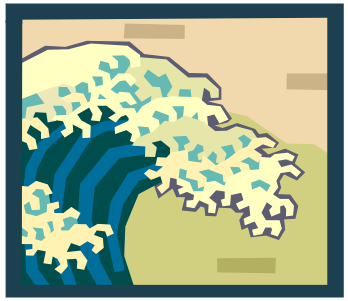
Cascadia Detective Story

Accounts of the January 1700 tsunami in Japan

Kazue Ueda and Satoko Musumi



Written records in Japan show that a tsunami of remote origin struck that country in January 1700. Two of the records come from samurai who were writing as bureaucrats for a feudal domain. Two other records come from private papers of merchants who had official responsibilities in their towns. Another record comes from the papers of a village headman. The localities reported struck by the tsunami range along 500 miles of Honshu's Pacific coast. Times when the tsunami was first noticed range from midnight on January 27 to soon after dawn the next morning, local time. Two of the records mention that people fled to high ground. Writers at two villages expressed wonder about the tsunami’s source.

Dating the Quake

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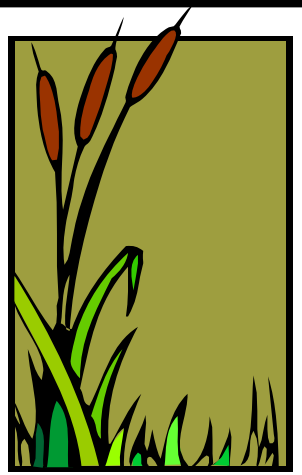
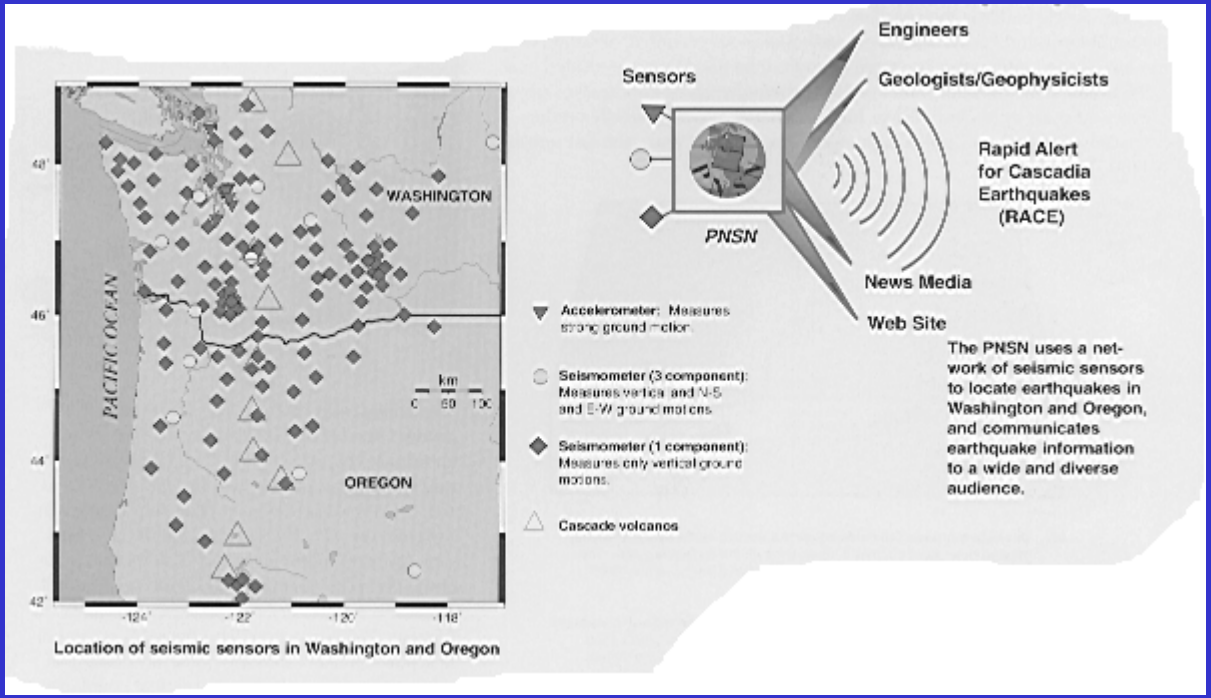


In 1986, geologists began finding buried soils of marshes and forests along Pacific coasts of the northwest. Some of the soils are covered with thin sand layers. As anticipated by a few theoretical geophysicists in the early 1980's, these features record huge earthquakes that lowered coastal land and set off tsunamis.

Since 1986, the geologists have been obtaining ballpark dates for these events using radiocarbon dating. Between 1991 to 1995, radiocarbon experts at the University of Washington showed that the most recent great quake occurred sometime between 1680 and 1720 in coastal Washington, Oregon and California.

During 1994 to 1997, Japanese researchers checked their country's archives for written records of tsunamis that could have come from an earthquake here between 1680 and 1720. The found only one such tsunami, and proposed that it resulted from such a 'Cascadia' earthquake close to magnitude 9 on the evening of January 26, 1700.



Location of seismic sensors in Washington and Oregon