

Diving into the Past: Precontact Underwater Archaeology in North America

David K. Thulman, Ph.D.
George Washington University
President, Archaeological Research Cooperative, Inc.



Geologic Era

Cultural Era

HOLOCENE

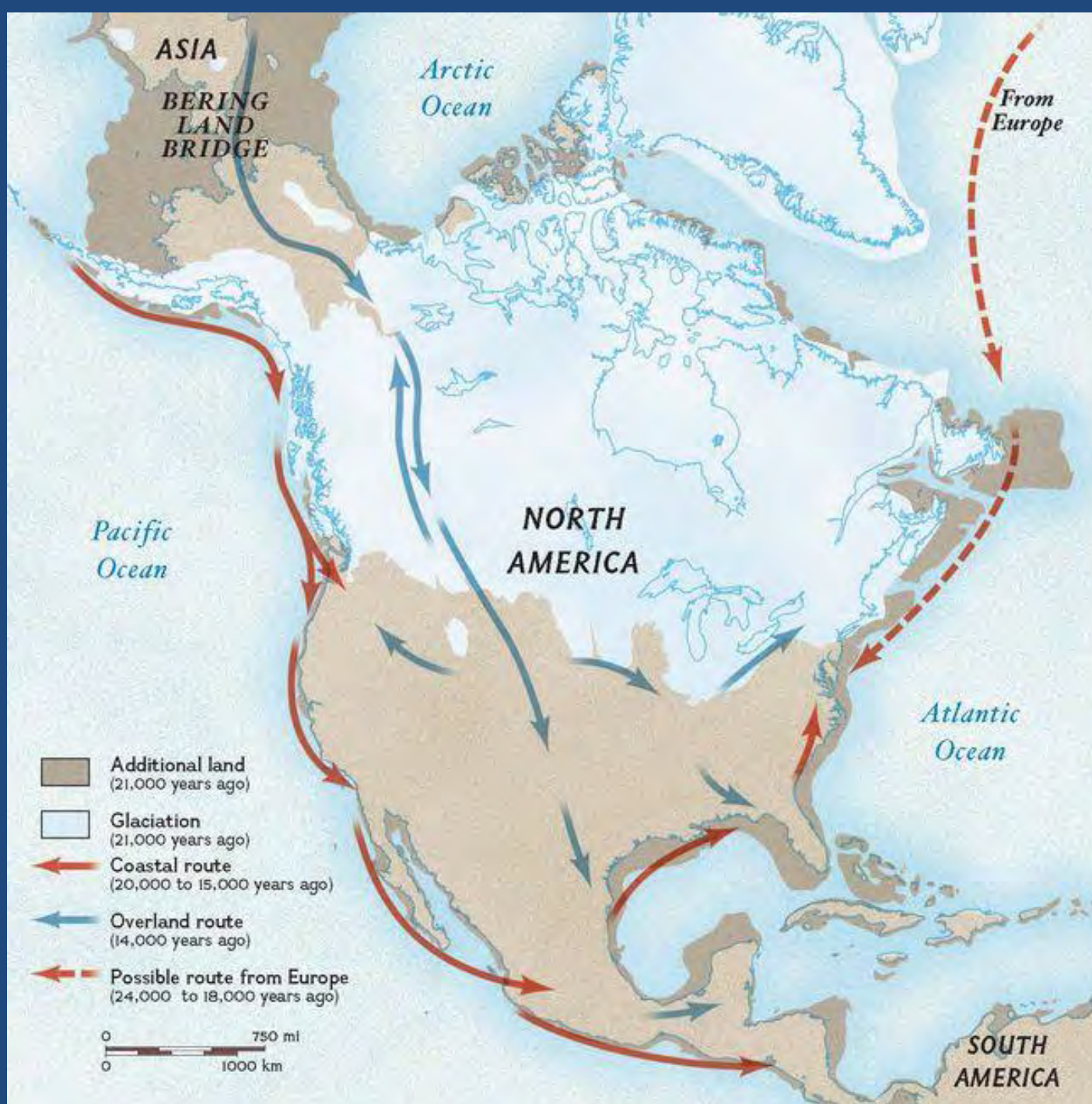
Younger Dryas

PLEISTOCENE

PERIOD Chronology (calendar years before present)		
Historic		300 - ...
Late Prehistoric		1,200 - 300
Transitional Archaic		2,000 - 1,200
Archaic	Late	3500 - 2,000
	Middle	6/5,000 - 3,500
	Early	9/8,000 - 6/5,000
Paleoindian (or Paleoamerican)	Late	11,000 - 8,000
	Middle	13,500 - 11,000
	Early	>16,000 - 13,500

Clovis

Pre-Clovis



1.3 miles

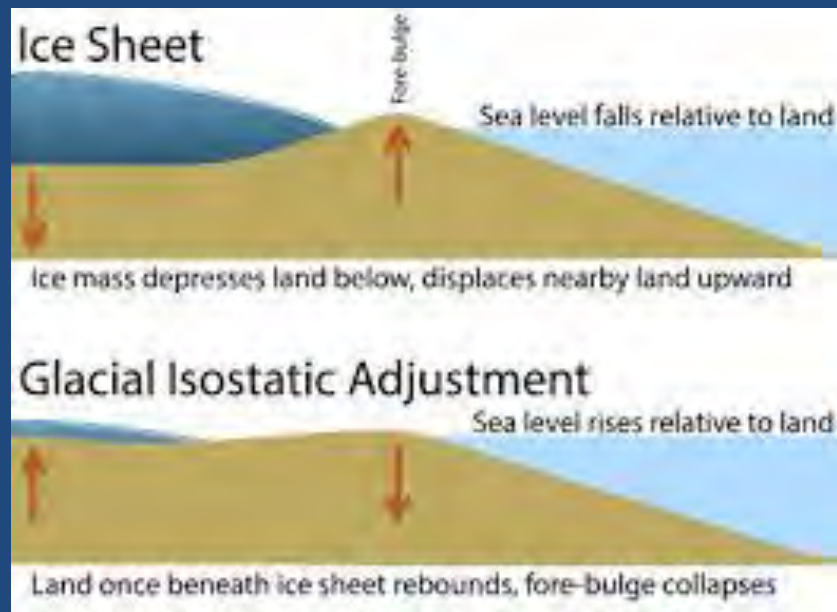
.5 miles

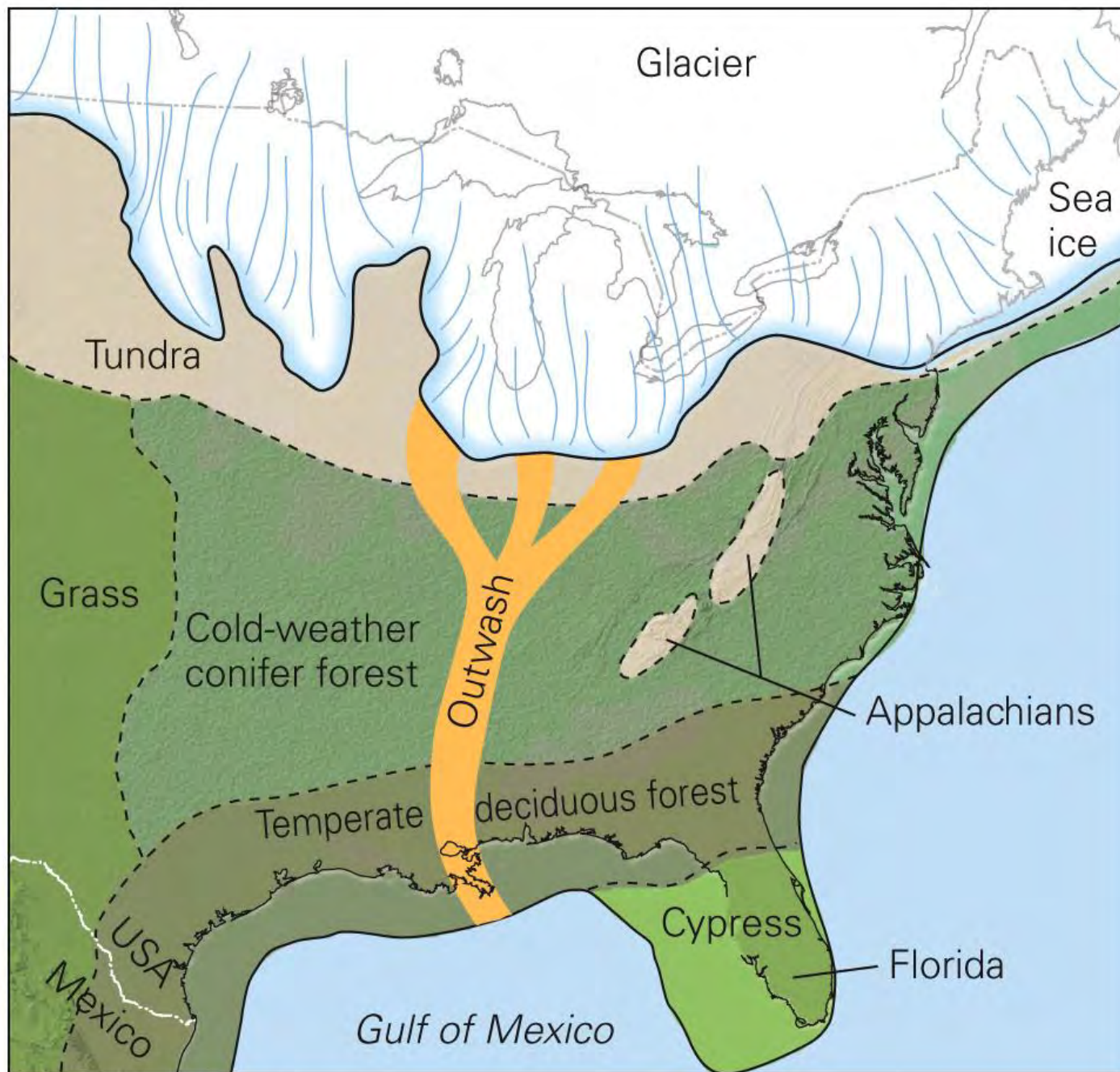
.78 miles

2.0 miles

THICKNESS OF THE ICE SHEETS AT VARIOUS LOCATIONS 21,000 YEARS AGO COMPARED WITH MODERN SKYLINES









@roman uchytel

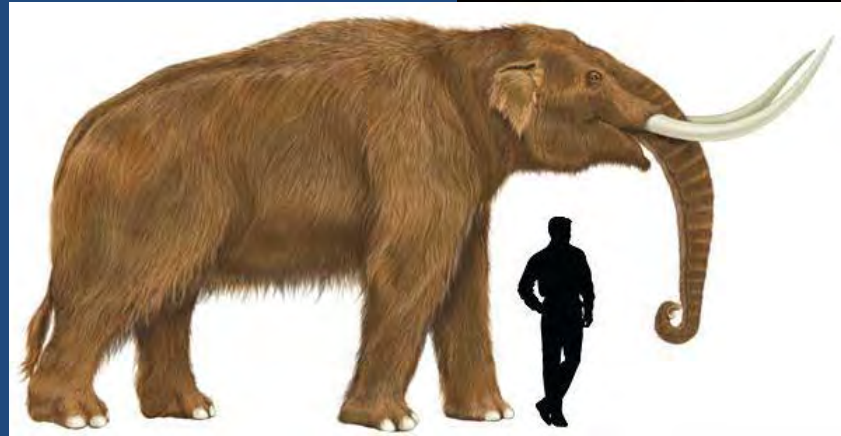
Hemiauchenia macrocephala

ROMAN UCHYTEL
prehistoric-fauna.com

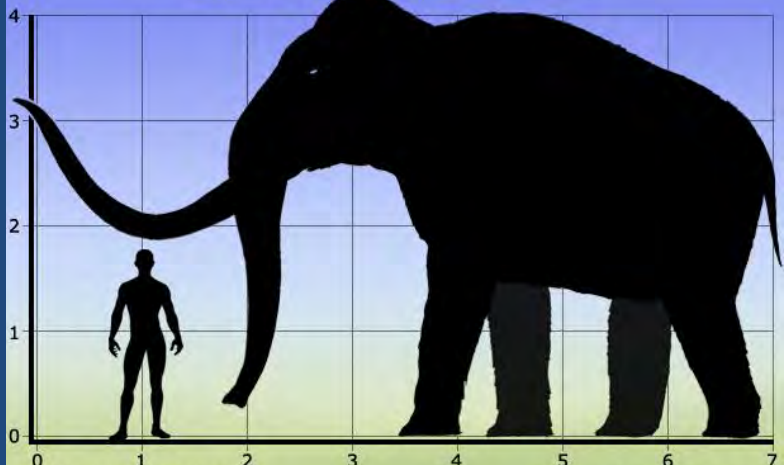


Bison antiquus

Human



Large *Mammuthus columbi* (Columbian mammoth) compared to a 1.8 meter tall person.



DIMENSIONS IN METERS

© www.prehistoric-wildlife.com



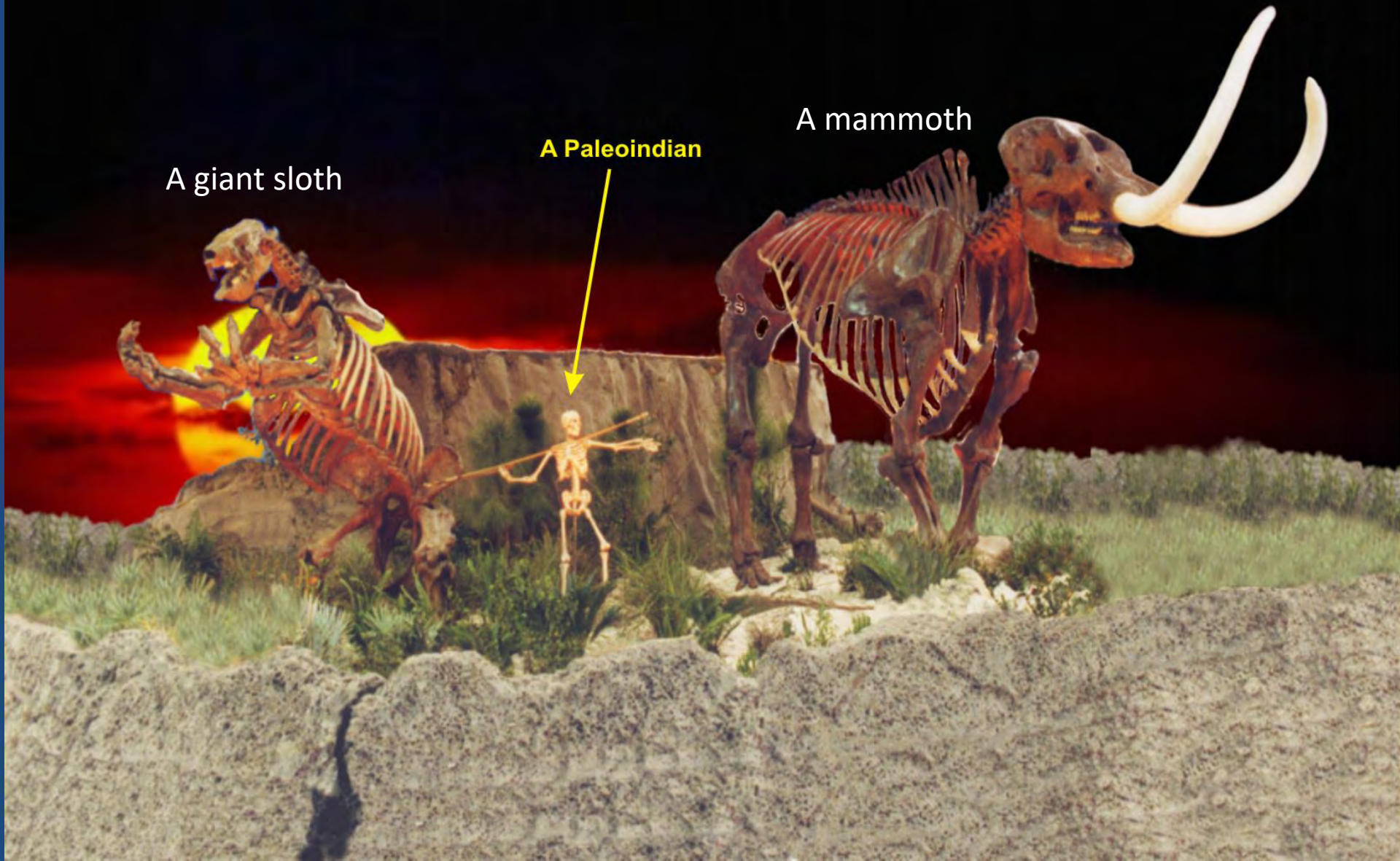


Pleistocene Fauna to Scale!!

A giant sloth

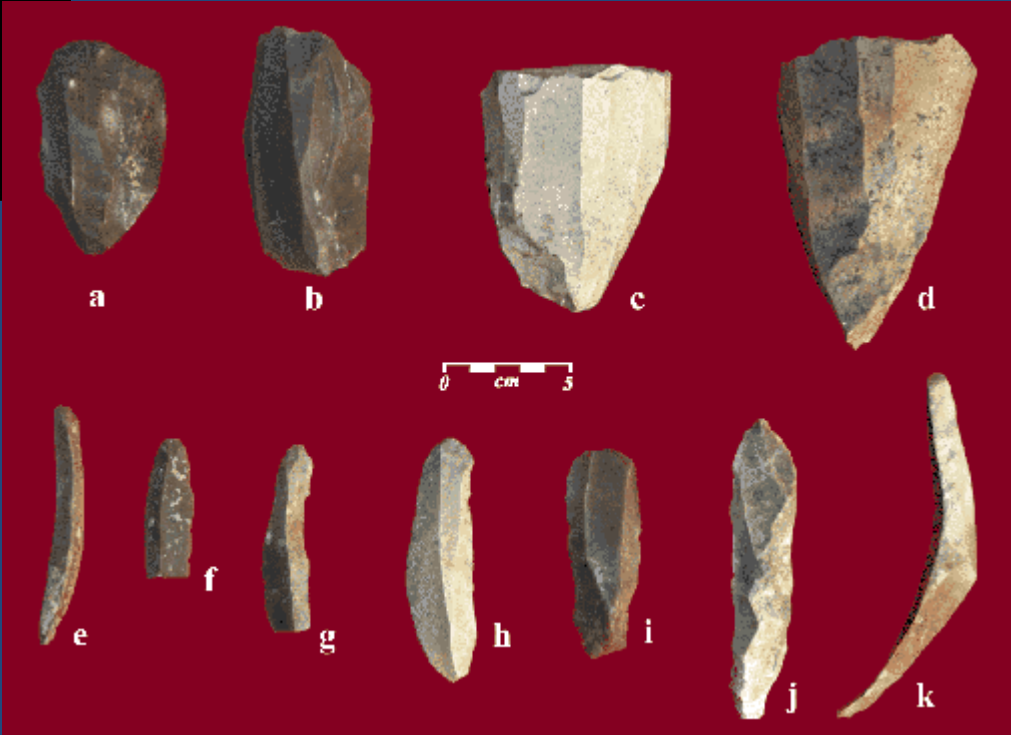
A Paleoindian

A mammoth



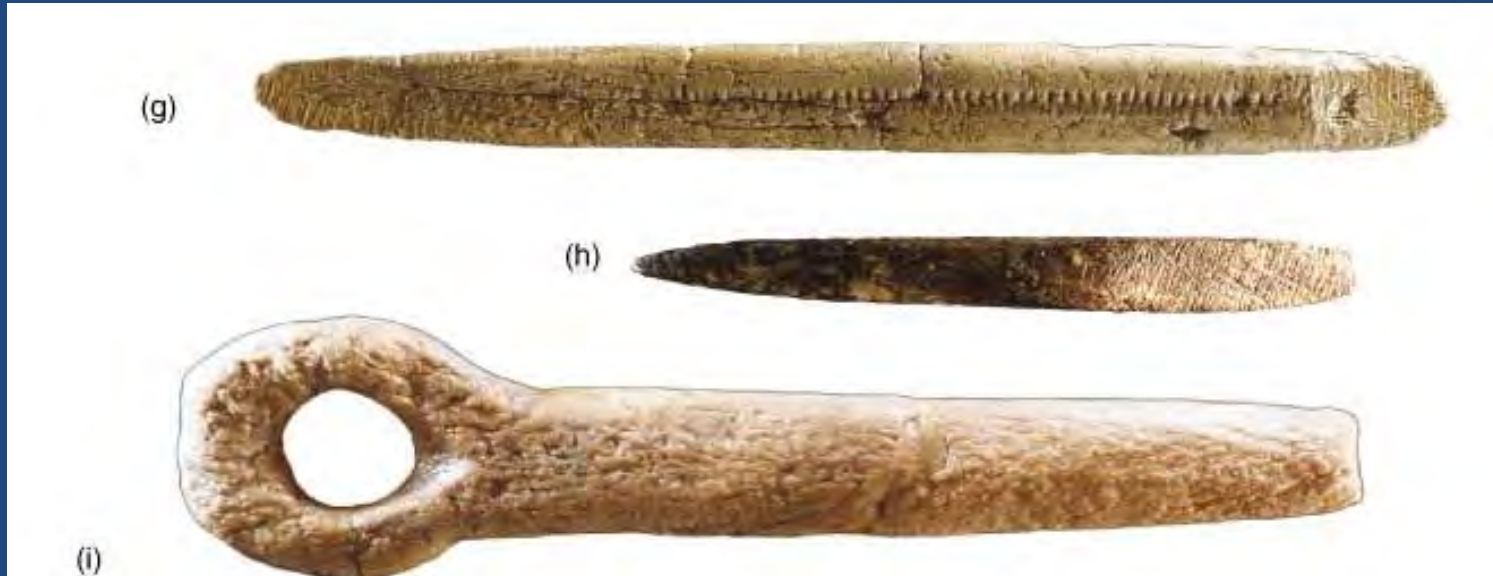
Clovis Point ~ 13,000 years ago





Not much to go on!

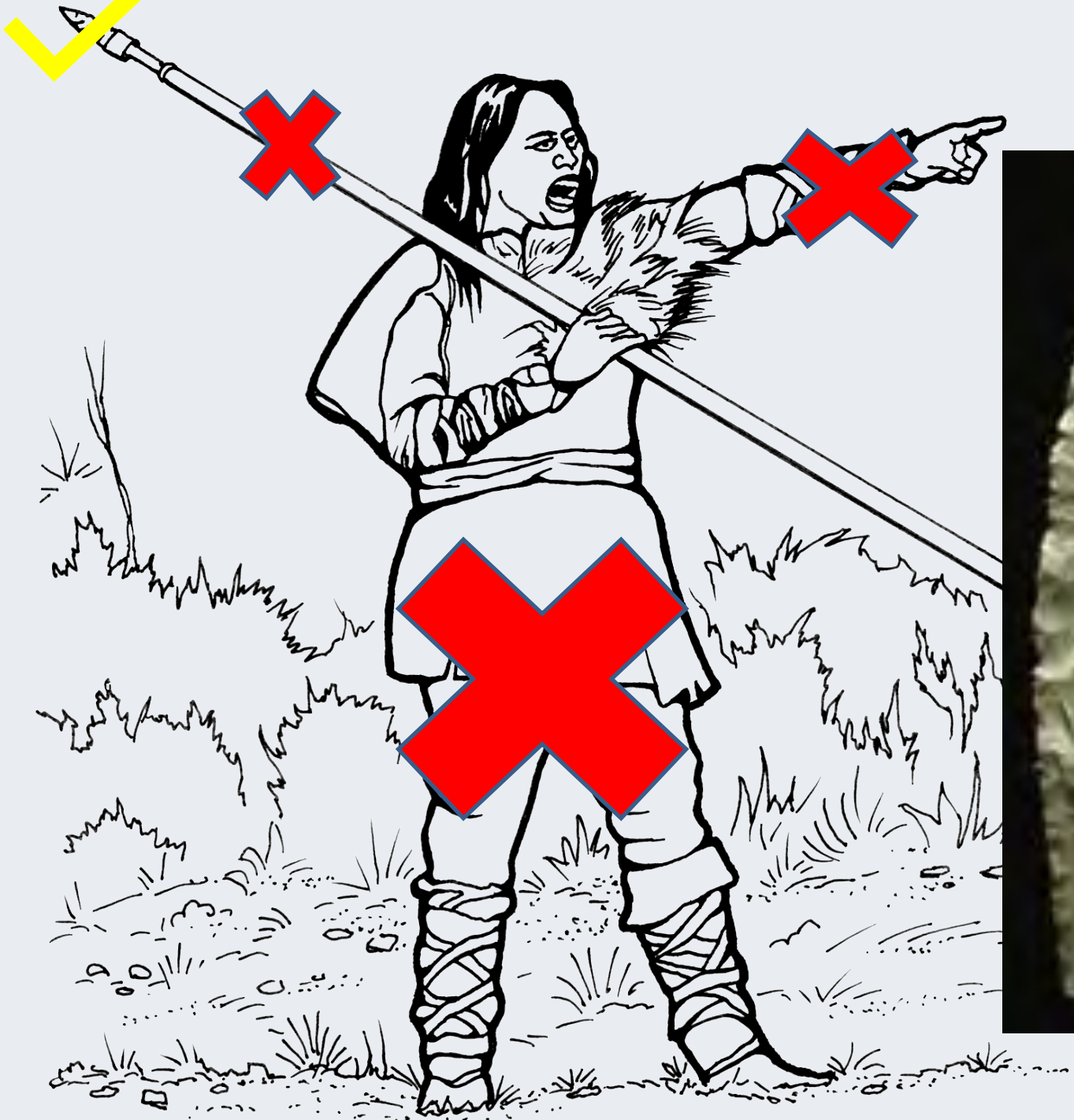
A few organic tools





Ed Jackson





Where are 13,000 year old organic tools preserved?

Where it's cold and dry, like Alaska

Where it's been wet for 13,000 years,
like Florida sinkholes



Grasslands

Scattered Sinkholes



Santa Fe River, Florida

*Probably dry 14,000
years ago*



Wakulla Springs

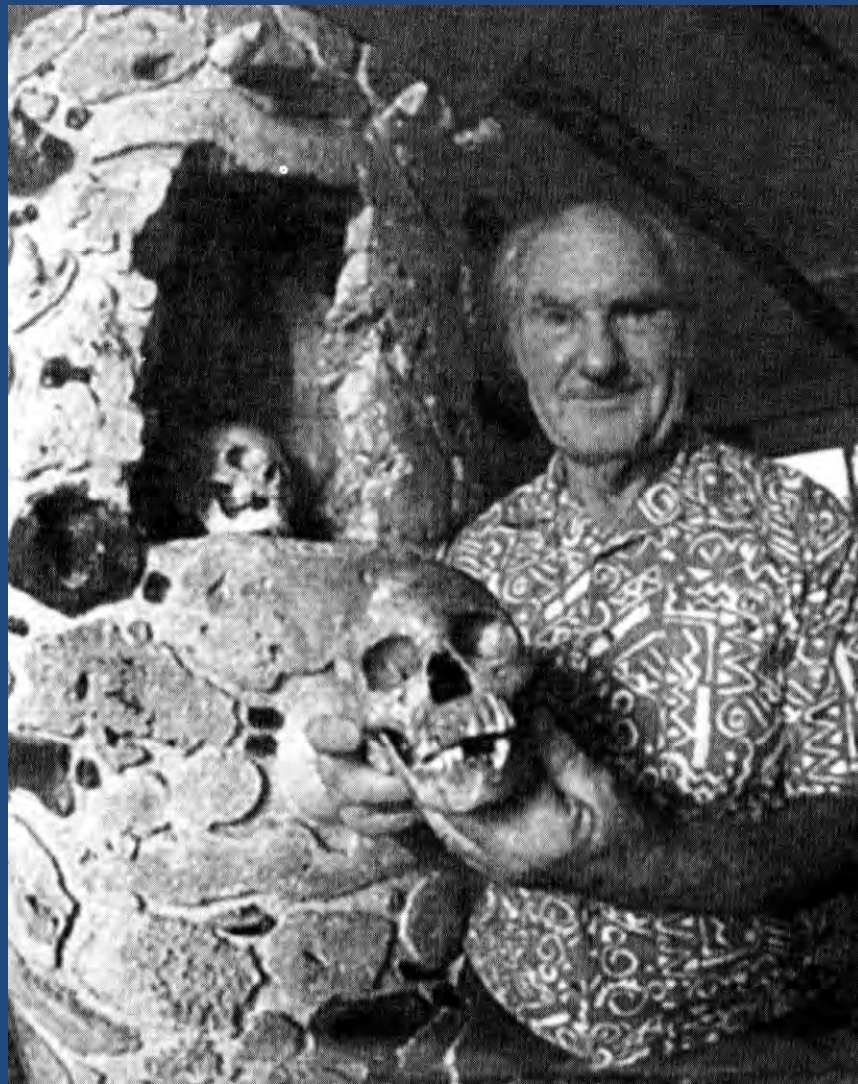


Ben Waller



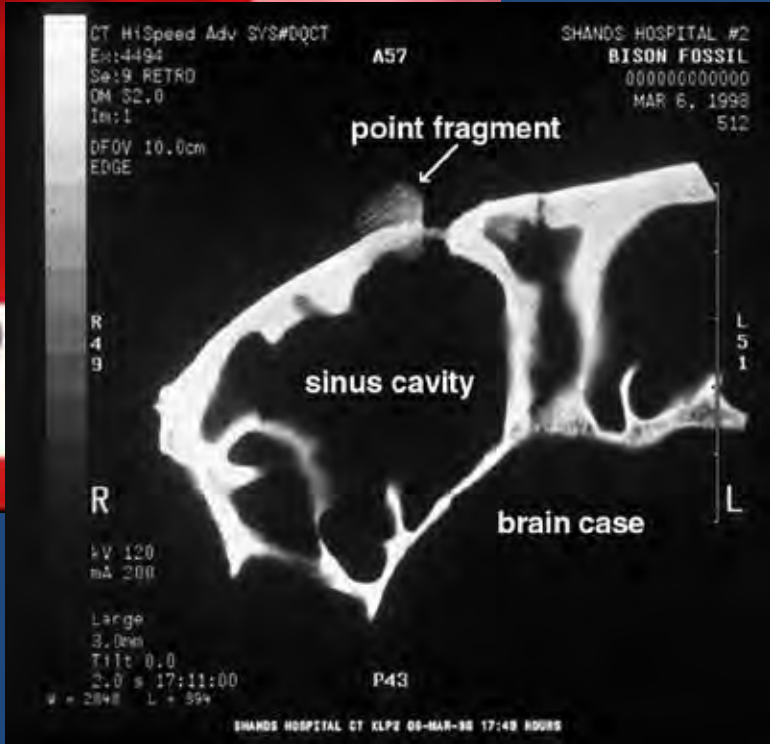
Alvin Hendrix

William Royal, Little Salt Springs





11,000 YEAR OLD BISON SKULL WITH
IMBEDDED SPEAR POINT FRAGMENT
WACISSA RIVER FLORIDA



Axelon Bison Skull



Dr. Dave Webb



**Investigation of mammoth remains
at Silver Spring, Florida in the early 1960s**

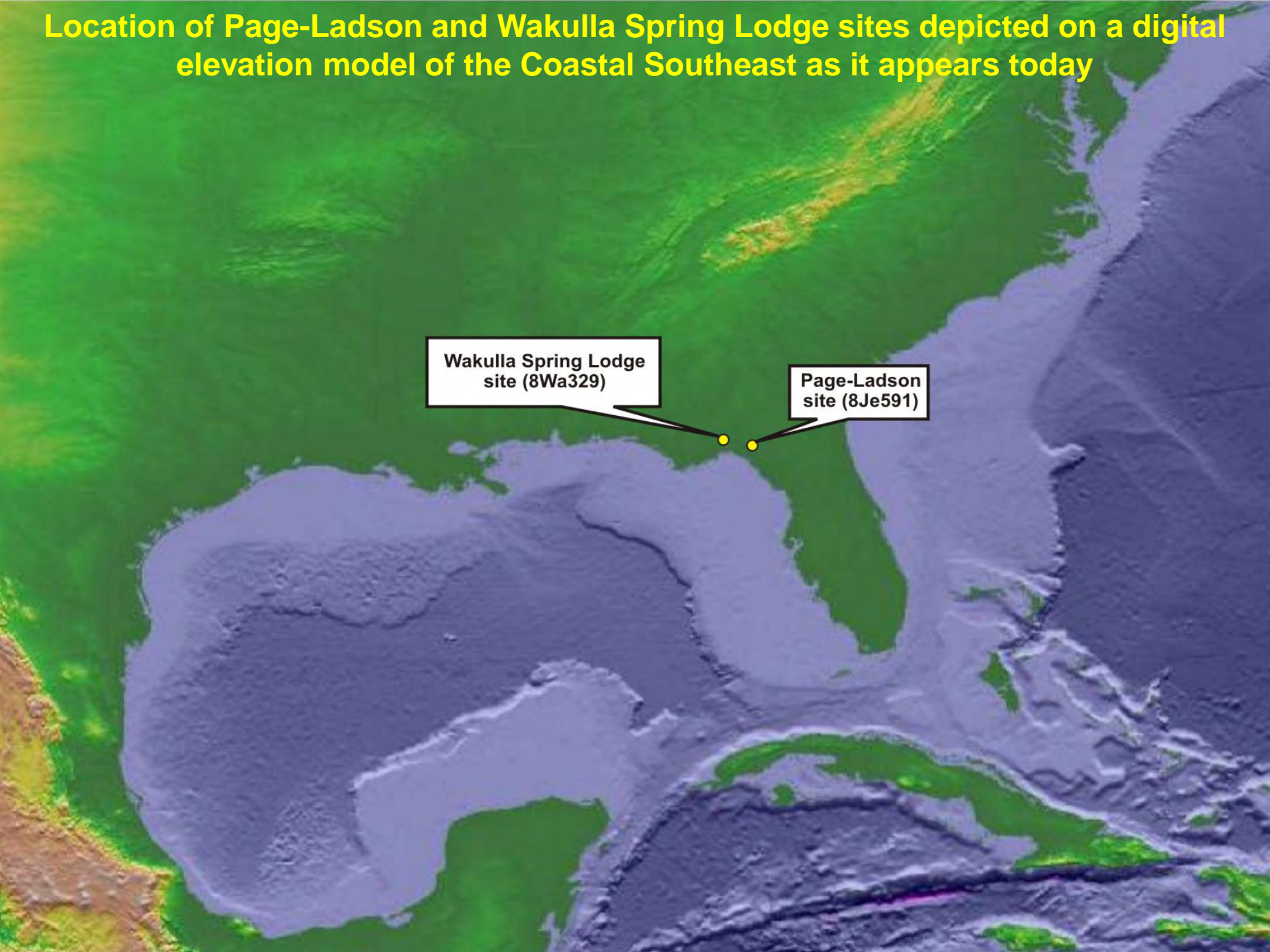


Guest Mammoth Site, Silver Springs





Location of Page-Ladson and Wakulla Spring Lodge sites depicted on a digital elevation model of the Coastal Southeast as it appears today



Wakulla Spring Lodge
site (8Wa329)

Page-Ladson
site (8Je591)

Aucilla River and Wacissa River sites

Wakulla Spring Lodge
site (8Wa329)

Page-Ladson
site (8Je591)



Aucilla River

Dark water

Series of Sinkholes

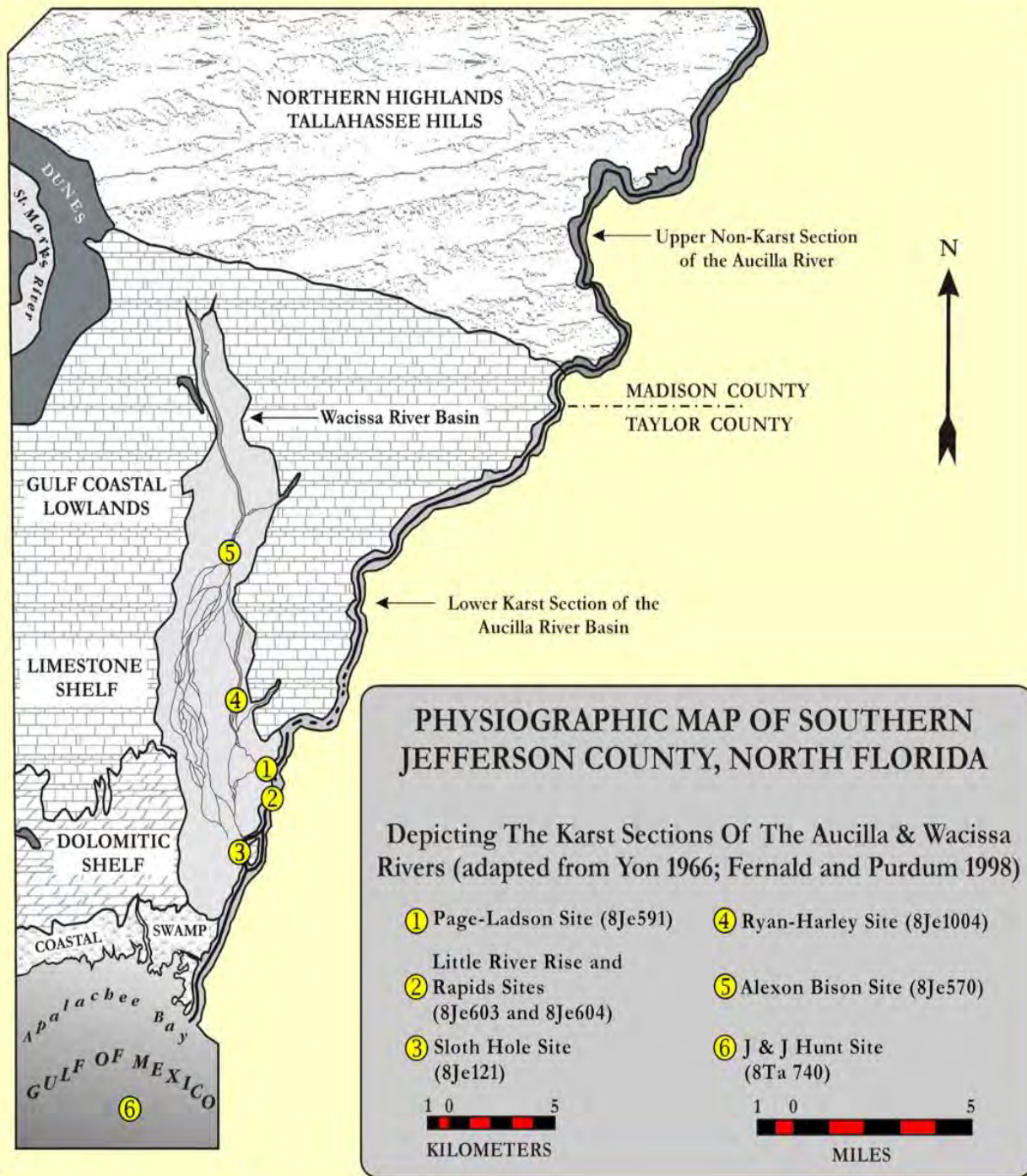
A mammoth or mastodon skeleton in the bottom of each sinkhole

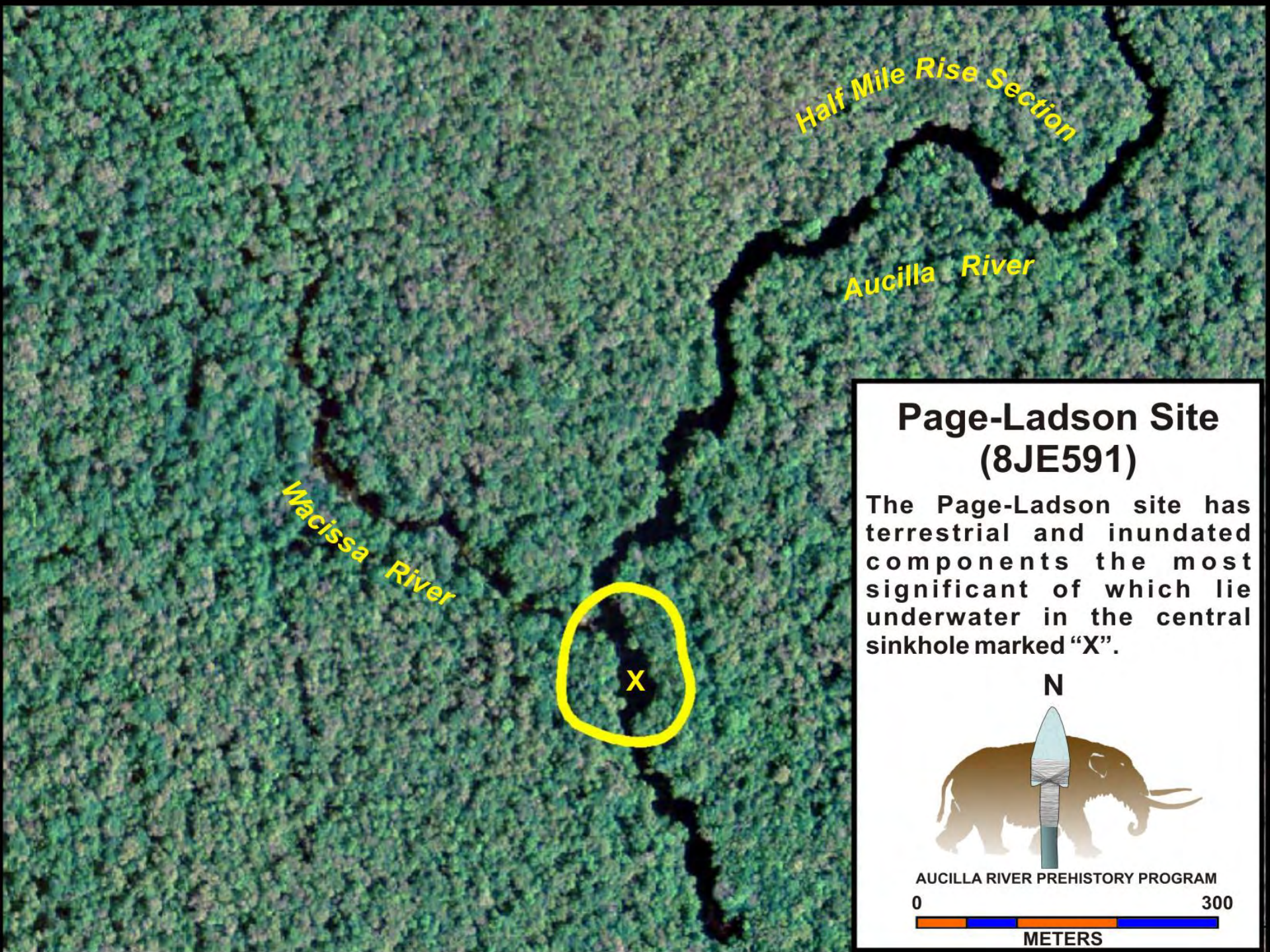
Wacissa R.

Clear water

Spring fed

No sinkholes





Half Mile Rise Section

Aucilla River

Wacissa River



Page-Ladson Site (8JE591)

The Page-Ladson site has terrestrial and inundated components the most significant of which lie underwater in the central sinkhole marked "X".

N



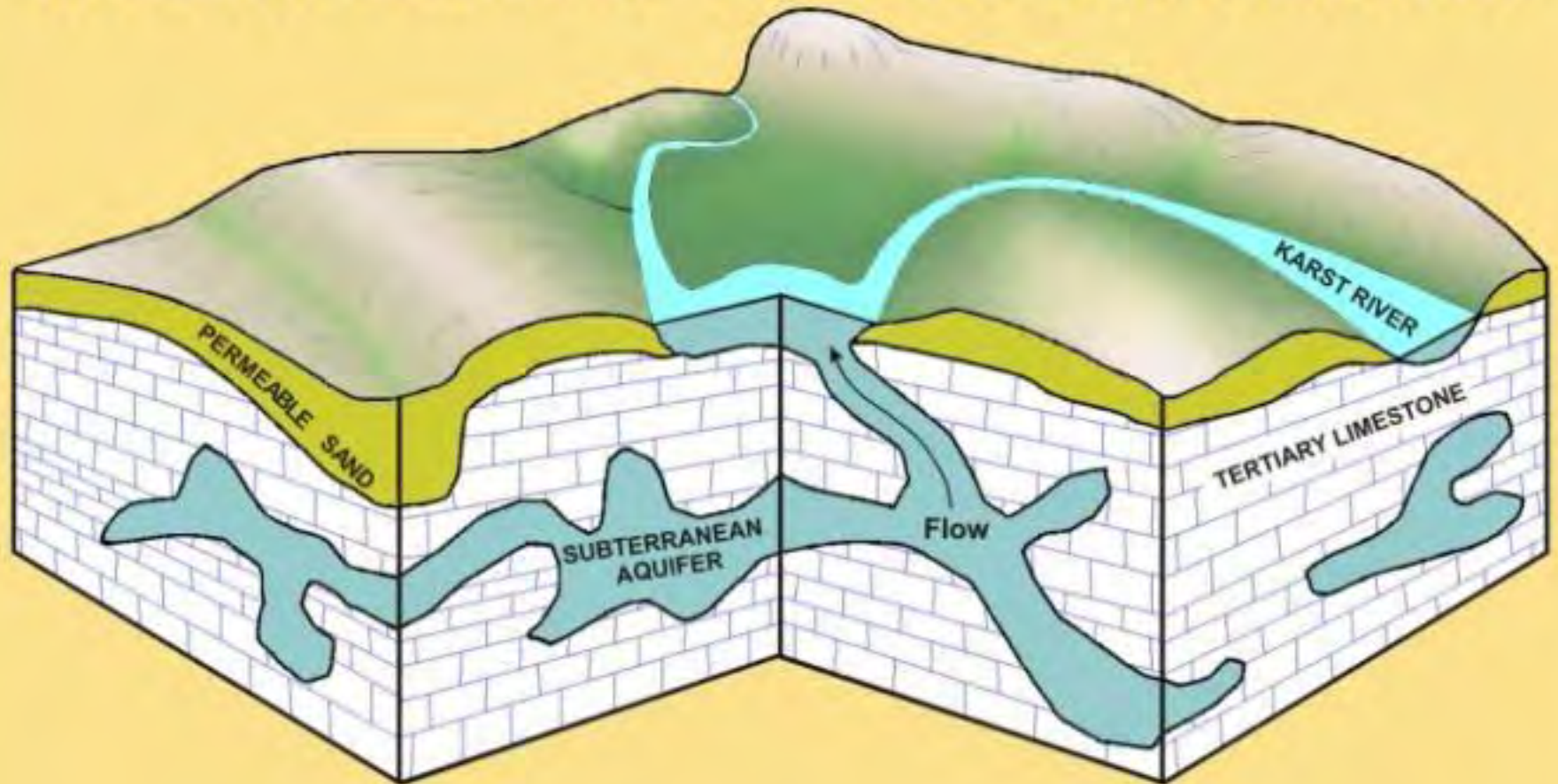
AUCILLA RIVER PREHISTORY PROGRAM

0 300



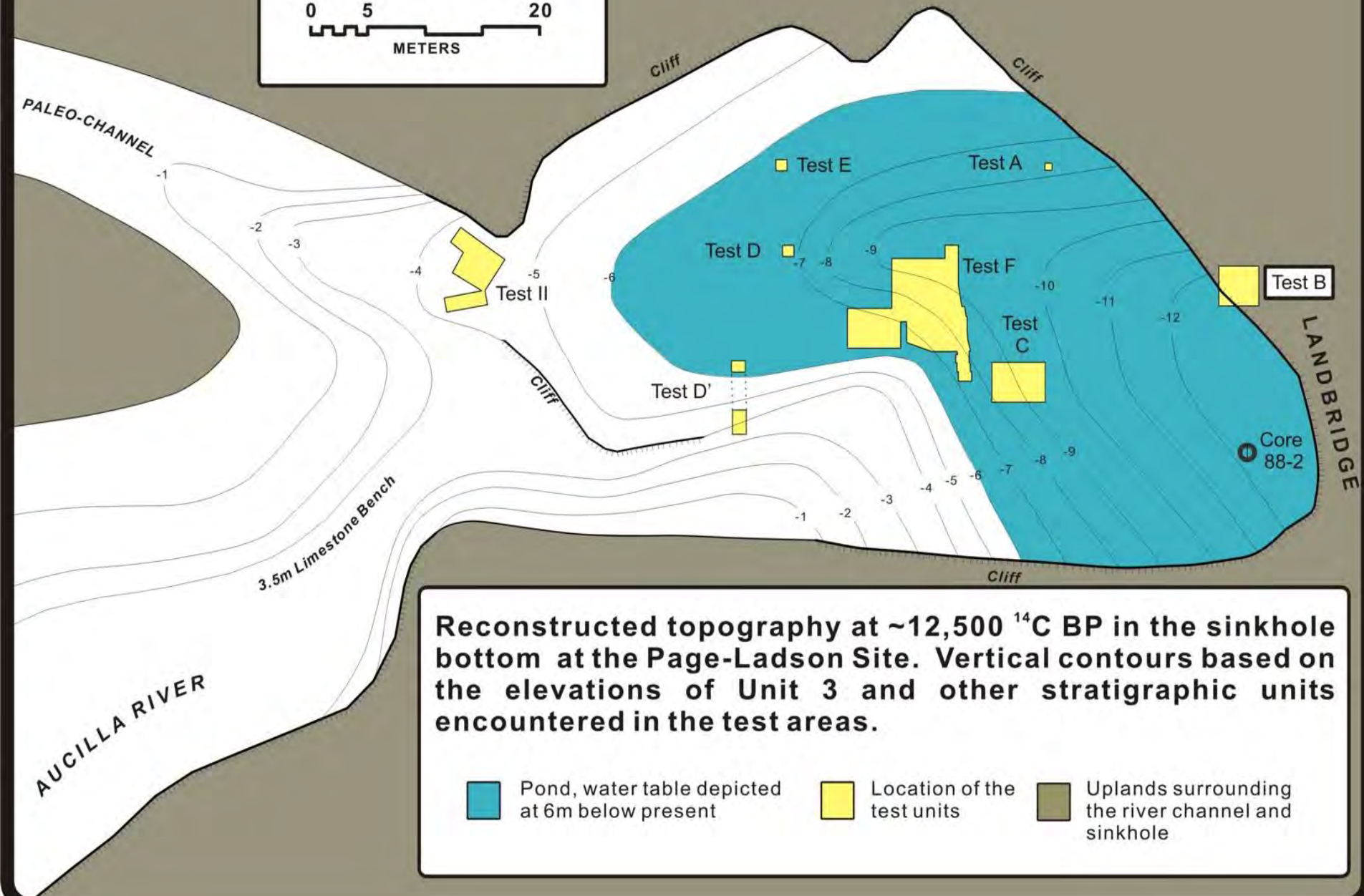
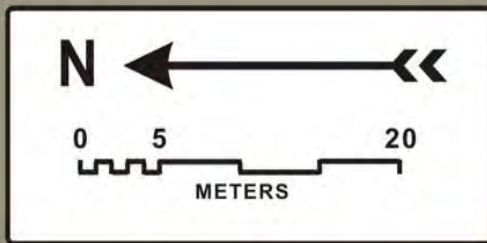
METERS

TERTIARY KARST REGION SHOWING MODERN LEVEL OF THE FLORIDAN AQUIFER



In times of low water, the Aucilla would be a series of sinkholes





Reconstructed topography at $\sim 12,500$ ^{14}C BP in the sinkhole bottom at the Page-Ladson Site. Vertical contours based on the elevations of Unit 3 and other stratigraphic units encountered in the test areas.



Pond, water table depicted at 6m below present

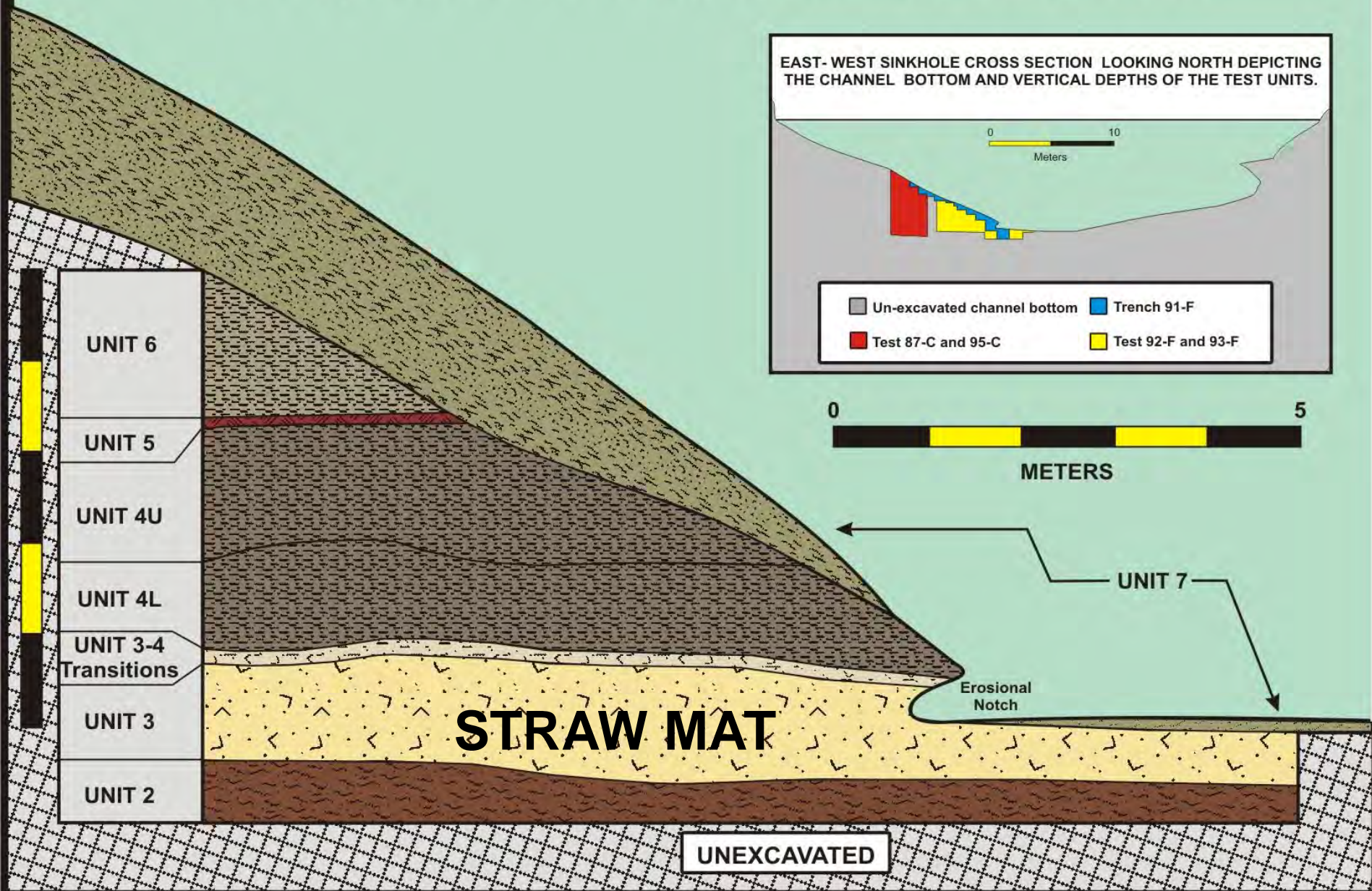


Location of the test units



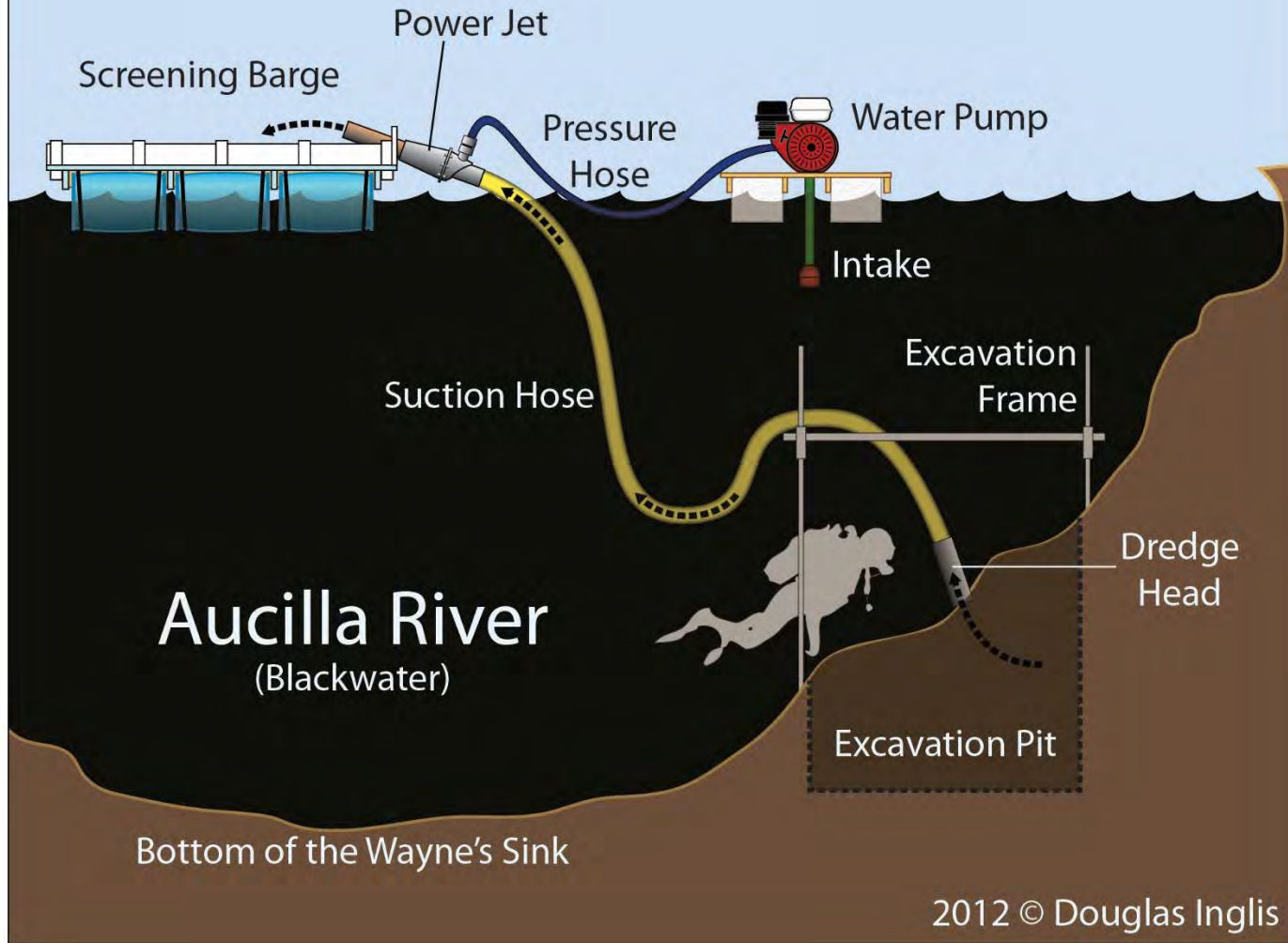
Uplands surrounding the river channel and sinkhole

PAGE-LADSON SITE (8JE591) COMPOSITE STRATIGRAPHIC SECTION TEST C, TRENCH 91-F AND TEST F - LOOKING NORTH



Archaeology on the Aucilla

Dredging Configuration















Pre-Clovis

Controversial

Bad Context

Questionable Artifacts

Not many sites

Questionable Dates

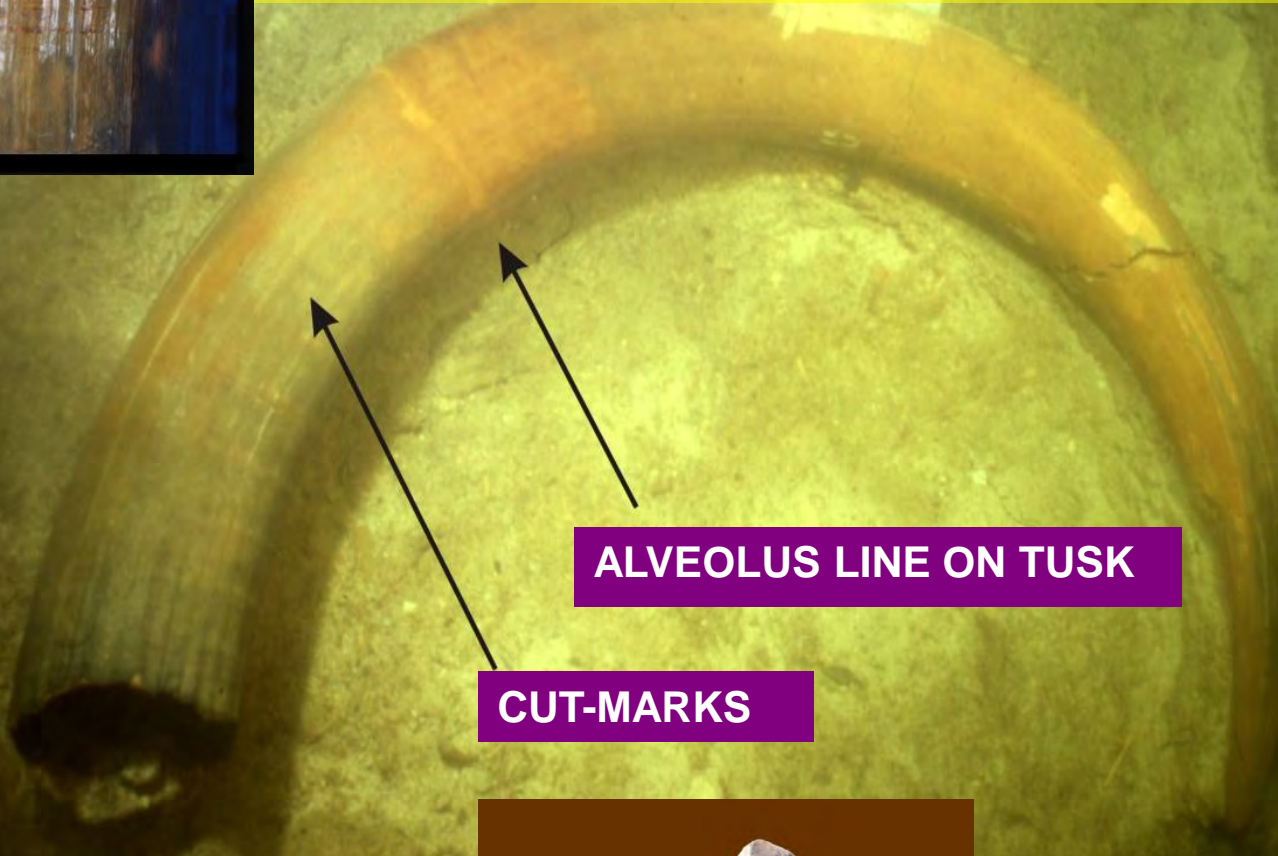
You need Old Dirt



Mastodon Digesta

CUT-MARK CLOSEUP

PRE OR OLD CLOVIS COMPONENT, UNIT 3, AT THE PAGE-LADSON SITE (8JE591) DEPICTING BUTCHER-MARKED MASTODON TUSK *IN SITU*



ALVEOLUS LINE ON TUSK

CUT-MARKS



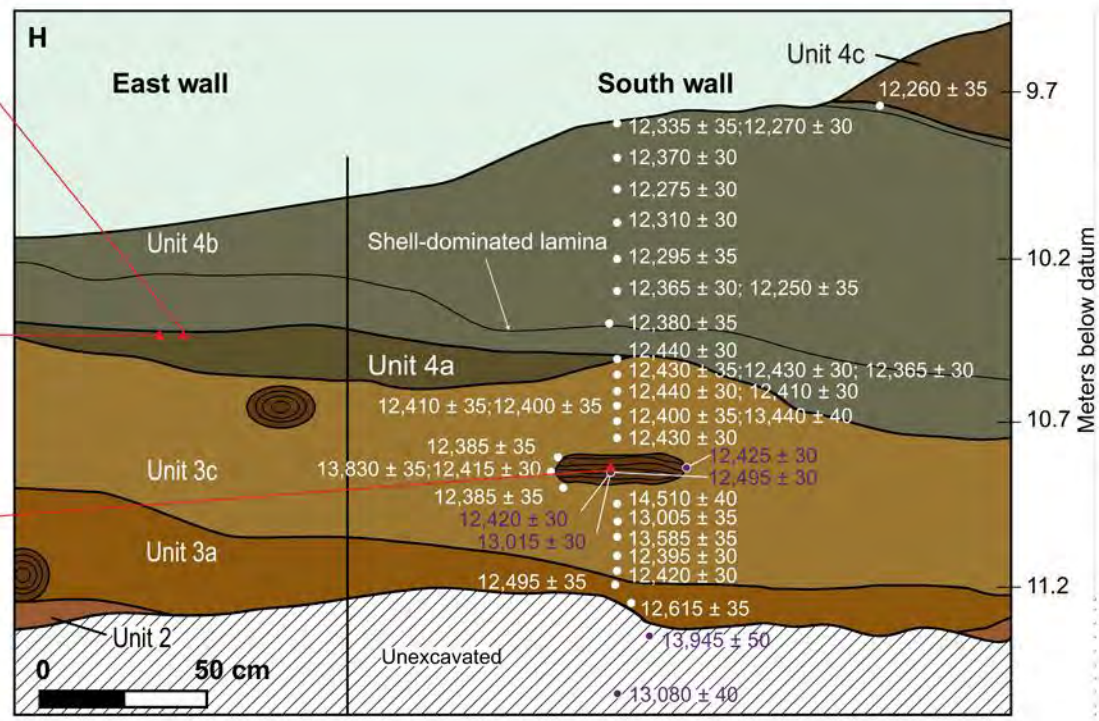
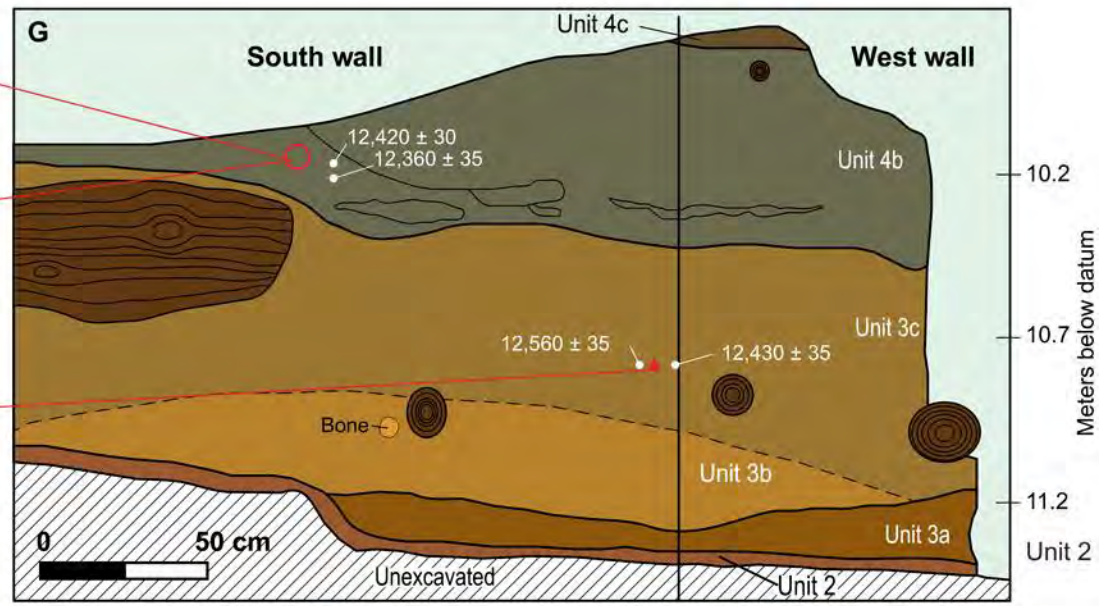
PAGE-LADSON SITE (8JE591)
GROUND PLATFORM BIFACE PERCUSSION FLAKE FROM
UNIT 3 DATED 12,420 ±80 c14 BP (n=7) (14,345 Calendar years BP)



ALSO DEPICTING ASSOCIATED LITHIC DEBITAGE

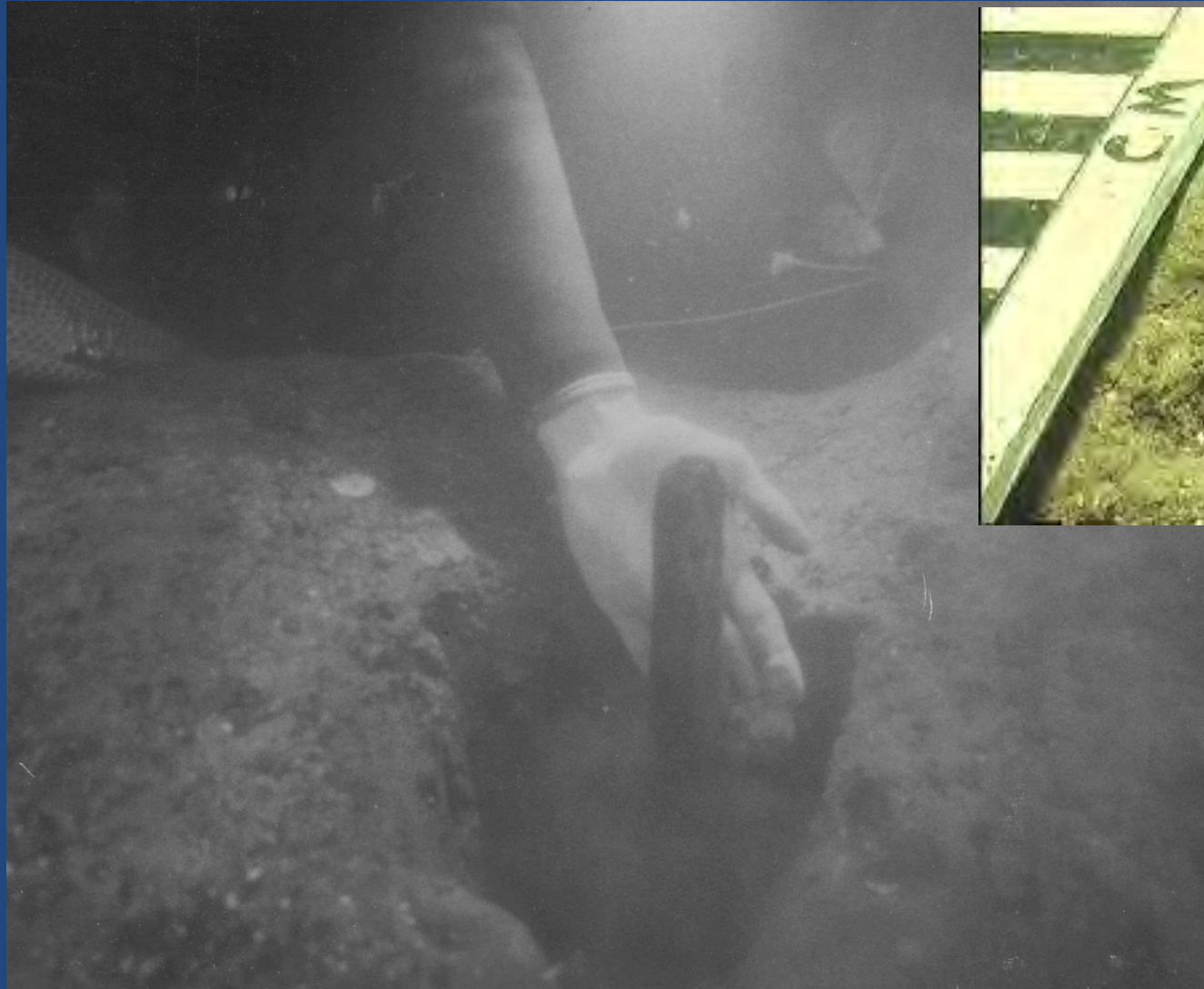
A close-up photograph of a Mastodon tusk, showing a series of parallel, horizontal cut-marks. The tusk has a light brown, fibrous texture. The cut-marks are evenly spaced and run across the width of the tusk. A white rectangular box with a black border is overlaid on the upper portion of the image, containing the text "Close-up of Cut-Marks on Unit 3 Mastodon Tusk".

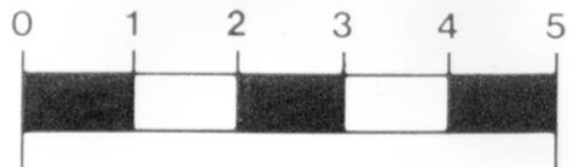
**Close-up of Cut-Marks
on Unit 3 Mastodon Tusk**





Bolen surface ca. 11,500 B.P.





EARLY ARCHAIC BOLEN ARTIFACTS RECOVERED IN SITU FROM THE "BOLEN SURFACE" TEST C



A



B



C



A. IMPACT FRACTURED BOLEN BEVELED
B. IMPACT FRACTURED BOLEN BEVELED
C. EXTENSIVELY RE-SHA-RPENED BOLEN BEVELED

FLORIDA BUREAU OF
ARCHAEOLOGICAL RESEARCH



BONE PIN



CARVED HICKORY STAKE

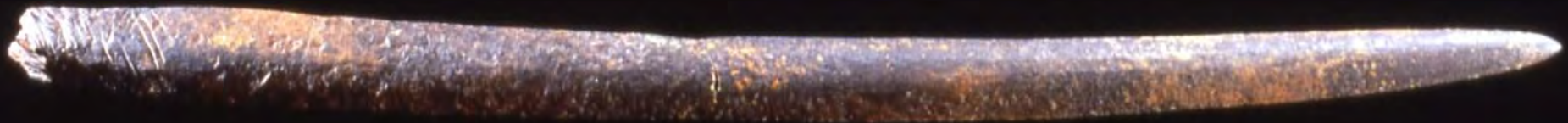
IN SITU WOOD STAKE BEFORE RECOVERY



CENTIMETERS



Three Views Of An Ivory Foreshaft From The Aucilla River North Florida





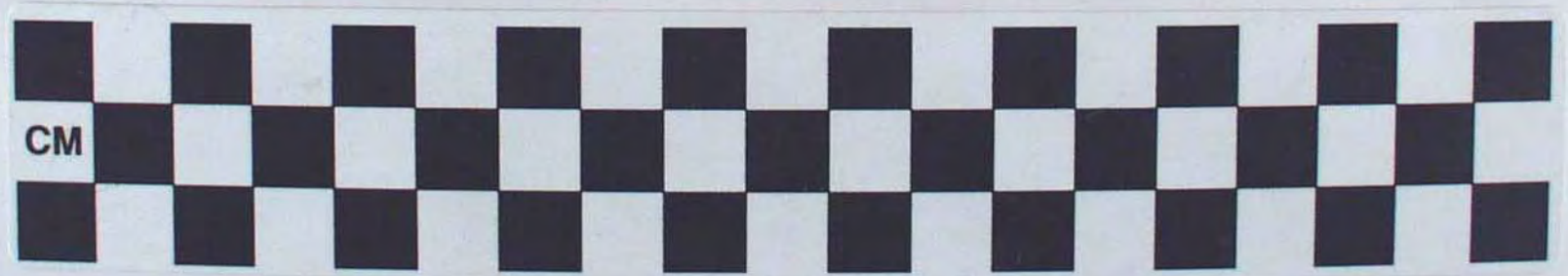


BARBED IVORY HARPOON FROM THE AUCILLA RIVER



*Florida Bureau of
Archaeological Research*









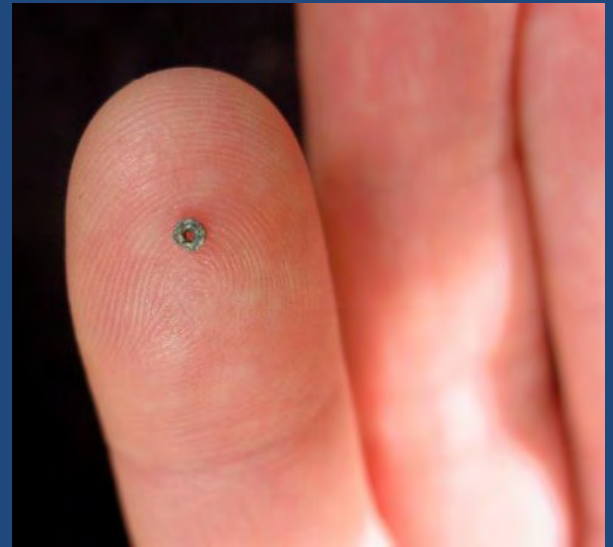
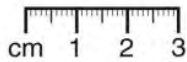


Ryan-Harley Site

Ryan-Harley Site (8Je1004)
Suwannee Points from Displaced Context



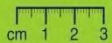
Florida Bureau of
Archaeological Research



IVORY SHAFT
OF MASTODON TUSK



Florida Bureau of
Archaeological Research



ONE CM



**CLUES FOUND
RECENTLY BY
FSU UNDERWATER
ARCHAEOLOGISTS
OFFER THE FIRST
PROOF OF FLORIDA'S
EARLIEST COASTAL
DWELLERS**



Preparing clay to be used to make molds of artifacts.



Mastodon teeth are a common find in Apalachee Bay.



Students Learn the discipline of taking detailed field notes.

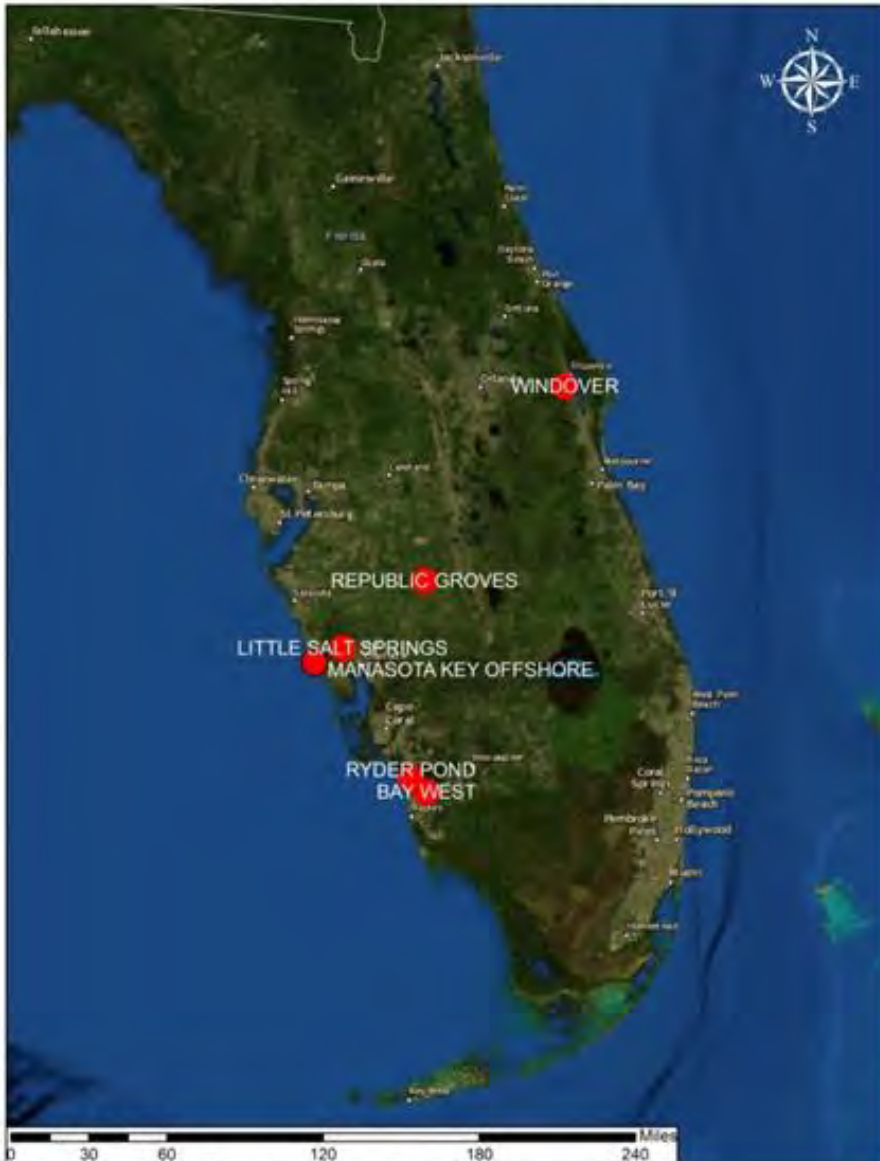
Offshore
investigations on
the Paleo-Aucilla

Windover Cemetery, Titusville ~8,000 years old

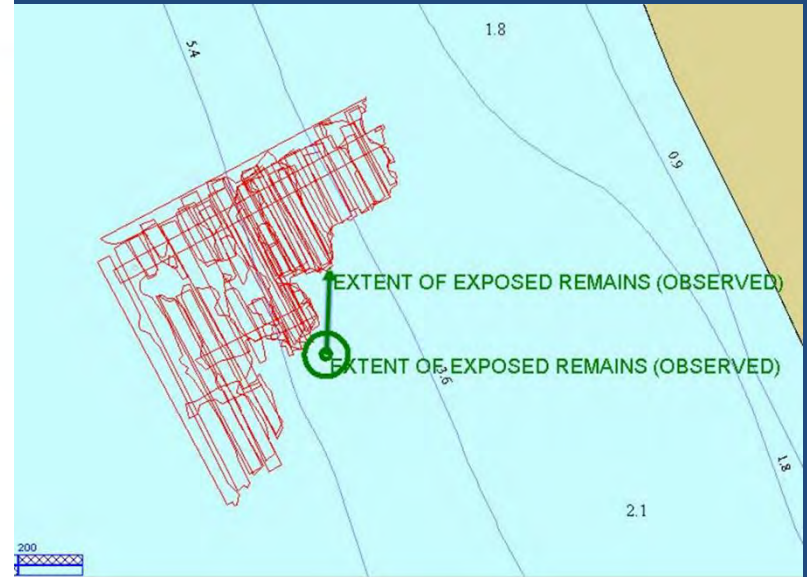




Archaic Peat Burial Sites



Author: R. Duggins, Florida Bureau of Archaeological Research.
Date: 10/26/2016

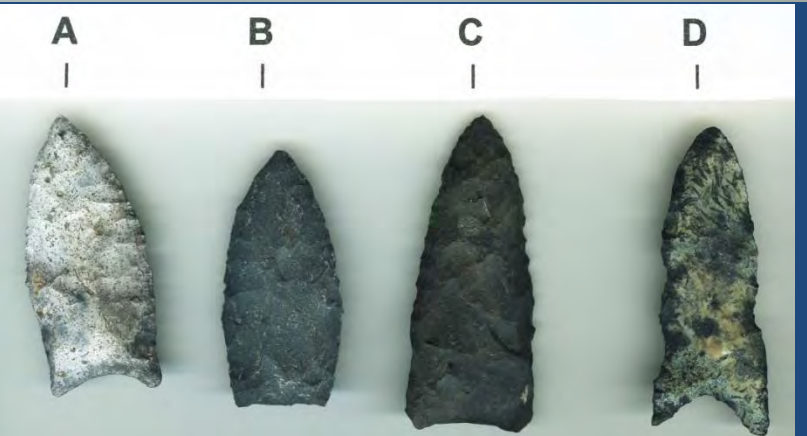
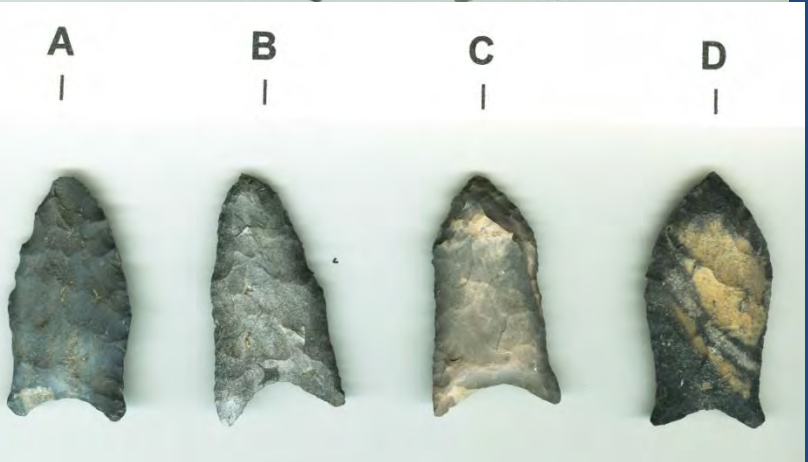
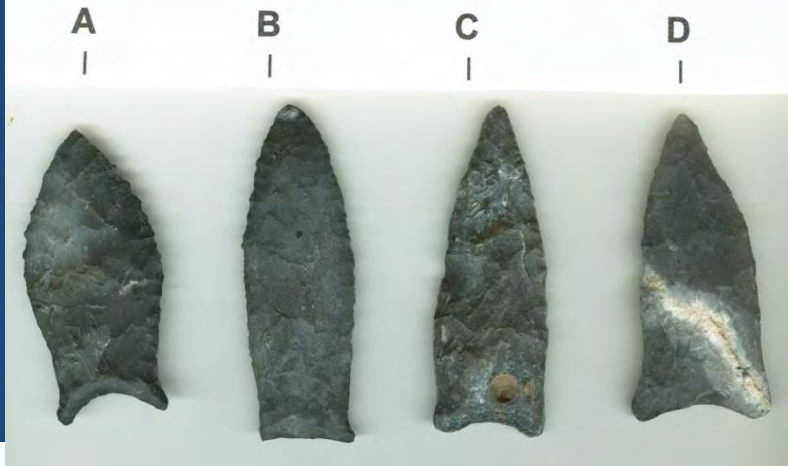


Large peat bed
offshore of Venice
with 100's of burials



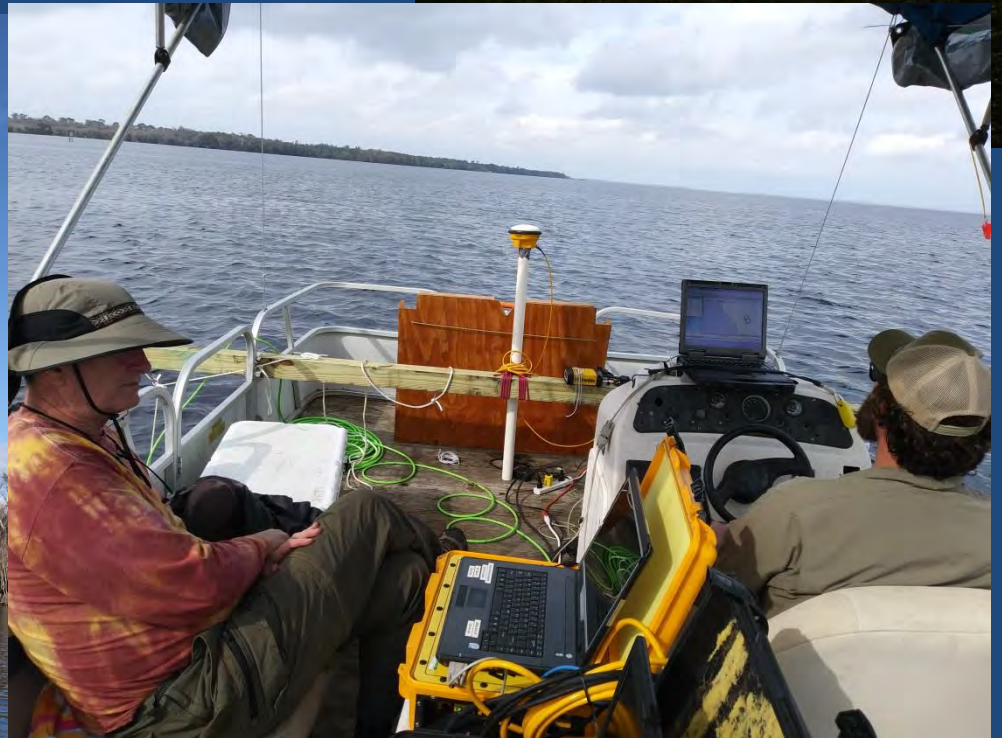
What does the future hold?





Lake George Point Site

Lake George

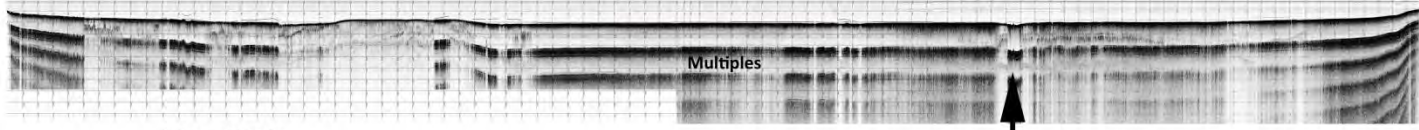


Looking North - Downstream

Line 004-006

Paleochannel Drayton Island

Buried Surface Paleochannel



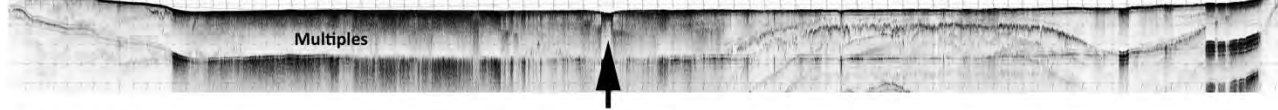
Line 000

Terraces

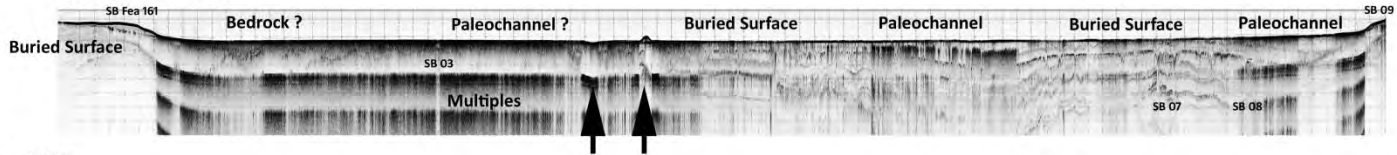
Paleochannel

Buried Surface

Paleochannel

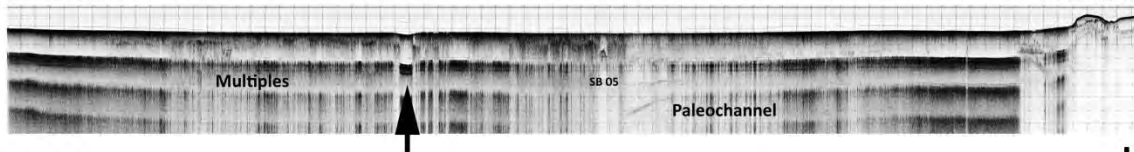


Lines 007-010



Line 026

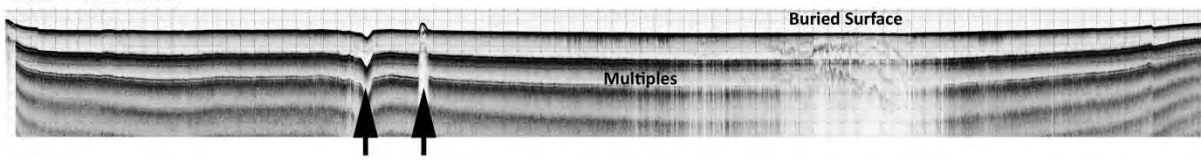
Feature 18



Line 017 - 020

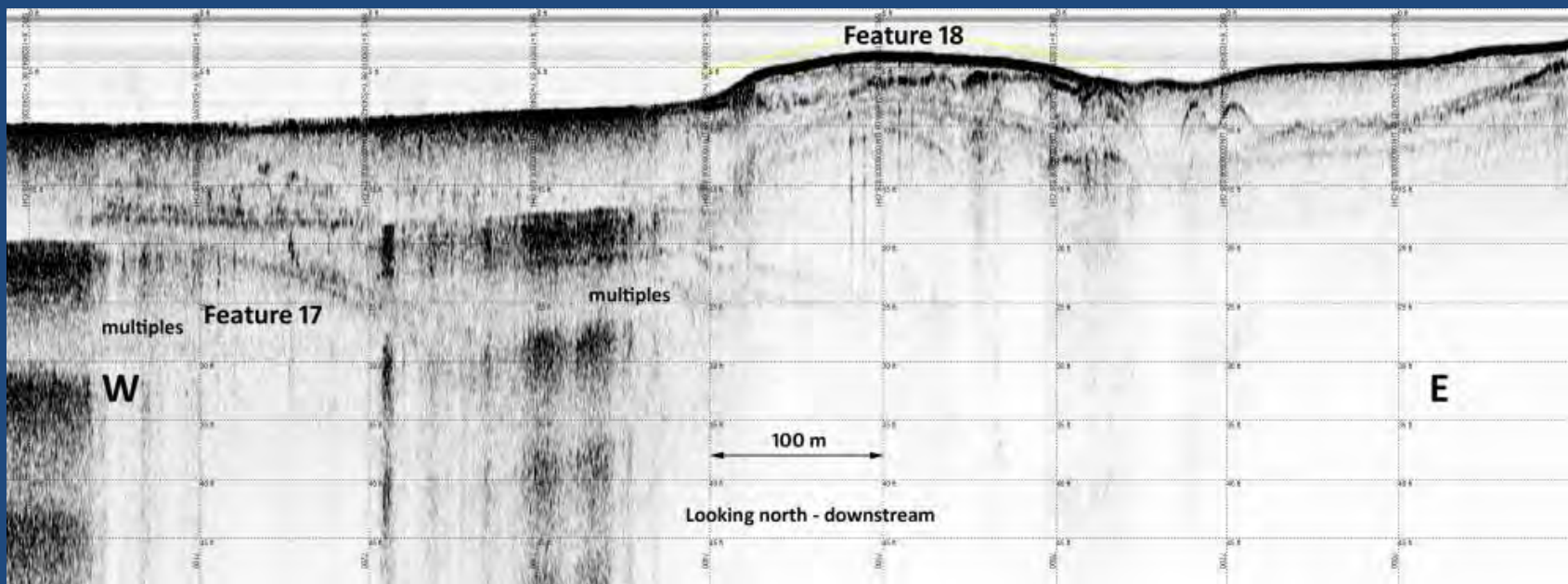
Buried Surface

Multiples



Lake George Prehistoric Underwater Survey

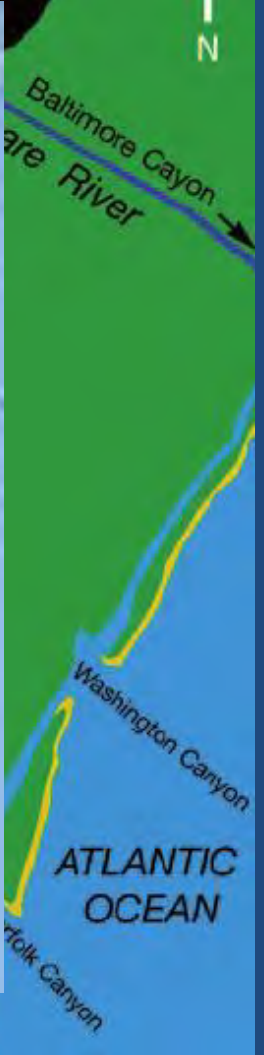
Sub-bottom Profiles Crossing Lines

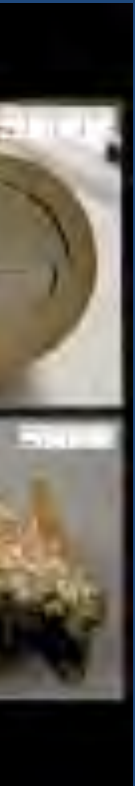
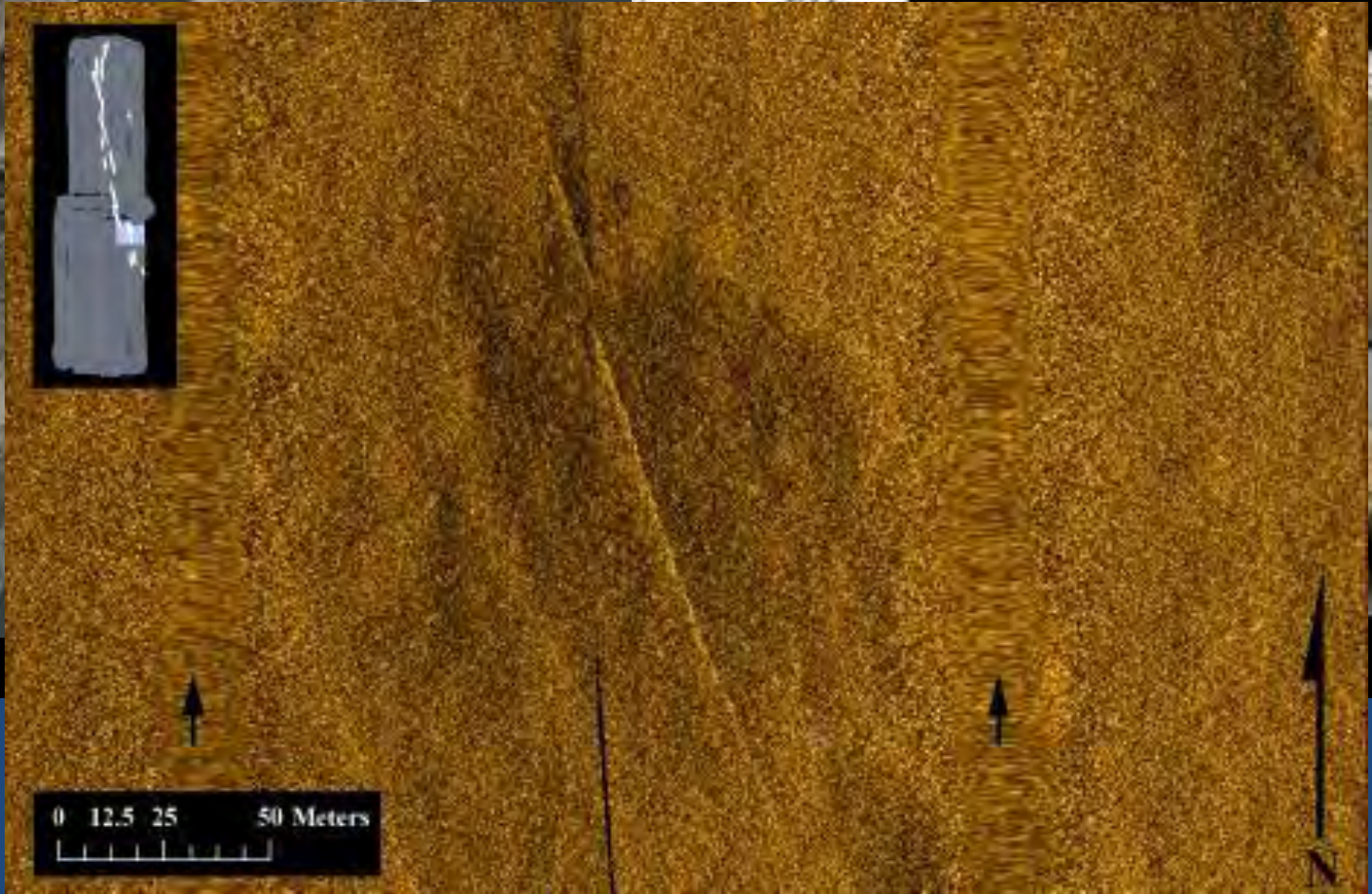


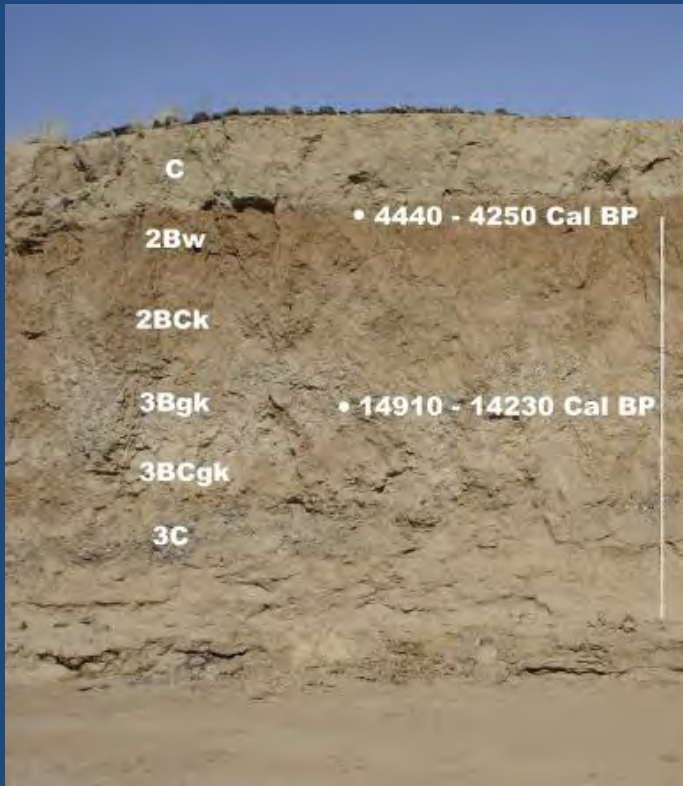
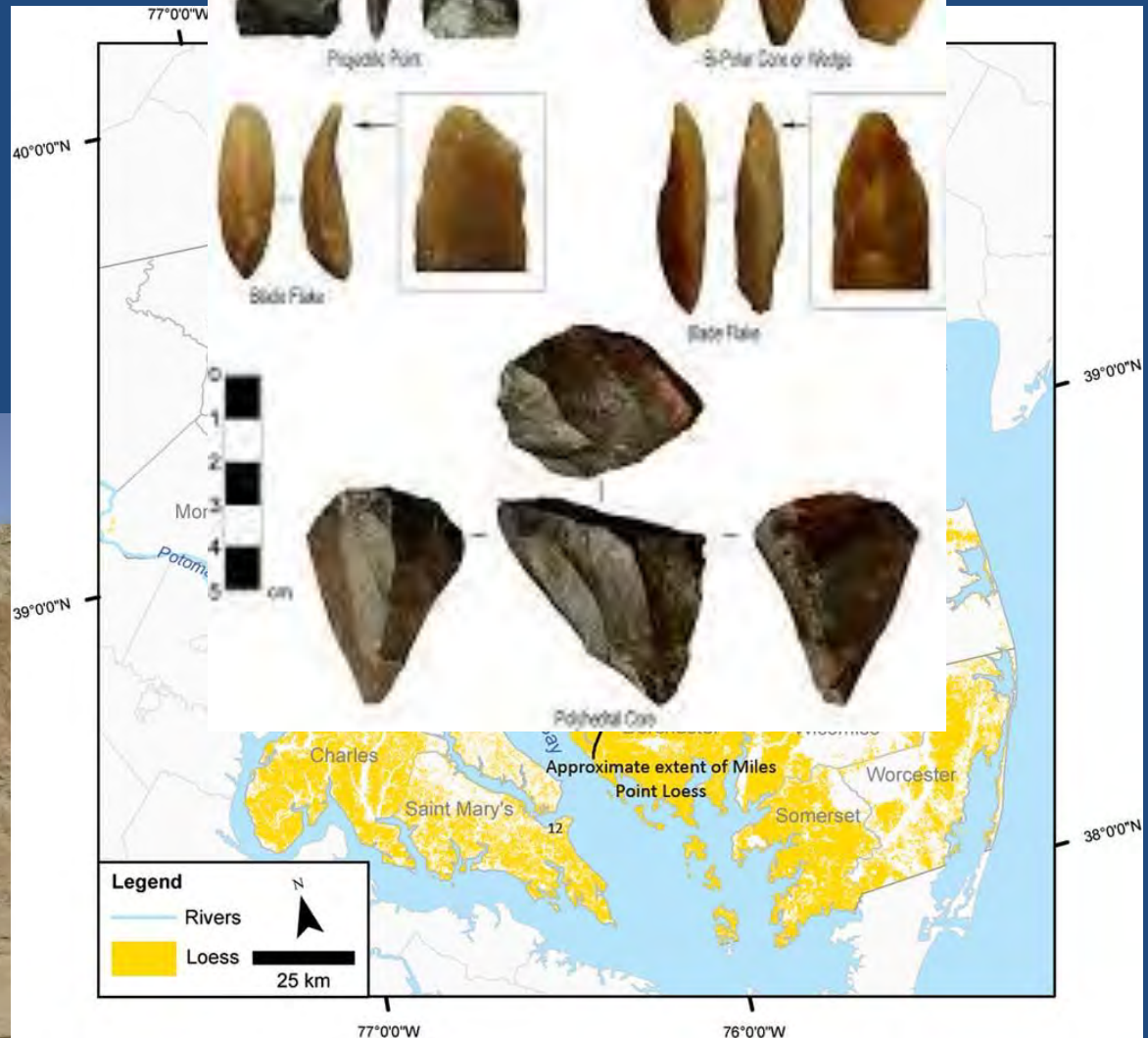


NEW DIRECTIONS
in the **SEARCH** *for the*
FIRST FLORIDIANS

EDITED BY
DAVID K. THULMAN
AND ERVAN G. GARRISON







Thank You

ARCO-OP for supporting this research

Florida Bureau of Archaeological Research

Florida Department of Historical Resources

Eglin Air Force Base

Ike Rainey, Alvin Hendrix, Don Munroe, and the conscientious people who made their collections available for study

