

Living with Earthquakes in the Pacific Northwest

Chapter 1

Robert S. Yeats
on-line edition

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LIVING WITH EARTHQUAKES IN THE
PACIFIC NORTHWEST

A SURVIVOR'S GUIDE

ROBERT S. YEATS

Second Edition, Revised and Expanded



Time Scales

Table 1. Time Scales

| <i>HISTORICAL</i> | |
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| 2000 | Age of computers, logging cutbacks, decline in state services, increased population, Nisqually Earthquake in 2001 |
| 1980 | Mt. St. Helens erupted. Space exploration and men on the Moon; Vietnam War |
| 1950 | U.S. interstate highway network. End of World War II atmospheric testing of nuclear weapons |
| 1940 | Roaring Twenties followed by the Great Depression and World War II |
| 1920 | World War I |
| 1900 | Extensive logging and development of farmland; autos replaced horses |
| 1880 | Development of rail network |
| 1860 | U.S. Civil War; present U.S.-Canada border established after the Pig War |
| 1840 | Pioneers headed west to Oregon; settlement of Willamette Valley, Puget Lowland, Fraser Delta, southern Vancouver Island, newspapers established |
| 1820 | Astoria and Fort Vancouver fur trade centers established |
| 1800 | Native Americans were in charge, but left no written records. Lewis and Clark expedition began great westward migration |
| 1780 | Explorers reached coasts of British Columbia, Washington, and Oregon |
| 1700 | Cascadia Subduction Zone Earthquake recorded by tsunami in Japan |
| 1600 | Spanish explorers reached southern Oregon coast |
| <i>LATE PREHISTORIC</i> | |
| 2000 | Today. Last great subduction-zone earthquake Jan. 26, 1790 |
| 1500 | Columbus discovered America but not the Pacific Northwest |
| 1000 | Large earthquake(s) on Seattle Fault around A.D. 900 |
| 500 | Three subduction-zone earthquakes between A.D. 500 and 1000. Long interval with no earthquakes between B.C. 1500 and 500 |
| <i>LATE QUATERNARY</i> | |
| <i>B.P.</i> , which used to mean "Before the Present" before nuclear fallout messed up our dating scales, now means "Before A.D. 1950" | |
| A.D. 2000 | Today. |
| 5,000 B.P. | Same as B.C. 3000; 5,000 years before A.D. 1950. Sea level approached present position; Mt. Mazama erupted to form Crater Lake |
| 10,000 | End of Pleistocene and beginning of Holocene. Sea level rising. Eighteen subduction-zone earthquakes during the Holocene. Great Missoula floods 15,000 to 12,000 years ago |
| 15,000 | Ice caps retreating and sea level rising rapidly |
| 20,000 | Glacial ice as far south as Olympia and Spokane, Washington; shorelines nearly 400 feet lower than today |
| <i>LATE CENOZOIC (Age, in thousands of years)</i> | |
| 0 | Today. Sea level is 20 feet lower today than 124,000 years ago |
| 500 | 500,000 years. Several ice advances and retreats. Earth's magnetic field reversed at 780,000 years; compass needle pointed south |
| 1,000 | More glacial advances and retreats |
| 1,500 | Beginning of Pleistocene 1,600,000 years ago |
| 2,000 | Pliocene Epoch |
| 2,500 | First major ice age started about 2,400,000 years ago. Still in the Pliocene, which started about 5,300,000 years ago |
| <i>OLDER EARTH HISTORY (Age, in millions of years)</i> | |
| 0 | Today |
| 2.4 | Beginning of Ice Ages |
| 15-17 | Great eruptions of Columbia River Basalt |
| 66 | Asteroid slammed into southern Mexico, dinosaurs became extinct |
| 245 | Greatest mass extinction in the history of the Earth |

Yeats Table 1

Source:

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