# Supplemental Figure Captions

**Figure S1.** Plot comparing the slab depth (A) and subduction dip angle (B) calculated from the McCrory (2012) slab model (light grey lines) and from the Slab 2.0 model (dark grey line; Hayes et al., 2018). C, Plot showing the percent difference between the two slab models in B.

**Figure S2.** Individual plots of topo-bathymetric profiles (blue line) and along-profile gradient (red line) used to create regionally averaged plot in Figure 4.

**Figure S3.** Cluster dendrogram showing the statistical similarity of the topo-bathymetric profiles based on outer wedge width and gradient metrics. The height of branching on the y-axis is the Euclidean distance between pairs of observations and indicates the degree to which each underlying grouping of profiles are similar (see Mathworks® for detailed description of the analysis). Degree of similarity for first-order and second-order groupings is indicated by the thick black dashed line and thin grey dashed line, respectively.

**Figure S4.** Map of topo-bathymetric profiles along the Cascadia margin illustrating (A) how the first-order statistical groupings divide the margin into four regions with along-strike extents of >100 km, and (B) how the second-order statistical groupings divide the margin into six regions with along-strike extents of >50 km.

**Figure S5.** Map showing the distribution of publicly available seismic-reflection data used in this study (Triezenberg et al., 2016; Phrampus et al., 2017).

**Figure S6.** A plot of outer wedge a versus b illustrating three distinct first-order groupings. Note the similarity between the groupings here and in Figure 4a.