DEVELOPING HIGH-RESOLUTION CLIMATE RECORDS FOR THE HUDSON RIVER REGION USING AN INTEGRATED APPROACH

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ABSTRACT

The primary goal of this proposal is to obtain up to 8 cores from the Hudson River from Newburgh to south of LDEO, which will permit continuing development of high-resolution climate records for the mid to late Holocene. Thus far, we have had success in evaluating the long-term evolution of the Hudson River and extracting a climate signal from salinity records from ~6,000 yr. to Recent by an integrated approach using stable isotopes and Sr/Ca ratios from bivalves, sedimentological data, $^{14}$C and $^{137}$Cs ages, and foraminiferal and diatom assemblages. However, the data are mainly from one long core (9 m) and more than fifty short cores (< 2 m). To substantiate and further continue developing a climate history, we will require additional long cores to be taken from the Hudson River. This proposal only requests for support in obtaining these cores, with the expectation of leveraging additional funds for analytical measurements, salary support, etc. from a proposal that will be submitted to the Hudson River Foundation this fall. The Hudson River Foundation has already supported the initial phase of extracting a climatic signal from the Hudson River sediments for the past 6,000 years by funding a 2 yr. project to Pekar, Burckle and McHugh. This study is part of a larger collaborative effort with D. Peteet, L. Burckle, R. Geyer, and C. Summerfield aimed to understand the history of the Hudson River and develop climate records.