



Kaho'olawe Island Conveyance Commission

SUPPLEMENT TO

Consultant Report No. 9

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# **Kaho'olawe's Potential Astro- Archaeological Resources**

By:

Rubellite Kawena Johnson

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**MAKALI'I AND MAKAKILO:**

**ARCHAEOLOGICAL SURFACE ASSESSMENT  
OF TWO RIDGE SITES ABOVE HAKIOAWA  
KAHO'OLAWE ISLAND**

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By:

Aki Sinoto



## INTRODUCTION

The following report presents the results of an archaeological assessment of two sites conducted during September 8 and 9, 1992. This work took place in conjunction with Dr. Rubellite Kawena Johnson's preliminary investigations of the potential archaeoastronomical resources of Kaho'olawe (Johnson, 1993) conducted under the auspices of the Kaho'olawe Island Conveyance Commission.

These sites are located nearly due south of Hakioawa on the northeastern slopes of Kaho'olawe, two ridgelines to the east, and inland of Oawawahie Bay (Fig. 1). They are located between the 140 and 180 meter elevations, roughly 200 meters apart, on the same ridgeline below Pu'u Kolekole.

The potential archaeoastronomical significance of these two sites came to light when a copy of a hand-drawn map annotated by Maui historian Inez Ashdown (Johnson, 1993:3.2) was given to Dr. Johnson for review. On this map, two areas in the proximity of the two sites are labelled *Makakilo* and *Makali'i*. Dr. Johnson defines the traditional Hawaiian archaeoastronomical association of both names:

- 1) *Makali'i* is the name given to the constellation Pleiades, and
- 2) *Makakilo* means sky-watcher/observer, as of stars/fish/weather phenomena (Johnson, 1993:4).

The current assessment was prompted by the sighting of what appeared to be two man-made *ahu* or markers from the northeastern promontory, above the *Hale-o-Lono* heiau at Hakioawa Bay (Fig. 2). On one of the previous field trips during the March closure period, Drs. Abraham Piiianaia and R. Kawena Johnson had observed these two features from Hakioawa as profiles on a distant ridgeline, but had been unable to inspect them closeup due to time constraints.

Hence, the objective of the current phase of work was to locate and document the two "ahu" sites on the ground. Dr. Johnson set forth these two tasks:

- 1) Check photographed "pillars" (*ahu*) sighted to see if they were man made or natural stone objects, and
- 2) Ascertain their precise location so that the ridge name and location could be more accurately determined (Johnson, 1993:1).

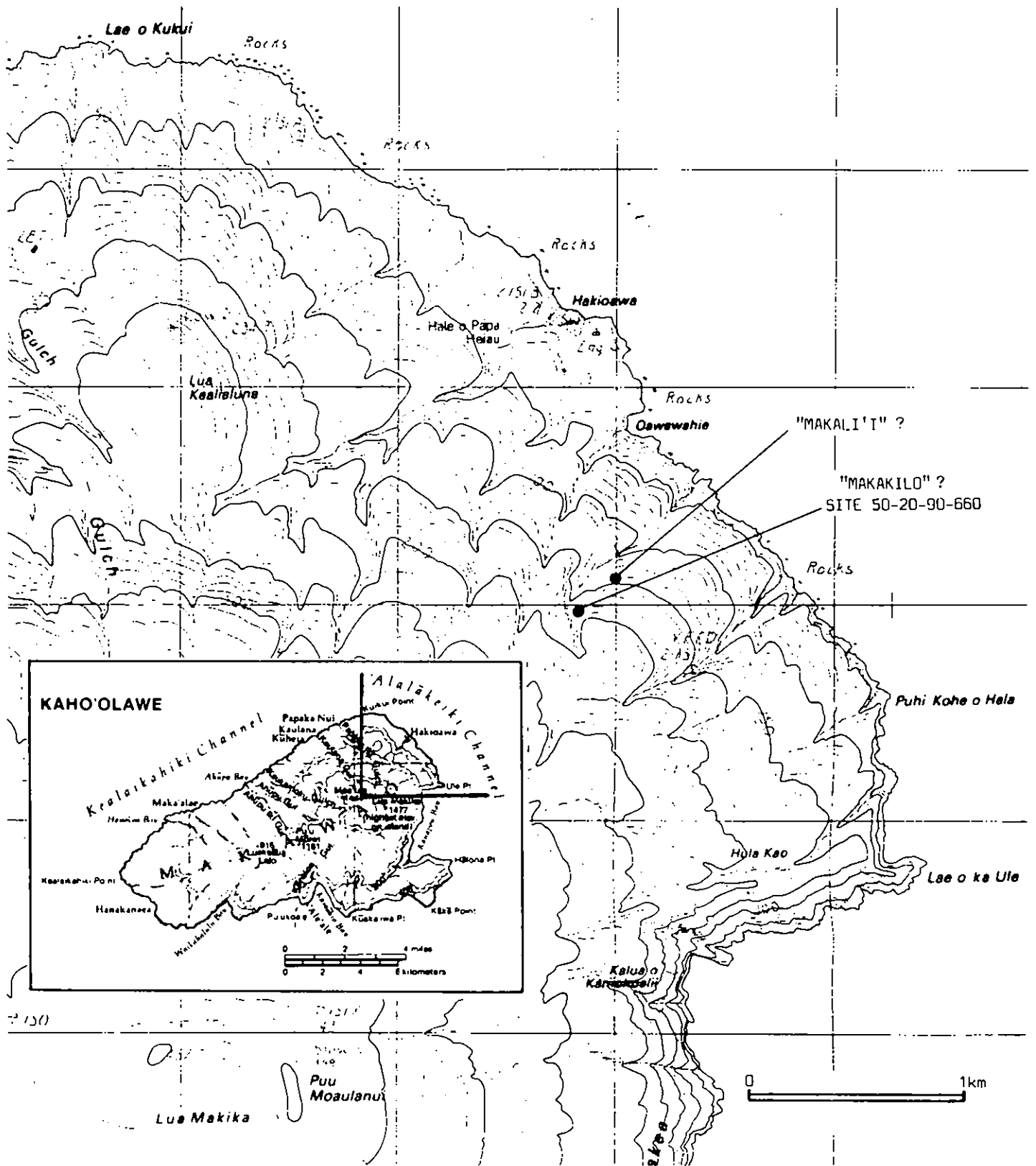


Figure 1. Portion of Topographic Map of Kaho'olawe Showing Site Locations

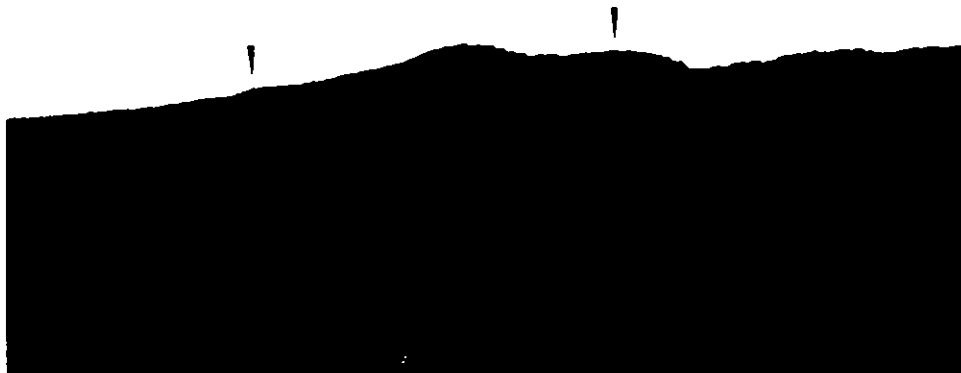


Figure 2. View South from Hakioawa Showing the Two Sites (arrows).

## RESULTS OF SURVEY

On Wednesday, September 9, 1993, with the kind and able assistance of USN Lt. Vernon Young (Officer in Charge), who accompanied us as driver, guide, and military chaperone; we approached these sites from above. We took the jeep, as far as possible, down the hardpan slopes north of Lua Makika to about the 250 meter elevation and walked the rest of the way past Pu'u Kolekole.

### SITE 50-20-90-660

The upper site had been previously recorded by Dr. Robert Hommon during the inventory survey in 1980 and designated as Feature A of Site 50-20-90-660. The Historic Places Inventory Form, with Hommon's description of the site, is attached as Appendix A. Notable aspects pointed out by Hommon were the absence of other sites in the vicinity for at least 100 meters in any direction and the evidence for a number of activities at the site; including procurement, preparation, and consumption of food; and the manufacture of basaltic glass and basalt artifacts.

Three features are present at Site 660, however, for the purposes of the current assessment, only Feature A will be considered.

### Feature A

A partially walled, oval platform occurs on the top of a small knoll roughly 300 meters northwest of Pu'u Kolekole. This platform, the main component of the three feature complex, incorporates outcrops and large boulders. It is partially enclosed on the north, east, and south by a semi-circular, stacked boulder and cobble wall (Fig. 3). Its measures 5.5 meters north/south and 7.5 meters east/west. The downslope side stands .90 meters high and the upslope side ranges in height from .60 to .70 meters. The stacked, boulder and cobble wall ranges in width from .80 to 1.0 meter. Neither the interior nor exterior of the wall is faced. The interior floor of the structure, raised .30 to .50 meters above the surrounding ground surface, consists of flat soil with some small stones. A scatter of basalt flakes occurs along the southern quarter of the interior floor area. Clusters of outcrop boulders occur on the eastern and western sides and are partially incorporated into the structure. Sparse midden scatters are apparent on the surrounding ground surface with a small concentration occurring on the eastern exterior of the structure.

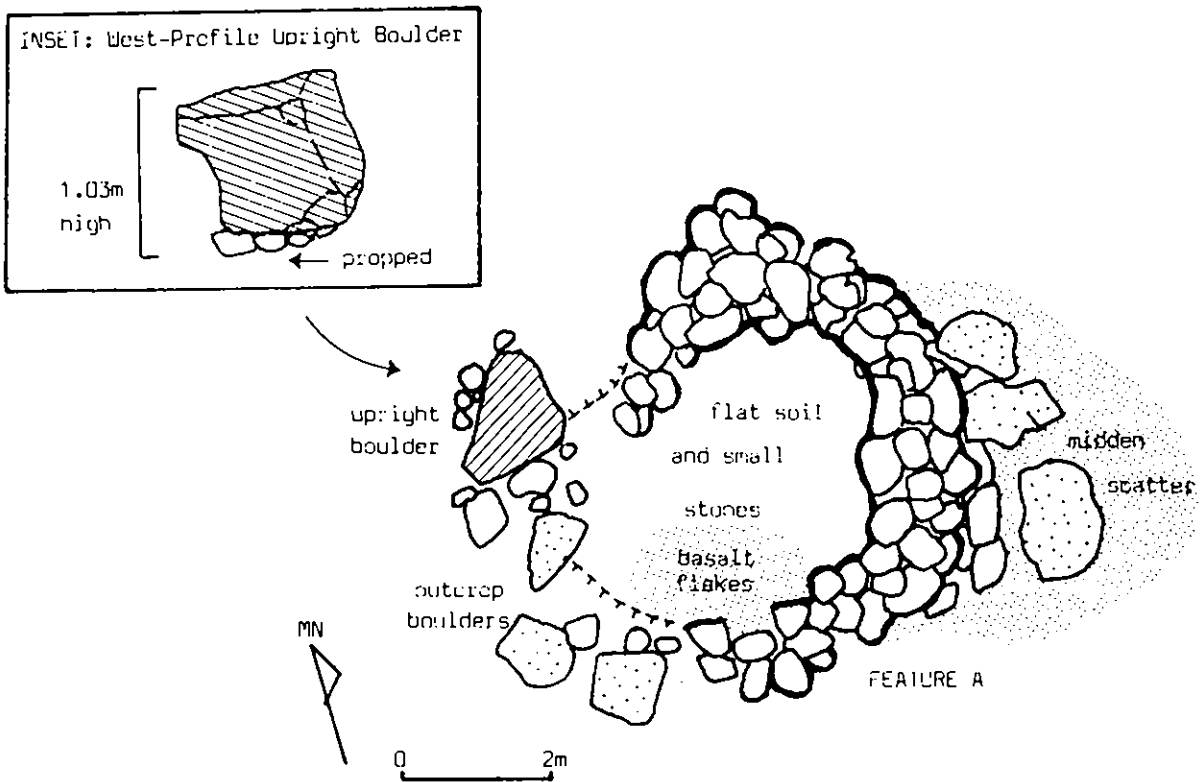


Figure 3. (top) View of Site 50-20-90-660 from the east.  
 (bottom) Plan View of Site 660 and Profile of Boulder.

On the western end of the structure stands a large, natural boulder, unmodified, but deliberately propped up into the present position by smaller stones wedged under its base (see Fig. 3). The stone stands 1.03 meters high, 1.2 meters wide, and 1.6 meters long. Based on its position on the knoll and its viewscape (Fig.4), this boulder was determined to be the upper "ahu" or "Makakilo" (?), as seen from Hakioawa (see Fig. 2).

#### Natural Boulder

Located roughly 200 meters below Site 660 on the same ridge, is a large naturally occurring, weathered basalt boulder (Fig. 5). The face-like appearance, as viewed from the northwest, can characterize this boulder as anthropomorphic (Fig. 6). The roughly cylindrical boulder stands 2.9 meters high, 2.6 meters wide, and 1.7 meters deep. Its position and viewscape (Fig. 7) determined this natural, but conspicuous, feature as the lower "ahu" or "Makali'i" (?). No evidence of cultural activity was observed in the vicinity of this site.

#### DISCUSSION

The procedures undertaken in support of archaeoastronomical inquiry, during the September fieldtrip, fulfilled the objectives set forth by Dr. Johnson following the March sighting. On site documentation was accomplished with one site determined to be man-made and the other natural. The ridgeline that they occupy and their individual locations were accurately established.

The boulder at Site 50-20-90-660, Feature A and the anthropomorphic boulder located 200 meters downslope were verified to be the two "ahu" sighted on the distant ridgeline during the previous field trip. Whether, these two features are indeed the "Makali'i" and "Makakilo" indicated on Inez Ashdown's map could not be conclusively established. Never-the-less, the following factors provide support for such an argument:

- 1) the isolated occurrence of the two sites as indicated by the archaeological evidence,
- 2) the prominent visibility of these two features from the coast, and
- 3) the spatial association relative to Inez Ashdown's map.

Relevant archaeoastronomical evidence is presented by Dr. Johnson and the reader is referred to her report.



Figure 4. View North towards Hakioawa (arrow) from Site 660 Boulder.

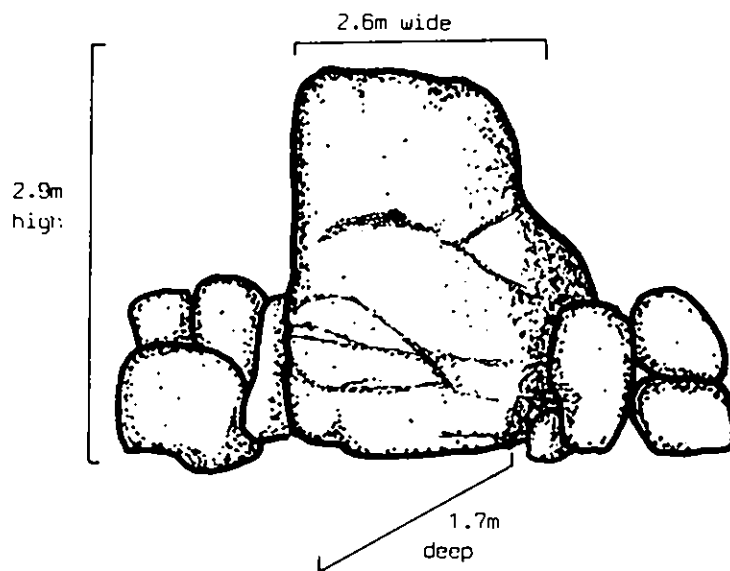


Figure 5. (top) View of Lower Boulder from Northwest.  
(bottom) Drawing of Boulder Showing Maximal Dimensions.



Figure 6. Closeup Showing Anthropomorphic Character of Boulder.

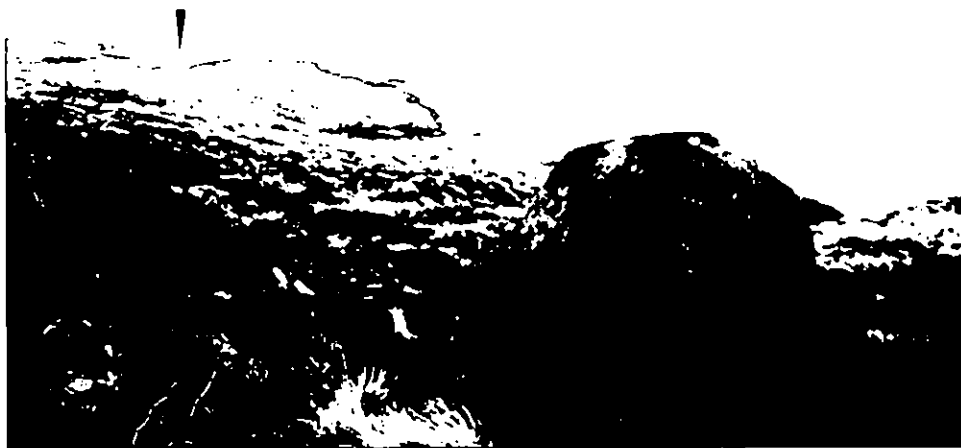


Figure 7. View North towards Hakiawa (arrow) from Lower Boulder Site.

### RECOMMENDATIONS

Systematic surface collection and subsurface testing are recommended for Site 50-20-90-660 Feature A, based on the surface scatter of midden and artifacts present on and around the site. Also, Feature B, the other possible habitation structure should be investigated. The objectives of such an undertaking should minimally include:

- 1) determination of artifact types present,
- 2) analysis of midden samples,
- 3) recovery of datable material, and
- 4) determination of the nature and extent of subsurface deposition.

The recovery of pertinent data may aid in the functional interpretation for the individual features as well as the complex.

No further procedures are recommended at the lower boulder site. However, for both sites, every effort should be made to minimize direct and indirect impacts from human disturbance. Access to such sites need to be controlled and possibly restricted until more intensive archaeological investigations are completed.

Observations indicate that these sites are primarily affected by wind erosion rather than by water. Although no major damage or changes appear to have occurred during the 13 years since the 1980 survey, the recommended procedures should be implemented, as soon as possible, to ensure maximum data recovery.

### ACKNOWLEDGEMENTS

Archaeoastronomy, especially in Hawaii, is a rather recent specialization that most archaeologists are not very familiar with. The current field trip and other similar cooperative ventures serve to demonstrate the value of such inter- and intra-disciplinary undertakings. The sharing of different ways of observing and interpreting cultural remains is a valuable and enriching experience for all involved. The knowledge of the existence of a complex and highly sophisticated traditional system of celestial observation together with an infrastructure of a network of manmade and natural features that served as observatories and reference points, will provide for the archaeologist another approach for the interpretation of site function.

The series of investigations and research conducted under the auspices of the Kaho'olawe Island Conveyance Commission brought together and fostered the sharing of knowledge, expertise, and interests among many individuals. Military personnel; physical, social, and natural scientists; *kupuna*; artists; government officials; and members of the Protect Kaho'olawe Ohana; were able to work in unison. Mahalo to the Commission for providing this opportunity.

I also wish to thank the following key individuals involved in logistics, planning, and administration; Hardy Spoehr, Roland Reeve, and Lt. Vernon Young.

The present value of Kaho'olawe is the absence of the rapid pace of change imminent in all of the other principal Hawaiian islands. In spite of being a target island for several decades, the many archaeological resources that still remain have existed with minimal historic and modern disturbances. Kaho'olawe provides an unmatched opportunity for comprehensive study. Perhaps as close to a "living laboratory" as scientists in Hawai'i may wish for. I hope that the individuals and agencies responsible for decisions regarding the future disposition of the island consider this aspect seriously.

### REFERENCES

- Hommon, Robert J.  
1980 Kaho'olawe Site 660, National Register of Historic Places  
Inventory -- Nomination Form, April 1980.
- Johnson, Rubellite Kawena  
1993 *Preliminary Archaeoastronomical Inquiry into Some Kaho'olawe  
Sites Conducted in Field Excursions in March and September 1992  
For the Kaho'olawe Conveyance Commission, Consultant Report No.  
9, Kaho'olawe Island Conveyance Commission, March 1993.*

APPENDIX A:

National Register of Historic Places Inventory -- Nomination Form  
Kaho'olawe Site 660

## 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

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DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Kaho'olawe archaeological site 660\* is a complex consisting of three features (2 habitation enclosures and one cairn). The site is situated on a hill top overlooking the northeast coast at an elevation of about 232 meters (760 feet), about 800 meters from the coast. The vegetation consists of a moderate cover of various grasses. The site measures about 16 x 12 meters and includes about 192 square meters. Its boundaries were determined by the clustering of its constituent features and the absence of other sites for a distance of at least 100 meters in any direction.

### Feature A

Feature A is an oval habitation enclosure measuring about 7.5 by 5.4 meters and standing to a height of 90 centimeters. The enclosure is constructed of multiple stacked pahoehoe chunks and boulders. The feature is in Ahupu Formation soil. The feature is situated on top of a hill and is partly covered with a moderate growth of various grasses. Surface midden is scarce and includes shells of thais (Thais aperta), and drupes (Drupa ricina). Also included are scarce amounts of porites (Porites sp.) coral. Surface artifactual materials include scarce amounts of basaltic glass flakes, and 1 broken adze blank. This feature is in fair condition and is currently being damaged by wind and surface water runoff. It is in need of immediate preservation action.

### Feature B

Feature B is a round habitation enclosure measuring about 2.8 meters in diameter, and standing to a height of 50 centimeters. The enclosure is constructed of multiple-stacked pahoehoe chunks. An internal feature consists of a concentration of basalt flakes along the south wall measuring 3 by 2 meters. The feature is in Ahupu Formation soil. The feature is situated on top of a hill and is partly covered with a moderate growth of various grasses. Surface midden includes scarce amounts of thais (Thais aperta), and medium-sized cowries (Cypraea reticulata). This feature is in deteriorated condition and is currently being damaged by wind and surface water runoff. It is in need of immediate preservation action.

\*Site 660 was discovered and recorded during a survey of Kaho'olawe conducted under the auspices of the United States Navy.

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NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY - NOMINATION FORM**  
FOR FEDERAL PROPERTIES

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DATE ENTERED	

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*  
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

**1 NAME**

HISTORIC

AND/OR COMMON

Kaho'olawe Site 660

**2 LOCATION**

STREET & NUMBER

Island of Kaho'olawe 9992 NOT FOR PUBLICATION

CITY, TOWN

CONGRESSIONAL DISTRICT

STATE

Hawaii

VICINITY OF

CODE

15

COUNTY

Maui

CODE

009

**3 CLASSIFICATION**

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input type="checkbox"/> DISTRICT	<input checked="" type="checkbox"/> PUBLIC	<input type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE <input type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input type="checkbox"/> PRIVATE	<input checked="" type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> PARK
<input type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL <input type="checkbox"/> PRIVATE RESIDENCE
<input checked="" type="checkbox"/> SITE	<b>PUBLIC ACQUISITION</b>	<b>ACCESSIBLE</b>	<input type="checkbox"/> ENTERTAINMENT <input type="checkbox"/> RELIGIOUS
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input checked="" type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT <input type="checkbox"/> SCIENTIFIC
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input checked="" type="checkbox"/> MILITARY <input type="checkbox"/> OTHER

**4 AGENCY**

United States of America

REGIONAL HEADQUARTERS (if applicable)

Department of the Navy

STREET & NUMBER

Naval Air Station, Barber's Point

CITY, TOWN

STATE

VICINITY OF

Hawaii

**5 LOCATION OF LEGAL DESCRIPTION**

COURTHOUSE,  
REGISTRY OF DEEDS, ETC

Pacific Division

STREET & NUMBER

Naval Facilities Engineering Command

CITY, TOWN

STATE

Pearl Harbor

Hawaii 96860

**6 REPRESENTATION IN EXISTING SURVEYS**

TITLE

DATE

FEDERAL  STATE  COUNTY  LOCAL

DEPOSITORY FOR  
SURVEY RECORDS

CITY, TOWN

STATE

# 8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION
<input type="checkbox"/> 1900	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

The significance of Kaho'olawe site 660 lies primarily in the data that it is likely to yield regarding the economic and residential patterns of the interior zone of Kaho'olawe, the history of settlement and population growth of the island as a whole, and the relationship between the coastal and inland zones.

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# NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 2

### Feature C

Feature C is an oval cairn measuring about 1.4 by 1.0 meters and standing to a height of 55 centimeters. The cairn is constructed of pahoehoe chunks and boulders. The feature is in Ahupu Formation soil. The feature is situated on top of a hill and is partly surrounded with a moderate growth of various grasses. Surface midden includes scarce amounts of thais (Thais aperta). This feature is in deteriorated condition and is currently being damaged by wind and surface water runoff. It is in need of immediate preservation action.

The form and contents of site 660 are evidence for a number of activities. The presence of scarce amounts of shell at features A, B and C indicates that the procurement preparation and consumption of food took place at or near these features. The presence of basaltic glass flakes, basalt flakes, and a broken adze blank at feature A indicates that basaltic glass and basalt artifacts were made at or near these features.



50-20-90-660A,  
B, C

