

M.E. Smith, H.G. Gregorich, L.A. Gipson, R.C. Krueger, A.R. Carroll, E.C. Parrish, A.P. Walters, S. Honig, C. Schwaderer, S. Meyers, B.S. Singer, T.K. Lowenstein, and W.D. Arnuk, 2023, High-resolution X-ray fluorescence-based provenance mapping 19 of Eocene fluvial distributary fans that fed ancient Gosiute Lake, Wyoming, USA: GSA Bulletin, <https://doi.org/10.1130/B37207.1>.

Supplemental Material

Table S1. Complete sample information, including location, stratigraphic position, lithology, grain size, petrographic modal composition, X-ray fluorescence-derived elemental abundances, and Gamma Ray spectrometer-derived elemental abundances.

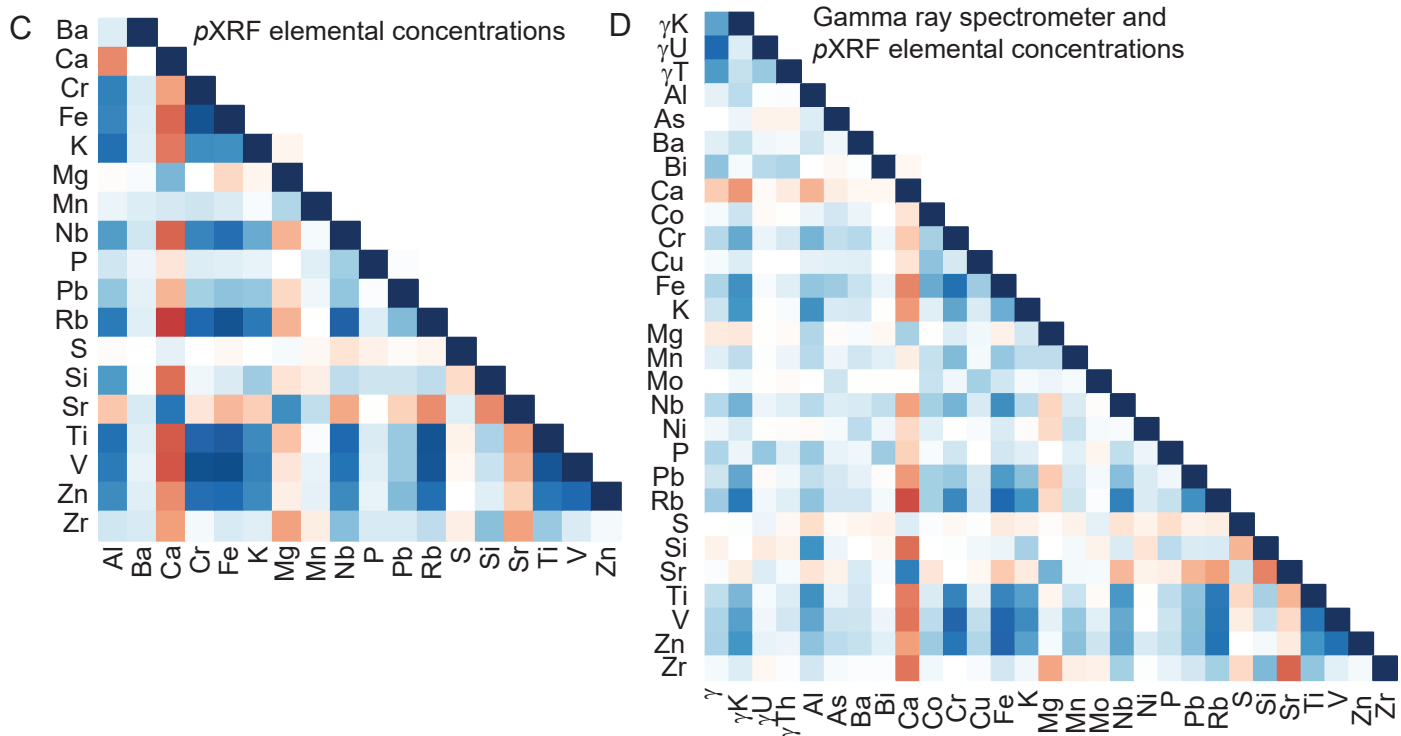
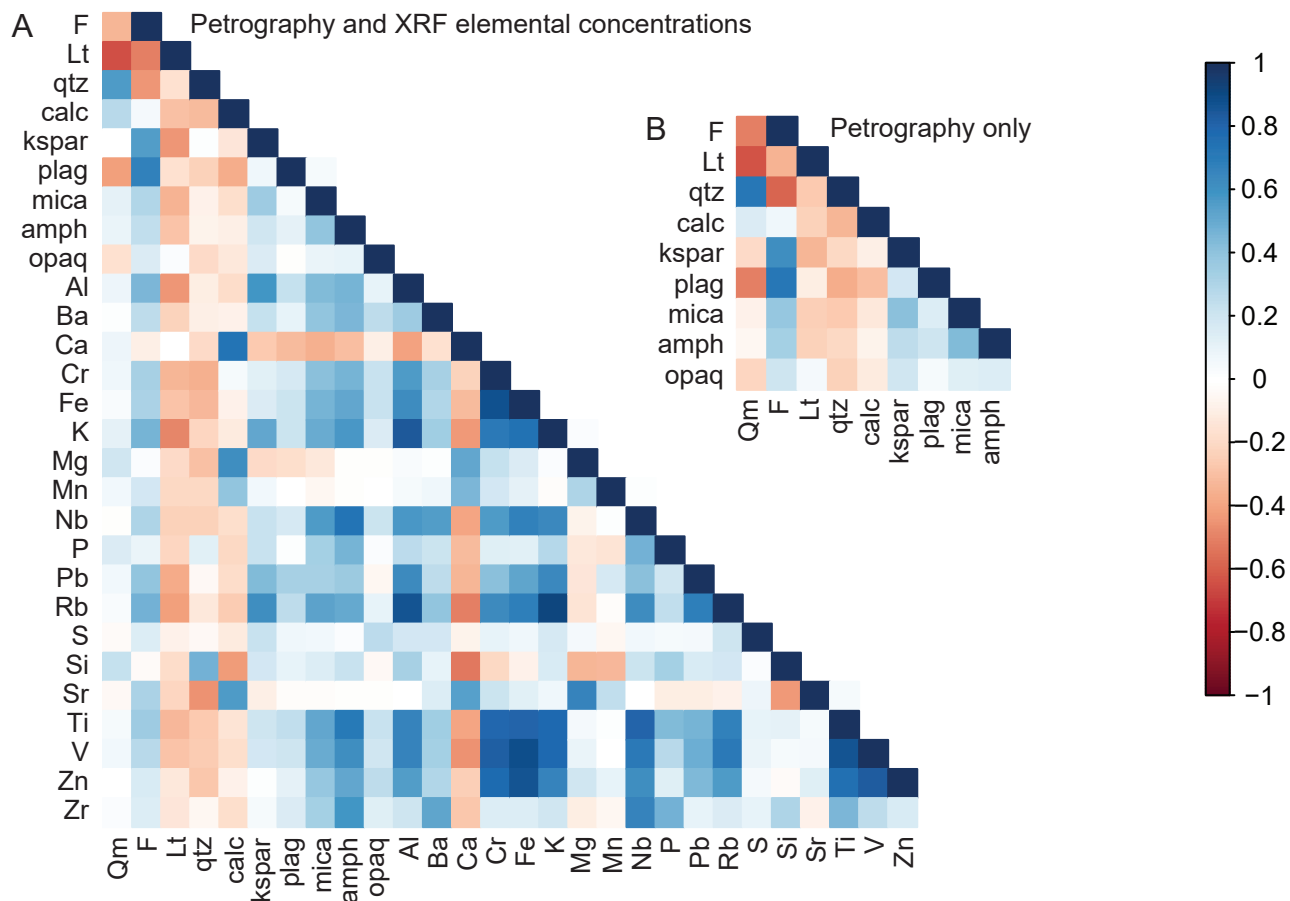
Figure S1. Correlation matrices for rock sample composition data described in the manuscript: A) Petrography and XRF elemental concentrations; B) Petrography only; C) X-ray fluorescence-derived elemental concentrations; D) Gamma ray spectrometer and X-ray fluorescence-derived elemental concentrations.

Figure S2. Plots showing principal component analysis results for X-ray fluorescence-measured elemental concentrations: A) PC1 and PC2, showing data by geographic sector; B) PC1 and PC3, showing data by geographic sector; C) PC1 and PC2, showing data by region; D) PC1 and PC3, showing data by region; E) PC1 and PC2, showing data by lithofacies; D) PC1 and PC3, showing data by lithofacies.

Figure S3. Plots showing principal component analysis results for X-ray fluorescence and Gamma Ray spectrometer-measured elemental concentrations: A) PC1 and PC2, colors differentiate samples by lithology; B) PC1 and PC3, colors differentiate samples by lithology; C) PC1 and PC2, colors differentiate samples by region; D) PC1 and PC3, colors differentiate samples by region.

Figure S4. Scree plots for PCA analyses described in the report showing the distribution of variance among principal components.

Figure S5. Simple linear regressions used to project core scanner-derived XRF counts into *p*XRF-based elemental concentrations and provenance-focused PCA coordinates.



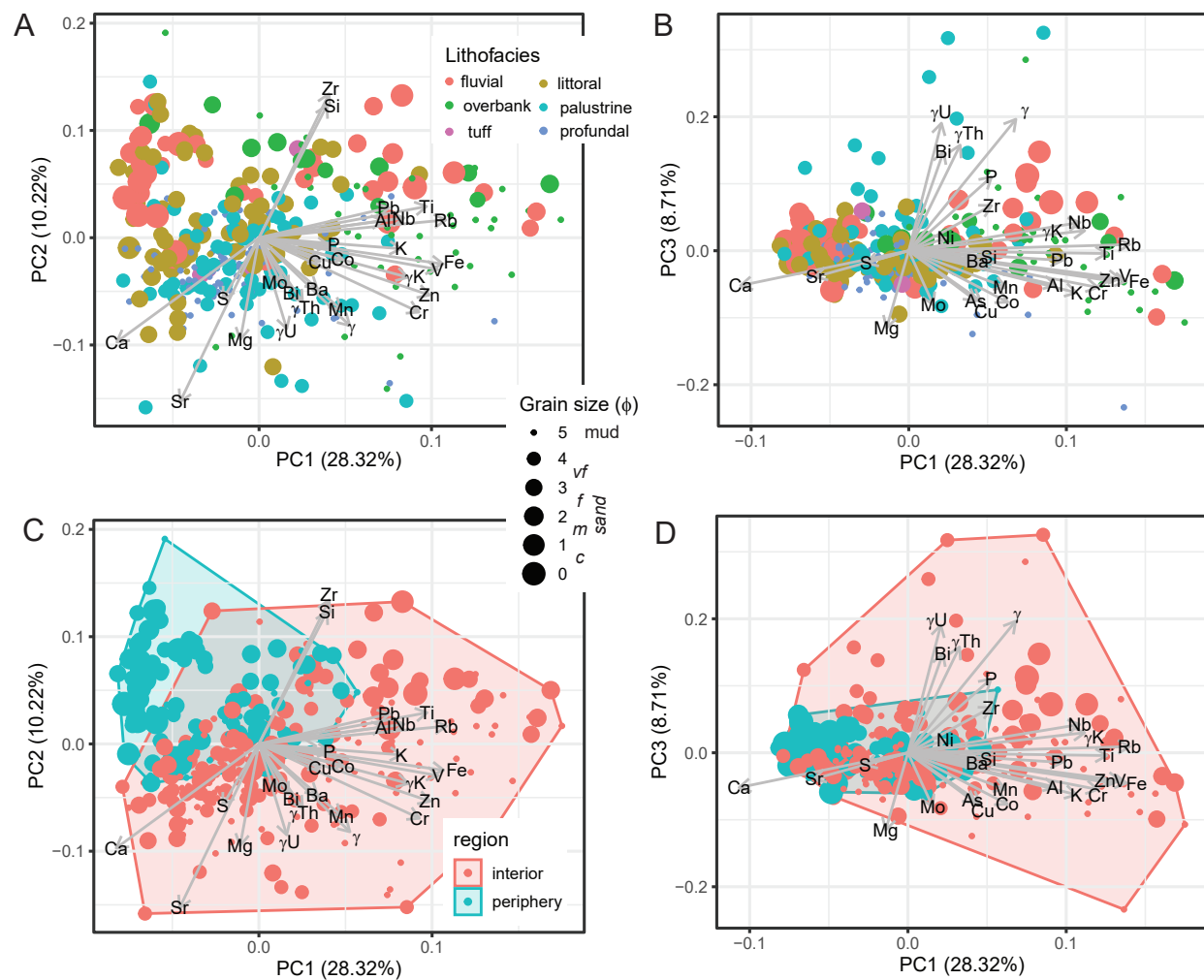


Figure S3

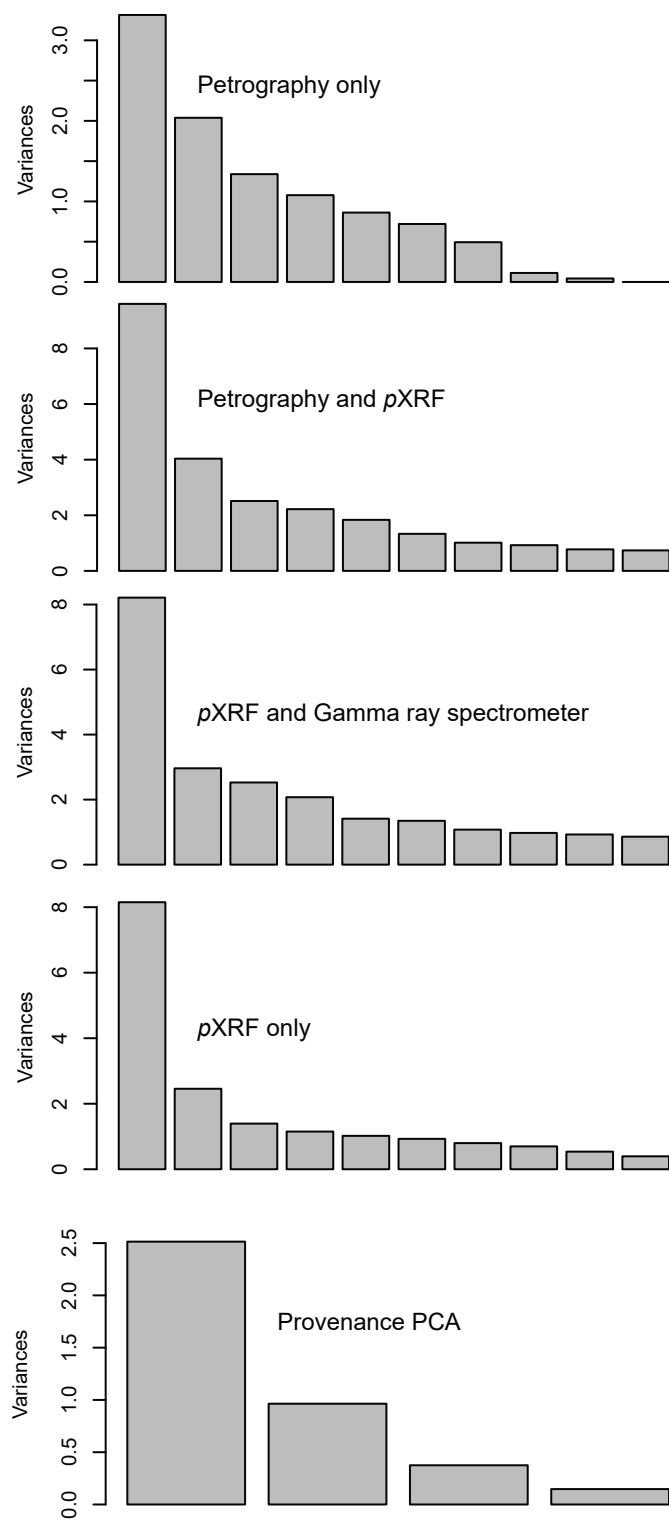


Figure S4

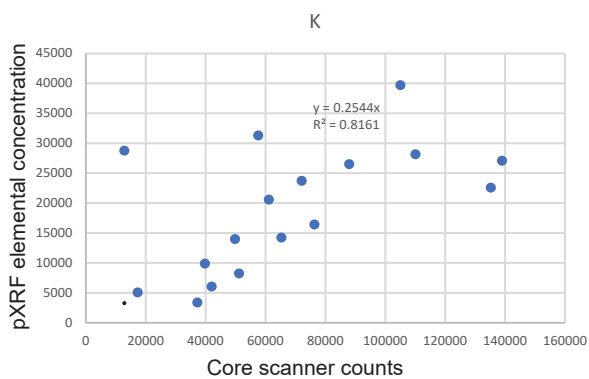
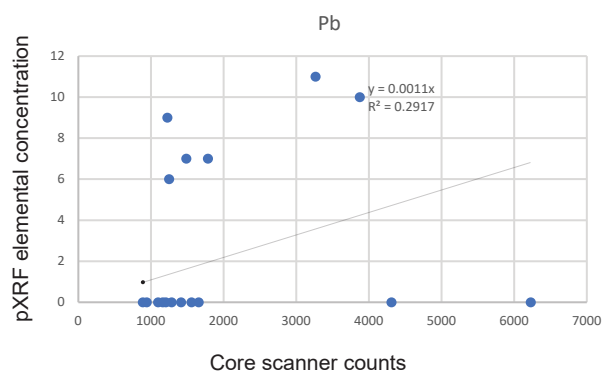
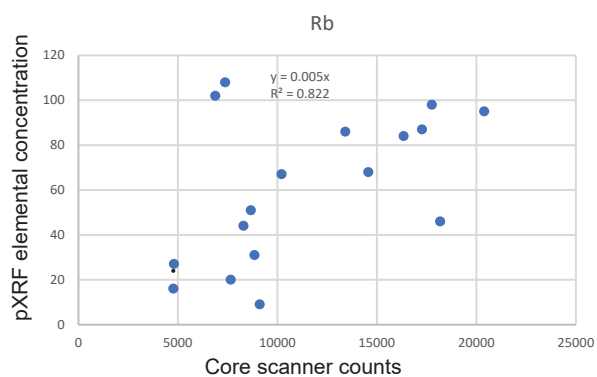
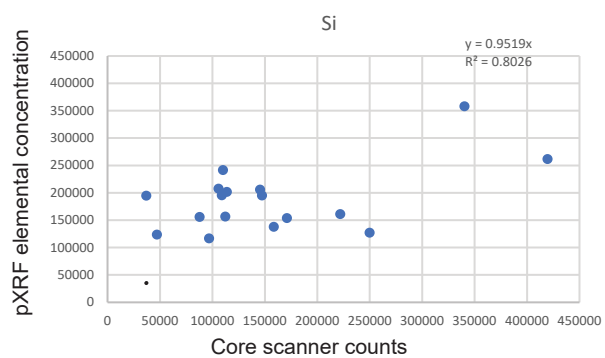


Figure S5