

A Combined Geophysical and Lithostratigraphical Investigation of a Young Pull-Apart Basin: Evaluating the Relationship Between Basin Sedimentation, Late-Quaternary Climate Change, and Tectonics (Lake Elsinore, Southern California)

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To the right: The new Lake Elsinore core (LEDC10-1) compared to example sites highlighted with major late Glacial climate intervals and their associated abrupt climatic transitions. Note the large geographic range of sites and their relationship to Southern California hydrologic variability.

A) NGRIP (Greenland) oxygen isotope data (Andersen et al., 2006; Rasmussen et al., 2006).

B) OCE326-GGC5 $^{231}\text{Pa}/^{230}\text{Th}$ meridional overturning circulation (MOC) proxy from western subtropical Atlantic (McManus et al., 2004).

C) New Lake Elsinore core (LEDC10-1) percent sand.

D) Ocean Drilling Program core 893 total *Pinus* (pine pollen) counts from Santa Barbara Basin using 2008 SBB age model (Hendy per. comm.). Pollen data from Heusser and Sirocko (1997).

YD = Younger Dryas
B-A = Bolling-Allerod
GS-2 (HE-1) = Greenland stadial-2 (Heinrich Event-1)

Andersen, K. K. et al., 2006, The Greenland Ice Core Chronology 2005, 15–42ka. Part 1: constructing the time scale: *Quaternary Science Reviews*, v. 25, no. 23-24, p. 3246-3257.
Heusser, L., and Sirocko, F., 1997, Millennial pulsing of environmental change in southern California from the past 24 k.y.: A record of Indo-Pacific ENSO events?: *Geology*, v. 25, no. 3, p. 243-246.
McManus, J. F. et al., 2004, Collapse and rapid resumption of Atlantic meridional circulation linked to deglacial climate changes: *Nature*, v. 428, no. 6985, p. 834-837.
Rasmussen, S. O. et al., 2006, A new Greenland ice core chronology for the last glacial termination: *Journal of Geophysical Research D: Atmospheres*, v. 111, no. 6.

