

















































854 **Figure captions**

855 Figure 1. Land-level changes during (a) the 1964 Alaska earthquake and (b) during  
856 earthquakes of the past few thousand years along the Cascadia subduction zone. Alaskan points  
857 digitized from Plafker (1969: plate 3). Cascadia compilation after Leonard et al. (2010).

858  
859 Figure 2. Schematic views: (a–e) Forest death by coastal subsidence during an  
860 earthquake and subsequent forest renewal. (f) Land-level changes between and during  
861 earthquakes at a subduction zone.

862  
863 Figure 3. Dated spruce along Twentymile River near Portage, Alaska. (a) Setting on  
864 airphoto taken 1966. (b) Tree sampled dead in 1991. (c) Sanded cross-section of root subsampled  
865 for radiocarbon analysis (rings A–G). (d, e) Fringe of earlywood cells outside ring A. (f)  
866 Radiocarbon results plotted on graph of atmospheric radiocarbon activity excerpted from (g).  
867 Radiocarbon activity in (f) and (g) is expressed as fraction of modern, pre-bomb levels ( $F^{14}C$  of  
868 Reimer et al. 2004). Root  $^{14}C$  data in (f), for rings A–G, from Table 1;  $^{14}C$  curve in (f) and (g)  
869 from Hua et al. (2013: Table S3a, NH zone 1) and Hammer and Levin (2017); bomb yield in (g)  
870 from Yang and others (2003). Airphoto in (a) from collection of A.T. Ovenshine; other photos by  
871 the authors.

872  
873 Figure 4. Maps of southwest Washington estuaries, locating (a) places cited in the  
874 text; (b) individual dead western redcedar whose death likely resulted from lowering of land  
875 during the 1700 Cascadia earthquake; (c) areas of multiple spruce stumps submerged at high  
876 tide; and (d) live Sitka spruce that either survived the 1700 earthquake or became established in  
877 the first century thereafter. Tree locations from compilations in Atwater (2020). Tree ages in (d)  
878 from Jacoby et al. (1997) and Benson et al. (2001).

879  
880 Figure 5. Dead trunks and stumps of western redcedar east of Willapa Bay.  
881 Examples in (a) and (b) from a salt marsh along the Bone River. Oblique airphoto in (b) from  
882 Washington Department of Ecology (2016). (c) Mapped distribution along Bone River and South  
883 Fork Palix River. (d) Bearing trees near South Fork Palix River surveyed 1855 (Lowell 1856a).

884  
885 Figure 6. Wetlands beside Youngs Bay. (a, b) Maps by Meriwether Lewis (Lewis et  
886 al. [1803–1806] 2005: codex Ia) and William Clark (1806: images 1008620 and 1008624),  
887 respectively; typed labels and stump symbols added. (c) Map by Rockwell and Sengteller  
888 (1868a), illustrating radiating symbols on tidal flat that probably represent spruce stumps. (d)  
889 Modern exposure of stumps on and beside tidal flat near mouth of Lewis and Clark River. Index  
890 map in Figure 4c.