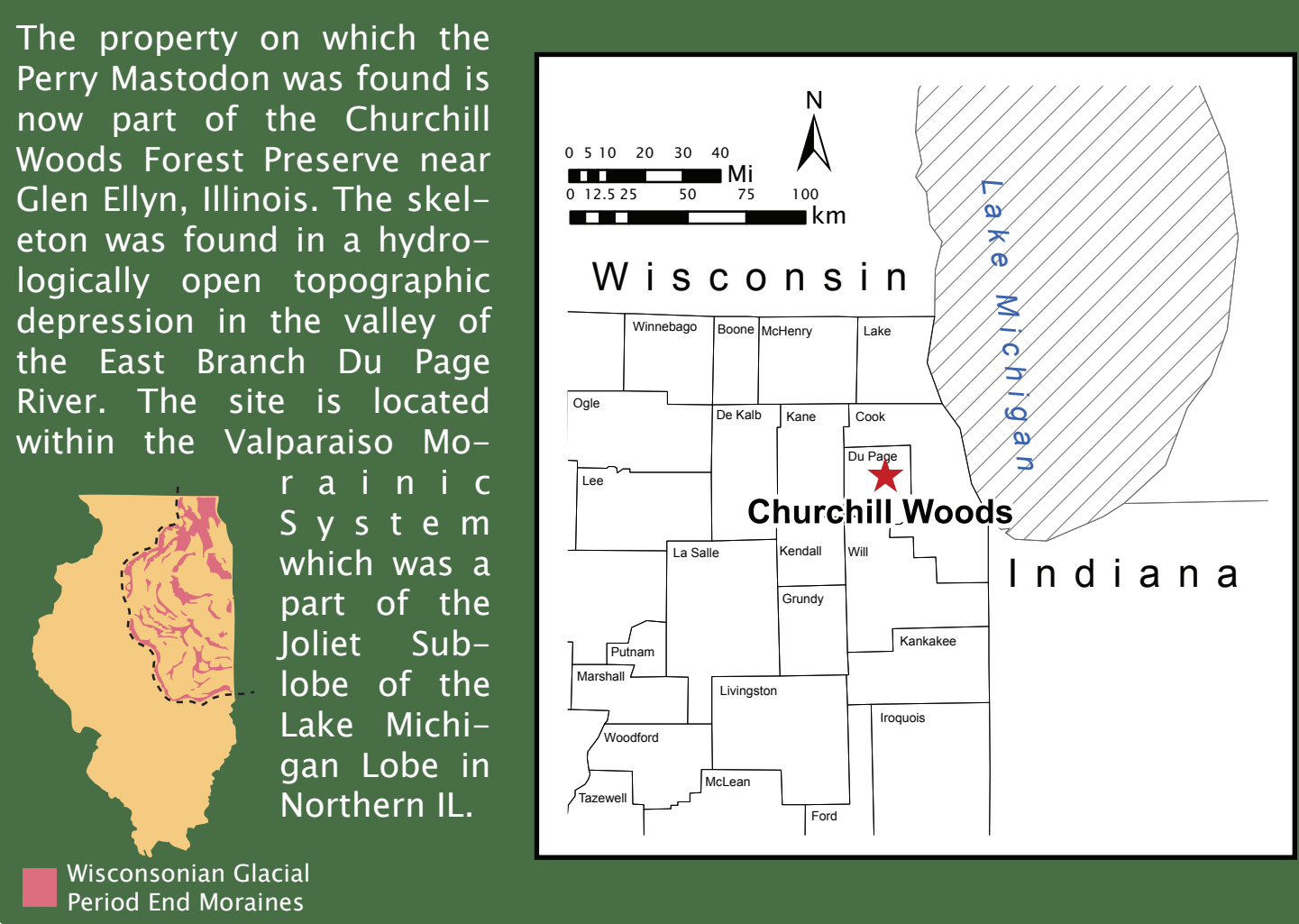


GLACIAL AND POST-GLACIAL STRATIGRAPHY OF THE PERRY MASTODON SITE, GLEN ELLYN, IL

INTRODUCTION

The Perry Mastodon (*Mammuth americanum*) was excavated in Glen Ellyn, Illinois, in October, 1963, immediately after it was discovered during construction of a residential pond. Little attention was paid to the geological setting during the eight-day excavation by the Wheaton College Geology Department. Our project determined the site's environment of deposition and through description and interpretation of cored sediments obtained through hand augering and the Illinois State Geological Survey's direct-push rig.

Study Area and Regional Context



METHODS

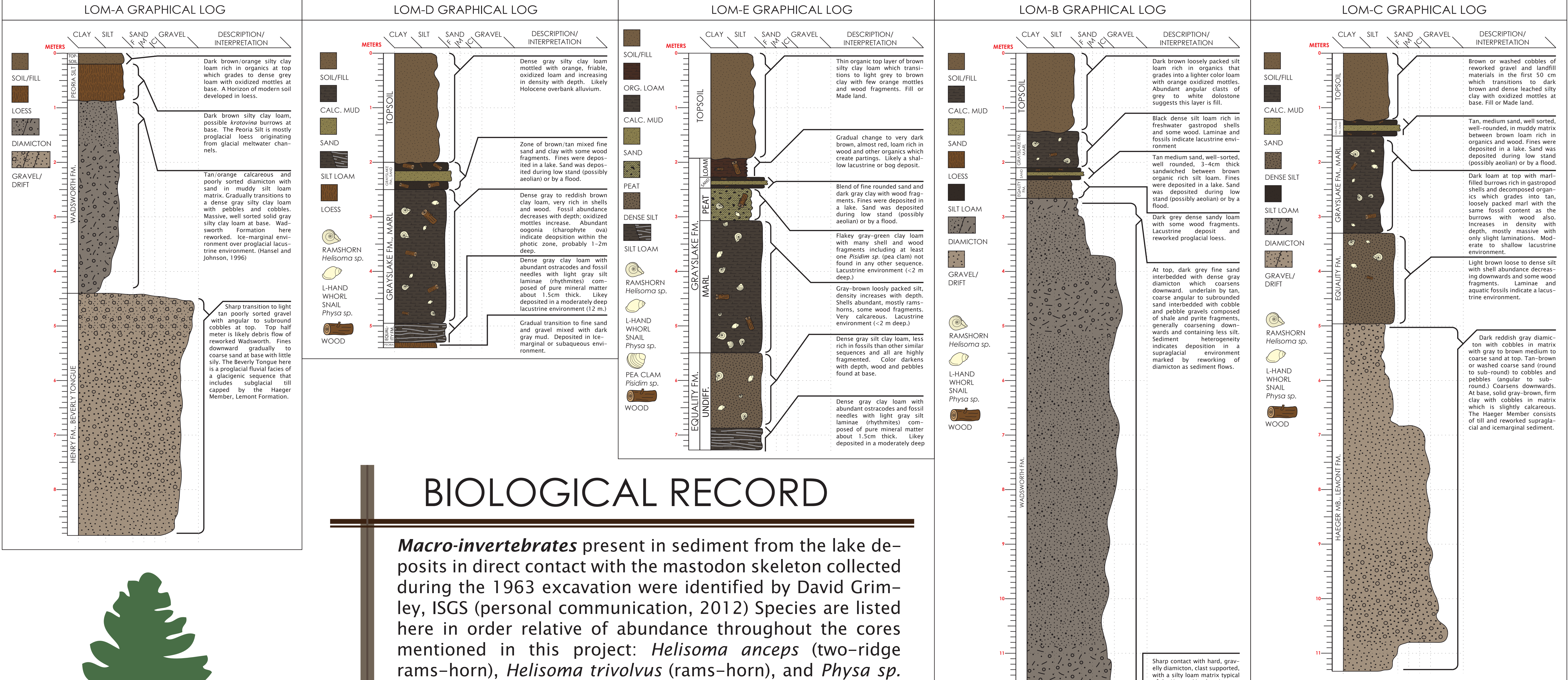
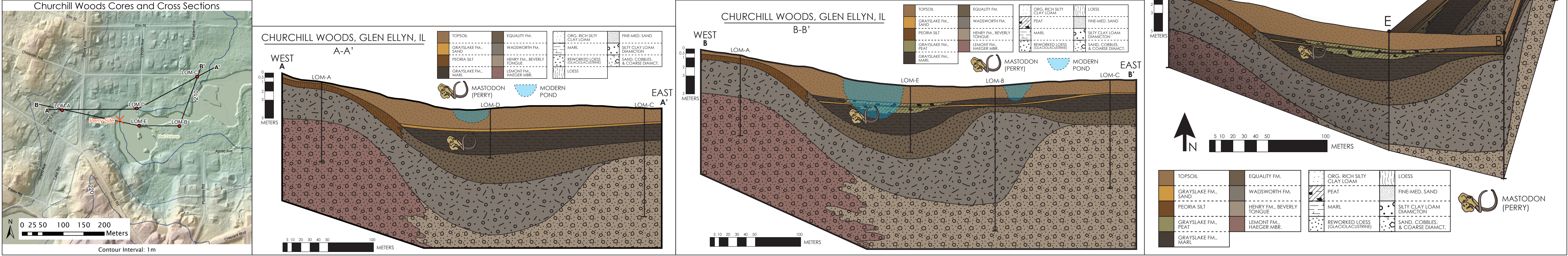
Stratigraphy was determined by using two methods of sub-surface sampling:
•Geo-probe core extraction using a back-end truck probe provided three of the five cores.
•Hand augering using a 15cm diameter bucket auger and 1m increments of extension rod yielded the final two sub-surface samples. These were taken back into the lab and logged, analyzed, and photographed in 10cm increments.



Joshua Olsen logging and photographing cores with makeshift photographic tray and stand in the lab.

RESULTS

The upward vertical succession is: (a) muddy sand of the Haeger Member of the Lemont Formation, (b) undifferentiated sand and gravel, (c) silt loam diamicton of the Wadsworth Formation, (d) loess of the Peoria Silt Formation, (e) fossiliferous laminated silt of the Equality Formation, (f) fossiliferous marl and peat of the Grayslake Peat and, (g) sterile fluvial sand of the Henry Formation.



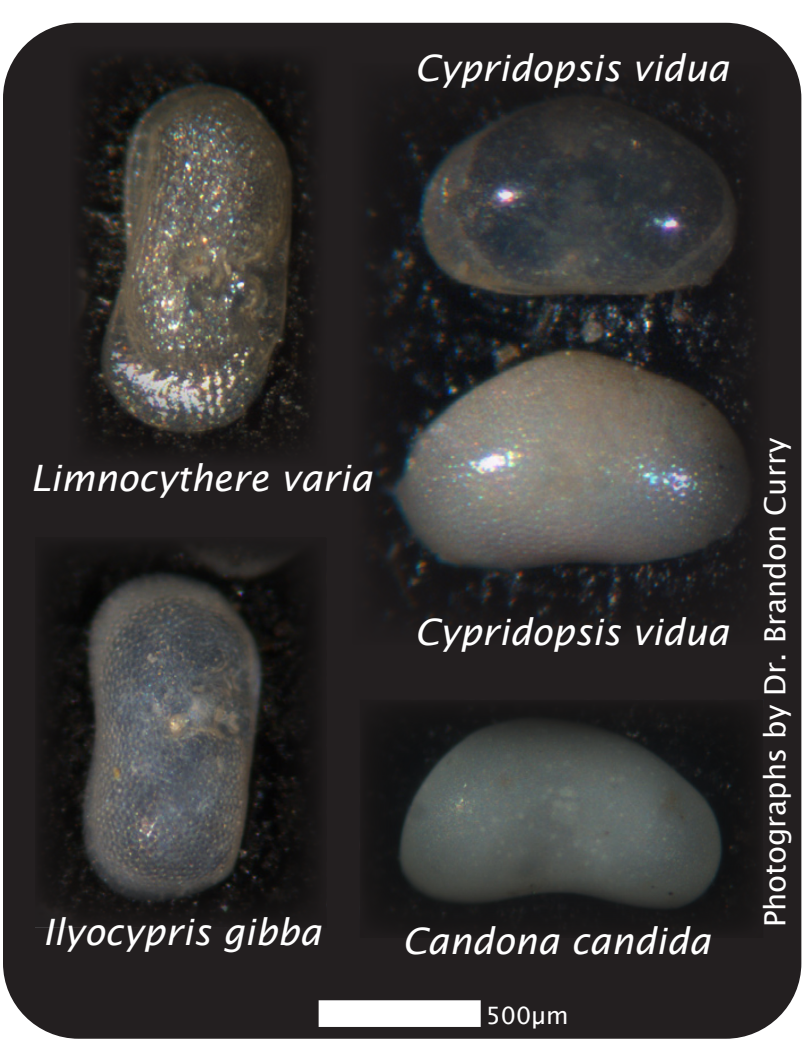
BIOLOGICAL RECORD

Macro-invertebrates present in sediment from the lake deposits in direct contact with the mastodon skeleton collected during the 1963 excavation were identified by David Grimley, ISGS (personal communication, 2012) Species are listed here in order relative of abundance throughout the cores mentioned in this project: *Helisoma anceps* (two-ridge rams-horn), *Helisoma trivolvis* (rams-horn), and *Physa* sp. (left-handed whorl snail), and to a much lesser degree; *Pisidium* sp. (pea clam) (only found at 3.05–3.3m in core LOM-E), and *Sphaerium lacustre* (N=1.)



Ostracodes were described by Dr. Brandon Curry from samples taken from LOM-D at 5.3m and 4.0m to determine the paleoclimate and water depth at time of deposition. 5.3m includes: *Fabaeformiscandona rawsoni*, *Cyclocypris laevis*, *Cyclocypris ampla* which are characteristic of deep, cold water. 4.0m contains: *Cyclocypris ampla*, *Cyclocypris sharepei*, *Cypridopsis vidua*, *Cyclocypris ampla*, *Physocypris globula* (very abundant) indicative of warmer shallow water in which the water was sulfate poor, and had fewer dissolved solids.

Datable **black spruce cones and needles** were found as well as **bones of avian and amphibian species**.

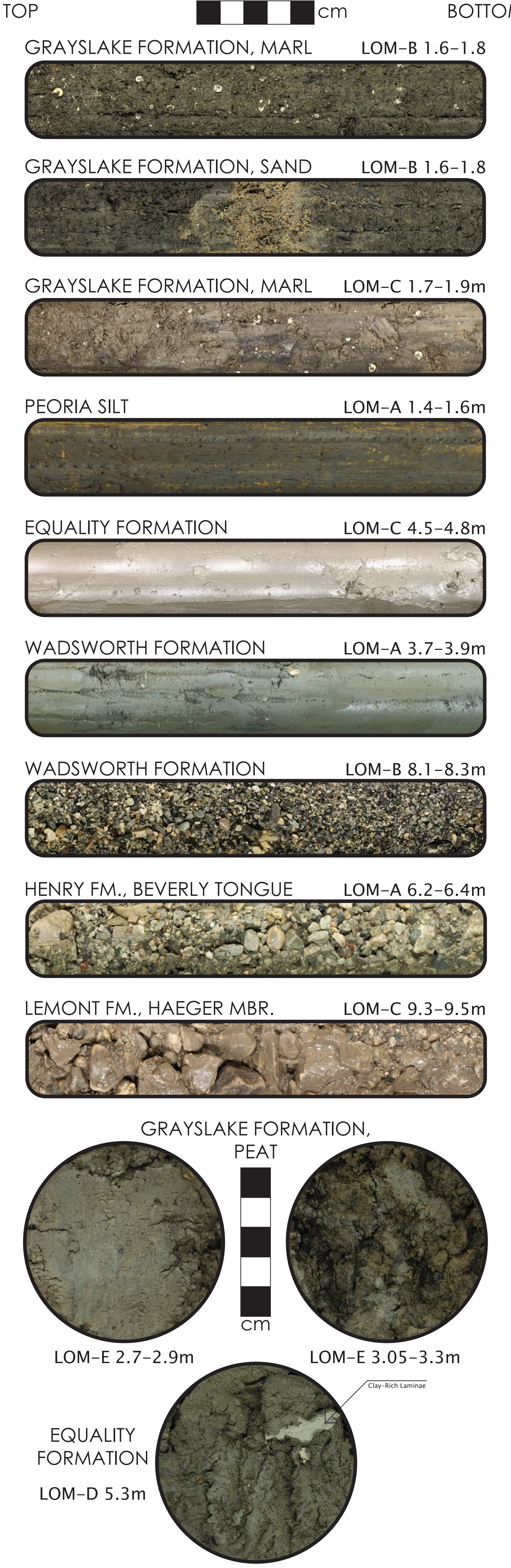


CONCLUSIONS

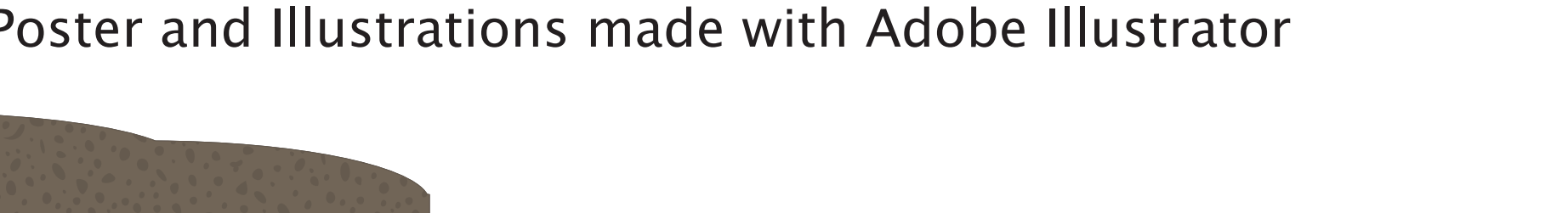
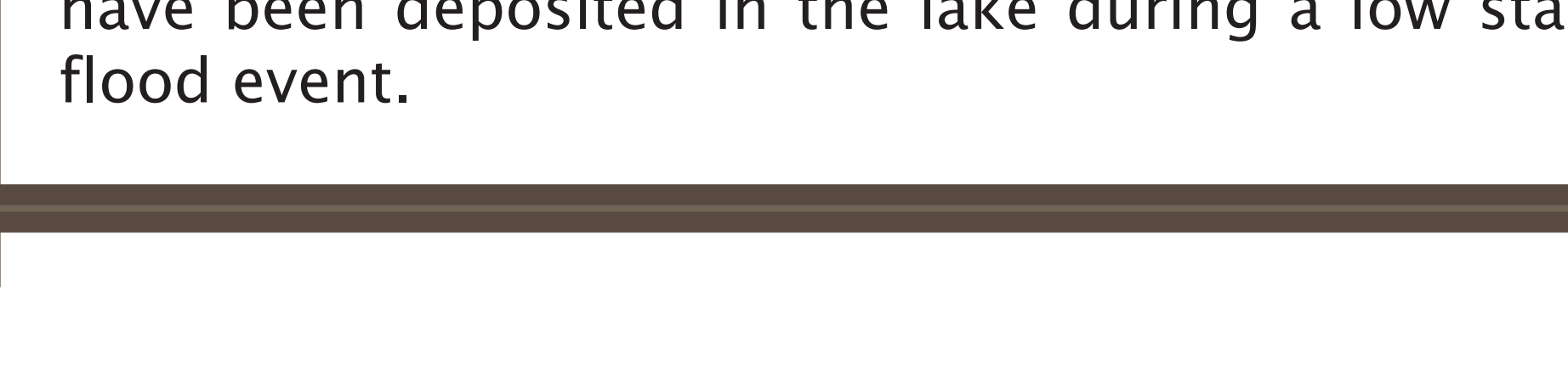
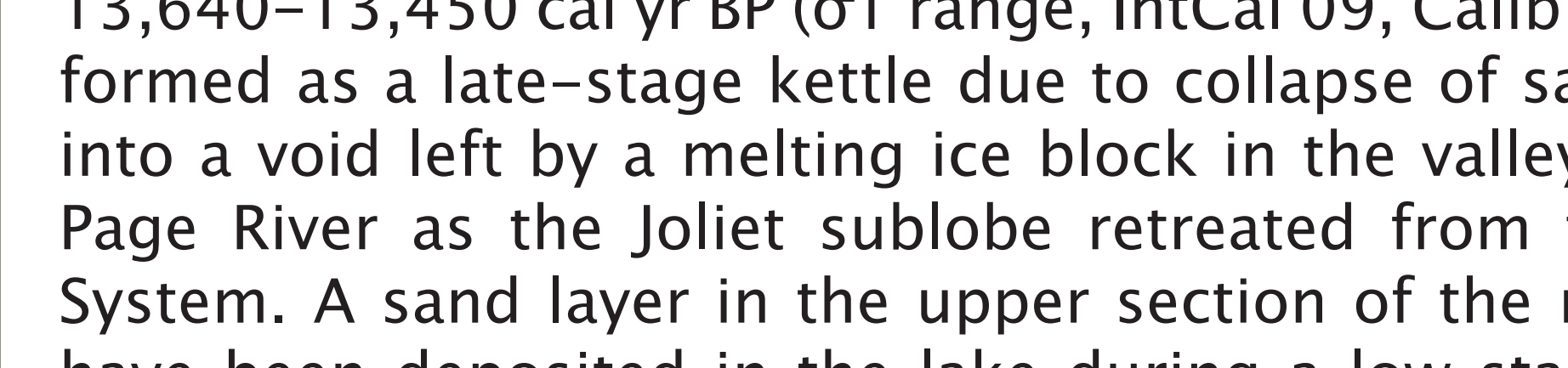
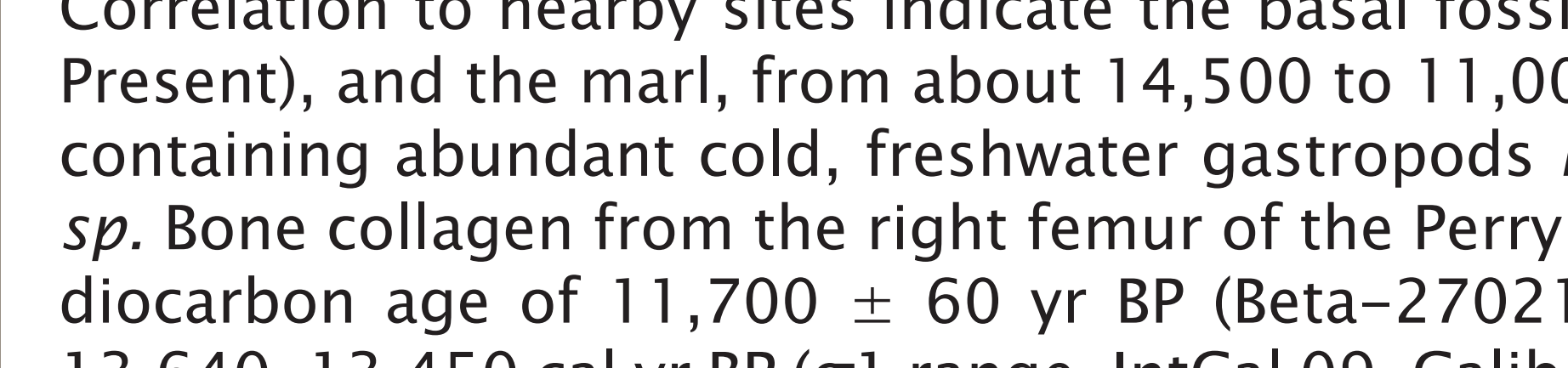
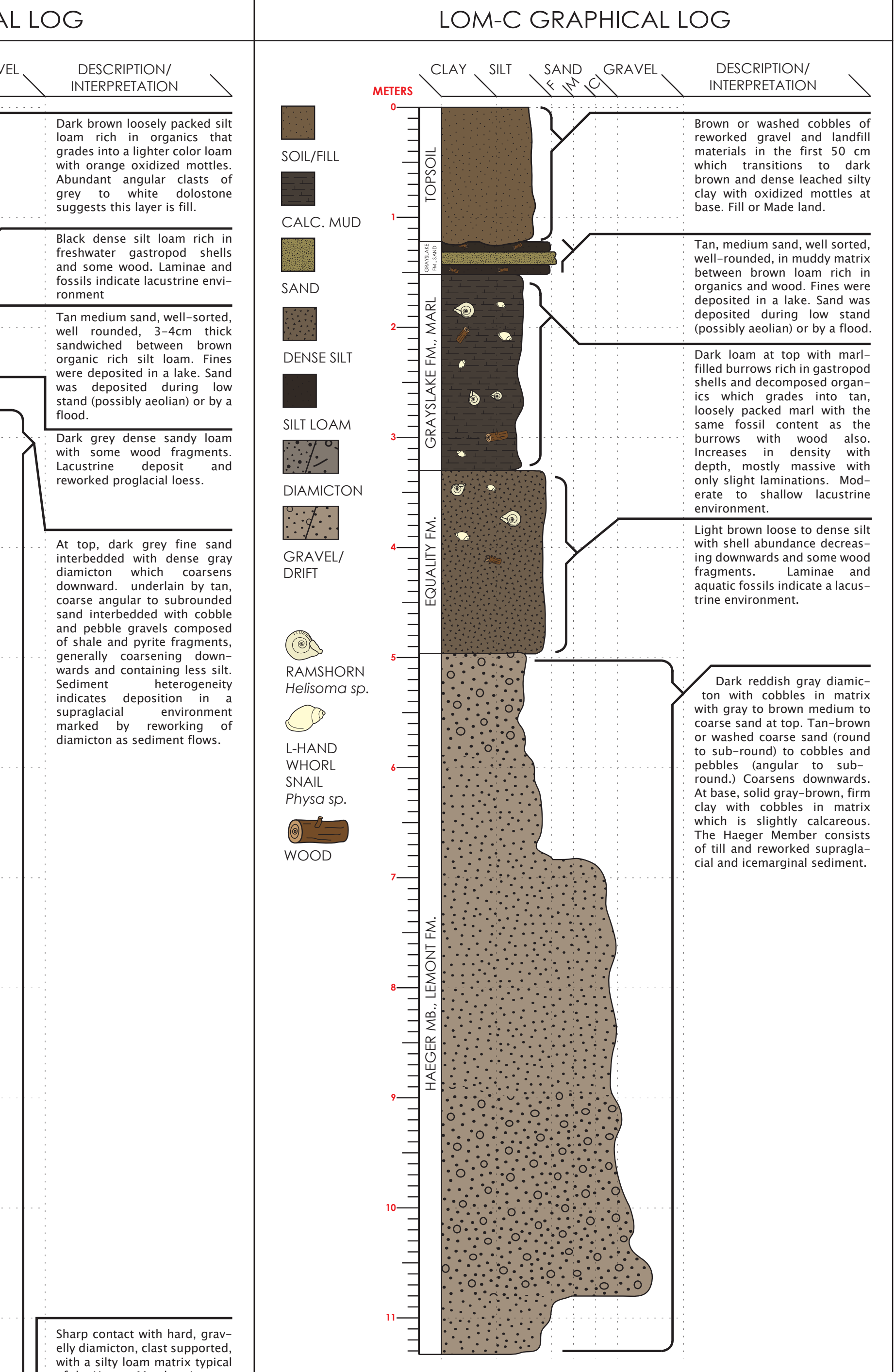
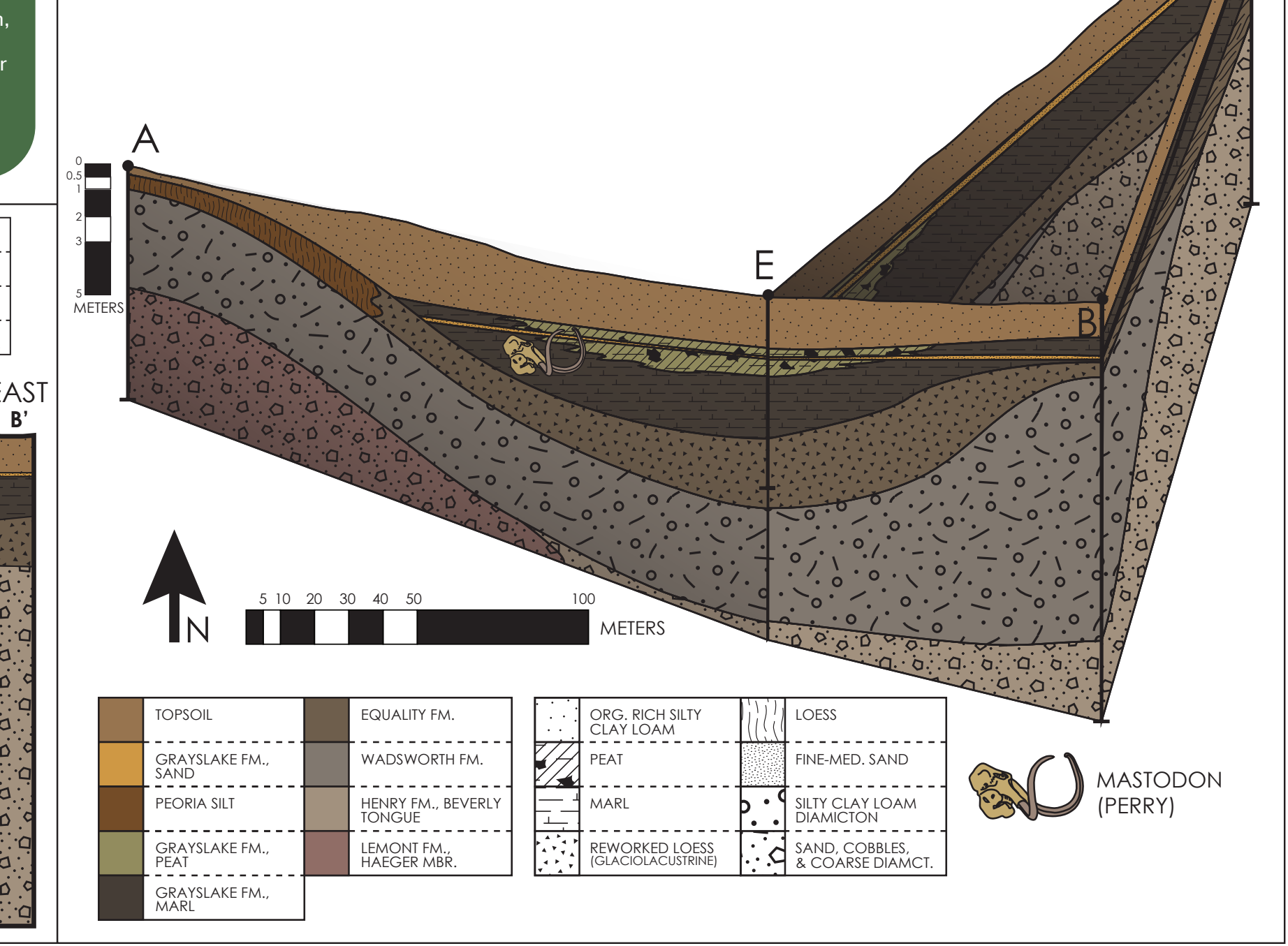
Correlation to nearby sites indicate the basal fossiliferous silts date from about 16,500 to 14,500 cal yr BP (Before Present), and the marl, from about 14,500 to 11,000 cal yr BP. The mastodon skeleton was encased in silt loam marl containing abundant cold, freshwater gastropods *Helisoma* sp. and *Physa* sp. Bone collagen from the right femur of the Perry Mastodon yielded a radiocarbon age of 11,700 ± 60 yr BP (Beta-270214), which calibrates to 13,640–13,450 cal yr BP (σ1 range, IntCal 09, Calib 6.0). The lake may have formed as a late-stage kettle due to collapse of sand and gravel outwash into a void left by a melting ice block in the valley of the East Branch Du Page River as the Joliet sublobe retreated from the Valparaiso Moranic System. A sand layer in the upper section of the marl and peat unit may have been deposited in the lake during a low stand or by a post-glacial flood event.



LITHOFACIES



CHURCHILL WOODS, GLEN ELLYN, IL STRATIGRAPHIC FENCE DIAGRAM



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