

The geology of a portion of the Skagit delta area, Skagit County, Washington.

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The geology of a portion of the Skagit delta area, Skagit County, Washington



Hopkins Jr., William Stephen

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Description

Northwest-southeast Miocene uplift with subsequent erosion has bared rocks of Paleozoic, Mesozoic and Cenozoic ages in the western Skagit Delta region. Pleistocene glaciation followed by recent alluviation has buried much of the bedrock leaving rock exposures only on islands in Skagit Bay or as low hills projecting through the alluvium. A low-grade metamorphosed sequence of graywacke, conglomerate, breccia, argillite, and spilite, all of probable Paleozoic age, make up the oldest rocks of the area. Mesozoic rocks, composed of graywacke and argillite, crop out in hills northwest and southeast of the town of La Conner. The contact between Paleozoic and Mesozoic rocks is not exposed but an unconformity is believed to separate the two. No fossils were found in either sequence. Because Paleozoic(?) and Mesozoic(?) rocks can not be correlated with any other known units, new names have been assigned by the writer. The Paleozoic(?) sequence is called the Goat Island Formation and the Mesozoic(?) sequence is called the La Conner Formation. Along the North Fork of the Skagit River a conglomerate sequence with interbedded sandstones and siltstones makes up disconnected, low, tree covered hills. Lithologically this sequence can be divided into two formations separated by a probable unconformity. Microfossils in the upper unit indicate a Lower Tertiary age but definite correlation with described units in other areas is not possible. The lower formation is here designated the Delta Rocks Formation while the upper is called the Ika Formation. Serpentinites make up the whole of Goat Island and adjacent parts of Fidalgo Island. On southern Fidalgo Island another serpentinite encloses an unusual

hydrothermal vein containing calcite, celestite, and strontianite. These ultrabasic rocks are considered part of the Fidalgo Formation and are of probable Triassic age. A small outcrop of marine Pleistocene occurs at the east end of Goat Island and contains an assemblage of invertebrates. Vashon till and outwash cover most of Fidalgo Island and Pleasant Ridge. Pre-Tertiary deformation has been intense with both Paleozoic and Mesozoic sequences folded, sheared and faulted. Cenozoic deformation has been restricted to Miocene concentric folding. Axes of both pre-Tertiary and Tertiary folding are aligned essentially east-west.

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