

EXPLANATION OF MAP UNITS

Mass Movement Hazards

PHls

PHb

PHf

PAIs

PAb

Als

Ab

Prehistoric complex landslide

Prehistoric slide block or slump

Prehistoric rock or soil flow

Potentially active complex landslide

Potentially active slide block or slump

Active complex landslide

Active slide block or slump

Shoreline Geology

Fill

Qal

S

S + Qal

Qc

Qmt

Tmcd

Tmwc

Tmwb

Tms

Tmn

Tmyn

Toys

Tech

Ten

Tb

Artificial fill

Alluvium

Vegetated dune sand

Dune-covered alluvium

Colluvium

Marine terrace deposits

Cape Foulweather Basalt

Sandstone of Whale Cove

Dipole Bay Basalt

Astoria Formation

Nye Mudstone

Yaquina Formation (mudstone)

Yaquina Formation (sandstone)

Basalt of Cascade Head

Nesikeo Formation

Intrusive basalt

MAP SYMBOLS

Contact

Contact between areas of mass movement and other areas

Contact between areas of mass movement and other areas

Zone of particularly active landslides and slide blocks

Fault zones

Boundary of slide block within larger slide block

Rock fall hazard

Rock unit label within a prehistoric slide block or slump

Rock unit label for unit making up less than 3 ft of the sea cliff

Uncertainty

Erosion rate transects

Generalized erosion rates

Shoreline protection structures

Strike and dip of bedding

Approximately located contact between formations or areas of differing type or age of mass movement

Approximately located contact between areas of mass movement and other areas

Area vulnerable to episodic loss of large amounts of headwall in back of landslides or slide blocks

Arrow showing dip; bar and ball on downthrown side; dashed where approximate, dotted where contoured; diamond-headed arrow showing rake; vertical offset of marine terrace in feet in parentheses

Approximately located bar and square on downthrown side

Areas of major rock fall hazard at high-use beaches

Parentless differentiate formation labels within a prehistoric slide block from the mass movement label PHb

Brackets are utilized to indicate that the rock unit has little control on sea cliff erosion

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

Points where shoreline erosion rates were examined for entry into the database of Open-File Report O-94-11; spacing on straight shorelines is about 150 feet; every tenth is labeled for reference to the database

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

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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Field work conducted 1991 through 1993

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Scale 1:4800

Horizontal datum: 1983 North American Datum  
Vertical datum: National Vertical Datum of 1959  
Contour interval: 5 feet

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.

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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.