

# Incorporating Legacy Data in Cultural Resource Research and Management: an Example from Cape Krusenstern National Monument



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## Introduction



Figs. 1 & 2. CAKR location and detail of the beach ridge complex (L); Ridges as seen from the air (above)

The beaches of Cape Krusenstern (CAKR) have been used by Northwest Alaskans continuously over the last 5,000 years. This extensive human history, as studied by archaeologist J.L. Giddings from 1958-1962, led to CAKR's designation as a National Historic Landmark in 1973. Giddings laid the foundation for all future archaeological work in this region, but the nature of mid-20<sup>th</sup> century field methods makes using this legacy archaeological data problematic.



Fig. 3. Archaeologists testing and mapping a cultural feature at Krusenstern

In 2007, the University of Washington and the National Park Service began a multi-year project at CAKR, focused on investigating human-environmental dynamics.

Goals include:

- cultural resource management
- refining archaeological and paleoenvironmental chronologies
- investigating settlement, subsistence, technological, and other cultural change
- paleoenvironmental research
- public outreach



Fig. 4. Excavating a pottery scatter

A crucial step toward these goals is identifying and documenting areas of previous archaeological study.

## Incorporating Legacy Data

An airphoto mosaic, annotated by Giddings, was photographed at high resolution, imported into ArcGIS, and georeferenced.

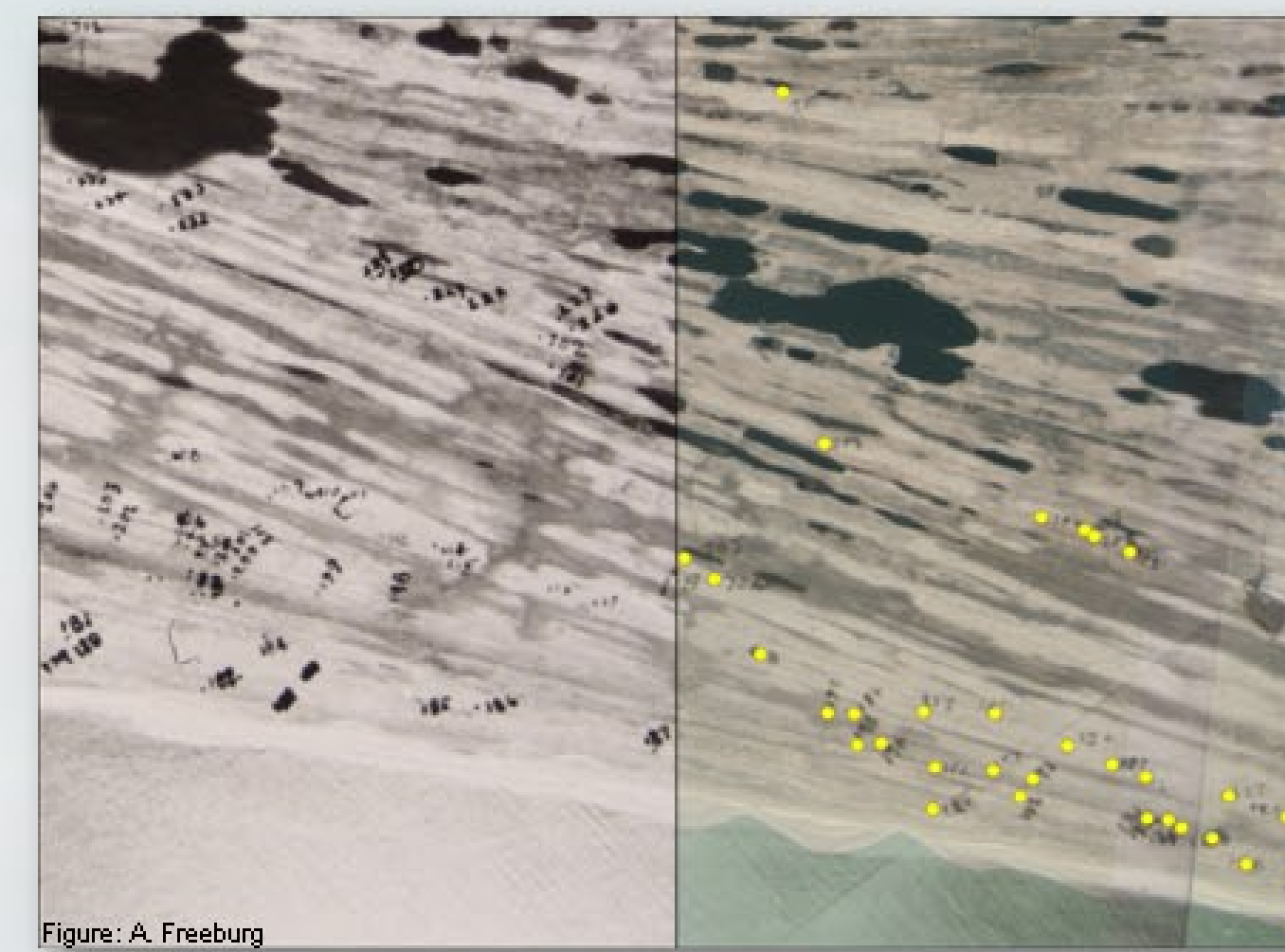


Fig. 6. Georeferenced airphoto (L) with ortho imagery<sup>1</sup> overlay and digitized legacy data (R). Stable lake features were used as control points for georeferencing.

These legacy data were incorporated into the project geodatabase and are now accessible for laboratory analyses and for use in the field when loaded onto GPS units.

## Putting Old Data to Work

1. In-field identification of previously recorded features allows visual comparison.



Fig. 7. Early Western Thule House 6 in 1958, fully excavated, looking from rear of main room to tunnel. Kitchen is to the right<sup>2</sup>.



Fig. 8. Early Western Thule House 6 in 2006, looking toward tunnel. Note considerable change in condition.

Sites are documented rapidly and thoroughly with digital cameras and high accuracy GPS equipment. Access to legacy information in the field also allows for meaningful site condition assessment for previously recorded locations.

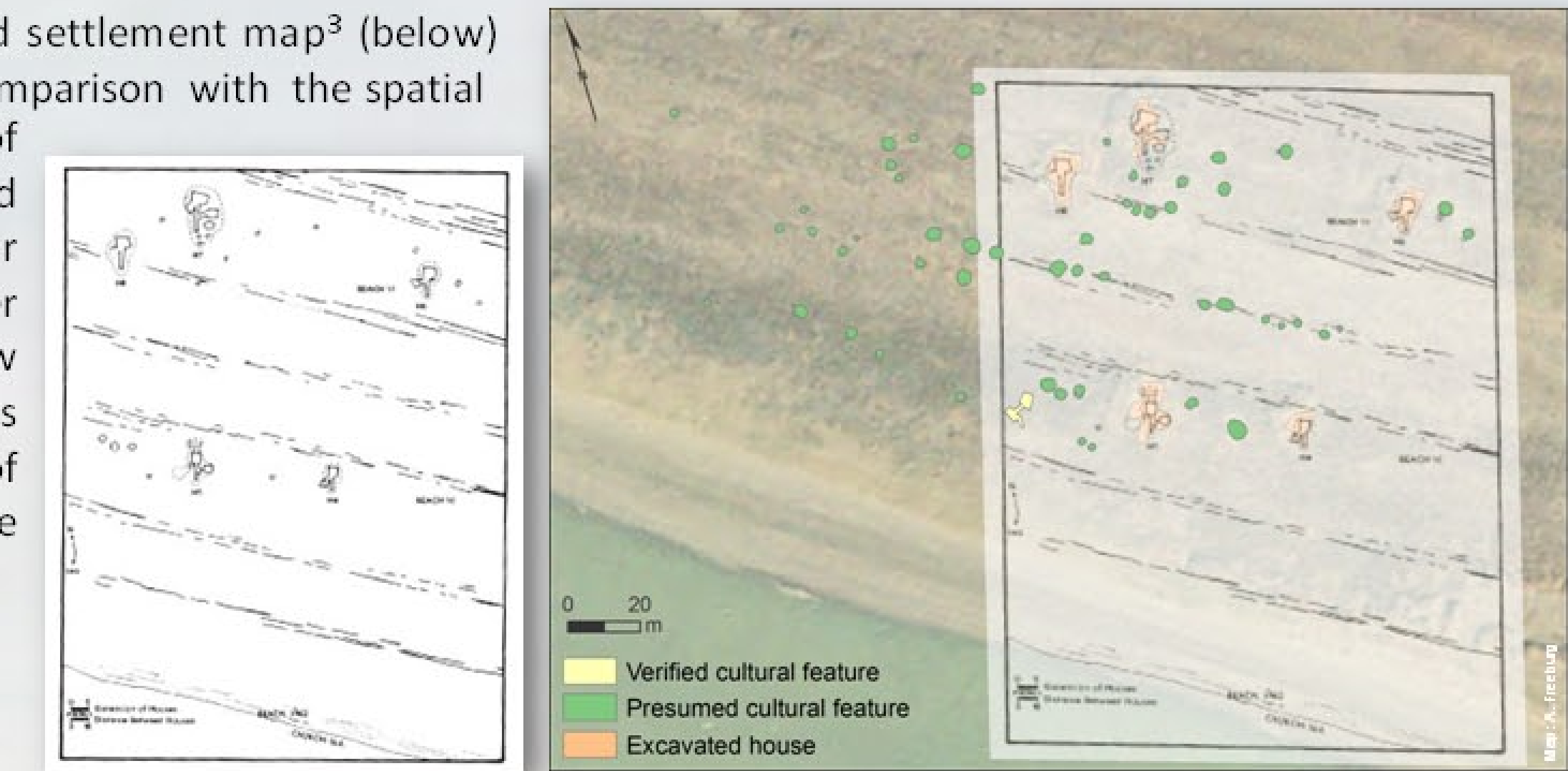


Fig. 5. Capturing the airphoto

Coded points on the airphoto were digitized and attributes of each point were collected from publications, as well as field and laboratory documentation.

2. Newly mapped features, artifacts, and excavation locations are compared to the legacy data.

Figs. 9 & 10. A published settlement map<sup>3</sup> (below) in GIS overlay allows comparison with the spatial extent and number of cultural features mapped by recent fieldwork (far right). Note the greater number of features now documented, as well as the incorporation of additional attribute information.



3. When linking new and old data, we build on previous knowledge by incorporating legacy data directly into spatial, chronometric, and other analyses.

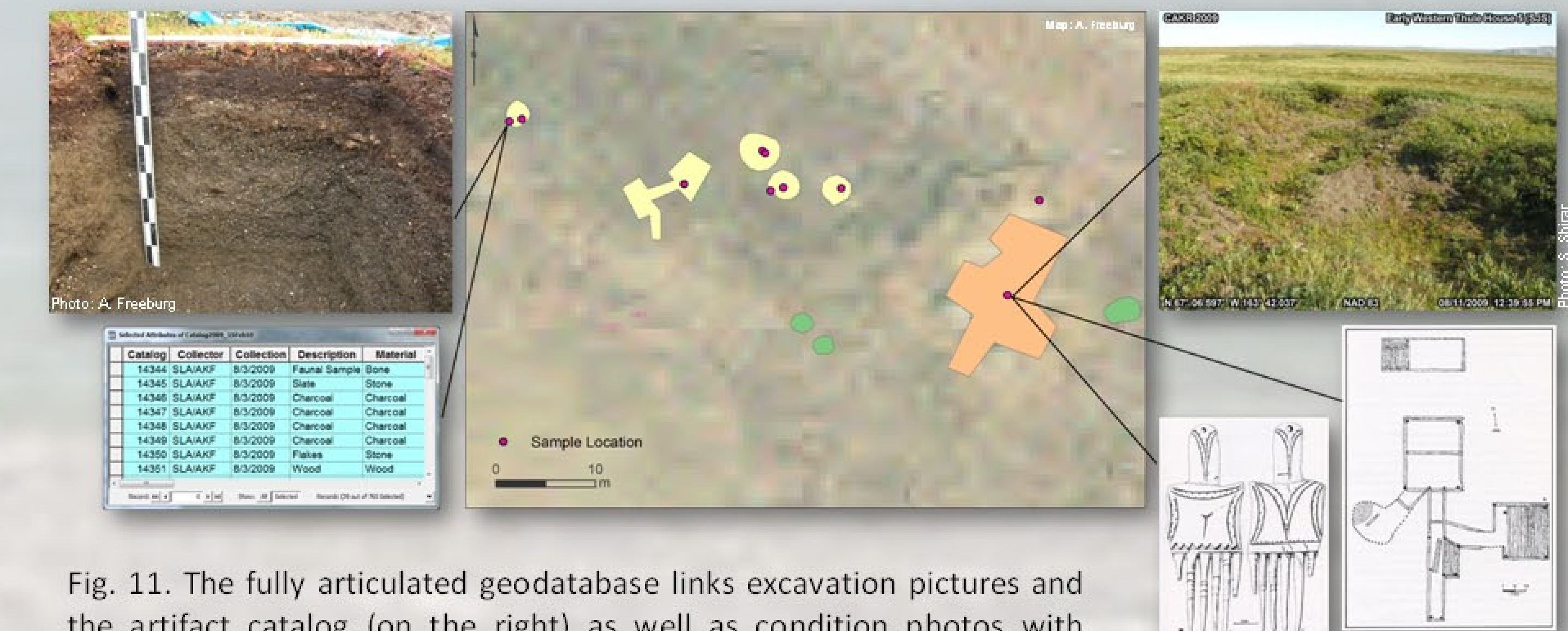


Fig. 11. The fully articulated geodatabase links excavation pictures and the artifact catalog (on the right) as well as condition photos with location and attribute watermarks, published maps and artifact drawings<sup>3</sup> (left).

## Conclusions

- Incorporating legacy data allows for better management of archaeological resources
- Incorporating legacy data in GIS results in an expanded dataset for addressing research questions
- By incorporating legacy data into current research, we can compare results and build on prior knowledge

## Acknowledgements

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<sup>1</sup>Manley, W.F., et al. 2007. *High-Resolution Orthorectified Imagery for the Coastal Areas of Bering Land Bridge NP and Cape Krusenstern NM, Northwest Alaska*. NPS, Arctic Network I&M Program. Fairbanks.

<sup>2</sup>Giddings, J.L. 1967. *Ancient Men of the Arctic*. Knopf, New York.

<sup>3</sup>Giddings, J.L. and D.D. Anderson. 1986. *Beach Ridge Archeology of Cape Krusenstern: Eskimo and Pre-Eskimo Settlements Around Kotzebue Sound, Alaska*. Publications in Archaeology 20. National Park Service, Washington, D.C.

Background photo by D. Anderson.