ABSTRACT. The difficulty of distinguishing between Aboriginal shell middens and natural shell deposits has been addressed in various settings. On the Abydos Plain near Port Hedland in northern Western Australia, archaeologists have generally not acknowledged this issue and have ascribed a cultural origin to most shell deposits. Recent investigations have demonstrated that episodic cyclones or storm waves on the coastal marshes have deposited or re-deposited shells that are similar in appearance to midden deposits, and that previous interpretations of the archaeology of the Plain are not justified. A geo-archaeological approach is essential to reveal the stratigraphic sequences and palaeo-processes which have controlled the formation of shell features on the Plain.

The shell deposits listed for salvage were registered archaeological sites that were to be buried by spoil dredged from the nearby harbour, as a key component of a port infrastructure upgrading project. The authors looked at the survey reports (Gavin Jackson P/L, 2007, 2008) and photographs of the sites in each area, and were concerned that the shell deposits might not be middens. They made short preliminary visits to the areas, and those concerns remained, although it was clear that the deposits were equivocal, and questions about their nature and origin could be resolved only by extensive excavations. As a result of those brief site visits, it was recommended that the salvage excavations should take a geoarchaeological approach, to investigate the shell deposits within their

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