JESS INTERIM REPORT ON
CULTURAL HERITAGE SITES IN
PROPOSED BAARDHEERE RESERVOIR AREA

JESS Report No. 8

Prepared by:

Steven A. Brandt, Ph.D.
Associates in Rural Development, Inc.
110 Main Street, Fourth Floor
P.O. Box 1397
Burlington, Vermont 05402
U.S.A.
Under AID contract number AFR-0134-C-00-5047-00.

Date: November 20, 1986

CONTENTS

Sectior		Page
Acronyms and Definitions		i
Preface		ii
I.	Executive Summary	1
II.	Introduction	3
III.	Preliminary Field Reconnaissance	4
	A. Study Area	4
	B. Previous Archaeological Research in Study Area	6
	C. Reconnaissance Methodology	6
	D. Results	8
IV.	Plan for Proposed Phase II Archaeological Survey	11
	A. Objectives	11
	B. Methods and Logistics	11
References		15
Appendices:	A -- Scope of Work	A-1
	B -- Daily Itinerary for Field Reconnaissance	B-1
	C -- Site Forms	C-1
	D -- Proposed Personnel for Phase II Archaeological Survey	D-1

ACRONYMS AND DEFINITIONS

AID	U.S. Agency for International Development
ARD	Associates in Rural Development, Inc.
ASD	Air Survey and Development, Inc.
B.P.	before present (uses 1952, when carbon dating became available commercially, as milestone for archaeological research)
ca.	circa (approximately)
GSDR	government of the Somali Democratic Republic
JESS	Jubba Environmental and Socioeconomic Studies
JuDAS	Jubba Development Analytical Studies
MJVD	Ministry of Jubba Valley Development
SOMAC	Somali Academy of Sciences and Arts
tog	wadi

PREFACE

The Jubba Environmental and Socioeconomic Studies (JESS) (number 649-0134) are jointly funded by the government of the Somali Democratic Republic (GSDR) and the U.S. Agency for International Development (AID). JESS is part of a larger project funded by AID and the GSDR, the Jubba Development Analytical Studies (JuDAS) project. Technical assistance and JESS management are being provided to the Ministry of Jubba Valley Development (MJVD) by Associates in Rural Development, Inc. (ARD) of Burlington, Vermont, under AID contract number AFR-0134-C-00-5047-00.

This interim report is one of many to be produced during Phase II of JESS, a two-year period of intensive project field studies. The present report concerns a preliminary reconnaissance of archaeological and historical sites within the proposed Baardheere Reservoir. This work was conducted for ARD between 7 September and 5 October 1986 by Dr. Steven A. Brandt of the University of Georgia's Department of Anthropology.

Completion of this archaeological reconnaissance would not have been possible without the generous help and recommendations of Tom Gresham, Dr. Peter Robertshaw and Mohammed Hassan Aden. The author is also very grateful to Cathy and Bruce of the Mennonite Mission at Hilo Mareer. They will long be remembered for their unswerving hospitality during the reconnaissance team's stay at their camp. Thanks are also due to Mr. Nuur of the National Range Agency camp in Luuq, who also very kindly looked after the team. Finally, the author would like to acknowledge the support and determination of Dr. E. Drannon Buskirk, Jr., in getting the team to the field on time.

I. EXECUTIVE SUMMARY

A preliminary reconnaissance of archaeological and historical sites encompassed within the proposed Baardheere Reservoir was conducted from 15 to 25 September 1986. The main objective of this JESS consultancy was to develop a comprehensive survey plan for assessing archaeological and historical sites threatened by construction of Baardheere Dam and Reservoir. To accomplish this, two specific objectives were identified:

- obtain a preliminary impression of the nature, quality and quantity of archaeological evidence in the inundation zone; and

- determine a plan of operations and logistical requirements for conducting a two-month comprehensive Phase II survey during the 1987 summary.

The reconnaissance involved a vehicle and foot survey of the 200-kilometer-long reservoir by three professional archaeologists: Dr. Steven Brandt, Thomas Gresham and Dr. Peter Robertshaw.

The study area consists of three physiographic zones:

- a southern section, characterized by narrow gorges and extending from the dam site north to just below Bordubo, a distance of about 80 kilometers;

- a central section, generally flat open terrain representing the main body of the reservoir and running some 33 linear kilometers from just south of Bordubo north to Durole; and

- the northern section, 80 linear kilometers of narrow gorges and open terrain stretching from a few kilometers above Durole to Luuq.

The northern and southern sections of the river have very few roads and are basically inaccessible by four-wheel-drive vehicles. The central section, however, has an extensive network of roads as well as an auto ferry, which allowed for easy access to both sides of the river.

Over 100 sites representing five classes of archaeological and historical sites were found within the study area:

- surface scatters of Middle Stone Age and/or Later Stone Age artifacts as well as rare potsherds;

- stone artifacts recovered in situ from a geological trench dug by engineers or geologists working on Baardheere Dam studies;

- possible "pastoral camp sites" characterized by dense concentrations of pottery, bone, shell and few or no stone artifacts;

- rock piles/cairns; and

- modern graves, tombs and mosques.

The most common sites were the lithic surface scatter, followed by rock piles.

This brief reconnaissance has clearly demonstrated the presence of a wide range of cultural heritage sites within the study area. Moreover, it is highly likely that additional types, and certainly considerably more sites, will be discovered during the comprehensive Phase II study.

Plans for the Phase II survey, to be conducted over a two-month period during the summer of 1987, call for a combination of survey methods, including:

- intensive survey in areas with the highest probability of containing significant sites;

- opportunistic survey in areas of dense vegetation; and

- stratified random sampling of the entire reservoir area.

This combination of methods will allow expedient discovery of a large number of sites and development of a model for predicting site densities in areas not surveyed by the Phase II study.

The proposed Phase II survey would be undertaken by three teams working concurrently in the three sections of the reservoir area. The northern and southern teams would conduct the survey by donkey and/or camel caravan, the central team by vehicle and foot. Successful completion of the survey would contribute to the formulation of a plan for mitigating the damage to cultural heritage sites caused by construction of the dam and inundation of the reservoir.

II. INTRODUCTION

The main goal of the initial survey of cultural heritage sites was to conduct a preliminary reconnaissance of the upper Jubba River Valley inundation zone (Baardheere Dam site to Luuq) in order to develop a comprehensive survey plan for assessing historical or archaeological sites threatened by construction of the Baardheere Reservoir (see Appendix A for the scope of work). The study had two specific objectives:

- obtain a preliminary impression of the nature, quality and quantity of archaeological evidence in the inundation zone; and

- determine a plan of operations and logistical requirements for conducting a two-month comprehensive Phase II survey during the summer of 1987.

This JESS interim report is part of Phase II, which includes a series of field studies to be carried out over the two-year period (see PHASE I REVIEW AND PHASE II WORK PLAN FOR THE JESS PROJECT, ARD, 31 July 1986). Phase II focuses principally on primary data collection in the Jubba Valley. Phase III will consist of analyses of Phase II and other secondary data. At the end of Phase III, JESS will deliver the following to AID and MJVD:

- socioeconomic and environmental assessments of the Jubba Valley that fit into a process for developing a master plan for valley development;

- a realistic, long-term system for environmental and socioeconomic monitoring by MJVD; and

- river basin planning and development guidelines for Somalia.

JESS will also work with MJVD to incorporate these guidelines into the mainstream of the Jubba Valley planning and development process. In addition, JESS will train MJVD staff so that they can continue to collect and analyze data, and plan and monitor future development activities.

III. PRELIMINARY FIELD RECONNAISSANCE

A. Study Area

The proposed Baarhdeere Reservoir begins 35 kilometers north of Baardheere at the dam site and continues north up the Jubba River some 200 linear kilometers to the town of Luuq. At its full capacity, the proposed reservoir will inundate about 330 square kilometers of land up to the 145-meter contour level. For purposes of this study, the proposed reservoir can be divided into three major sections (Figure 1):

- The southern section extends from the dam site to about four kilometers south of Bordubo, a distance of approximately 80 kilometers. Here, the river has cut through sediments to form gorges characterized by narrow bench terraces and steep upland slopes.

- The central section contains the main body of the reservoir and extends 33 kilometers along the river, from four kilometers south of Bordubo to just above the refugee camp of Durole. This section covers about 150 square kilometers and is 10 kilometers at its widest point. It is essentially characterized by extensive flat plains dissected by dendritic "tog" (wadi) systems. About 15 square kilometers of the river's floodplain are under cultivation, while another 11 square kilometers are taken up by refugee camps.

- The northern section begins just above Durole, where the reservoir narrows to less than a kilometer in width, and continues northward 80 kilometers to the northern reservoir terminus just north of Luuq.

Geologically, the inundation zone includes the following lithological units (Electroconsult, 1985):

- sandy silt to fine sandy alluvial deposits of late Quaternary age--the deposits vary in thickness and extent and are located along both banks of the river;

- older terraced alluvial deposits of Quaternary age, composed of coarse cemented sand and limestone nodule inclusions; and

- limestones, gypsiferous marls and other evaporitic rocks of Jurassic age, comprising the hills and talus slopes.

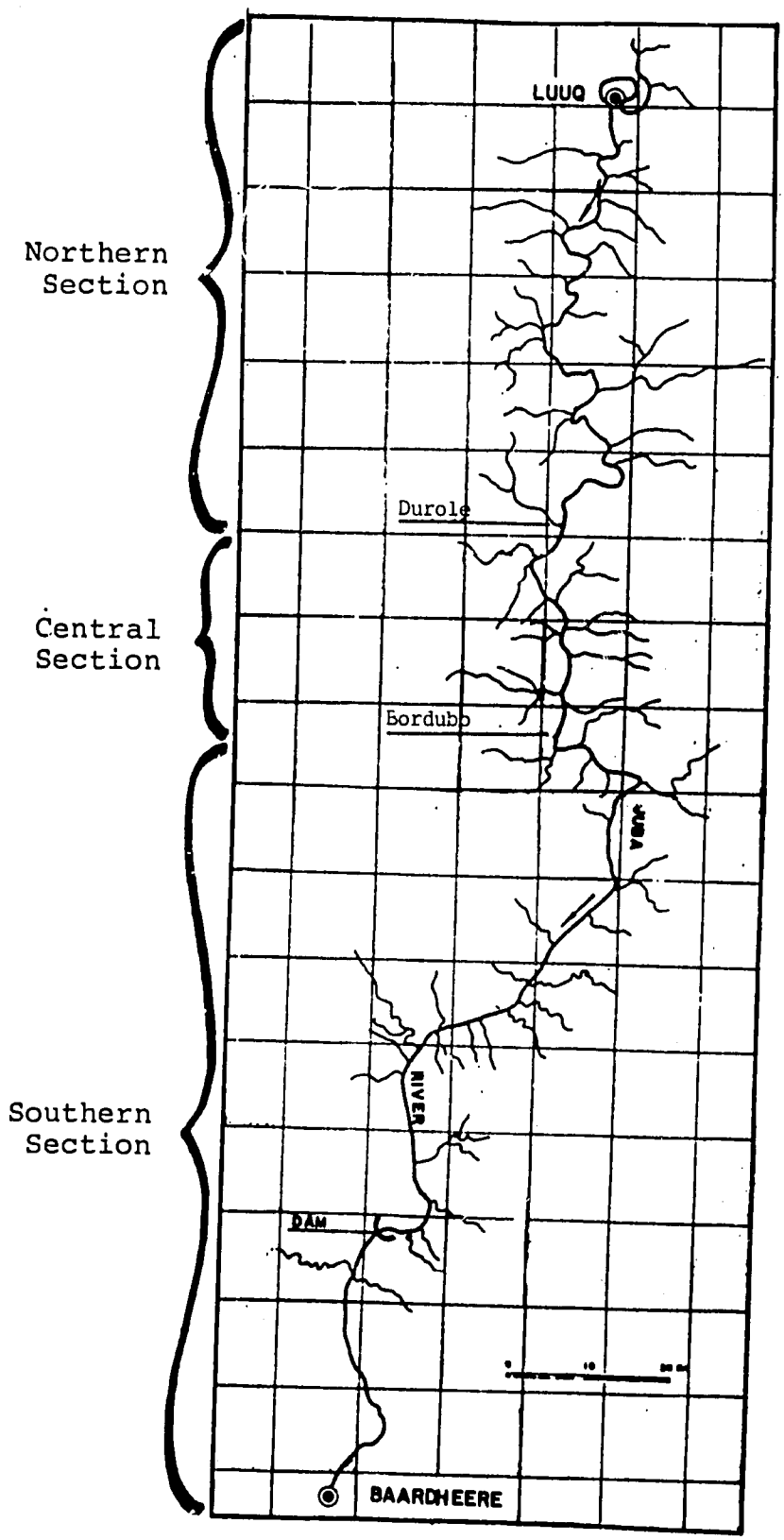


Figure 1. Proposed Baardheere Reservoir on the Jubba River

B. Previous Archaeological Research in Study Area

A literature search revealed little in the way of earlier archaeological research in the upper Jubba River Valley. In 1913 the Stefanini-Paoli Geological and Zoological Expedition to Somalia explored sections of the Jubba, subsequently discovering surface stone artifact scatters from Salagle to Luuq (Puccioni, 1919). Further surface scatters were discovered at Luuq by the 1935 Graziosi-Puccioni Expedition (Graziosi, 1940). British military personnel reported additional Stone Age sites at Baardheere and Luuq during World War II (Clark, 1954). However, none of the aforementioned sites were ever systematically surveyed or excavated, and their precise locations were not recorded. More recently, M. Mussi (1982, 1984) reported on the discovery of stone cairns near Baardheere.

C. Reconnaissance Methodology

Cartographic Sources

Prior to undertaking the reconnaissance, maps and aerial photos were examined in Mogadishu for information relating to vehicle access, physiography and geology of the study area. Cartographic sources consulted included:

- 1:100,000 GSDR topographic sheets;
- 1:40,000 maps of the Baardheere Flood Detention Reservoir prepared for the Ministry of Public Works by Technital S.p.a., Rome (1979);
- 1:20,000 photogeological maps of the Baardheere Flood Detention Reservoir prepared for the Ministry of Public Works by Technital S.p.a., Rome (1977); and
- 1:30,000 aerial photos prepared by Air Survey and Development, Inc. (ASD), Frankfurt.

Copies or originals of the above cartographic sources were also used during the reconnaissance.

Survey Personnel

The reconnaissance team was composed of three professional archaeologists, an MJVD counterpart and support personnel. The following archaeologists were involved:

- Dr. Steven A. Brandt, assistant professor of anthropology at the University of Georgia and ARD consultant, reconnaissance team leader and proposed project director for 1987 Phase II comprehensive survey;

- Mr. Thomas Gresham, vice president of Southeastern Archaeological Services, Athens, Georgia, and volunteer consultant and proposed field supervisor for 1987 Phase II comprehensive survey; and

- Dr. Peter Robertshaw, assistant director of the British Institute in Eastern Africa, Nairobi, and volunteer consultant whose institute may sponsor excavations of significant sites discovered during the Phase II survey.

Additional personnel traveling in the two CJ8 Jeeps included Mohammed Hassan Aden, the MJVD Somali counterpart, as well as a driver, a cook and a policeman, the latter of whom joined the team at Baardheere and stayed until the end of the reconnaissance.

Travel Plans and Logistical Realities

The initial plan was to spend 12 days on reconnaissance, with five or six days on the west bank of the river traveling north from Baardheere to Luuq, one day at Luuq, and another five or six days on the east bank of the river before returning to Baardheere. The aim was to locate roads or drivable tracks that would reach the river at varying points within each section. However, as learned from examination of the cartographic resources and discussions with JESS anthropologist Dr. James Merryman, vehicle accessibility was severely restricted.

Approaches to the west bank of the river in the southern section were limited to a narrow and rough track that ended seven kilometers south of the dam site. On the east bank the only passable road ended 1.5 kilometers north of the dam site. The northern section was almost equally inaccessible, with the road southward along the west bank ending only 18 kilometers south of Luuq, just below the refugee camps. The east bank road also came to an end when it reached an impassable tog about 20 kilometers south of Luuq. Virtually the entire 80 linear kilometers of the southern section and 60 kilometers of the northern section were therefore inaccessible by vehicle, although local informants said that a foot path existed on both sides of the river all the way from the dam site to Luuq.

Unlike the other areas, the central section was almost completely accessible by vehicle. Furthermore, the existence of

an automobile ferry at Bordubo and a passenger ferry at Hilo Mareer meant that the river could be crossed at virtually any time of the day, albeit when the river was high.

Due to the lack of roads, the reconnaissance was reduced to an 11-day period from 15 through 25 September. Excluding travel time, two days were used to explore the areas around the dam site in the southern section, three days were spent examining the central section, and three the northern section, including the town of Luuq (see Appendix B for the daily itinerary).

Reconnaissance Procedures

Since the objectives of this reconnaissance were to obtain a general understanding of the range of cultural heritage sites as well as to gain insights into the probable logistical problems of the Phase II study, the goal was to maximize the terrain covered. Therefore, team members examined most of the accessible areas by vehicle. Whenever they observed something of interest and wanted to make a closer inspection, they left the vehicle and walked. The team also conducted a series of foot surveys across a wide range of landscapes (i.e., the floodplain, old river terraces, toggas, talus slopes, etc.) in the northern and central sections as time permitted. Foot surveys of the southern section were restricted on the west bank to a seven-kilometer walk from the end of the track to the dam site, and on the east bank to a 2.5-kilometer walk north of the dam site.

The team noted the general location and type of sites discovered during the vehicle and foot surveys, but did not try to count all sites or attempt to fill out site survey forms for each site, as this will be done during the Phase II survey. However, five sites were recorded in order to field-test the forms. Although minor modifications will have to be made prior to the Phase II survey, the site survey forms worked well and were relatively quick to fill out. Copies of the blank form and records of the five sites can be found in Appendix C.

D. Results

It became readily apparent that the inundation zone contained at least five classes of cultural heritage sites:

- stone artifact and pottery surface scatters;
- stone artifacts recovered *in situ* from a geological trench;

- "pastoralist camp sites" with dense concentrations of pottery, bone, shell, and few or no stone artifacts;

- rock piles/cairns; and

- modern or historic graves, tombs and mosques.

Nc caves were discovered, and it is highly unlikely that any will be, as the limestone deposits in the reservoir show little karstic activity (Electroconsult, 1985).

Over 50 surface scatters of Middle Stone Age (ca. 125,000-40,000 B.P.) and/or Later Stone Age (ca. 40,000-5,000 B.P.) artifacts made from chert, and more rarely quartz and quartzite, were found in all three sections and represent the most common class of site. They usually were found on the older terraced alluvial deposits, tog floors and talus limestone slopes, but were also observed, albeit less frequently, on the younger alluvial soils. Occasionally they were found in dense concentrations, but usually were diffusely distributed over several meters. On two occasions rare potsherds of unknown age were found in association with Later Stone Age artifacts (see Appendix C, Markably 1 and Luuq 2 site forms for examples of this type of site).

On the west bank of the dam site a trench about three meters deep had been bulldozed by previous engineering/geological teams. Two boulder beds could be seen in section, interstratified by layers of finer sands and gravels. Two chert flakes of indeterminate age were recovered in situ from the upper boulder bed about 0.7 top one meter below the surface. This suggests that deeply buried sites may be found in such natural exposures as toggas.

In the northern and central sections of the study area, six dense concentrations of pottery, animal bone fragments (including goat and sheep remains) and shell fragments were found eroding from subsurface, ashy, organic sediments overlying the recent floodplain deposits of the river banks. Since a prehistoric pottery chronology for the region has yet to be developed, it is difficult to determine the exact ages of these sites, which the reconnaissance team is tentatively referring to as "pastoral camps." Although it is possible that some of the sites are relatively recent, all of the sites are associated with non-modern potsherds. At one site, buried stone circles and rare stone flakes were also recovered, suggesting some antiquity (see Appendix C, Luuq 1, 3 and 5 site forms for examples of this type of site).

The second most common site class was the rock pile/cairn. Three types were distinguished, based primarily on morphology:

- circular-shaped piles of rocks varying from one to two meters in diameter and 0.5 to one meter in height;

- large stone circles about one to three meters in diameter; and

- small stone circles about 50 centimeters in diameter.

Over 40 such sites were observed in all three sections of the river, occurring either as single, isolated piles or in concentrations. The largest cluster was located on the west bank of the central section and contained over 15 stone piles. The origin, age and function of rock piles/cairns in eastern Africa are not commonly known. However, it is highly likely, based on studies in Kenya, that at least some of these sites represent prehistoric human graves, while others may simply be territorial, religious or some other kind of marker or monument.

The final class of sites are Islamic graves, tombs and mosques of modern or historic age. These appear to be particularly concentrated in the central section and are associated with the refugee camps.

In summary, this brief reconnaissance has clearly demonstrated the presence of a wide range of cultural heritage sites within the study area, and it is highly likely that additional types, and certainly considerably more sites, will be discovered during the comprehensive Phase II study.

IV. PLAN FOR PROPOSED PHASE II ARCHAEOLOGICAL SURVEY

A. Objectives

The proposed Phase II survey has two major objectives. The first objective is to locate and describe cultural heritage sites important to an understanding of the prehistory and history of Somalia. All sites, no matter how small or disturbed, contain some information important to arachaeologists. In some cases this information simply shows that humans were at a specific place at a specific time and performing some task or tasks. Much of this kind of information will be gathered by the Phase II survey. Some sites will contain a great deal more information, occasionally in an undisturbed and/or stratified context. Such significant sites will warrant further investigation.

During the field research, the archaeological team will reconstruct settlement and land-use patterns in the upper Jubba River Valley over time. This will help the archaeological survey to discern temporal changes in human mobility and settlement patterns. Basically this requires knowledge of the location of the full range of sites in an area, including very small artifact scatters. An important by-product of detailed site plotting is the recognition of areas that do not contain sites and apparently were not used by humans. The recording of small sites with few artifacts and areas with no artifacts allows archaeologists to draw inferences on how these sites relate to the larger, artifact-rich sites and, ultimately, how the river valley was utilized over time. This pattern can then be compared with how the valley is used today.

The second objective of the archaeological survey is to formulate a testing and mitigation plan for salvaging information from significant sites as determined from the achievement of the above goals. An explicit plan for mitigating the loss of important cultural heritage sites prior to construction of the dam will be formulated. Although the scope and details of the mitigation plan cannot be determined until the Phase II survey has been completed, it is anticipated that mitigation will involve excavation of some sites, intensive surface collection of others, and perhaps relocation of some historically important localities.

B. Methods and Logistics

The methods to be used are dictated by time and money constraints, the physiography of the reservoir area and logistical considerations such as vehicular access and the location of base camps. A total survey, where 100 percent of the proposed reservoir is examined at an intensive level (e.g., at

30-meter intervals) is not possible given the large area (about 330 square kilometers) and limited time and personnel. Proposed instead is a combination of the following approaches:

- intensive survey in areas with the highest probability of containing significant sites;
- opportunistic survey in areas of dense vegetation; and
- stratified random sampling of the entire reservoir area.

This combination of methods will allow expedient discovery of a large number of sites and development of a model for predicting site densities in areas not surveyed by the Phase II study. The stratified random sampling will also allow for a quantifiable depiction of "non-site" areas. To manage the recording of the very different kinds of sites encountered, the teams will complete detailed forms for each site (an example is provided in Appendix C). Surface scatters will constitute a site when the density meets or exceeds five artifacts within a two-pace (1.5-meter) radius of the surveyor.

The survey will be conducted by three teams working concurrently in the northern, central and southern sections of the reservoir area. The northern and southern teams, given such poor vehicle access, will conduct the survey using pack teams of donkeys and/or camels. Each of these teams will be composed of two Americans (either two graduate students or Brandt or Gresham and a graduate student), a Somali counterpart from MJVD or the Somali Academy of Science and Arts (SOMAC), a cook, an animal driver/pack man, and a policeman (Appendix D gives the proposed team composition).

The survey procedure will mostly be one of opportunistic survey. The graduate students and SOMAC representative will, when possible, spread out across the inundation zone and search for surface and/or exposed sites. Topography, geology and other features will guide these investigations. However, parts of the southern section may be restricted, due to vegetative cover and physiography, to a single animal trail. The base of the hills will be examined as extensively as vegetation permits. The walls of the gorges will be scanned by binoculars for caves and rock shelters. Where the floodplain widens and at toggas, the crew will fan out as much as possible for the ground inspection. Each morning, after surveying has begun, the cook and animal driver will pack up camp, move four or five kilometers to an appropriate camp spot, and set up the new camp.

The southern team will start at the dam site on the east side and head north to Bordubo. The pack animals can probably be

secured at one of the villages near the dam site and will require a few days' advance preparation. Upon reaching Bordubo, the team will require several days of rest and outfitting before heading south down the west bank to Serenli or Baardheere, where they will be picked up and returned to Bordubo. The northern team will begin their survey on the west bank of Luuq and, after resting at Bordubo, will survey north to Luuq along the river's east bank. Again, advance preparations for securing pack animals and preparing specific meal plans, etc., will need to be undertaken.

On the basis of calculations for each section of the inundation area, it is estimated that the northern section can be surveyed in 38 working days, 19 days per side. The calculations feature an eight-hour work day and a survey rate of 1.5 kilometers per hour with an extra 0.5 hour per tog and 0.5 hour per site for compiling records. These estimates are based on the expectation of finding two sites per linear kilometer of river explored. The southern section can be surveyed in 34 working days (17 per side), based on the same calculation rates as used for the northern section.

The central team will consist of two Americans, two MJVD or SOMAC counterparts, a cook, a camp assistant, a driver and two local survey assistants. The central team will establish the project's base camp, preferably at the AFMED farm just south of Hilo Mareer. The central team will split into two survey crews. One crew, consisting of an American, a counterpart, and one local assistant, will survey all the toggas. This will be done by walking up the tog itself and examining both banks for sites. The crew will then separate and return by walking each shoulder of the tog. The toggas and their flanks are considered to be areas of high probability for locating stratified, in situ sites. It is estimated that about 48 working days will be required to survey this area, based on the amount of area to be covered, a six-hour period each day for in situ survey time on specific sites, and calculated survey rates similar to those mentioned above.

The second crew, consisting of an American and a counterpart, will implement an extensive stratified random sample survey. The specific strategy of this survey will be developed prior to the survey and will probably form the basis of a master's thesis. This survey is expected to take 40 days to complete. Survey hours will be from 7:00 a.m. to 1:00 p.m. The afternoons will be spent cataloging and mapping sites onto the base maps, analyzing the surface collections (which will be limited to diagnostic types whenever possible) and entering the information on the site forms as well as other data into an IBM-compatible portable computer supplied by JESS or Dr. Brandt. This computer will also be used to transfer data to the IBM-AT in Mogadishu for more memory-intensive analyses. Following

completion of the northern and southern surveys, the crews will return to the base camp and assist in analysis, data entry and report writing. It is expected that the final report will be finished no later than 10 days following completion of all surveys.

REFERENCES

Clark, J. D. 1954. The Prehistoric Cultures of the Horn of Africa. Cambridge: Cambridge University Press.

Electroconsult. 1985. The Baardheere Dam Project. Vol. 1. Geology. Rome.

Graziosi, P. 1940. L'Eta della pietra in Etiopia ed in Somalia. Firenze: Centro di Studi Coloniali.

Mussi, M. 1982. "Archaeological Survey in Southern Somalia." Nyame Akuma 20:45.

Mussi, M. 1984. "Excavations in Southern Somalia." Nyame Akuma 24/25:18.

Puccioni, N. 1919. Studi sui materiali antropologici ed etnografici raccolti dalla missione Stefanini - Paoli nella Somalia Italiana meridionale. Archivio per l'Antropologia ed l'Ethnologia XLIX.

APPENDIX A

Scope of Work Phase II Steven A. Brandt

1. The contractor will conduct a 4 week consultancy in Somalia beginning on or about September 7, 1986 for Associates in Rural Development, Inc. (ARD).

2. The general focus of this consultancy will be on conducting a preliminary reconnaissance for cultural heritage sites within a proposed reservoir between Baardheere and Luuq in Jubba Valley as a part of ARD's Juba Environmental and Socioeconomic Studies (JESS) project.

3. Prior to departure to Somalia, the consultant will hold a final telephone briefing with ARD project manager Richard Donovan or project technical manager R. Tillman.

4. Upon arrival in Somalia, the consultant will hold briefing meetings with USAID project manager Sally Patton and JESS chief of party E. Drannon Buskirk, Jr. to discuss the consultant's scope of work. At this meeting, a means for progress reporting during this consultancy will be defined.

5. With the JESS chief of party, the consultant will hold briefing meetings with project managers in the Ministry of Juba Valley Development (MJVD) to discuss the scope of work and necessary support from the Ministry. Arrangements for meetings with other Somali agencies will be made in concert with the JESS chief of party and officials from MJVD.

6. With logistical support from JESS, the consultant will travel to Jubba River to conduct an on-site familiarization trip of the proposed reservoir area. The consultant will briefly survey areas along both sides of the river from Baardheere to Luuq, recording and plotting areas and sites of potential significance on base maps provided by JESS.

7. The consultant will prepare recommendations for a second cultural heritage study which will be conducted during 1987 by a larger field team.

8. A draft report for this consultancy should be delivered to the JESS chief of party one full day before departure from Somalia. This report should be written in a format which meets guidelines which the consultant should obtain from the JESS chief of party. This report will be the basis of a final briefing with the USAID project manager, JESS chief of party and project personnel from MJVD. Revisions to the final report should be completed within two weeks after the consultant's return to the United States and delivered to the ARD home office in Burlington.

9. At the discretion of the ARD project manager, a final briefing may be required at the ARD home office in Burlington, VT.

APPENDIX B

Daily Itinerary for Field Reconnaissance

9/15/86	Leave Mogadishu at noon, arriving in Baardheere at 7:00 p.m.
9/16	Cross the river to the west side and travel north past Serenli until the track ends seven kilometers south of the dam site. Set up camp and walk to dam site.
9/17	Travel to Bordubo on main road. Stay at the Mennonite Camp.
9/18	Survey the west bank of the central section.
9/19	Survey the east bank of the central section.
9/20	Survey the west bank of the central section and travel to Luuq. Stay at NRA camp.
9/21	Survey the west bank of the northern section from Luuq south to the end of the road.
9/22	In the morning, survey the east bank of the northern section from Luuq south to the end of the road. In the afternoon, survey the area north of Luuq.
9/23	Travel from Luuq to Baardheere on the main eastern road.
9/24	In the morning, survey the eastern side of the dam site. In the afternoon, drive to Buur Heybe and spend the night there.
9/25	After interviewing the Buur Heybe potters about Jubba Valley pottery, drive to Mogadishu, arriving in the afternoon.

APPENDIX C

Site Forms

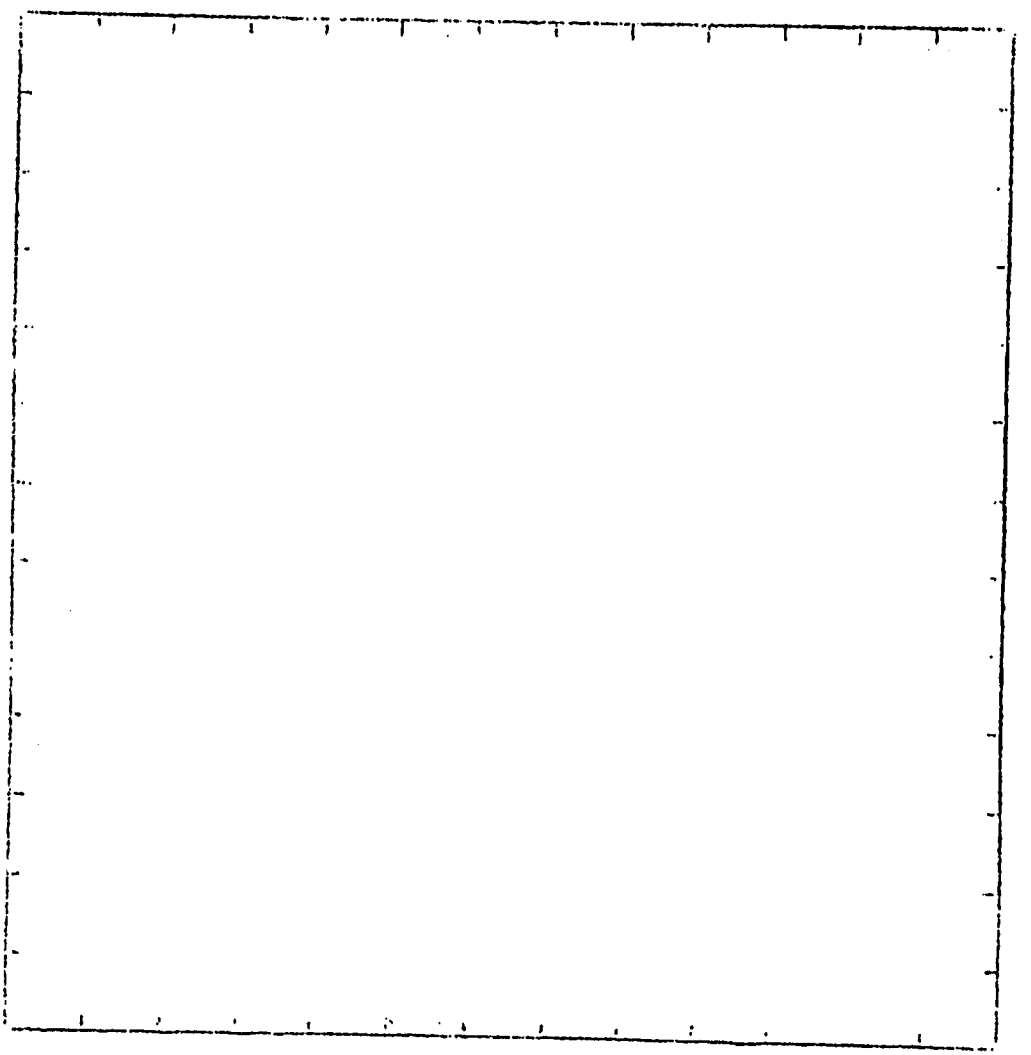
JUBBA Environmental and Socioeconomic Studies

Archeological Site Form

Date: Surveyors:

GENERAL SITE LOCATION

1. Site #:
2. Air photo #:
3. Topo #:
4. Coordinate #1: (North)
5. Coordinate #2: (East)
6. Coordinate #3:



GENERAL SITE ENVIRONMENT

7. Topography:

1. hill top
2. hill slope
3. foot of hill
4. scree
5. 1st levee (T0)
6. 2nd levee (T1)
7. terrace
8. undiff. bottoms
9.

8. Location of Artifacts

1. surface
2. ravine
3. stream bed
4. river bed
5. road cut
6. path
7. disturbance
8.

9. Vegetation

1. old field
2. present field
3. river gallary forest
4. grass/herbs/bushland
5. acacia/bushland
6. forest
7.
8.

10. Slope

1. flat
2. shallow
3. moderate
4. steep

11. Soil Type/Texture

1. clay/silt
2. sand
3. gravel
4.

12. Soil Color

1. white/pale
2. light brown
3. reddish
4. dark brown
5. dark grey/black
6.

13. Depth of Deposits

1. unknown
2. none (stone floor)
3. shallow (0-20 cm)
4. medium (20 cm - 1 m)
5. deep (over 1 m)

14. Soil Erosion

1. none
2. light
3. moderate
4. heavy

15. Closest Water Source/Type

1. river
2. permanent stream
3. seasonal stream
4. spring/seep
5. spring/pool
6. artificial well
7. artificial pond
8. natural pond
9. swamp
10.
11.

16. Distance to Nearest Water

---

17. Special/Natural/Resources

1. none
2. quarriable quartz
3. quarriable chert
4. other lithics
5. pottery clay
6. hematite/magnetite
7. other

Site: Date:

18. Evidence of Animal Use

1. none
2. burrows
3. animal bones/lair
4. animal dung

19. Modern Land Use

1. unknown
2. village
3. farming
4. grazing
5. pottery firing
6. pottery storage
7. garbage pits
8.
9.

20. Recency of Plowing

1. unknown
2. never
3. recent

21. Predominant Crops

1. sorghum
2. sesame
3. maize
4. fruit trees
5. other

GENERAL SITE INFORMATION

22. Type of Archaeological Site

1. rock shelter
2. overhang
3. open air site
4. stone cairn
5. grave/tomb
6. shrine
7. mosque
8. monument
9. building
10. homestead
11. village
12. town
13. structural feature
14.

23. Age/Cultural Affiliation

1. unknown
2. ESA
3. MSA
4. Iron Age
5. Islamic
6. Colonial
7. modern
8.

24. Degree of Disturbance

1. none
2. slight
3. moderate
4. heavy

25. Associated Features

1. storage pit
2. hearth
3. fire pit
4. earthen mound
5. stone cairn
6. stone scatter

26. Characterization of Assemblage

1. chert artifacts
2. quartz artifacts
3. other flaked stone artifact
4. pottery
5. grinding stones
6. metal
7. glass
8. no artifacts - features only

27. Recognized Tools

1. hand axe
2. chopper
3. bifacial points
4. unifacial points
5. microliths
6. side scrapers
7. end scrapers
8. burin
9. bec/perforator
10. Levallois points/flakes
11. unshaped tools
12.
13.

28. Overall Lithic Density

1. none
2. trace
3. light
4. moderate
5. heavy

29. % of Quartz Lithics _____

30. % of Chert Lithics _____

31. % of Other Lithics _____

32. Estimated Lithic Artifacts

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

33. Sherd Density

1. none
2. trace
3. light
4. moderate
5. heavy

34. Estimated # of Potsherds

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

35. # of Grind Stones/Frags

1. less than 5
2. 6-10
3. 11-25
4. 26-50
5. over 50

36. # of Lithics (m^2) _____

37. # of Potsherds (m^2) _____

38. # of Grind Stones (m^2) ____

39. Organic Preservation

1. bone
2. shell
3. charcoal
4. ash
5. vegetal remains

40. Sampling Technique

1. random sampling
2. 100% sample
3. densest m^2
4. all I.D. tools, sherds collected

Notes:

JUBBA Environmental and Socioeconomic Studies

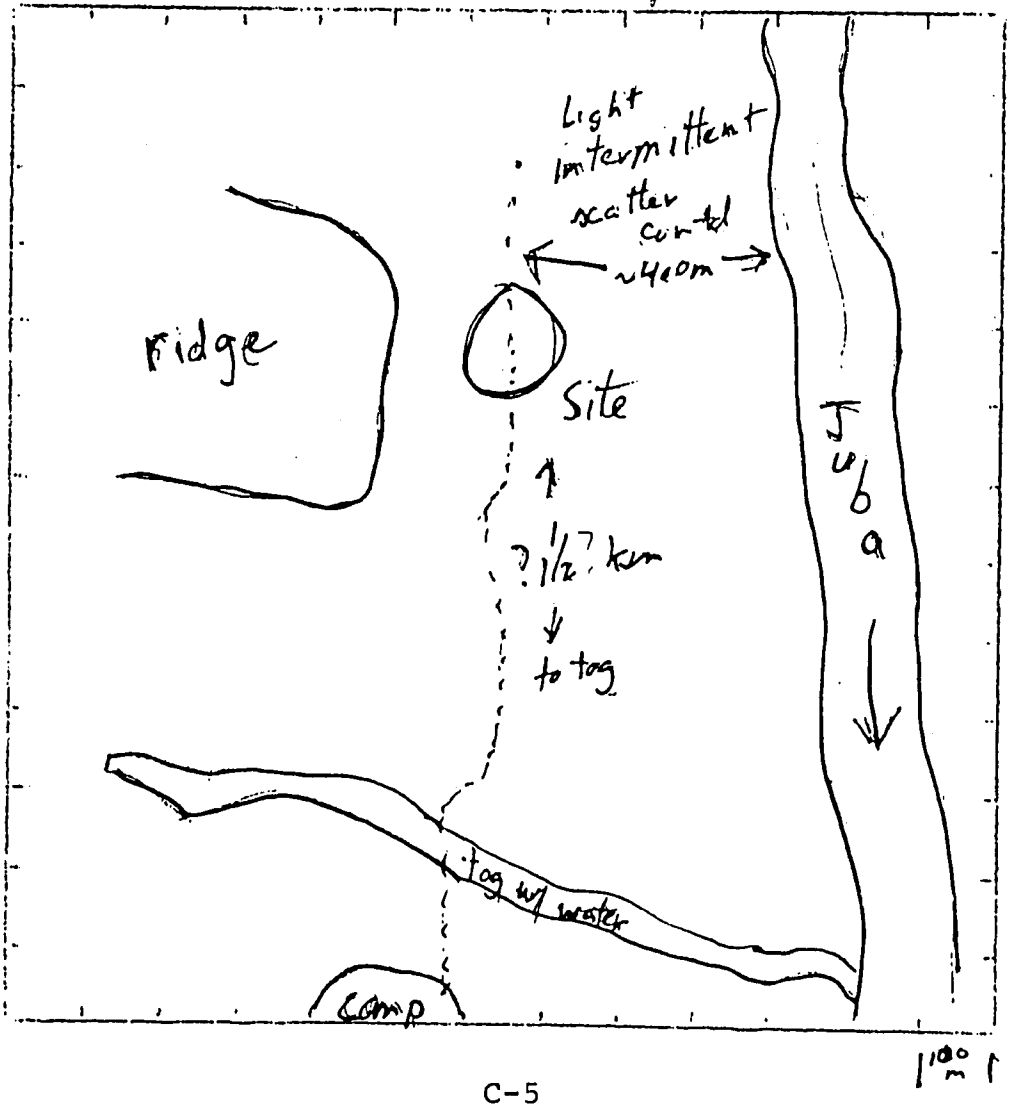
Archeological Site Form

Date: 16·7·86 Surveyors: THG + SAB

GENERAL SITE LOCATION

1. Site #: ~~Below Dam~~ Markably 1
2. Air photo #: none (below FSI-45)
3. Topo #:
4. Coordinate #1: (North)
5. Coordinate #2: (East)
6. Coordinate #3:

Note: Site Continues North for several hundred meters



GENERAL SITE ENVIRONMENT

7. Topography:

1. hill top
2. hill slope
3. foot of hill
4. scree
5. 1st levee (T0)
6. 2nd levee (T1)
7. terrace
8. undiff. bottoms
9.

8. Location of Artifacts

1. surface
2. ravine
3. stream bed
4. river bed
5. road cut
6. path
7. disturbance
8.

9. Vegetation

1. old field
2. present field
3. river gallary forest
4. grass/herbs/bushland
5. acacia/bushland
6. forest
7.
8.

10. Slope

1. flat
2. shallow
3. moderate
4. steep

11. Soil Type/Texture

1. clay/silt
2. sand
3. gravel
4. rocky

12. Soil Color

1. white/pale
2. light brown
3. reddish
4. dark brown
5. dark grey/black
6.

13. Depth of Deposits

1. unknown / surface
2. none (stone floor)
3. shallow (0-20 cm)
4. medium (20 cm - 1 m)
5. deep (over 1 m)

14. Soil Erosion

1. none
2. light
3. moderate
4. heavy

15. Closest Water Source/Type

1. river
2. permanent stream
3. seasonal stream
4. spring/seep
5. spring/pool
6. artificial well
7. artificial pond
8. natural pond
9. swamp
10.
11.

16. Distance to Nearest Water

~400 m

17. Special/Natural/Resources

1. none
2. quarriable quartz
3. quarriable chert
4. other lithics
5. pottery clay
6. hematite/magnetite
7. other

Site: Marshall 1 Date: 16-7-86

18. Evidence of Animal Use

(1) none
2. burrows
3. animal bones/lair
4. animal dung

19. Modern Land Use

1. unknown
2. village
3. farming
(4) grazing
5. pottery firing
6. pottery storage
7. garbage pits
8.
9.

20. Recency of Plowing

1. unknown
(2) never
3. recent

21. Predominant Crops

1. sorghum
2. sesame
3. maize
4. fruit trees
5. other

GENERAL SITE INFORMATION

22. Type of Archaeological Site

1. rock shelter
2. overhang
(3) open air site
4. stone cairn
5. grave/tomb
6. shrine
7. mosque
8. monument
9. building
10. homestead
11. village
12. town
13. structural feature
14.

23. Age/Cultural Affiliation

1. unknown
2. ESA
3. MSA
4. Iron Age
5. Islamic
6. Colonial
7. modern
8. LSA
(9) MSA/LSA

24. Degree of Disturbance

(1) none
2. slight
3. moderate
4. heavy

25. Associated Features

1. storage pit
2. hearth
3. fire pit
4. earthen mound
5. stone cairn
6. stone scatter

26. Characterization of Assemblage

(1) chert artifacts
2. quartz artifacts
3. other flaked stone artifact
4. pottery
5. grinding stones
6. metal
7. glass
8. no artifacts - features only

27. Recognized Tools

1. hand axe
2. chopper
(3) bifacial points
4. unifacial points
5. microliths
6. side scrapers
7. end scrapers
8. burin
9. bec/perforator
10. Levallois points/flakes
11. unshaped tools
12.
13.

28. Overall Lithic Density

1. none
2. trace
3. light
4. moderate
5. heavy

29. % of Quartz Lithics 0

30. % of Chert Lithics 100

31. % of Other Lithics 0

32. Estimated Lithic Artifacts

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

33. Sherd Density

1. none
2. trace
3. light
4. moderate
5. heavy

34. Estimated # of Potsherds

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

35. # of Grind Stones/Frags

1. less than 5
2. 6-10
3. 11-25
4. 26-50
5. over 50

36. # of Lithics (m^2) _____

37. # of Potsherds (m^2) _____

38. # of Grind Stones (m^2) ____

39. Organic Preservation

1. bone
2. shell
3. charcoal
4. ash
5. vegetal remains

40. Sampling Technique

1. random sampling
2. 100% sample
3. densest m^2
4. all I.D. tools, sherds collected

Notes:

first site encountered on path - out of project area - not on aerial photo

JUBBA Environmental and Socioeconomic Studies

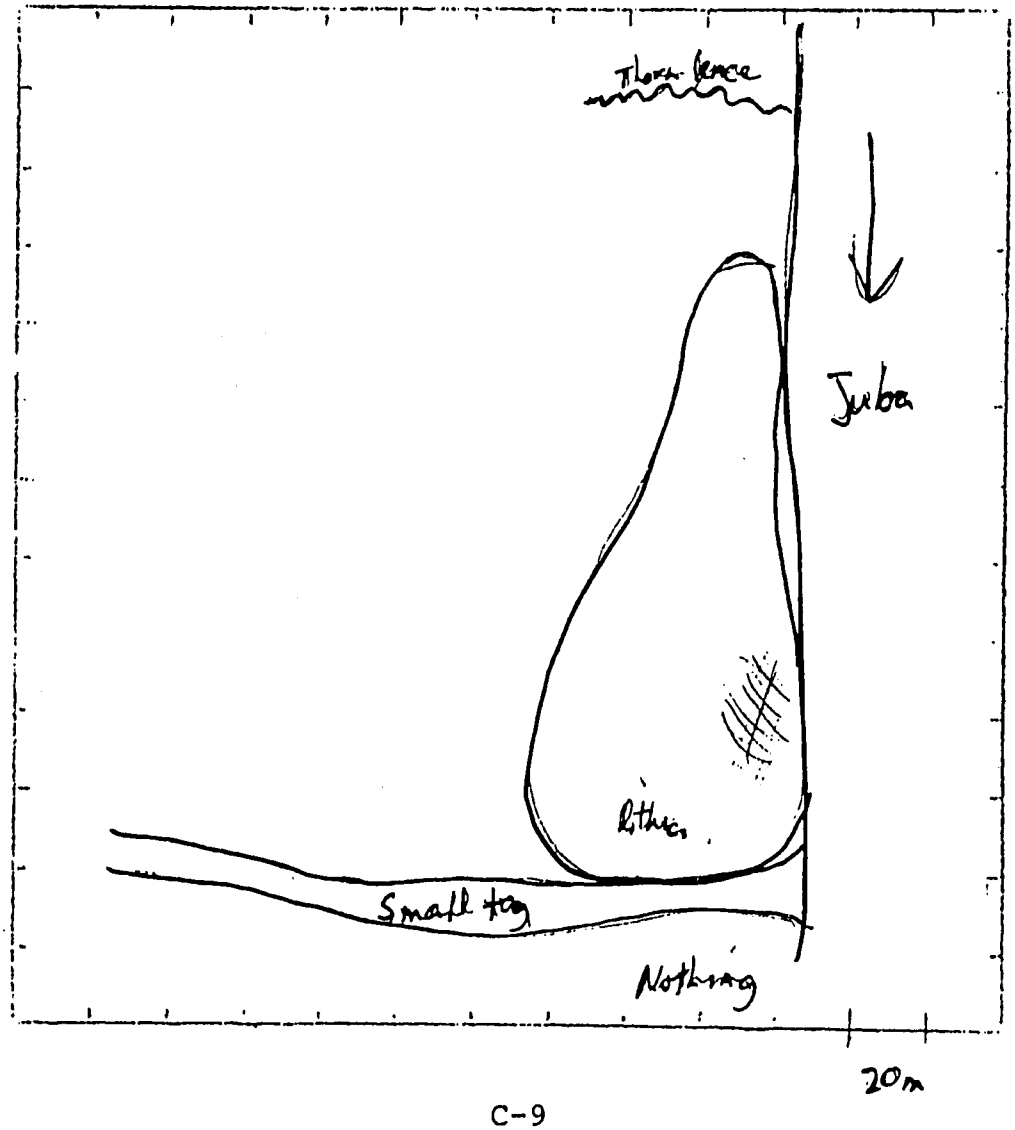
Archeological Site Form

Date: 21-4-86 Surveyors: TAG - SAB

Time : 1:30

GENERAL SITE LOCATION

1. Site #: ~~10~~ Luug 1
2. Air photo #: F11-13
3. Topo #: 8
4. Coordinate #1: (North) 405,500
5. Coordinate #2: (East) 221,500
6. Coordinate #3:



GENERAL SITE ENVIRONMENT

7. Topography:

1. hill top
2. hill slope
3. foot of hill
4. scree
5. 1st levee (T0)
6. 2nd levee (T1)
7. terrace
8. undiff. bottoms
9.

8. Location of Artifacts

1. surface
2. ravine
3. stream bed
4. river bed
5. road cut
6. path
7. disturbance
8.

9. Vegetation

1. old field
2. present field
3. river gallary forest
4. grass/herbs/bushland
5. acacia/bushland
6. forest
7. Cleared/deforested
8.

10. Slope

1. flat
2. shallow
3. moderate
4. steep

11. Soil Type/Texture

1. clay/silt
2. sand
3. gravel
4.

12. Soil Color

1. white/pale
2. light brown
3. reddish
4. dark brown
5. dark grey/black
6.

13. Depth of Deposits (Estimated)

1. unknown
2. none (stone floor)
3. shallow (0-20 cm)
4. medium (20 cm - 1 m)
5. deep (over 1 m)

14. Soil Erosion

1. none
2. light
3. moderate
4. heavy

15. Closest Water Source/Type

1. river
2. permanent stream
3. seasonal stream
4. spring/seep
5. spring/pool
6. artificial well
7. artificial pond
8. natural pond
9. swamp
10.
11.

16. Distance to Nearest Water

2 m

17. Special/Natural/Resources

1. none
2. quarriable quartz
3. quarriable chert
4. other lithics
5. pottery clay
6. hematite/magnetite
7. other

Site: Luvg 2 Date: 21.9.16

18. Evidence of wild Animal Use

1. none
2. burrows
3. animal bones/lair
4. animal dung

19. Modern Land Use

1. unknown
2. village
3. farming
4. grazing
5. pottery firing
6. pottery storage
7. garbage pits
8. nomad camp
9.

20. Recency of Plowing

1. unknown
2. never or not recently
3. recent

21. Predominant Crops

1. sorghum
2. sesame
3. maize
4. fruit trees
5. other

GENERAL SITE INFORMATION

22. Type of Archaeological Site

1. rock shelter
2. overhang
3. open air site
4. stone cairn
5. grave/tomb
6. shrine
7. mosque
8. monument
9. building
10. homestead
11. village
12. town
13. structural feature
14.

22a Site Size (length in m) 160

23. Age/Cultural Affiliation

1. ~~unknown~~ LSA
2. ESA
3. ~~MSA~~
4. Iron Age
5. Islamic
6. Colonial
7. modern
8. ~~unknown~~ other
9. unknown ceramic

? 24. Degree of Disturbance

1. none
2. slight
3. moderate
4. heavy

25. Associated Features

1. storage pit
2. hearth
3. fire pit
4. earthen mound
5. stone cairn
6. stone scatter

open (circular pit hearth)

26. Characterization of Assemblage

1. chert artifacts
2. quartz artifacts
3. other flaked stone artifact
4. pottery
5. grinding stones
6. metal
7. glass
8. no artifacts - features only
9. modern debris - plastic, fibre, styrofoam

27. Recognized Tools

1. hand axe
2. chopper
3. bifacial points
4. unifacial points
5. microliths
6. side scrapers
7. end scrapers
8. burin
9. bec/perforator
10. Levallois points/flakes
11. unshaped tools
12.
13.

28. Overall Lithic Density

1. none
2. trace
3. light
4. moderate
5. heavy

29. % of Quartz Lithics _____

30. % of Chert Lithics 100

31. % of Other Lithics _____

32. Estimated Lithic Artifacts

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

5m²

33. Sherd Density

1. none
2. trace
3. light
4. moderate
5. heavy

34. Estimated # of Potsherds

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

35. # of Grind Stones/Frags

1. less than 5
2. 6-10
3. 11-25
4. 26-50
5. over 50

36. # of Lithics (m^2) _____

37. # of Potsherds (m^2) _____

38. # of Grind Stones (m^2) _____

39. Organic Preservation

1. bone
2. shell
3. charcoal
4. ash
5. vegetal remains

? possibly all modern

40. Sampling Technique

1. random sampling
2. 100% sample
3. densest m^2
4. ~~all~~ I.D. tools, sherds collected

some vs all

Notes:

Most site - is also modern nomad camp - on sandy 1st level - may have some depth to it

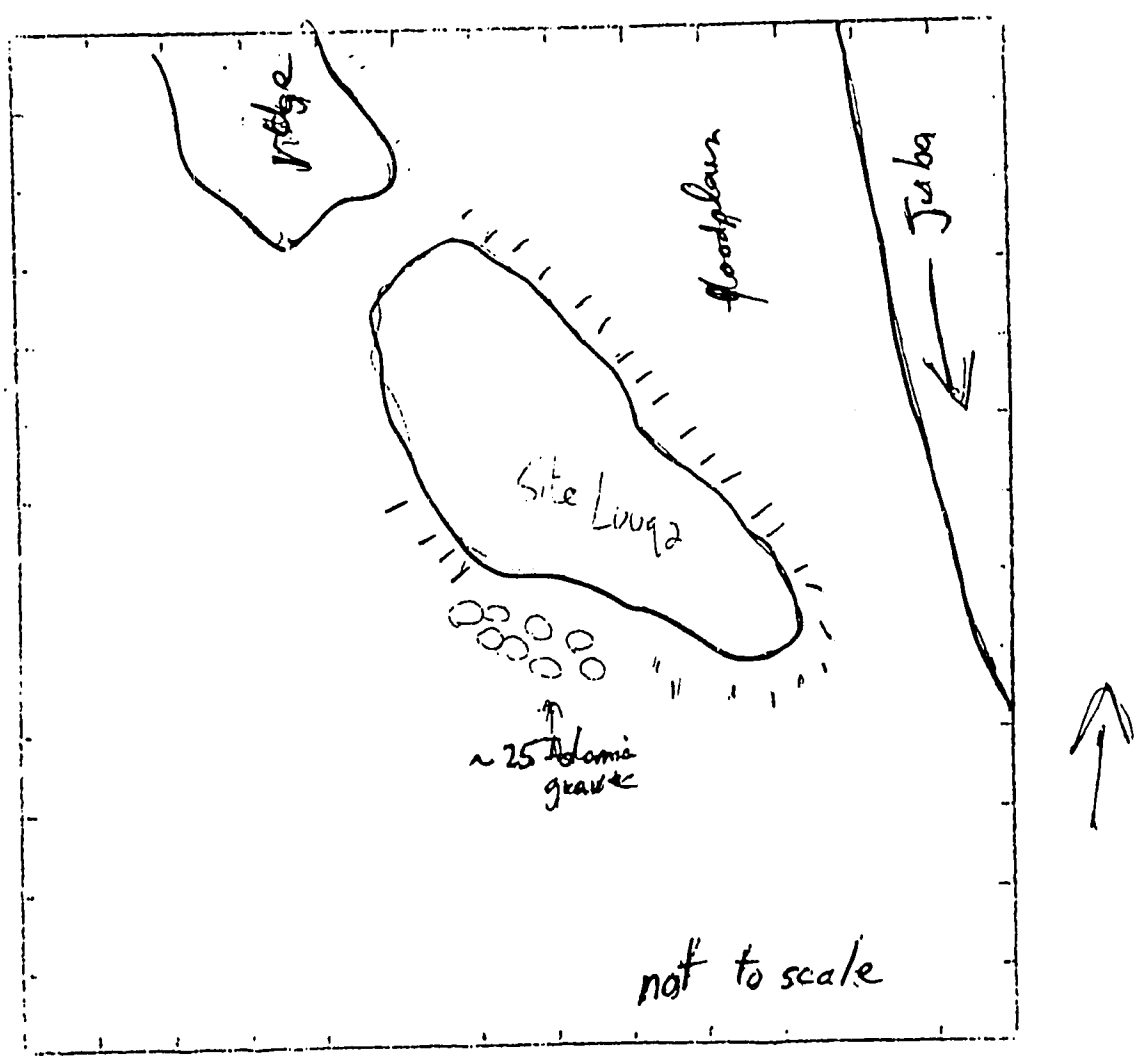
JUBBA Environmental and Socioeconomic Studies

Archeological Site Form

Date: 21-9-86 Surveyors: THG + SAB

GENERAL SITE LOCATION

1. Site #: Luoq 2
2. Air photo #: F11 13
3. Topo #: 8
4. Coordinate #1: (North)
5. Coordinate #2: (East)
6. Coordinate #3:



GENERAL SITE ENVIRONMENT

7. Topography:

1. hill top
2. hill slope
3. foot of hill
4. scree
5. 1st levee (T0)
(6) 2nd levee (T1)
7. terrace
8. undiff. bottoms
9.

8. Location of Artifacts

(1) surface
2. ravine
3. stream bed
4. river bed
5. road cut
6. path
7. disturbance
8.

9. Vegetation

1. old field
2. present field
3. river gallary forest
4. grass/herbs/bushland
(5) acacia/bushland
6. forest
7.
8.

10. Slope

1. flat
2. shallow
3. moderate
4. steep
(5) rolling

11. Soil Type/Texture

1. clay/silt
(2) sand
3. gravel
4.

12. Soil Color

1. white/pale
(2) light brown
3. reddish
4. dark brown
5. dark grey/black
6.

13. Depth of Deposits

Estimated

1. unknown
(2) none ~~(stone floor)~~
3. shallow (0-20 cm)
4. medium (20 cm - 1 m)
5. deep (over 1 m)

14. Soil Erosion

(1) none
2. light
3. moderate
4. heavy

15. Closest Water Source/Type

(1) river
2. permanent stream
(3) seasonal stream
4. spring/seep
5. spring/pool
6. artificial well
7. artificial pond
8. natural pond
9. swamp
10.
11.

16. Distance to Nearest Water

50 m

17. Special/Natural/Resources

(1) none
2. quarriable quartz
3. quarriable chert
4. other lithics
5. pottery clay
6. hematite/magnetite
7. other

Site: [illegible] Date:

18. Evidence of wild Animal Use

a. none
2. burrows
3. animal bones/lair
4. animal dung

19. Modern Land Use

1. unknown
2. village
3. farming
(4) grazing
5. pottery firing
6. pottery storage
7. garbage pits
8.
9.

20. Recency of Plowing

1. unknown
(2) never or not recently
3. recent

21. Predominant Crops

1. sorghum
2. sesame
3. maize
4. fruit trees
5. other

GENERAL SITE INFORMATION

22. Type of Archaeological Site

1. rock shelter
2. overhang
(3) open air site
4. stone cairn
5. grave/tomb
6. shrine
7. mosque
8. monument
9. building
10. homestead
11. village
12. town
13. structural feature
14.

22a Site Size (length m) 330

22b Site Size (Breadth m) 30

23. Age/Cultural Affiliation

(1) ~~unknown~~ LSA
2. ESA
(3) MSA
4. Iron Age
5. Islamic
6. Colonial
7. modern
(8) ~~unknown~~ 8. Unknown Lithic
9 Unknown Ceramic

24. Degree of Disturbance

(1) none
2. slight
3. moderate
4. heavy

25. Associated Features

1. storage pit
2. hearth
3. fire pit
4. earthen mound
5. stone cairn
6. stone scatter

26. Characterization of Assemblage

(1) chert artifacts
(2) quartz artifacts
3. other flaked stone artifact
(4) pottery
5. grinding stones
6. metal
7. glass
8. no artifacts - features only

27. Recognized Tools

problem

1. hand axe
2. chopper
3. bifacial points
4. unifacial points
5. microliths
6. side scrapers
7. end scrapers
8. burin
9. bec/perforator
10. Levallois points/flakes
11. unshaped tools
12.
13.

28. Overall Lithic Density

1. none
2. trace
3. light
4. moderate (circled)
5. heavy

29. % of Quartz Lithics 20

30. % of Chert Lithics 80

31. % of Other Lithics ____

32. Estimated Lithic Artifacts

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000 (circled)
6. over 1000

33. Sherd Density

1. none
2. trace (circled)
3. light
4. moderate
5. heavy

34. Estimated # of Potsherds

1. less than 10
2. 10-50 (circled)
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

35. # of Grind Stones/Frags

1. less than 5
2. 6-10
3. 11-25
4. 26-50
5. over 50

36. # of Lithics (m^2) –

37. # of Potsherds (m^2) ____

38. # of Grind Stones (m^2) ____

39. Organic Preservation

1. bone
2. shell
3. charcoal
4. ash
5. vegetal remains

40. Sampling Technique

1. random sampling (circled)
2. 100% sample
3. densest m^2
4. all I.D. tools, sherds collected

Notes:

Artifact scatter lightest at south end and northern end. Approximately 330 m long & 10-20 m wide

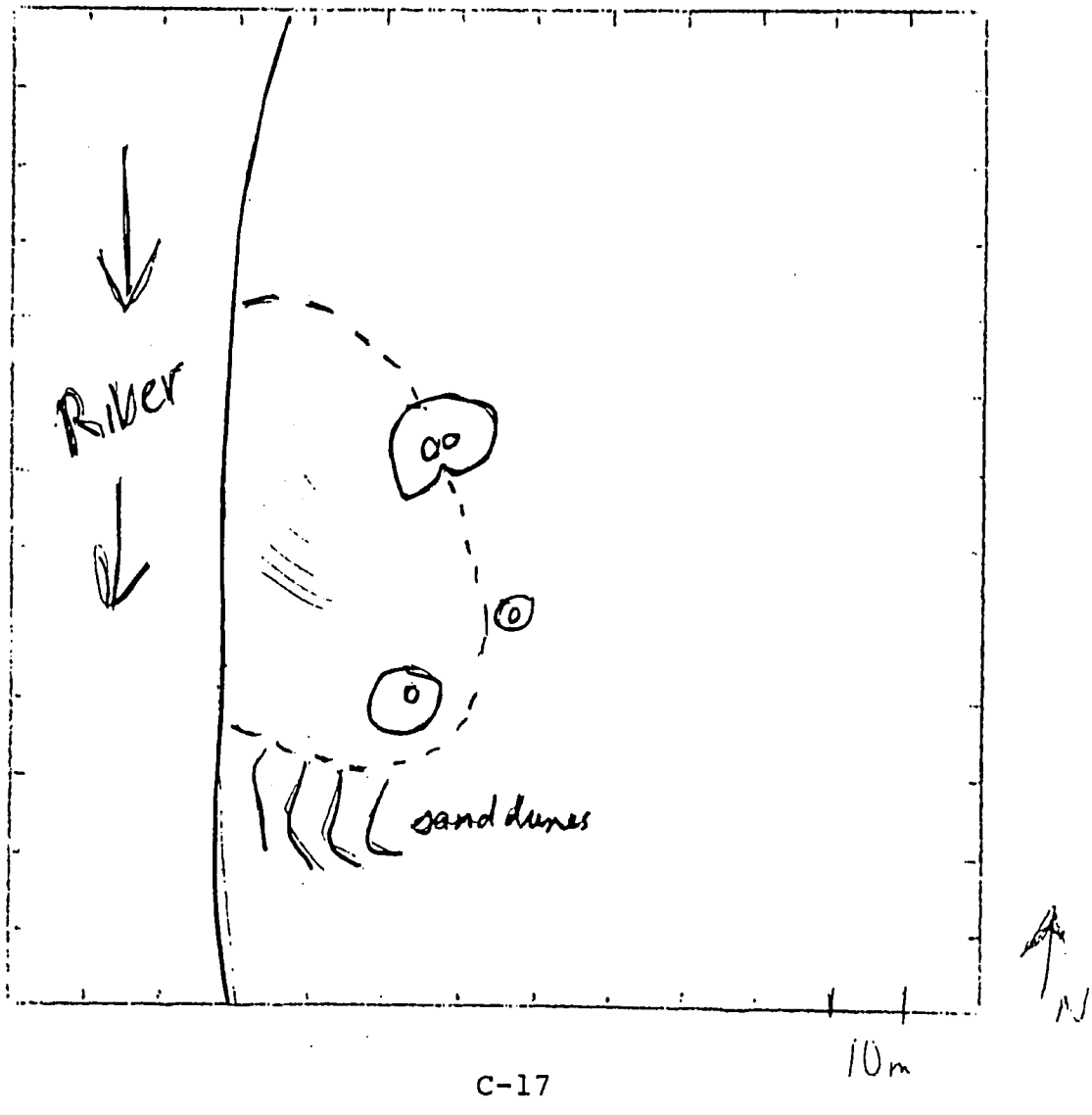
JUBBA Environmental and Socioeconomic Studies

Archeological Site Form

Date: 22/9/86 Surveyors: THG SAB PR

GENERAL SITE LOCATION

1. Site #: Lwq 3
2. Air photo #: F8-43
3. Topo #: 9
4. Coordinate #1: (North)
5. Coordinate #2: (East)
6. Coordinate #3:



GENERAL SITE ENVIRONMENT

7. Topography:

1. hill top
2. hill slope
3. foot of hill
4. scree
5. 1st levee (T0)
6. 2nd levee (T1)
7. terrace
8. undiff. bottoms
9.

8. Location of Artifacts

1. surface
2. ravine
3. stream bed
4. river bed
5. road cut
6. path
7. disturbance
8.

9. Vegetation

1. old field
2. present field
3. river gallary forest
4. grass/herbs/bushland
5. acacia/bushland
6. forest
7. sand-sparse bushland (commonly)
8.

10. Slope

1. flat
2. shallow
3. moderate
4. steep

11. Soil Type/Texture

1. clay/silt
2. sand
3. gravel
4.

12. Soil Color

1. white/pale
2. light brown
3. reddish
4. dark brown
5. dark grey/black
6.

Estimated

13. Depth of Deposits

1. unknown
2. none (stone floor)
3. shallow (0-20 cm)
4. medium (20 cm - 1 m)
5. deep (over 1 m)

14. Soil Erosion

1. none
2. light
3. moderate
4. heavy

need deflation / + more observation

15. Closest Water Source/Type

1. river
2. permanent stream
3. seasonal stream
4. spring/seep
5. spring/pool
6. artificial well
7. artificial pond
8. natural pond
9. swamp
10.
11.

16. Distance to Nearest Water

2 m

17. Special/Natural/Resources

1. none
2. quarriable quartz
3. quarriable chert
4. other lithics
5. pottery clay
6. hematite/magnetite
7. other

Site: Lvvq 3 Date:

18. Evidence of Wild Animal Use

(1) none
2. burrows
3. animal bones/lair
4. animal dung

19. Modern Land Use

1. unknown
2. village
3. farming
4. grazing
5. pottery firing
6. pottery storage
7. garbage pits
(8) nomadic camp
9.

20. Recency of Plowing

(1) unknown
2. never or not recently
3. recent

21. Predominant Crops

1. sorghum
2. sesame
3. maize
4. fruit trees
5. other

GENERAL SITE INFORMATION

22. Type of Archaeological Site

1. rock shelter
2. overhang
(3) open air site
4. stone cairn
5. grave/tomb
6. shrine
7. mosque
8. monument
9. building
10. homestead
11. village
12. town
13. structural feature
14.

22a Site Size (length m) 60

22b Site Size (breadth m) 35

23. Age/Cultural Affiliation

1. ~~unknown~~ LSA
2. ESA
3. MSA LSA
4. Iron Age
5. Islamic
6. Colonial
7. modern
(8) Unk ~~Ceramic~~ lithic
(9) Unk ~~Lithic~~ ceramic

24. Degree of Disturbance

(1) none
2. slight
3. moderate
4. heavy

25. Associated Features

1. storage pit
2. hearth
3. fire pit
4. earthen mound
5. stone cairn
6. stone scatter

26. Characterization of Assemblage

1. chert artifacts
2. quartz artifacts
3. other flaked stone artifact
(4) pottery
5. grinding stones
(6) metal
7. glass
8. no artifacts - features only
(9) modern - glass, metal, etc

27. Recognized Tools

1. hand axe
2. chopper
3. bifacial points
4. unifacial points
5. microliths
6. side scrapers
7. end scrapers
8. burin
9. bec/perforator
10. Levallois points/flakes
11. unshaped tools
12.
13.

28. Overall Lithic Density

(1) none
2. trace
3. light
4. moderate
5. heavy

29. % of Quartz Lithics _____

30. % of Chert Lithics _____

31. % of Other Lithics _____

32. Estimated Lithic Artifacts

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

33. Sherd Density

1. none
2. trace
3. light
(4) moderate
5. heavy

34. Estimated # of Potsherds

1. less than 10
2. 10-50
(3) 51-100
4. 101-500
5. 500-1000
6. over 1000

35. # of Grind Stones/Frags

1. less than 5
2. 6-10
3. 11-25
4. 26-50
5. over 50

36. # of Lithics (m^2) _____

37. # of Potsherds (m^2) _____

38. # of Grind Stones (m^2) ____

39. Organic Preservation

(1) bone
(2) shell
(3) charcoal
(4) ash
5. vegetal remains

40. Sampling Technique

1. random sampling
2. 100% sample
3. densest m^2
(4) ~~all~~ I.D. tools, sherds collected

Notes:

Very similar to Lwg. 1

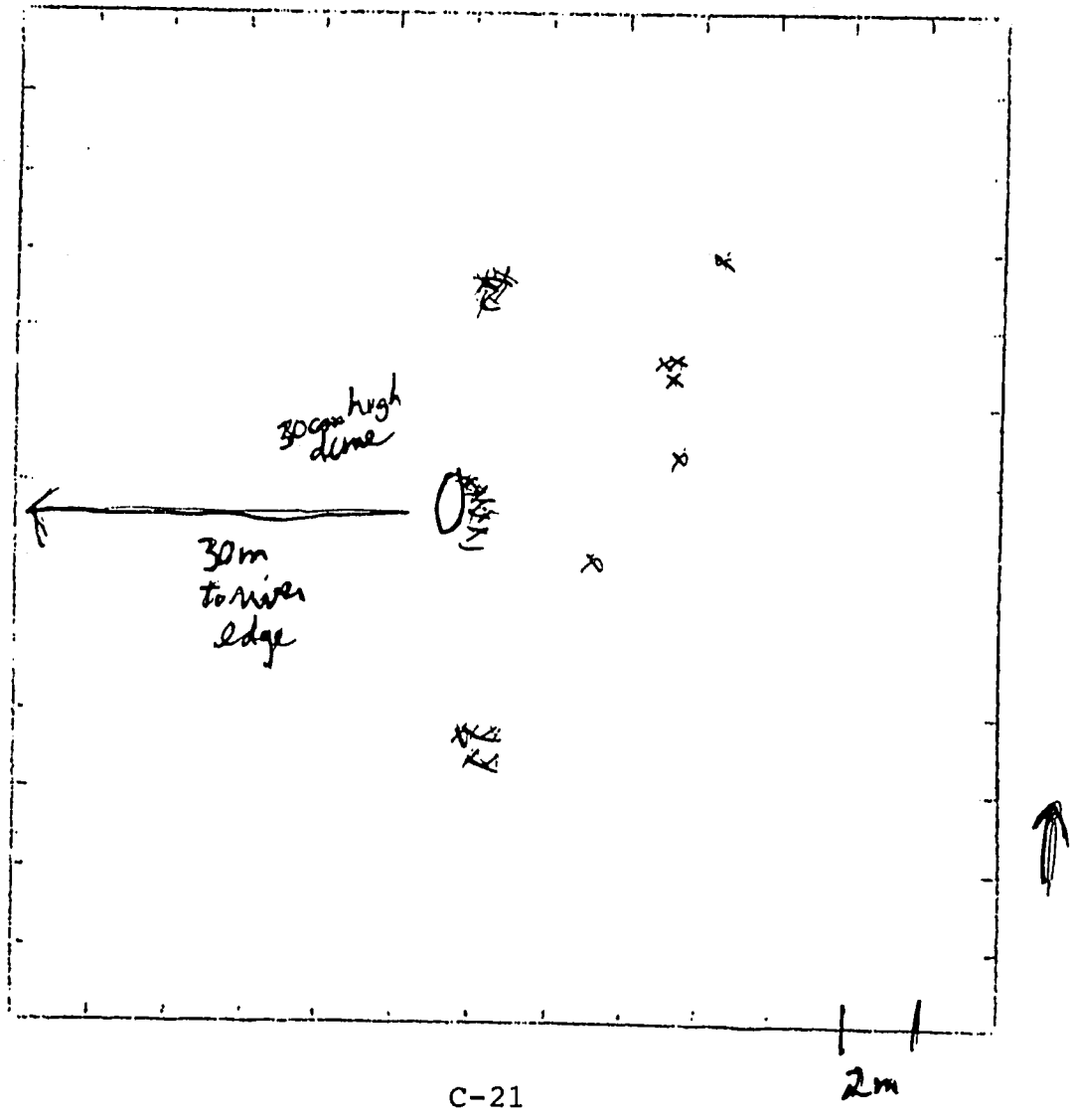
JUBBA Environmental and Socioeconomic Studies

Archeological Site Form

Date: 22-9-86 Surveyors: TTG SAB PR IN

GENERAL SITE LOCATION

1. Site #: Luuq 4
2. Air photo #: F8-43
3. Topo #: 9
4. Coordinate #1: (North)
5. Coordinate #2: (East)
6. Coordinate #3:



GENERAL SITE ENVIRONMENT

7. Topography:

1. hill top
2. hill slope
3. foot of hill
4. scree
(5) 1st levee (T0)
6. 2nd levee (T1)
7. terrace
8. undiff. bottoms
9.

8. Location of Artifacts

(1) surface
2. ravine
3. stream bed
4. river bed
5. road cut
6. path
7. disturbance
8.

9. Vegetation

1. old field
2. present field
3. river gallary forest
4. grass/herbs/bushland
5. acacia/bushland
6. forest
(7) ~~dusty bush~~ cleared/deforested
(8) sandy bush

10. Slope

(1) flat
2. shallow
3. moderate
4. steep

11. Soil Type/Texture

1. clay/silt
(2) sand
3. gravel
4.

12. Soil Color

1. white/pale
(2) light brown
3. reddish
4. dark brown
5. dark grey/black
6.

Apparent

13. Depth of Deposits

1. unknown
2. none (stone floor)
(3) shallow (0-20 cm)
4. medium (20 cm - 1 m)
5. deep (over 1 m)

14. Soil Erosion deflation yes

1. none
(2) light
3. moderate
4. heavy

15. Closest Water Source/Type

(1) river
2. permanent stream
3. seasonal stream
4. spring/seep
5. spring/pool
6. artificial well
7. artificial pond
8. natural pond
9. swamp
10.
11.

16. Distance to Nearest Water

30m

17. Special/Natural/Resources

1. none
2. quarriable quartz
3. quarriable chert
4. other lithics
5. pottery clay
6. hematite/magnetite
7. other

Site: Lvvq 4 Date:

18. Evidence of wild Animal Use

(1) none
2. burrows
3. animal bones/lair
4. animal dung

19. Modern Land Use

1. unknown
2. village
3. farming
(4) grazing
5. pottery firing
6. pottery storage
7. garbage pits
8.
9.

20. Recency of Plowing

(1) unknown
2. never
3. recent

21. Predominant Crops

1. sorghum
2. sesame
3. maize
4. fruit trees
5. other

GENERAL SITE INFORMATION

22. Type of Archaeological Site

1. rock shelter
2. overhang
(3) open air site
4. stone cairn
5. grave/tomb
6. shrine
7. mosque
8. monument
9. building
10. homestead
11. village
12. town
13. structural feature
14.

22a Site Size (length m) 2

22b Site Size (Breadth m) 2

23. Age/Cultural Affiliation

1. unknown
2. ESA
3. MSA
4. Iron Age
5. Islamic
6. Colonial
7. modern
(9) unk Later ceramic

24. Degree of Disturbance other than erosion gullies

(1) none
2. slight
3. moderate
4. heavy

25. Associated Features

1. storage pit
2. hearth
3. fire pit
(4) earthen mound - possibly man-made natural
5. stone cairn
6. stone scatter

26. Characterization of Assemblage

1. chert artifacts
2. quartz artifacts
3. other flaked stone artifact
(4) pottery
5. grinding stones
6. metal
7. glass
8. no artifacts - features only

27. Recognized Tools

1. hand axe
2. chopper
3. bifacial points
4. unifacial points
5. microliths
6. side scrapers
7. end scrapers
8. burin
9. bec/perforator
10. Levallois points/flakes
11. unshaped tools
12.
13.

28. Overall Lithic Density

(1). none
2. trace
3. light
4. moderate
5. heavy

29. % of Quartz Lithics _____

30. % of Chert Lithics _____

31. % of Other Lithics _____

32. Estimated Lithic Artifacts

1. less than 10
2. 10-50
3. 51-100
4. 101-500
5. 500-1000
6. over 1000

33. Sherd Density

1. none
2. trace
3. light
(4). moderate
5. heavy

34. Estimated # of Potsherds

1. less than 10
2. 10-50
(3). 51-100
4. 101-500
5. 500-1000
6. over 1000

35. # of Grind Stones/Frags

1. less than 5
2. 6-10
3. 11-25
4. 26-50
5. over 50

36. # of Lithics (m^2) _____

37. # of Potsherds (m^2) _____

38. # of Grind Stones (m^2) _____

39. Organic Preservation

1. bone
2. shell
(3). charcoal
4. ash
5. vegetal remains

40. Sampling Technique

1. random sampling
2. 100% sample
3. densest m^2
(4). ~~all~~ I.D. tools, sherds collected

Notes:

Muhamad says the 2m long erosional remnant with concentration of pottery is gradine - but pottery is in 4 loci on site remnant is linear and goes NW-SE

APPENDIX D

Proposed Personnel for Phase II Archaeological Survey

Dr. Steven Brandt, project director

Thomas Gresham, field director

4 American graduate students

4 SOMAC and/or MJVD counterparts

3 cooks

1 camp assistant

2 animal drivers/packers

2 policemen

2 local survey assistants

1 driver

Southern Team

2 Americans
SOMAC or MJVD counterpart
cook
trail guide
policeman

Central Team

2 Americans
2 SOMAC or MJVD counterparts
cook
camp assistant
driver
2 local survey assistants

Northern Team

2 Americans
SOMAC or MJVD counterpart
cook
trail guide
policeman