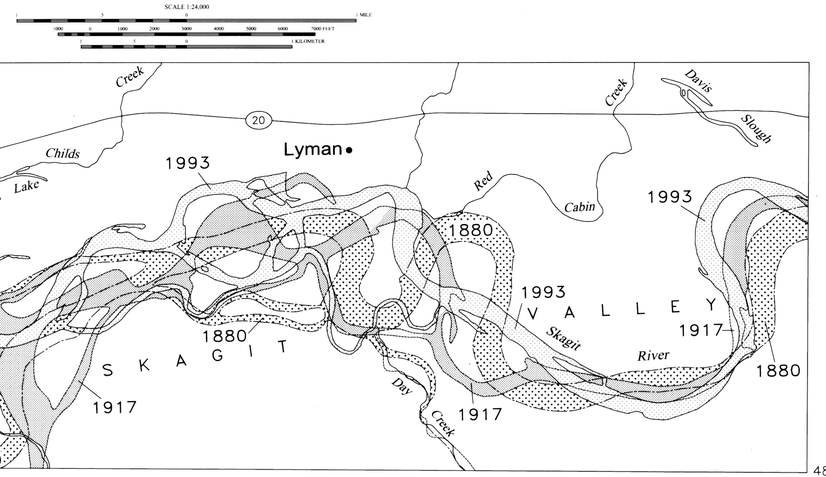
WASHINGTON STATE DEPARTMENT OF
Natural Resources
Jennifer M. Belcher - Commissioner of Public Lands

SKAGIT RIVER CHANNELS 1880–1993

Produced in cooperation with the U.S. Geological Survey
National Cooperative Geologic Mapping Program
Agreement Number 98HQAG2062

SCALE 1:24,000



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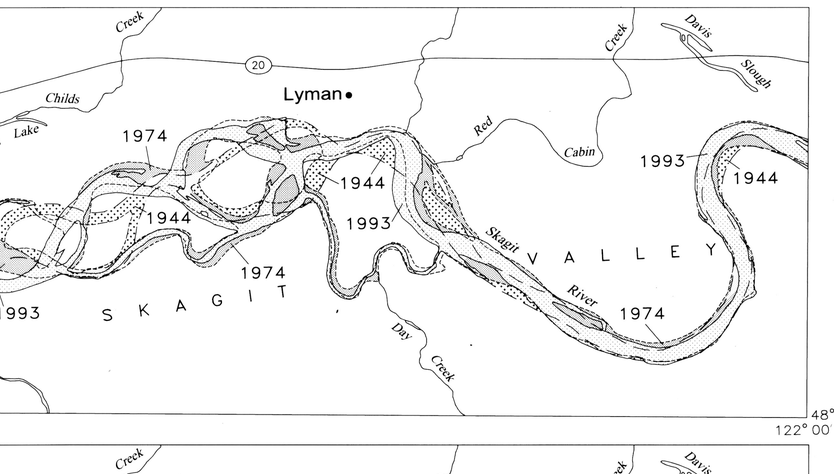

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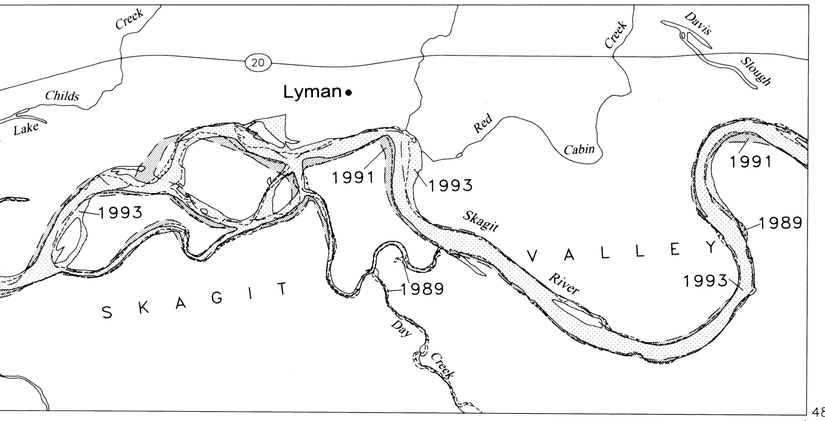


122° 07′ 30″ — 48° 30′ — 122° 00′

WASHINGTON DIVISION OF GEOLOGY AND EARTH RESOURCES
Raymond Lasmanis, State Geologist

PLATE 3
OPEN FILE REPORT 99-3
GEOLOGIC MAP OF THE SEDRO-WOOLLEY NORTH AND LYMAN 7.5-MINUTE QUADRANGLES, WESTERN SKAGIT COUNTY, WASHINGTON

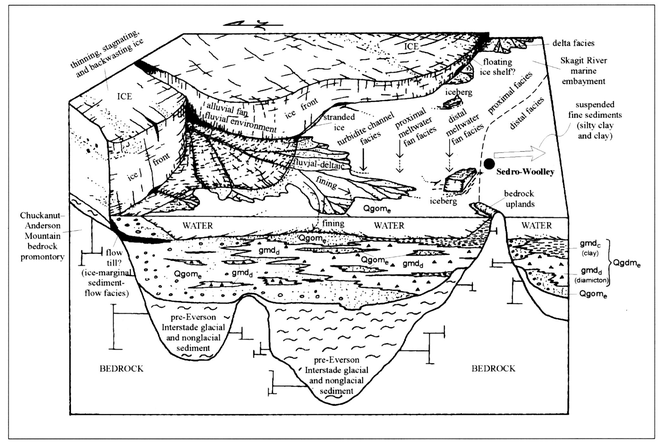
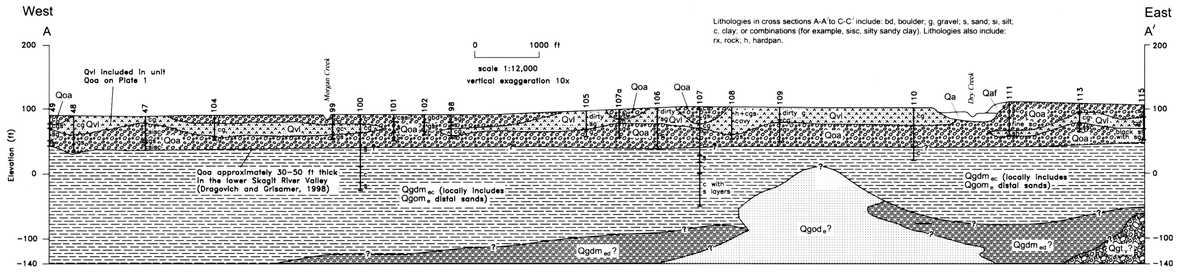
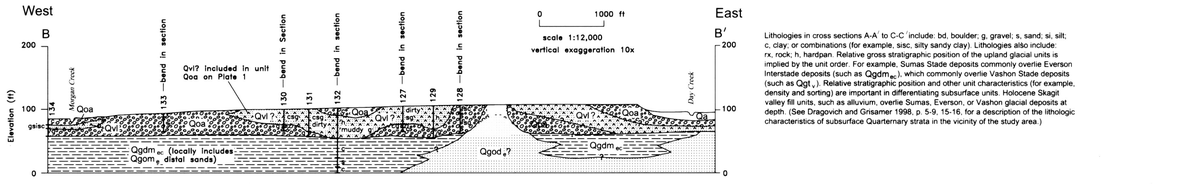
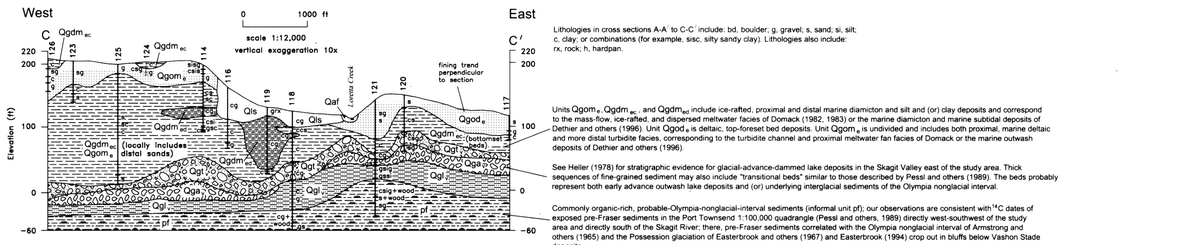


Figure 3.1. Schematic block diagram showing the interpreted Everson interstade recessional paleogeography and depositional setting for a portion of the lower Skagit River Valley. Everson interstade unit $Qgdm_e$ is subdivided into units $Qgdm_{ed}$ (diamicton) and $Qgdm_{ec}$ (clay). "Fining", schematically shows the inferred depositional environment of the Everson glaciomarine outwash (unit $Qgom_e$ or $Qgod_d$) wherein mostly gravelly terrestrial alluvial fan-fluvial sediments fine to the south (below the glaciomarine limit) to deltaic-turbidite sands and silty sands that are locally rhythmically bedded. (Also see Plate 1.) Everson stratigraphic fining, thinning, and fossil distribution information indicate ice stagnation on the Chuckanut-Anderson Mountain promontory in the study area. Water-well logs and field observations indicate an overall upward-fining sequence from lower ice-proximal outwash deposits (for example, unit $Qgom_e$) to more distal diamicton from marine and iceberg melt-out sediment sources (for example, unit $Qgdm_{ed}$) away from the ice front. This sequence is commonly capped by silty clays and clays (also partially included in unit $Qgdm_{ec}$) that contain little or no dropstone gravel and represent environments away from significant iceberg influence and (or) mostly distal meltwater fan sedimentation. View to the northeast.

SKAGIT RIVER VALLEY CROSS SECTIONS





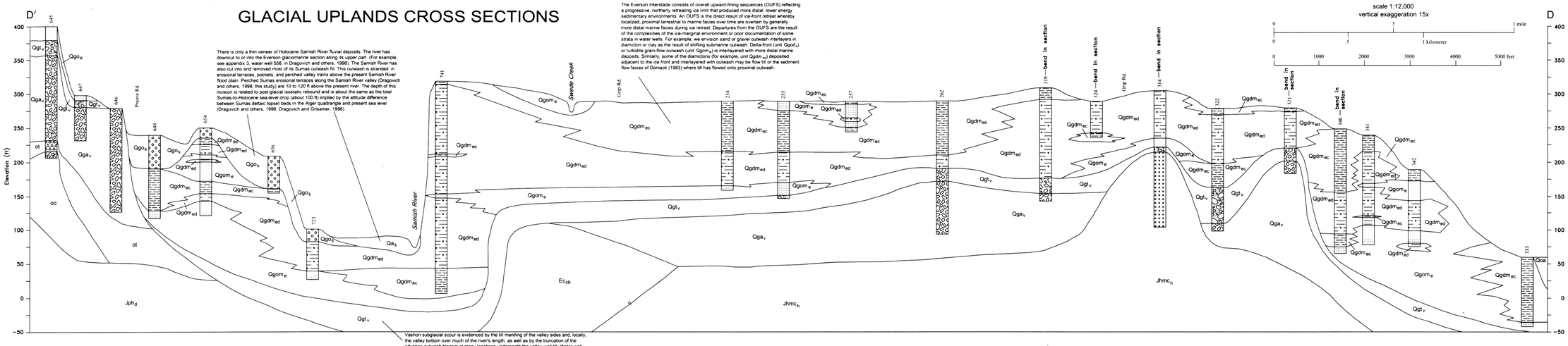


Units $Qgom_e$, $Qgdm_{ec}$, and $Qgdm_{ed}$ include ice-rafted, proximal and distal marine diamicton and silt and (or) clay deposits and correspond to the mass-flow, ice-rafted, and dispersed meltwater facies of Domack (1982, 1983) or the marine diamicton and marine subtidal deposits of Dethier and others (1996). Unit $Qgod_d$ is deltaic, top-foreset bed deposits. Unit $Qgom_e$ is undivided and includes both proximal, marine deltaic and more distal turbidite facies, corresponding to the turbidite channel and proximal meltwater fan facies of Domack or the marine outwash deposits of Dethier and others (1996).

See Heller (1978) for stratigraphic evidence for glacial-advance-dammed lake deposits in the Skagit Valley east of the study area. Thick sequences of fine-grained sediment may also include "transitional beds" similar to those described by Pessl and others (1989). The beds probably represent both early advance outwash lake deposits and (or) underlying interglacial sediments of the Olympia nonglacial interval.

Commonly organic-rich, probable-Olympia-nonglacial-interval sediments (informal unit pf); our observations are consistent with ^{14}C dates of exposed pre-Fraser sediments in the Port Townsend 1:100,000 quadrangle (Pessl and others, 1989) directly west-southwest of the study area and directly south of the Skagit River; there, pre-Fraser sediments correlated with the Olympia nonglacial interval of Armstrong and others (1965) and the Possession glaciation of Easterbrook and others (1967) and Easterbrook (1994) crop out in bluffs below Vashon Stade deposits.

GLACIAL UPLANDS CROSS SECTIONS



Cartographic design and production by Keith G. Ikerd,
Washington Division of Geology and Earth Resources