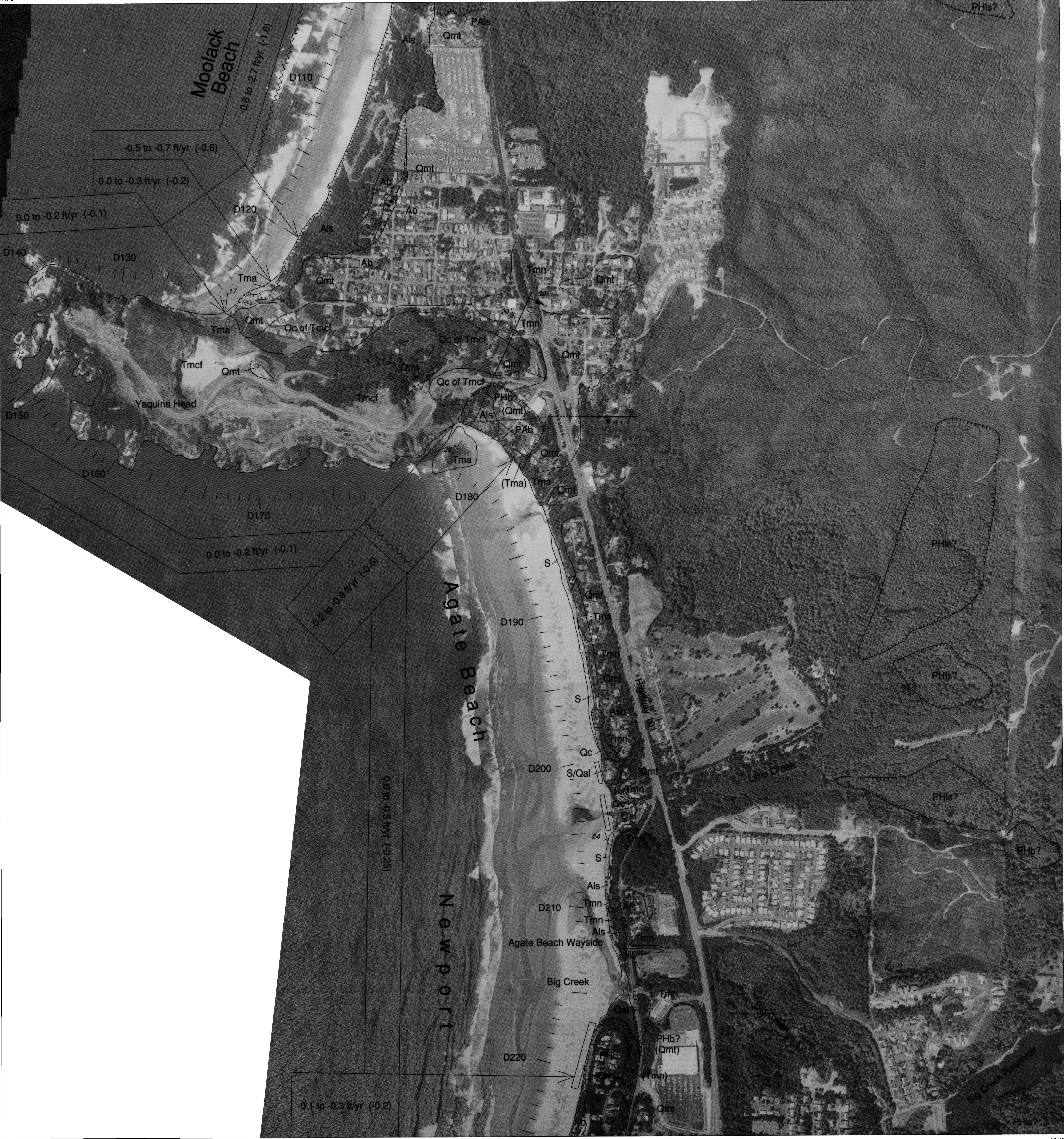


Chronic Geologic Hazard Map of the Moolack-Agate Beach Area,
Coastal Lincoln County, Oregon

392068.83 N
7270631.46 E

392068.83 N
7281431.46 E



380468.83 N
7270631.46 E

380468.83 N
7281431.46 E

EXPLANATION OF MAP UNITS

Mass Movement Hazards

- PHls Prehistoric complex landslide
- PHb Prehistoric slide block or slump
- PHt Prehistoric rock or soil flow
- PAIs Potentially active complex landslide
- PAb Potentially active slide block or slump
- Als Active complex landslide
- Ab Active slide block or slump

Shoreline Geology

- Ta Artificial fill
- Qal Alluvium
- S - Qal Vegetated dune sand
- Qc Dune covered alluvium
- Qmt Colluvium
- Tmcf Marine terrace deposits
- Tmcb Cape Foulweather Basalt
- Tmcb Sandstone of Whale Cove
- Tmcb Depoe Bay Basalt
- Tma Astoria Formation
- Tmn Nye Mudstone
- Toym Yaquina Formation (mudstone)
- Toys Yaquina Formation (sandstone)
- Tech Basalt of Cascade Head
- Ten Nestucca Formation
- Tb Intrusive basalt

MAP SYMBOLS

- Contact - Approximately located contact between formations or areas of differing type or age of mass movement
- Contact between areas of mass movement and other areas - Approximately located. Outlines a general area of mass movement of one or several ages and types
- Zone of particularly active landslides and slide blocks - Area vulnerable to episodic loss of large amounts (>40 feet) of headwall in back of landslides or slide blocks
- Fault zones - Arrow showing dip; bar and ball on downthrown side; dashed where approximate, dotted where concealed; diamond headed arrow showing rake; vertical offset of marine terrace in feet in parentheses
- Boundary of slide block within larger slide block - Approximately located; bar and square on downthrown side
- Rock fall hazard - Areas of major rock fall hazard at high-use beaches
- Rock unit label within a prehistoric slide block or slump - Parentheses differentiate formation labels within a prehistoric slide block from the mass movement label PHb
- Rock unit label for unit making up less than 3 ft of the sea cliff - Brackets are utilized to indicate that the rock unit has little control on sea cliff erosion
- Uncertainty - Question mark used to indicate uncertainty about a mass movement label because the area was examined only by aerial photo analysis or had ambiguous field information
- Erosion rate transects - Points where shoreline erosion rates were examined for entry into the database of Open File Report O-94-11; spacing or straight shorelines is about 150 feet; every tenth is labeled for reference to the database
- Generalized erosion rates - Feet per year of erosion (negative sign = erosion); mean is in parentheses; range separated by a small arrow; applicable to the shoreline segment marked by the arrows perpendicular to the shoreline
- Shoreline protection structures - Sea walls or riprap
- Strike and dip of bedding

* Oregon Department of Geology and Mineral Industries Open File Report O-94-11 should be utilized with this map to provide detailed information on the hazard mapping techniques and appropriate use of the information. Data fields summarizing erosion rates, geologic data, and mass movement hazards at each transect are listed in a digital database included with Open File Report O-94-11.

Erosion rates estimated from data in Open File Report O-94-11.

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Land Conservation and Development.

Field work conducted 1991 through 1993.

Cartography by Mark Neuhaus.

Scale 1:4800.

Horizontal datum: 1983 North American Datum.

Base map is a 1993 orthophotograph; photography was produced from a
positionally controlled flight in the late summer of 1993; the flight was conducted
by Spencer B. Gross, Inc. in cooperation with Bergman Photographic Services,
both of Portland, Oregon.

This study was supported by the Oregon Department of Geology and Mineral Industries,
Federal Emergency Management Agency Cooperative Agreement EMW J1-K-3576, and
the Oregon Department of Land Conservation and Development utilizing support by the
Coastal Zone Management 509 Program of the National Oceanographic and Atmospheric
Administration.

DISCLAIMER: The Oregon Department of Geology and Mineral Industries
is publishing this paper because the subject matter is consistent with the
mission of the Department. To facilitate timely distribution of information,
this report has not been edited to our usual standards.