GEOLOGY OF QUOSATANA BUTTE AREA

Curry County
Gold Beach Dist.

The area of Quosatana Butte has a complex geologic history. It is underlain by a variety of rock types including altered tuffs (compacted volcanic fragments), dark gray sandstones derived in part from lavas and tuffs, phyllitic rocks (altered shales and siltstones of marine origin), and serpentine.

On the basis of their stratigraphic position and lithology the altered sedimentary and volcanic rocks are tentatively dated as Upper Jurassic (approx. 150 million years old) and probably belong to the Dothan formation. The serpentine is a slightly younger intrusive rock.

The eroded buttes of Quosatana and a portion of the western rim or ridge are made up of the highly resistant altered tuffs. The saddle area between the buttes and the western ridge is underlain by the less-resistant graywacke type sandstone. The highly contorted shales and phyllites are exposed in the western rim and make up much of the talus below.

General structural trends are northeast with moderate to high dips southeast. The area is broken by at least two northeast-trending faults. One is exposed in the road just southeast of the buttes as a highly sheared zone with water seepage. Another can be recognized as a sheared contact along the narrow serpentine zone exposed by road cuts south of the western rim. The very steep face of the western rim is formed by massive landsliding. Regional uplift and rapid erosion of the deformed rocks during and since the ice age (about 1 million years ago) has resulted in over-steepening of the slopes which is the chief cause of landsliding.

The caverns situated just north of the middle butte is probably caused by a combination of landslide slumping and differential weathering of the altered tuffs along fractures.

Report by: Len Ramp 6/24/63.