

Figure 11. Detailed ALSM (airborne laser swath mapping; also known as LIDAR) image showing Sunset Beach scarps and sites of the Snake and Bees' Nest trenches. Red line marks approximate base of scarp, dashed where origin or location of the scarps are less certain. Contours generated from ALSM data have errors of less than 30 cm. Base contour is mean sea level. The DEM (digital elevation model) consists of two ALSM hillshade layers: top layer azimuth 80°, height above horizon 60°; 5x vertical component, 75% transparent; bottom layer azimuth 310°, height above horizon 60°; 5x vertical component, 70% transparent.

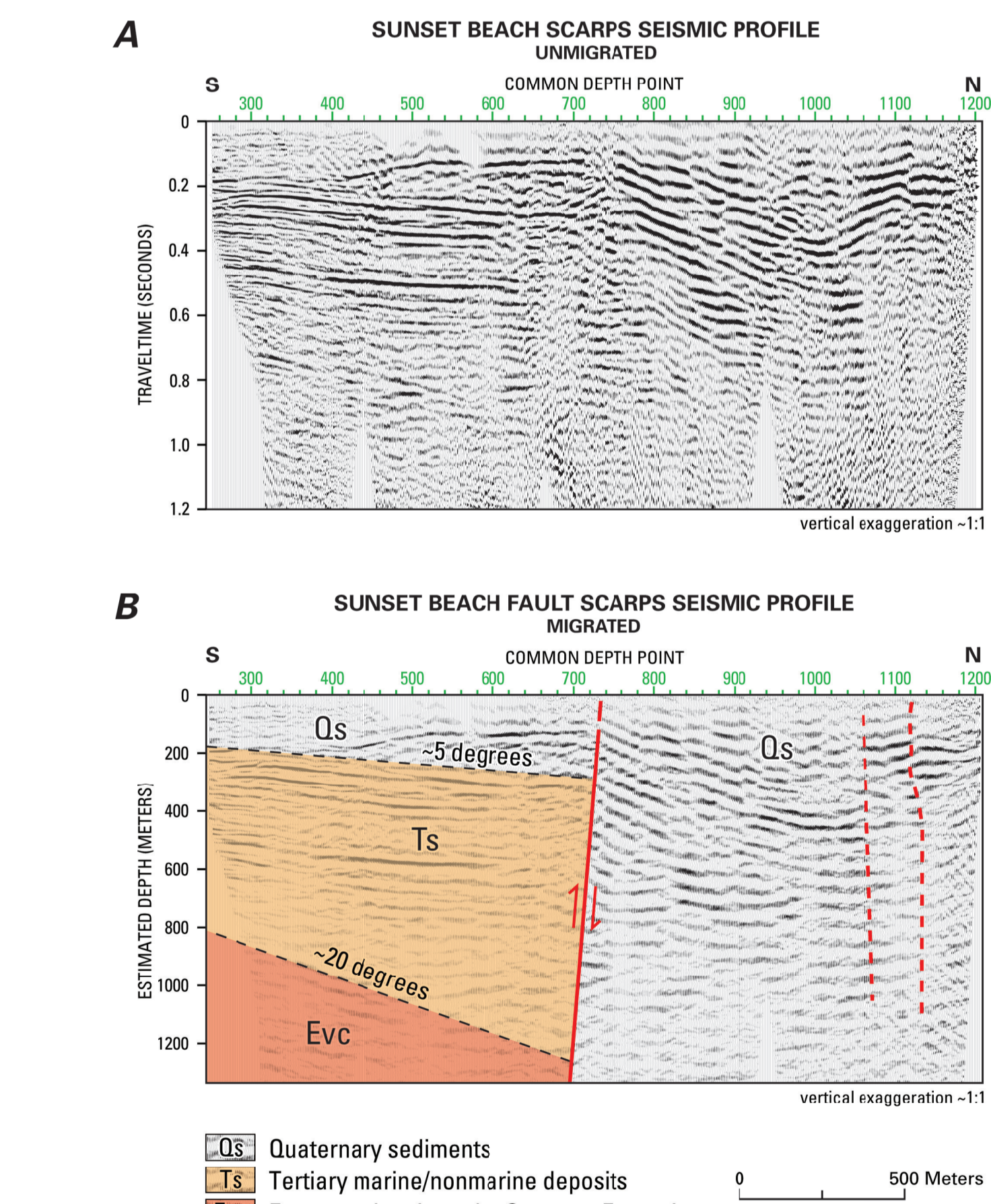
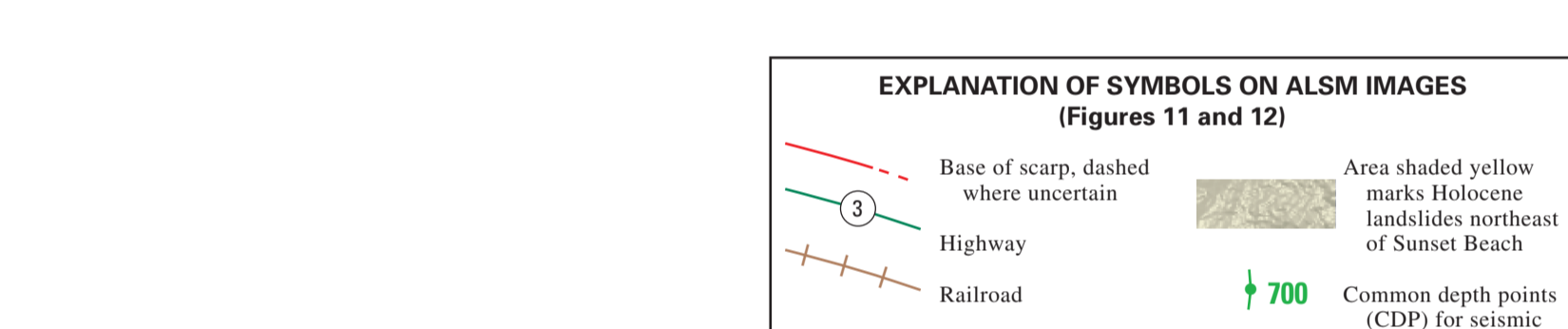


Figure 13. High-resolution north-south unimigrated travel time (A) and migrated depth (B) sections east of Hood Canal (fig. 11). The north end of the profile crosses the Sunset Beach scarps between the Snake and Bees' Nest trench sites (fig. 12). Duplicated reflections suggest steeply dipping reverse faults beneath and to the south of the scarps; a general trend of north-dipping reflections suggests the profile is located on the north limb of a fold related to the Tacoma fault. Common depth point (CDP) spacing is 2.5 m. Data were recorded using an accelerated 200 kg hammer and a 120-channel seismic recording system (Liberty, 2007).

Legend for Figure 13:

- Qs: Quaternary sediments
- Ts: Tertiary marine/nonmarine deposits
- Evc: Eocene volcanic rocks-Crescent Formation

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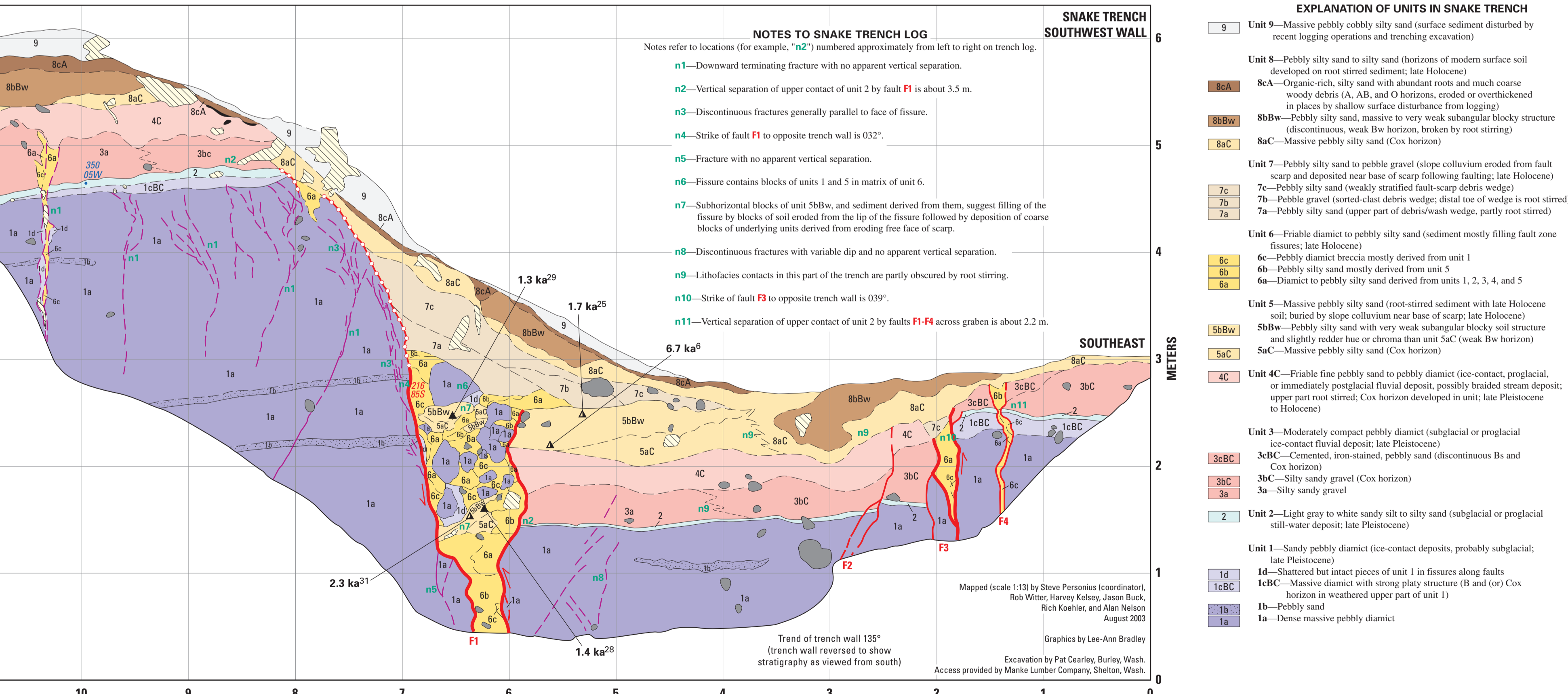
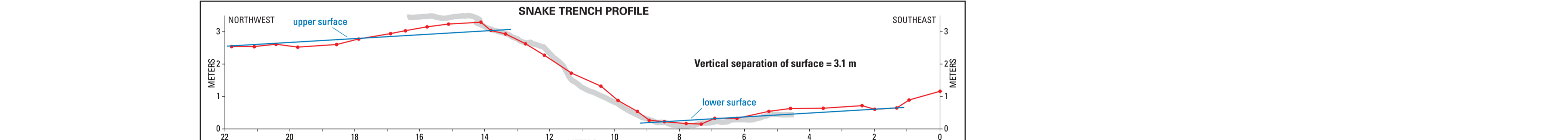
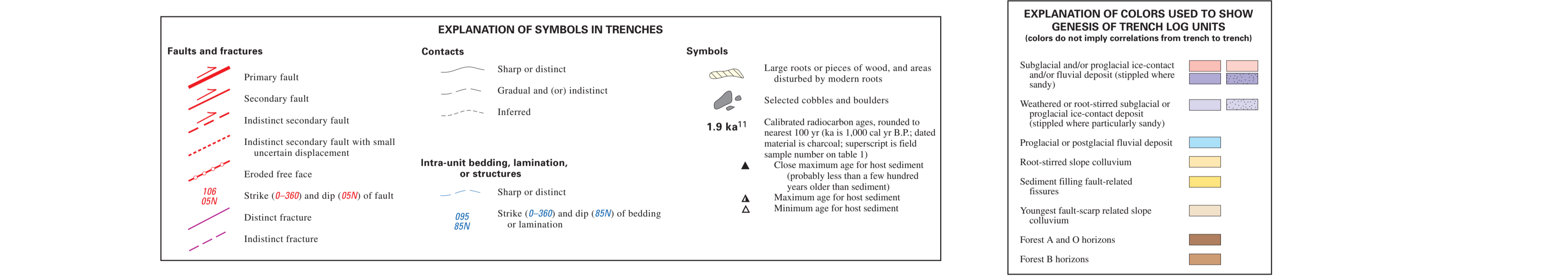
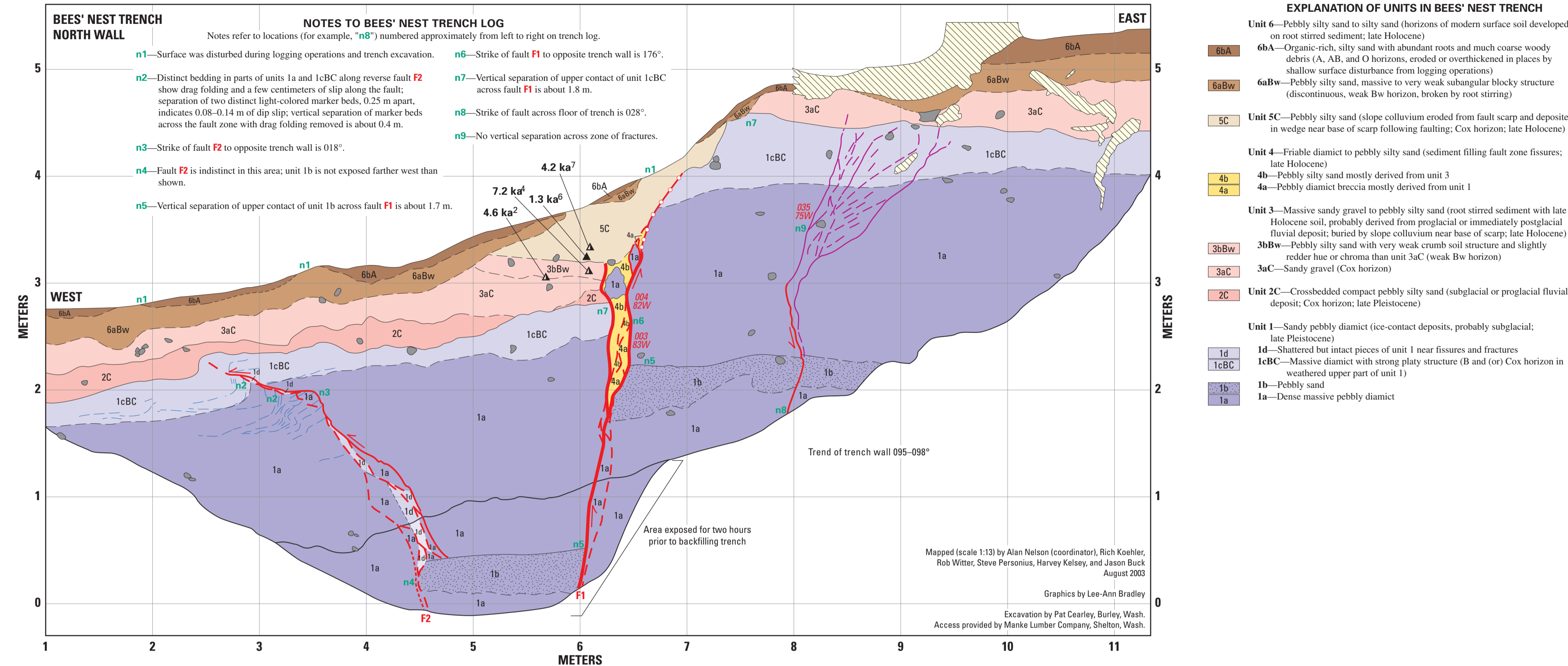
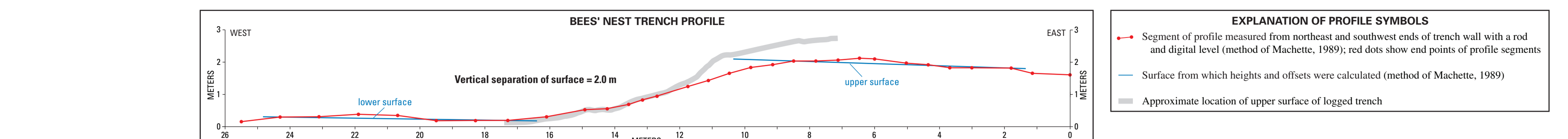


TABLE 2. RADIOCARBON DATA FOR CHARCOAL SAMPLES FROM THE SNAKE AND BEE'S NEST TRENCHES

Field number	Unit number	Station ¹ h,v (m)	Radiocarbon lab number ²	Radiocarbon age (14C yr BP at 1σ) ³	Calibrated age (cal yr BP at 2σ) ⁴	Sample weight (mg) ⁵	13C (‰)	Description of dated material ⁶
Sunset Beach								
SK-28	BbBw	5.35, 2.00	OS-43390	1,800±45	1,890-1,340	11.4	-25.5	10x3x5-mm fragment burned wood
SK-28	SbBw	6.21, 1.00	CAMS-101667	1,455±35	1,410-1,290	10.6g	-24.2	4 delicate 2x1x1-mm fragments
SK-29	SbBw	6.55, 2.42	OS-43060	1,280±45	1,300-1,070	11.7	-26.7	6x5x4-mm fragile fragment
SK-31	SbBw	6.36, 1.50	CAMS-101668	2,120±40	2,310-1,990	18.7g	-24.9	6x4x4-mm dentate fragment
SK-6	SbBw	5.64, 2.19	OS-43059	5,750±40	6,090-6,440	23.7	-26.0	10x6x2 bark-like fragment
Bees' Nest trench								
BN-2	SbBw	5.85, 3.04	CAMS-101664	3,980±40	4,570-4,330	10.5	-26.4	9x5x4-mm fragment
BN-4	SbBw	6.10, 3.11	CAMS-101665	6,175±40	7,230-6,940	51.6	-25.1	9x8x7-mm dentate fragment
BN-6	SC	6.06, 3.21	CAMS-101666	1,280±40	1,290-1,060	8.1	-25.1	6x2x1-mm fragment
BN-7	SC	6.10, 3.30	OS-43058	3,680±40	4,150-3,890	17.9	-24.0	6x14x4-mm fragment

¹Location (horizontal, vertical) on reference grid used to map north wall of Bees' Nest trench and southwest wall of Snake trench. Superscripts on sample ages shown on trench logs are the digits of field sample numbers (first column).
²Laboratories: OS, National Ocean Sciences AMS Facility (NOSAMS), Woods Hole Oceanographic Institution, Massachusetts; CAMS, Lawrence Livermore National Laboratories, California.
³AMS (accelerator mass spectrometer) ages (methods described in Gagnon and others, 2000). Quoted error for each AMS analysis is the larger of counting error or target reproducibility error.
⁴Ages in solar years calculated using OxCal (version 3.10; Bronk Ramsey, 2001; probability method) with the INTCAL04 atmospheric dataset (Reimer and others, 2004). NOSAMS' (OS) and Lawrence Livermore's (CAMS) results from the Third International Radiocarbon Comparison show minimal offset from comparison means suggesting that no additional interlaboratory variance is required for calibration. Calibrated ages show time intervals of 95% probability distribution at 2σ. Calibrated ages shown on trench logs are weighted averages of age probability distribution functions (Telford and others, 2004) rounded to nearest 100 years.
⁵g* indicates samples with adhering sediment when submitted to 14C laboratory; weight is a maximum for organic material in the sample.
⁶Unless indicated otherwise, ages are on angular, unbraded fragments of charcoal with distinct wood cellular structure. In each sample, the largest, most angular, least decayed fragments of charcoal were selected to minimize the chance of analyzing carbon much older than the host sediment. Most sediment adhering to fragments was removed with brushes or dental tools in distilled water at 6-20X. Charcoal was picked directly from sediment collected from the trench wall.

FIELD AND LABORATORY DATA FROM AN EARTHQUAKE HISTORY STUDY OF SCARPS IN THE HANGING WALL OF THE TACOMA FAULT, MASON AND PIERCE COUNTIES, WASHINGTON

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