Painted in broad terms, my research interests are directed towards understanding the relationship between ritual and ideology. From a theoretical perspective my purpose is to investigate how differing levels of access to sacred landscape features can inform us about the development and maintenance of social control. With funding from the Foundation for the Advancement of Mesoamerican Studies, Inc. (FAMSI) grant number 95110, a regional analysis has been undertaken of caves in Belize, Central America, that have been architecturally or otherwise modified by the ancient Maya.
Introduction

In Belize, cave research has been hampered by the absence of a coherent list of site names and their alias, survey and mapping histories, a centralized and standardized series of maps with accompanying photographs, and an accurate record of location information. In the absence of such a standardized record the voluminous data generated over the past 100 years, while interesting and of great intrinsic value, can have little impact from an archaeological perspective. With FAMSI support a rich and significant database has been created by accessing previously unpublished and archived material from a wide variety of sources to supplement the published literature. In its final form this material will serve not only to address the research question stated at the outset of this project, but will also act as a substantial resource with which to contextualize and assess ongoing studies.

The following brief history of cave studies in Belize clearly demonstrates the utility of the data collection strategy undertaken. Following, preliminary results of data acquisition are presented. Sincere thanks are offered to all of the individuals who contributed their time, energy, and dedication to this project.

Attenuated History of Cave Research in Belize–Data Acquisition Strategy

Beginning at least as early as 1918 with the work of Thomas Gann (1918), Captain Joyce (Joyce et al., 1928), and Gregory Mason (1928), cave studies in Belize have enjoyed a colorful if somewhat irregular history. It was not, however, until the early 1950’s and 60’s after the installment of A. Hamilton Anderson as the first Archaeological Commissioner, that cave studies in Belize could be said to have truly begun. Together with cave enthusiasts Frank Norris and Ford Young, and after 1961 with archaeologist David Pendergast, Anderson would go on to explore and record numerous caves in Belize until his death in 1967.

While Anderson’s published accounts (cf. Anderson, 1952) clearly telegraph his abiding interest in Maya cave use, it is in his unpublished papers and personal photographs that his fascination becomes apparent. Archived in England by his family since 1967, Anderson’s personal papers, journals, extensive photographic collection, and mementos from his years in Belize present the contemporary archaeologist with a wealth of irreplaceable data. In 1996 permission was received from the Anderson family to
evaluate and incorporate this data into my research. In addition to papers, over 260 photographs were obtained and have been digitized (Figure 1). These include the only complete photo record of the excavations at Las Cuevas conducted in 1957 by Anderson with Adrian Digby of the British Museum. Adrian Digby has also provided me with a copy of the only detailed report of excavations at the caves (Digby, n.d.). Together with the photographs it is now possible for the first time to assess more fully the extensive modifications at the site of Las Cuevas.

Figure 1: Dry-laid masonry retaining wall with plastered platform surface. Entrance chamber, Las Cuevas, Belize.
David Pendergast who has allowed me access to his previously unpublished cave photographs has also contributed significantly to the development of a detailed photographic record for this early period of cave research in Belize.

By 1984 a total of 65 cave sites were reported (Hartshorn et al., 1984:133-136 Appendix A), although only a handful had undergone systematic excavation and been published (cf. Pendergast, 1962; 1964; 1966; 1968; 1969; 1970; 1971; 1971a; 1972; 1974; Graham, McNatt and Gutchen, 1984; Palacio, 1977). This rapid increase in the number of known caves was largely a result of the efforts of a group of dedicated spelunkers assigned to the Belizean Department of Archaeology (DOA) under a joint Smithsonian - Peace Corp initiative. However, the thrust of this program was to a great extent designed to aid the DOA to locate and thus monitor archaeological cave resources that were to a growing extent at risk from the activities of looters (Figure 2). As a result, while preliminary mapping and limited surface collections were conducted, little excavation was undertaken and virtually none of this information has reached print in any form. With the invaluable assistance, including access to personal notes and photographs of Logan McNatt, and Barbara McLeod, among others, much of this data has now been examined, synthesized and incorporated into the current research.

In addition to cave investigation with an archaeological thrust, throughout the 1970's, 1980's, and to this date, other researchers were taking interest in the caves of Belize. Among these, Tom Miller, a karst geologist and avid cave enthusiast stands out for his contributions. While Miller's list of publications is extensive (cf. Miller, n.d.a; n.d.b.; 1974; 1979; 1980; 1981a; 1981b; 1984a; 1984b; 1985; 1986a; 1986b; 1986c; 1986d; 1989a; 1989b; 1989c; 1989d; 1989e; 1989f; 1989g; 1989h; 1990a; 1990b; 1991; among others), the significance of his work to archaeological cave research in Belize has not been widely recognized due to its presentation in caving oriented journals.

Among the numerous caves Miller discovered, explored, and surveyed both on his own and with others - perhaps his most striking contribution in archaeological terms was the discovery of the Chiquibul System in 1982 (Miller, 1984a:1). With funding from the National Geographic Society, the expedition members mapped over 100 km of passage during three seasons, 1984, 1986, and 1988. Logan McNatt participated in the 1984 and 1986 seasons as the project archaeologist. During that time extensive notes and plans, photographs and maps of the Actun Kabal Group were produced (cf. McNatt, n.d.a; n.d.b; n.d.c; 1984a; 1984b; 1984c; 1984d; 1986). This Group in the Chiquibul System exhibits areas of extensive modification, particularly in the Chiquibul Chamber, Ledge of Offerings, and Kotob Entrance. Where the System extends into Guatemala, elaborate modifications have been reported at Actun Zactun (Figure 3) (cf. Bloesser, 1986; McNatt, 1986; Miller, 1986d), and Actun Xibalba (Miller, n.d.a; 1986d; 1989a).
Figure 2: Masonry stairs and retaining wall, main entrance, Petróglyph Cave, Belize.
While progress reports were completed for the National Geographic Society, filed with the DOA, and numerous brief articles published (cf. McNatt and Miller, above), without synthetic treatment the Chiquibul System remains poorly known. With the assistance of numerous Chiquibul Project participants, and the unflagging enthusiasm of Logan McNatt, much of this material has now been acquired and will be made available to the archaeological community through inclusion in my dissertation.

The late 1980’s and early ’90’s also saw the arrival on the Belize caving scene of a number of well organized and funded caving expeditions from the U.K. Of particular note are the various projects of Queen Mary College/Below Belize (Marachov & Williams, eds. 1992; Marachov and Williams, 1989; Roberts, 1986; 1990; Williams, 1988; 1989; 1992a; 1992b; 1994; 1996; Williams, ed. 1992; Williams and Clark, 1990). As with the work of Tom Miller, while well published within the caving venue - much of this material has remained well outside the purview of archaeological inquiry. With the assistance of Nick Williams and the British caving community, particularly in the area of clarifying numerous cave locations, this information will be incorporated into the archaeological record.
Results

In recent years, the increasing numbers of field-based projects in Belize with either a cave focus or cave component clearly demonstrates a growing archaeological interest in caves. However, an extensive body of data exists which pre-dates these more recent studies and provides a rich source of material with which to address the role of caves in ancient Maya society.

As a direct result of the research conducted with funding from FAMSI, 304 cave entrances representing over 250 caves, have been documented. Seventy (28%) of these caves were modified by the ancient Maya of Belize. To date in excess of 220 features have been identified. Nearly 100 maps, plans and sketches illustrating these modifications have been scanned and are being redrawn and standardized for inclusion in the final dissertation. Some 175 photographs documenting the range of cave modification have now been digitized, and where necessary given the age or condition of the original, being photo-enhanced. Where appropriate or necessary, photos will be incorporated with computer generated cave maps to illustrate features where no drawings are available. Wherever possible accurate UTM (Universal Trans Mercator) coordinates have been obtained. All of the cave entrances with known locations have been plotted on the 1:50,000 series topographic sheets for Belize. Digitized in 10 km squares, these distribution outsets will be redrawn with minimal topographic information and included in the final dissertation. In addition, the entire known corpus of caves will be plotted against the known distribution of surface sites to generate a surface distribution of these features.

Synthesis and analysis of these materials will provide a detailed and much needed contextual assessment of Maya cave use and modification in Belize from a broad regional perspective. Further, this project will contribute directly to the ongoing management of this non-renewable cultural resource by the government of Belize. Following completion of my research a copy of the complete database, as well as digitized photographs, cave maps, feature drawings, and UTM coordinates will be provided to the Department of Archaeology in Belize. Accurate location data, in conjunction with an inventory of utilized caves by mapping, photography, and written documentation are urgently required in the rapidly developing environment of the Belizean eco-tourism industry which, if not managed will have considerable, and possibly irreparable negative impact on this unique cultural resource.
Figure 4: Constructed Platform Groups - Chiquibul Chamber, Kabal Group, Chiquibul System, Belize, C.A.
Figure 5: Outset After Figure 4 - Architectural features - Chiquibul Chamber, Kabal Group, Chiquibul System, Belize, C.A.
Figure 6: Terrace Group 5 - Planar view - Chiquibul Chamber, Kabal Group, Chiquibul System, Belize, C.A.
List of Figures

**Figure 1:** Dry-laid masonry retaining wall with plastered platform surface. Entrance chamber, Las Cuevas, Belize.

**Figure 2:** Masonry stairs and retaining wall, main entrance, Petróglyph Cave, Belize.

**Figure 3:** Constructed wall with central opening - entrance, Actun Zactun, Chiquibul System, Guatemala.

**Figure 4:** Constructed Platform Groups - Chiquibul Chamber, Kabal Group, Chiquibul System, Belize, C.A.

**Figure 5:** Outset After Figure 4 - Architectural features - Chiquibul Chamber, Kabal Group, Chiquibul System, Belize, C.A.

**Figure 6:** Terrace Group 5 - Planar view - Chiquibul Chamber, Kabal Group, Chiquibul System, Belize, C.A.

Sources Cited

Anderson, A. H.

Blosser, Bret

Digby, Adrian
n.d. Untitled Manuscript (Las Cuevas). Received from Adrian Digby, September 1996.

Gann, Thomas

Graham, Elizabeth, Logan McNatt and Mark A. Gutchen


Joyce, T. A., T. Gann, E. L. Gruning, and R. C. E. Long


Marachov, Nick, and Nick Williams


Marachov, Nick, and Nick Williams, eds.


Mason, Gregory


McNatt, Logan


McNatt, Logan


Miller, Thomas E.


1974  "Belize." Unpublished manuscript on file at the Department of Archaeology Library, Belmopan, Belize.


Miller, Thomas E.


1989c "Belize Expedition: Let's Put the Record Straight." Caves & Caving 44:12.


Palacio, Joseph O.

Pendergast, David M.
1964  "Excavaciones en la cueva Eduardo Quiroz, Distrito Caya, Honduras Británica." Estudio de Cultura Maya 4:119-139.


Pendergast, David M.


1972  "When the Counting Stopped." Archaeological Newsletter, News Series No. 84, Royal Ontario Museum, Toronto, Ontario.


Roberts, Charlotte A.

1990  "Observations of Mayan Cave Archaeology in Belize." Cave Science 17(3):123-129.

Williams, Nick


Williams, Nick, ed.  

Williams, Nick, and Tina Clark, eds.  