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**PALEOENVIRONMENTAL RECONSTRUCTION OF HOLOCENE LAKE INCHQUIN, WESTERN IRELAND, USING GRAIN SIZE, LOSS-ON-IGNITION, AND DIATOM ANALYSES**

Little research has been conducted to evaluate the changes in grain size within cores taken from peat bogs. For this study, I utilized an eight-meter long core taken from a peat bog near Lake Inchiquin, western Ireland. The particular area in which the core was taken was a large expanse of open water 10,000 years ago, but has since been infilled by sediment and organic material. I conducted a thorough grain size analysis of the core, with the intention of considering both large-scale and small-scale changes in grain size within it. I also conducted loss-on-ignition and diatom analyses on the core, and tried to correlate changes in carbon and diatomic content with changes in grain size. Preliminary results indicate that grain size steadily increases from the base to the top of the core until the onset of fully-developed peat. Changes in carbon and shelly content do not appear to correlate with changes in grain size. This may be because, whereas the amounts of organic and microfossil content are contingent upon many factors, grain size seems to be only related to lake depth. Although diatom analysis of the core is not yet completed, I hypothesize that diatom concentration in the core is directly proportional to grain size, since the presence of diatoms in a carbonate-rich area such as this could only be due to the inflow of periphytic diatoms derived from outlying streams.