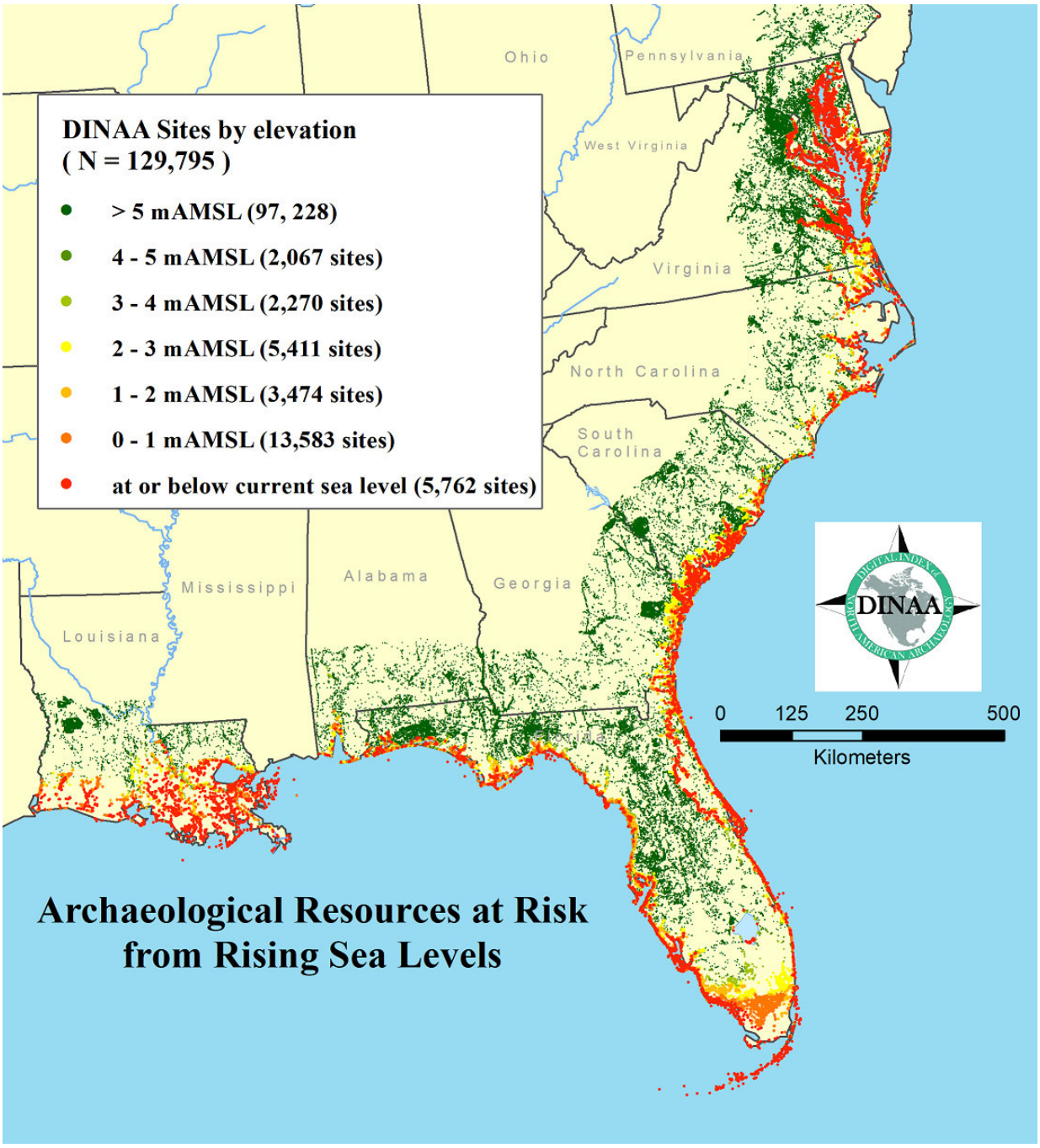
Sea-level rise predicted to threaten >13,000 archaeological sites in southeastern US

November 29 2017



Tens of thousands of known archaeological sites are threatened by sea level rise in the southeast, and far more currently unknown and unrecorded, as shown here at low spatial resolution. Credit: Anderson et al., 2017

Sea-level rise may impact vast numbers of archaeological and historic sites, cemeteries, and landscapes on the Atlantic and Gulf coasts of the southeastern United States, according to a study published November 29, 2017 in the open-access journal *PLOS ONE* by David Anderson from the University of Tennessee, Knoxville, USA, and colleagues.

To estimate the impact of sea-level rise on archaeological sites, the authors of the present study analyzed data from the Digital Index of North American Archaeology (DINAA). DINAA aggregates archaeological and historical data sets developed over the past century from numerous sources, providing the public and research communities with a uniquely comprehensive window into human settlement.

Just in the remainder of this century, if projected trends in sea-level rise continue, the researchers predict that over 13,000 recorded archaeological sites in the southeast alone may be submerged with a 1 m rise in sea-level, including over 1,000 listed on the National Register of Historic Places as important cultural properties. Many more sites and structures that have not yet been recorded will also be lost.

Large linked data sets, such as DINAA, that show what may be impacted and what could be lost across entire regions, are essential to developing procedures for sampling, triage, and mitigation efforts. Such research is essential to making accurate forecasts and public policy decisions about the consequences of rapid climate change, extreme weather events, and displaced populations. These are factors that could shape our civilization profoundly in the years to come.

Anderson notes: "Sea-level rise in the coming years will destroy vast numbers of archaeological sites, buildings, cemeteries, and cultural landscapes. Developing informatics capabilities at regional and continental scales like DINAA (Digital Index of North American Archaeology) is essential if we are to effectively plan for, and help

mitigate, this loss of human history."

More information: Anderson DG, Bissett TG, Yerka SJ, Wells JJ, Kansa EC, Kansa SW, et al. (2017) Sea-level rise and archaeological site destruction: An example from the southeastern United States using DINAA (Digital Index of North American Archaeology). *PLoS ONE* 12(11): e0188142. doi.org/10.1371/journal.pone.0188142

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