

**8 June 2012**  
**Application for SAHRA Permit #302: Heritage Objects**  
**Part B. Supplemental Information to permit application**

Paul J. Hearty, Ph.D.  
Research Associate Professor  
Department of Environmental Studies  
601 South College Road  
University of North Carolina at Wilmington  
Wilmington, NC 28403 USA  
[heartyp@uncw.edu](mailto:heartyp@uncw.edu) [kaisdad04@gmail.com](mailto:kaisdad04@gmail.com)

See: [www.pliomax.org](http://www.pliomax.org) for general information about the project protocols and objectives.

*Item B-8. Description of the sites, type of material, and approximate dates.*

The primary objective of our research is to locate and describe ancient marine terraces and shoreline features dating from the early Pliocene onward to the Quaternary and Holocene. These features will be morphologically analysed in great detail to establish the palaeo-topography of the shoreline. The next objective is to locate sedimentary and fossil deposits associated with the shoreline features. From these samples we will select the best preserved material for dating by a variety of methods including strontium-isotopes, amino acid geochronology, and uranium-thorium technique. Although there are some sites identified in the literature, our research mission is one of discovery of localities having multiple components (geomorphology, stratigraphy, sediments, and fossils). We have demonstrated our ability to locate and describe such deposits in other global localities. We plan to be working in the field in the Western and Northern Cape Provinces between the 13<sup>th</sup> and 29<sup>th</sup> of June, 2012.

We are strictly interested in the shallow water geological deposits of Pliocene age that blanket the southwest coastal region of South Africa. To this end we would only desire to collect small numbers of marine invertebrate fossils (for dating purposes only) from geological deposits that are widespread in nature and have no commercial or heritage value. If during the course of our field surveys we find any evidence of paleo-human habitation or other like evidence of archeological interest we will report this to SAHRA authorities.

Samples will not be accessioned in a museum collection. Bulk samples will be shipped by Fed Ex to my Department at the University of North Carolina at Wilmington. There the samples will be identified and rated in terms of preservation, then logged shells will be submitted to various labs for Sr-isotopes, U/Th, amino acid geochronology, and sedimentological analyses. Only well-preserved common marine invertebrates will be used for these geochronological analyses. Labs and their directors are identified below.