

G470/570 Regional Landscapes of Oregon
Primer to Regional Physiography of Oregon

orphys.wpd

- I. Oregon Physiographic Provinces of Orr and Orr (1999)
 - A. Blue Mountains
 - B. Klamath Mountains
 - C. Basin and Range
 - D. Owyhee Uplands
 - E. High Lava Plains
 - F. Deschutes-Columbia Plateau
 - G. Cascade Mountains
 - 1. Western Cascades
 - 2. High Cascades (east)
 - H. Coast Range
 - I. Willamette Valley
- II. Blue Mountains Province
 - A. Mountains
 - 1. Wallowa Mountains
 - 2. Elkhorn Mountains
 - 3. Greenhorn Mountains
 - 4. Strawberry Mountains
 - 5. Aldrich Mountains
 - 6. Ochoco Mountains
 - B. Rivers
 - 1. John Day
 - 2. Grande Ronde
 - 3. Wallowa
 - 4. Imnaha
 - 5. Willow Creek
 - C. Geologic Overview
 - 1. Bedrock Geology
 - a. Exotic Tectonic Terranes
 - b. Subduction-Related, Convergent Tectonics
 - c. Paleozoic-Mesozoic Terranes overlain by younger Tertiary Sedimentary Rocks and Volcanics
 - 2. Surficial Geology
 - a. Pleistocene Glaciation of Wallowas
 - (1) U-shaped valleys / till deposits
- III. Klamath Mountains
 - A. Mountains
 - 1. Klamath
 - 2. Siskiyou
 - B. Rivers
 - 1. Rogue
 - a. Illinois
 - b. Applegate
 - c. Chetco

- C. Geologic Overview
 - 1. Bedrock Geology
 - a. Exotic Tectonic Terranes
 - b. Subduction-Related, Convergent Tectonics
 - c. Paleozoic-Mesozoic Terranes
 - (1) Slivers and Slices of Ocean Floor
 - (2) Metamorphics / Hydrothermal activity
 - (3) Heavy Mineral / Ore Deposits
 - 2. Surficial Geology
 - a. Localized Pleistocene Alpine Glaciers
 - b. Colluvial Processes / Mass Wasting
 - c. Coastal Features
 - (1) Wave-Cut Platforms
 - (2) Headland Erosion
 - (3) Landslides
 - (4) Uplifted Marine Terraces
 - (5) Bay / Tsunami Stratigraphy

IV. Basin and Range

- A. Block-Fault Mountains
 - 1. Winter Rim
 - 2. Abert Rim
 - 3. Warner Mountains
 - 4. Hart Mountain
 - 5. Steens Mountain
 - 6. Pueblo Mountains
- B. Down-Dropped Basins
 - 1. Klamath Lake
 - 2. Goose Lake Valley
 - 3. Chewaucan Basin
 - 4. Abert Lake Basin
 - 5. Warner Valley
 - 6. Catlow Valley
 - 7. Alvord Basin
 - 8. Owyhee Valley
- C. Through-Flowing Rivers
 - 1. Klamath River
 - 2. Owyhee River
- D. Geologic Overview
 - 1. Bedrock Geology
 - a. Late Cenozoic Extensional Tectonics
 - (1) Crustal Thinning / Stretching
 - (2) Fault-Block Activity
 - (a) Horsts / Grabens
 - (b) Fault-Block Mountains
 - (3) High Heat Flow / Volcanism
 - 2. Surficial Geology
 - a. Localized Pleistocene Alpine Glaciation
 - (1) e.g. Steens Mtn

- b. Pleistocene Climate / Pluvial Lakes
 - (1) Paleo Shorelines
 - (2) closed drainage basins
 - (3) Alkaline Lakes
 - (4) Desert Features
 - (a) Eolian / Dunes
 - (b) Alluvial Fans
- V. Owyhee Uplands
 - A. Topography
 - 1. Dissected Plateau Country
 - B. Rivers
 - 1. Owyhee River - Snake River
 - 2. Tributary to Snake River
 - C. Bedrock Geology
 - 1. Subdued fault-block topography\
 - 2. volcanic rocks
- VI. High Lava Plains
 - A. Topography
 - 1. High Plateau (5000 - 7000 ft)
 - B. Rivers
 - 1. Headwaters of Deschutes
 - 2. Local Closed Basins
 - C. Geology Overview
 - 1. Bedrock
 - a. Late Tertiary-Quaternary-Holocene Volcanism
 - (1) Explosive Volcanism
 - b. Active Faulting
 - (1) Brothers Fault Zone
 - (2) Walker Lane Fault Zone
 - 2. Surficial
 - a. Pluvial Lakes / Pleistocene
 - (1) Paleo-Shorelines
 - b. Closed Basins / Alkaline Lakes / Playas
- VII. Deschutes / Columbia Plateau
 - A. Topography
 - 1. Part of Columbia Basin WA-OR-ID
 - 2. Plateau / Dissected Uplands
 - 3. Steep-Walled Canyons
 - B. Rivers
 - 1. Deschutes
 - 2. Columbia
 - C. Geologic Overview
 - 1. Bedrock Geology
 - a. Late Tertiary volcanism
 - b. Columbia River Basalts / Flood Basalts
 - c. Explosive Volcanism / Deschutes Formation

2. Surficial Geology
 - a. Missoula Floods
 - b. Loess Transport / Deposition

VIII. Cascade Mountains

- A. Topography
 1. Mountainous
 - a. Western Cascades (1700-6000 ft)
 - b. High Cascades (8000-11,000 ft)
- B. Rivers
 1. Willamette
 2. McKenzie
 3. Santiam
 4. Deschutes Headwaters
- C. Geologic Overview
 1. Bedrock Geology
 - a. Early Cenozoic Volcanism
 - b. Quaternary Volcanism
 - c. Arc-Related Andesitic Volcanism
 - (1) Explosive Volcanism
 - (2) Lahars
 2. Surficial Geology
 - a. Quaternary Glaciation / Active Glaciation
 - b. Mass Wasting / Colluvial Processes
 - c. Catastrophic Lahars / Debris Flow / Landslides

IX. Coast Range

- A. Topography
 1. Mountains 1500-4000 ft
 2. Coastal Headlands
 3. Beach Interface
- B. Rivers
 1. West Draining / tiday estuaries
 - a. Coos
 - b. Siuslaw
 - c. Alsea
 - d. Yaquina
 - e. Siletz
 2. East Draining
 - a. Marys
 - b. Luckiamute
 - c. Yamhill
- C. Geologic Overview
 1. Bedrock Geology
 - a. Cenozoic Accretionary Tectonics / Subduction Related
 - (1) Rotation / Docking / Uplift of Coast Range

- b. Seafloor volcanics / Sedimentary rocks / exotic rocks
 - c. Shallow Ocean / Shelf Sedimentary Rocks
 - 2. Surficial Geology
 - a. Mass Wasting / Colluvial Processes
 - b. Debris Flow
 - c. Localized Pleistocene glaciation
 - d. Coastal Processes
 - (1) headland erosion
 - (2) marine terraces / neotectonics
 - (3) landslides
 - (4) paleo-tsunami deposits / bays

X. Willamette Valley

- A. Topography
 - 1. Willamette-Puget Lowland
 - 2. Structural and Depositional Basin
- B. Geologic Overview
 - 1. Bedrock Geology
 - a. Localized marine sedimentary rocks
 - b. Localized Columbia River basalts / local volcanics
 - (1) late Tertiary
 - c. Localized volcanic buttes
 - 2. Surficial Geology
 - a. Alluvial Fan Deposits
 - b. Alluvial Deposits
 - (1) Floodplains
 - (2) Terraces
 - (3) Channel gravels
 - c. Catastrophic Pleistocene Flood Deposits (Missoula Floods)
 - (1) Ice Rafted Debris
 - (2) Slackwater silt/clay deposits
 - d. Localized mass wasting / colluvial deposits from local hillslopes