southern Cascadia subduction zone 125°0'0''W MAX events (1): Paleoquake Evidence Wang, et al., 2003 Fluck et al., 1997 TN0909 Cores RR0207 Cores



COAS, Oregon State University, Corvallis, OR, United States.
Cascadia GeoSciences, McKinleyville, CA, United States.
Pacific Watershed Associates, McKinleyville, CA, United States



- otsunami evidence of subduction earthquakes for northern California: Final
- Fault and Possible Stress Linkage to the Cascadia Subduction Zone in BSSA,

- Pritchard, C. J., 2004. Late Holocene Relative Sea-Level Changes, Arcata Bay, Radiocarbon dates from the Oxford AMS system: Archaeometry Datelist 33,
- carbon Age Calibration, 0-26 cal Kyr BP., Radiocarbon, v. 46., n. 3, p. 1029-Valentine, D. W., 1992, Late Holocene Stratigraphy, Humboldt Bay, California:

OxCal radiocarbon modeling

Tom H. Leroy

MAX (1

- Curve("IntCal09","IntCal09.14c") BCAD=FALSE; Plot()
- Sequence (SCSZ_20100315) Boundary("Bottom"); R_combine("scsz_max_2") R Date("LC 1992 LC1-B6 2 2 0", 320, 70"
- R_combine("scsz_max_3")
- R_combine("scsz_max_4") R Date("FR 1987 ER-VC-06 2 2 0", 860, 7 R Date("ER 1987 ER-VC-07 2 2 0", 810, 70)
- R combine("scsz max 5")
- R Date("HS 1990 HS-B-275-A 2 4 0", 1180, 50);
- R Date("SH 2000 00-LS-22 2 2 0", 1180, 40);

Curve("IntCal09","IntCal09.14c"); BCAD=FALSE

MIN (3)

- Plot() Sequence (SCSZ_20100415_min_3) Soundary("Bottom");
- R_combine("scsz_min_3_2") R_Date("0_1990_WOOD-A-70-1_0_2_0", 320, 40)
- R Date("LC 1992 LC1-B6 2 2 0", 320, 70) R combine("scsz min 3 3")

R_Date("SH_2000_00-LS-22_2_2_0", 1180, 40) ("HS 1990 HS-B-275-A 2 4 0", 1180, 5 R Date("LC 1992 LC-3-RC3 4 4 0", 1280, 40"

R combine("scsz min 3 4")

R_Date("ER_1987_ER-VC-11_3_3_0", 1290, 60) te("ES 1990 ES-E-300-A 0 4 0", 1270, 40" ate("MRS 2003 MRS-3-287 3 3 0", 1280, 40) R Date("LC 1992 LC-21-RC1 4 4 0", 1350, 40) R_Date("LC_1992_LC-4-RC2_5_5_0", 1320, 40) R_combine("scsz_min_3_5")

R Date("MRS 1987 MRS-3-BP280 4 4 0", 1120, 70); R Date("AS 2003 ARC-4-218 4 4 0", 1630, 40); R Date("ES 1990 ES-E-300-A 0 4 0", 1270, 40); R Date("JC 2003 JAC-2-164 4 4 0", 1610, 40);

Date("ER 1987 ER-C-03 4 4 0", 1520, 70) R Date("MRS 1987 MRS-3-3689-1 5 5 0", 1600, 40); R_Date("LC_1992_LC-4-RC1_6_6_0", 1590, 40); R_Date("CCS_1996_CC 41-180_4_4_0", 1620, 40);

What can we conclude?

Option A: All terrestrial events are unique.

Option B: Fewer events recorded on land, possibly selectively archiving the largest events. What is the Mw threshold for recording an event? (Nelson et al, 1996 suggest we need ~1m subsidence in order to detect the ubsidence)



Conclusions

1) at least one earthquake may be limted to the Eel River region.

2) at least one earthquake may be limted to north of the Eel River region.

3) not all paleoenvironmental elevation anges have been sampled.

4) not all earthquake related strata have age control (or age control is of low qual-

5) Terrestrial RI estimates from individual paleoseismic investigations need to be combined in order to evaluate the entire record.