leg H toward Naches and Yakima or drive west toward Packwood.

Remember to reset your odometer when you start another leg. ■