What is Geologic Mapping?

Geologists record bedrock types, the angles of tilted layers, and details of folded and faulted rocks.

What is a geologic map?

A geologic map uses colors and symbols to show the different types of rock and sediment on the surface of the Earth, as well as natural features such as geologic contacts, faults, and folds. Depending on its purpose, a geologic map might also depict features such as landslides, active volcanoes, and gravel deposits.

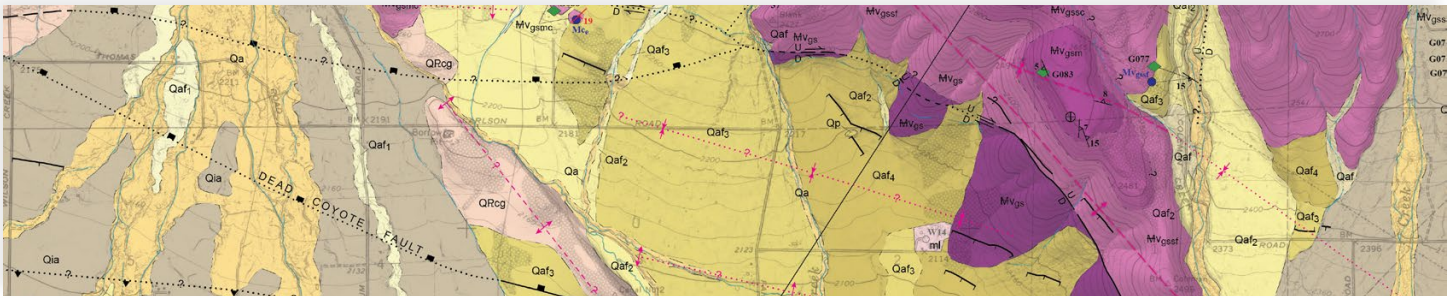
How is a geologic map made?

To create a geologic map, geologists investigate bedrock, sediment, and landforms in a study area. Their aim is to identify and describe these features, and to depict them as geologic units. They explore the landscape to find outcrops where rocks, sediment, and geologic structures are exposed. These observations form the basis for a history of the landscape and ongoing change.

Who uses geologic maps and how do they benefit your community?

Geologic maps are used by the general public, consultants, planners, and emergency managers. These maps inform decisions related to the safety of people, property, and infrastructure. For example, geologic maps guide how to build roads around landslide hazards, where to construct buildings, and where to find resources from sand and gravel to precious metals. In addition to practical benefits, geologic mapping helps scientists better understand our planet.

Geologic maps help people understand the physical world and its history, develop economic resources, identify and plan for natural hazards, and make land-use decisions.



Geologic maps use colors and symbols to depict rock types, faults, and sediment deposits. This image is a portion of the Colockum Pass SW and southern half of the Naneum Canyon 7.5-minute quadrangles, Kittitas County, Washington.

FAQ for Landowners

In some cases Survey geologists may want to enter private property to complete mapping. This section addresses some possible concerns of landowners.

Why are we visiting?

We have identified your property, along with others, as places of interest likely to have rocks or geologic features that will be important to see as we construct a map.

What activities will we be doing?

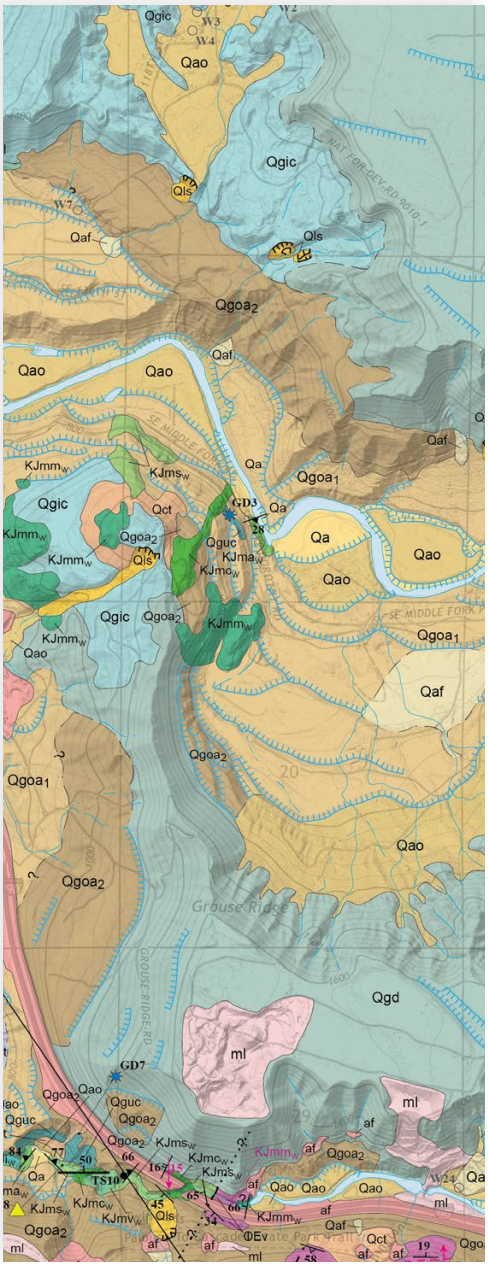
We will be mapping rock and sediment types as part of a larger effort to create a geologic map that includes your area. We typically spend most of our time in areas with outcrops, such as road cuts, stream channels, or cliffs. Our activities include making observations of rocks and sediment, measuring natural features and structures, taking notes and recording locations, and occasionally collecting small samples.

How can you help?

We are always happy to receive geology-related photographs or stories—your observations of things such as rock types, land movements, or the subsurface might improve understanding of your area's geology! We also appreciate if you can inform our mappers of any hazards.

What are our responsibilities?

We prioritize safety and protection of private property when mapping, aiming to leave no trace. We minimize disturbance to the ground, vegetation, and structures by mapping with professionalism and care. We may clean dirt from previously disturbed rock or soil exposures, or use a rock hammer to break a fresh face off weathered rock. This is typically the only disturbance we cause and it is often difficult to notice.



Portion of the Chester Morse Lake 7.5-minute quadrangle, King County, Washington.

Mapper Contact Info

Name: _____

Phone: _____

E-mail: _____

Please contact us with any questions or concerns at geology@dnr.wa.gov

WASHINGTON STATE DEPT OF NATURAL RESOURCES
WASHINGTON GEOLOGICAL SURVEY