

Ventilation of the Santa Barbara Basin and the North Pacific thermocline over the past two millennia.

Christopher Charles (Scripps Inst. Of Oceanography, UCSD, La Jolla CA. 92093-0224)

Our objectives are to create a detailed time series of the radiocarbon content of North Pacific thermocline water. We achieve this by measuring the ^{14}C of benthic foraminifera in an annually laminated sediment core from the Santa Barbara Basin. Radiocarbon is a highly discriminatory tracer of the changing chemistry and physical properties of the water filling the basin.

The changing ventilation of the basin can be compared with changes in benthic assemblages expressed in the same sedimentary sequence.

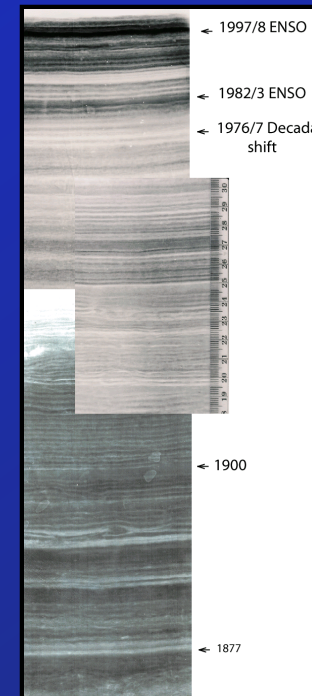
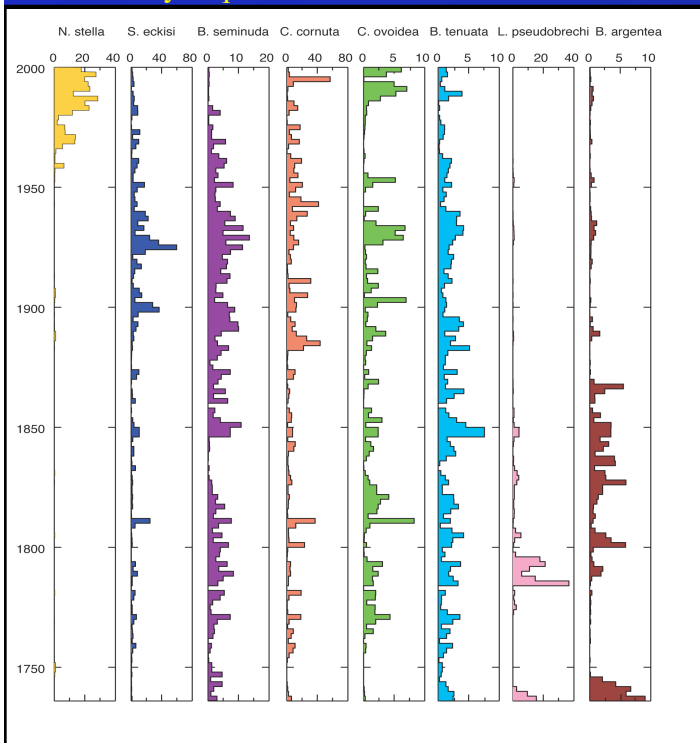
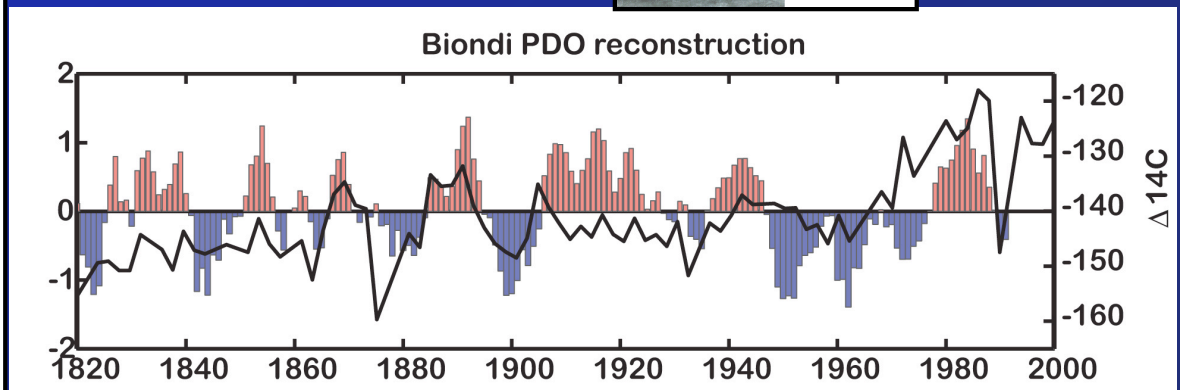


Image courtesy of Dave Field



Benthic foraminiferal radiocarbon record from the Santa Barbara Basin plotted along with the Pacific Decadal Oscillation reconstruction from Biondi *et al.*, 2001. The striking correlation between the two time series suggests that the ventilation of California Current is associated with the large-scale changes in North Pacific climate.