

DOUBTS ABOUT HOW THE MIDDLE HORIZON COLLAPSED (C. AD 1000), AND
OTHER INSIGHTS FROM THE LOOTED CEMETERIES OF THE LOWER ICA VALLEY,
SOUTH COAST PERU.

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Abstract

This paper presents new information from funerary contexts in the lower Ica Valley, south coast of Peru, spanning two millennia from the end of the Early Horizon to the Late Intermediate Period. Although severely looted, these sites can still yield valuable information. We discuss their architecture and material culture in the context of radiocarbon dates. Among other findings, these cast new light on the poorly understood transition from the Middle Horizon to the Late Intermediate Period, for which a paucity of archaeological data from c. A.D. 1000 to 1250 has long been taken as evidence of an environmentally or socially-induced demographic collapse. Yet the data we present here suggests that the basins of the lower Ica Valley were likely occupied *continuously* over this period, and that the echoes of Wari influence here may have lasted longer than previously thought.

Keywords

South coast Peru, burial archaeology, chronology, Middle Horizon, Late Intermediate Period

Introduction

The south coast of Peru is one of the world's driest deserts but is traversed by lush riverine oases draining the western flanks of the Andes wherein a number of distinctive and shared cultural trajectories waxed and waned over the millennia that preceded the Spanish conquest, shaped in part by the region's distinctive geomorphology, climate and hydrology (e.g. Willey 1971: 78). Those include the beginnings of irrigated agriculture during early Ocucaje phases c. 750 B.C., culminating in intensified interactions with the highlands during the Early Horizon (late Ocucaje, or 'Paracas' phases), and which evolved into the flourishing Nasca societies of the subsequent Early Intermediate Period (c. 0-500 A.D.). Late Nasca society seemingly fragmented, perhaps in the face of a rising power in its adjacent highland hinterlands at Wari in Ayacucho, which arose to dominate the south coast during the Middle Horizon and apparently marked "the virtual replacement of one culture by a radically different one on the south coast" (Rowe 1956: 148). By around A.D. 1000 Wari itself had collapsed and the subsequent Late Intermediate Period saw new polities and burgeoning demographics on the south coast including that of Chinchá, which seemingly enjoyed particular status under the Inca Empire (or Late Horizon) in the fifteenth century (Cieza de León 1995 [1553]).

The archaeological record of the south coast has been investigated since the pioneering work of Uhle (1924) at the start of the twentieth Century (e.g. Kroeber 1944; Rowe 1956; Strong 1957; Engel 1981), with much focus on survey and settlement pattern studies in the Río Nazca drainages (Schreiber 1999; Silverman 2002a; Reindel and Wagner 2009, Sossna 2015), or on the monumental site of Cahuachi (Silverman 1993; Orefici 2012). Thousands of the region's funerary contexts have been looted, while those few that have been excavated have been variably reported (see Pezzia 1968; Tello and Mejía 1967, 1979; Menzel 1976; Carmichael 1995; Kroeber and Collier 1998), all of which serves to hinder spatial or temporal comparisons of south coastal burial customs. While focus on the Río Nazca is understandable because of its

wealth of visible sites, the Ica Valley has also had a significant role to play (Massey 1986; Cook 1994), not least because its ceramic sequences (Menzel 1964, 1976; Menzel *et al.* 1964) underlie Rowe's (1967) widely used chronology for all Andean prehistory. Yet certain parts of that sequence are only now being tied to absolute radiocarbon dates on the south coast, in particular for Nazca and Palpa areas (see for example Unkel and Kromer 2009; Unkel *et al.* 2012), while others remain to be clarified or refined.

Human remains from looted sites in the lower Ica Valley have yielded important information on changing palaeodiet over almost two millennia (Cadwallader 2013), while their radiocarbon dates (Cadwallader *et al.* 2015) have shown these sites to be a valuable source of information despite their disturbed contexts. In this study we examine the burial contexts of the lower Ica Valley and their associated material culture for insights they offer into occupation here, and for how they correspond to the wider south coast archaeological record.

Our study area is the Samaca and Ullujaya basins of lower Ica Valley (FIG. 1) the western margins of which are lined with the cemeteries of the various cultural groups who inhabited them over the two millennia before the Spanish conquest. Downstream of these basins the Río Ica enters a narrow canyon through which it continues to the Pacific Ocean.

[Insert Figure 1 around here]

We report here on a selected subset of seven funerary contexts: four in the Samaca basin and three in Ullujaya out of a total of 34 such contexts that we have recorded in these basins. These seven sites were chosen because initial evaluations suggested they each pertained to a single cultural period, and because they also offered sufficiently well preserved human remains for the palaeodietary analysis carried out by Cadwallader (2013). All of the funerary contexts of the lower Ica Valley have been subjected to looting of varying severity throughout the twentieth century by *huaqueros*, often colluding with landowners, to supply lucrative, so-called 'art',

markets (see Rowe 1979, 1992; Burger 1992; MMA 2013). Their surfaces are littered with the detritus of that looting in the form of fragments of material culture and human remains, but they each preserve vestiges of material culture that define discrete periods of use. Looting in Samaca has now ceased thanks to the protection of the local landowner, although archaeological sites elsewhere on the south coast of Peru, are still depressingly subject to such depredations. Diagnostic material (ceramics and textiles) that could be used to date the sites was gathered during systematic field-walking surveys of the sites for the purpose of collecting human and faunal remains from the surface for palaeodietary investigations (Cadwallader 2013). The majority of the observations about the other aspects of the funerary contexts, e.g. architecture, grave goods, etc. were also made at the same time, and combined with wider surveys of the two basins (Beresford-Jones 2011). This research shows that despite the loss of most archaeological context these sites can still yield data of value to our understanding of the rich prehistory of the south coast of Peru.

Sites of the Lower Ica Valley

We begin by briefly describing each site studied here: their locations, burial architectures, associated grave goods and their approximate size, based on the visible limits of looting activity and/or modern truncation of these sites. Human remains found in the sites show varying degrees of preservation depending upon the severity of, and the time elapsed since, looting. Yet, because of the region's arid climate each of these funerary contexts — especially 398, 755 and 1003 — yielded examples of preserved soft tissues (hair, skin, etc.). The vast majority of their human remains are completely disarticulated, although incidences of articulated limbs and/or parts of the torso were observed in all contexts except 1001 and 1002.

Late Ocucaje – Nasca Transition (Sites 1001, 1002 and 1004)

Three sites (1001, 1002 and 1004) were recorded, putatively dated to the Late Ocucaje period (phases 9/10 to Nasca 1) by virtue of their associated material culture remains. Sites 1001 and 1002 are located close together, at the southern end of the Samaca basin, just above the current river floodplain at around 210 masl (these probably correspond to H3 and H7 in Cook's 1994 survey of the valley). Site 1004, meanwhile, is located high on the *Tablazo de Ica* pampa, over 100 m above the current river floodplain at around 320 masl (FIG. 1). Sites 1001 and 1002 show little evidence of being associated with habitation and therefore are considered to be cemeteries, whereas site 1004 does show some suggestions of associated habitation (although all these sites are highly disturbed).

Cemetery 1001 measures approximately 140 m from east to west and 30 m north to south (FIG. 2). Its eastern end shows the most evidence of looting. Based on the depth of the looted pits and their infilling of wind-blown deposits it seems evident that this cemetery was looted some time ago — perhaps in the mid twentieth century. Only one tomb structure — a circular pit (ca. 1.2 m in diameter) — was observed. Archaeological material was spread across the whole cemetery area including: a few diagnostic ceramics dating to Ocucaje Phases 9 and 10 (cf. Menzel *et al.* 1964); a fragment of 'Paracas' stem-stitch embroidered textile (cf. Stone-Miller 1992: 91); and fragments of cotton (*Gossypium* sp.) nets; and a mica pendant. Human remains and desiccated plant remains, including a maize (*Zea mays*) husk, maize cobs and reeds (*Cyperus* sp.), were occasionally recovered, as were scant faunal remains, including camelid bones, fish bones, marine mollusks and terrestrial mollusks (family Bulimulidae) collected from nearby *lomas* (fog meadow) ecologies.

[Insert Figure 2 around here]

Cemetery 1002 is approximately oval shape, with its longest dimension along a northwest-southeast axis of approximately 85 m in length and a northeast-southwest axis of approximately 51 m (FIG. 2). Just as for cemetery 1001, looting here took place some time ago, although its northeast part shows heavy disturbance. Any evidence for tomb structures is uncertain. Wooden posts and reeds were observed in the spoil of looter's disturbance, possibly remnants of *barbacoa* (see Tello and Mejía 1979: 493), whereby tombs or pits are roofed with wooden beams and reed matting. Most diagnostic pottery fragments recovered were Ocucaje Phases 9 and 10, although a few fragments of slip-decorated Early Nasca pottery were also recovered. Other surface remains comprised human remains and some plant materials of pacay leaves (*Inga feullei*) and maize. Faunal remains of camelid, marine and terrestrial lomas mollusks were also observed.

Site 1004 is the largest of the three Late Ocucaje contexts, encompassing an area of approximately 700 m by 250 m and divided into five sectors (FIG. 3). Site 1004 is also located adjacent to a concentration of trapezoid geoglyphs, although aside from that striking spatial association, there is no evidence that these were contemporary. While its human remains and looted condition clearly indicates that it contains numerous mortuary contexts, there are also some suggestions that these may have been set amidst a habitation site (or sites).

[Insert Figure 3 around here]

Looted burial contexts were noted in four out of the site's five sectors although most occurred in just two sectors (Sectors B and C). No tomb structures were observed although reeds are present in the spoil heaps of Sector B. Close to one of the concentrations of human remains in Sector C, many fragments of large *olla*, cooking jars in forms typical of the Late Ocucaje period (e.g. Menzel *et al.* 1964: 344), were observed. These may have been used for infant burials, although no direct evidence of this was noted. Diagnostic pottery fragments of Ocucaje 9 and

10 and Nasca 1 were recovered, including: burnished black ware with incised designs; incised, resin-painted designs; negative designs and panpipe fragments (cf. Menzel *et al.* 1964: 369-382 and see FIG. 4). A few slip-decorated Nasca phase 2/3 fragments were recovered from the northern extreme of Sector B. Fragments of 'Paracas' textile border executed in stem-stitch embroidery were recovered in association with one of the individuals sampled (FIG. 4H, cf. Stone-Miller 1992: 91). Fragile and poorly preserved fragments of plain weave cotton textile were associated with some other individuals sampled.

[Insert Figure 4 around here]

Two individuals, a child (Sector B) and an adult (Sector C), were observed in a well-preserved state, although their burials had been disturbed. The body of the adult had an extended upper half and the hips and knees were flexed, in a crouched or fetal position. This individual had been interred in a roughly circular pit. The child burial was also found in a small circular pit, and although it had been truncated at the upper torso, the positioning of the rest of the body suggests this infant was buried in a cross-legged sitting position (FIG. 4G). A red plain weave textile wrapped the body of the child.

Other finds and artifacts observed in this site include: *batan* grinding stones; numerous finely-made obsidian points, cores and lithic debitage; occasional construction materials including reed matting and a few huarango (*Prosopis* sp.) posts; utilitarian items such as cotton nets, perhaps for fishing; used cooking pots; wooden agricultural implements; well-preserved, desiccated plant remains of maize, peanut (*Arachis hypogaea*) shells, pacay pod fragments, desiccated manioc (*Manihot esculenta*) tubers and pumpkin (*Cucurbita* sp.) seeds (see Beresford-Jones *et al.* 2011); abundant camelid bones; and marine and terrestrial mollusks (FIG.4J).

This range of finds and artifacts is strikingly similar to the Ocucaje 10 grave goods reported by Silverman (2002b) from Rubini's excavations in the Ocucaje basin. Site 1004 is, of course, heavily looted. Nonetheless, some aspects suggest that it might encompass habitation refuse as well as grave goods: not least the occasional heavy batan grinding stone, the fact that camelid remains are apparently more than four times as abundant as human remains, and the quantities of charcoals and burnt cooking vessels evident in parts of the site.

Late Nasca – Middle Horizon Transition (Cemetery 734)

Cemetery 734 is located at around 230 masl on the edge of the Ullujaya basin at the margins between bluffs of sedimentary rock and its relict river terrace (FIG 5). The site's north-eastern edge is truncated by a modern irrigation canal. The site is orientated along a northeast-southwest axis, approximately 105 m by 41 m in size. There is some evidence for tomb structures in its surface remains in the form of construction materials of reeds and a few huarango timbers and a short fragment of *quincha* wall apparently in situ. It is not possible, however, to discern clearly any tomb architecture. There is no evidence to suggest the site was used for activities other than burials.

[Insert Figure 5 around here]

Among the detritus of looting are many fragments of *ollas* and diagnostic pottery fragments of Late Nasca (Dawson Phases 7 and 8); *pallar* (*Phaseolus lunatus*) pods and beans; notable concentrations of mussel and clam shells; quantities of raw cotton (*Gossypium* sp.); and plain weave gauze-like, tie-dyed textile fragments - one with yellow rings on a red background, a dark blue fragment and a yellow fragment (cf. Stone-Miller 1992:99-101).

Some information on burial position was observed from the head and torso remains of one individual, which were in an extended position with the arms folded across the chest.

Middle Horizon (Cemeteries 398 and 755)

Two cemeteries putatively dated to this period are located in the Ullujaya basin: cemetery 398 is located on sedimentary bluffs overlooking the relict river terrace of the basin at around 250 masl, whilst cemetery 755 is located on the barren duracreted surface of that relict river terrace at 230 masl (FIGS. 5 and 6). Neither context is associated with any settlement or habitation features, suggesting that they were purely cemeteries.

Remains of Middle Horizon occupations in the Samaca and Ullujaya Basins are very scarce (see Beresford-Jones 2011), but more substantial settlements are reported in the upstream Callango basin and elsewhere in the Ica Valley (Cook 1994, Cook and Parrish 2005).

[Insert Figure 6 around here]

Cemetery 398 runs north-south along the steep bluff edge for around 145 m, with width of about 15 m at its southern end and 22 m at its northern end. Just below the main cemetery area was a small platform feature around 15 m square. By virtue of its relatively inaccessible position, cemetery 398 was spared from the looting with heavy machinery which was inflicted upon some sites in these basins in the late 1990s. When it was first surveyed in 2006, it was clear that looting by hand here had only recently happened, and indeed was still on-going.

Although the site is now very disturbed, some fairly intact remnants of tomb architecture were observed and some still remain, in the form of rectangular rooms aligned east-west of adobe with mud mortar. At the northern end of cemetery 398 some tombs were constructed using the natural rock for their western walls with their other walls constructed of pieces of sedimentary rocks set into mud mortar. Extant rectangular tombs observed in cemetery 398 were substantial: spaced around 6 m apart and each around 1.75 m in width and between 4.5 m and 7 m in length. Large huarango beams were observed in looter's spoil, or still in situ supporting *barbacoa* tomb roofs covered with reeds tied in bundles (FIG. 7A), which are evident throughout the cemetery.

Some of these timbers were very large, up to 1.5 m in diameter, far larger proportions than any living trees today in the lower Ica Valley (Beresford-Jones 2011: 113).

[Insert Figure 7 around here]

Artifacts observed on the surface of cemetery 398 include Late Nasca (7/8) and Epoch 2 Middle Horizon pottery fragments (cf. Menzel 1964: Plate IX), enormous quantities of raw, unspun cotton and fragments of dark blue plain weave textile tie-dyed with red and white diamond shapes, or in green with yellow tie-dyed shapes (cf. Stone-Miller 1992: 99-101). Other finds included a weaver's basket of spindle whorls with partly spun cotton and balls of white cotton yarn; a few fragments of worked *Spondylus* sp.; and remains of marine mollusks, maize, and camelids, including an naturally mummified neonate (FIG. 7E).

Cemetery 755 is one of several located on the barren duracreted surfaces of the relict river terraces which are such a dominant feature of the floodplain landscape in these basins today (FIG. 6). Various lines of geoarchaeological and archaeological evidence, including relict canal courses, suggest that these terraces were vegetated and productive during the Early Nasca Period up until at least A.D. 550 (Beresford-Jones 2011).

Covering an area of around 94 m by 60 m this once extensive site, already severely looted when it was first surveyed in 2006, has been more recently truncated by a large trench dug with heavy machinery as part of a water management scheme. Prior to this latest damage it comprised 36 rectangular gallery tomb structures orientated east-west, some having a lining of adobe bricks and some of those being plastered. These were of various dimensions: between 1 m and 1.5 m wide and up to 19 m in length, although most were around 10 m long (FIGS. 6, 8). These gallery tombs all clearly had *barbacoa* roof structures of worked huarango timbers, a few of which were still in situ in 2006. All have now been removed, probably for burning as fuel. The site also has several, far smaller, round cut pits of around 50 cm in diameter (FIG. 8A) that are

probably single graves for children, because one contained several disarticulated skeletal elements of an infant aged 5-6 years old, along with plain textiles, a comb and hair piece (Cadwallader 2013). There is also intriguing evidence of intense fires within the area of funerary context 755 in the form of well-defined fire scars of rubified silt up to 10 cm in depth, although, aside from their intimate spatial association, there is no evidence that these were contemporary.

Among the looter's detritus at cemetery 755 many pottery fragments were recovered. Some of these could be assigned to Middle Horizon 2B (cf. Menzel 1964: Plate IX). Most, however, could be assigned to "Early Ica – Epigonal" (Kroeber and Strong 1924), "Chulpaca A" (Pezzia 1968: 230, 252-253), and/or Ica I (Lyons 1966): all of which we prefer to lump, conservatively, as Middle Horizon 4 (following Menzel 1964: 65 and Menzel 1976: 1-5). Other finds included three fragments of Late Intermediate Period ceramics; and many textile fragments including, fragments of cotton slings, tie-dye textiles (dark blue plain weave with red and yellow tie-dyed diamonds), complementary warp faced textiles, dark red plain weave textiles, plain weave heavy white cotton textiles and feather textiles (dark blue plain weave with yellow and orange feathers attached in dense, regular rows). Tie-dyed textiles are commonly assigned to the Middle Horizon (e.g. Stone-Miller 1992: 99-101). The fragments of complementary warp faced textile, meanwhile, share certain structural features with those assigned to the Late Intermediate in Ica (cf. Rowe 1979: 164), and yet their iconography is generally quite distinct (FIGS. 8E, 8G). Other artifacts included many plaited human hair braids (cf. Stone-Miller 1992: 122), worked *Spondylus* sp. fragments, large clam shells (*Cumingia mutica*) containing vestiges of red pigment (FIG. 8F), and small fragments of copper (likely of personal adornment).

[Insert Figure 8 around here]

The most obvious characteristic of these looted Middle Horizon contexts in the lower Ica Valley is their vast quantities of unspun, and partly spun, raw cotton, almost certainly used to stuff the now destroyed funerary bundles. Thick circular mats made of, and stuffed with, cotton, on which funerary bundles sat are also commonly noted (FIG. 8H). Plant remains apart from cotton were few: maize, beans (*P. lunatus*), guayaba (*Psidium guajava*) and pacay. Only few camelid bones were observed.

Late Intermediate Period (Cemetery 1003)

Cemetery 1003 is the remains of a large cemetery in the Samaca basin on margins between the sedimentary rock bluff and dune deposits on the edge of the river floodplain. Its eastern edge is truncated by a modern irrigation ditch and road. The main part of cemetery 1003 measures 176 m by 161 m but its dimensions are obscured by the looting with a bulldozer that occurred in the late twentieth century (FIG. 9). Only one clear rectangular adobe tomb structure remains of around 3 m by 4 m, at a considerable depth of around 6 m within the huge mounds of sand and human remains that give 1003 its grisly and depressing aspect today. Huarango beams and adobe bricks are, however, scattered across its surface. The majority of the material culture in the form of pottery and textile fragments from 1003 date from Ica Phases 6-10 of the Late Intermediate Period to Late Horizon (Menzel 1976; Rowe 1979, 1992). There are also, however, some Middle Horizon 4 pottery fragments, as defined above. Several naturally mummified human heads showed evidence of red pigment applied to their facial skin (FIG. 10). Others preserved textile impressions on their facial skin indicating that they were buried wrapped in cloth.

[Insert Figures 9 and 10 around here]

Most of the moderate amount of animal remains observed were camelid bones. There was a notable absence of *lomas* snail and marine shells observed in 1003, rather in contrast to the

other contexts described here. Plant remains were found scattered across the cemetery, most frequently utilitarian plants, i.e. cotton (both processed and raw), plant fiber cords and gourds. There were also edible plant remains such as maize and bean (*P. lunatus*). Other artifacts observed on the surface of the cemetery include worked *Spondylus* sp. fragments, occasional small metal fragments and beads (including green sodalite). None of cemetery 1003's artifacts or features suggest that it was anything other than a cemetery.

Discussion

Late Ocucaje – Nasca Transition Funerary Contexts

Three lower Ica Valley sites: 1001, 1002 and 1004, share features that resonate with those of other published Late Ocucaje (aka 'Paracas') contexts (Pezzia 1968; Isla 2009), such as their associated artifacts and materials, including plain and decorated textiles, ceramics, worked obsidian and their associated vegetable and faunal remains. In general, these latter two classes of remains seem to comprise a combination of wild and domestic resources from the valley riparian oases, the coast and the *lomas*. Funerary contexts on the Paracas peninsula of this period are synonymous with funerary bundles of highly elaborate textiles (Tello and Mejía 1967), but because the purpose of looting is to remove such artifacts for sale, it is almost impossible to say much about the quality of textile and other artifacts at these sites in the lower Ica Valley.

Both sites 1001 and 1004 show evidence of circular pits being used for adults and children. Both also contain many large *olla* fragments, many of which, especially those from site 1004 Sector C, show no evidence of having been used for cooking, and might be the remains of infant urn burials reported elsewhere (Isla 2009: 127). The remains of reeds and wooden posts on the surface of sites 1002 and 1004 also suggest that the graves may have had *barbacoa*-

covered roofs, which became common in the Late Ocucaje period (Pezzia 1968; Isla 2009: 125).

Burial positions, evidenced by two well-preserved individuals observed in site 1004, also resonates with the bodies excavated at Jauranga, Palpa (Isla 2009: 127), in which bodies were laid in a dorsal extended position with extended or flexed legs, or in the case of child burials, in seated positions. In sum, the evidence that has survived in sites 1001, 1002 and 1004 would seem to suggest a shared burial tradition across the south coast region during the Late Ocucaje to Nasca 1 transition period.

This is supported by radiocarbon dates from four of the five individuals from the funerary contexts of sites 1002 and 1004, which fall into the period defined by Unkel *et al.* (2012: 2299) as Initial Nasca (260 B.C. to A.D. 80), corresponding to the ceramic phases of Ocucaje 10 and Nasca 1 (Menzel *et al.* 1964) with our dates (median dates ranging from CAL A.D. 38 to 60, see Cadwallader *et al.* 2015: Table 3) falling in the latter stages of this period.

One individual (117) from cemetery 1002 is dated to CAL A.D. 251-400 and is much later than the others, falling within Early Nasca (A.D. 80-300) or even Middle Nasca (A.D. 300-400). There are a few fragments of Early Nasca pottery recorded in cemetery 1002, as well as in site 1004, suggesting that these sites may also have been used for burial during that period. This is noteworthy, both because it offers further evidence of cultural continuity between Late Ocucaje and Early Nasca, and because, although there are extensive Early Nasca archaeological remains in the Ullujaya basin, funerary contexts from that period here are seemingly rather few (see Beresford-Jones 2011).

Late Nasca – Middle Horizon Transition Funerary Contexts

We can make only limited comparison here between the burial archaeology of the lower Ica Valley for this period and other south coast contexts because of the lack of remaining surface evidence in cemetery 734. What evidence there is — namely remains of reeds, huarango timbers and *quincha* fragments — suggests that tombs here had *barbacoa*-covered roofs similar to those reported for other Late Nasca funerary contexts from the Ica Valley (Pezzia 1968), Nazca (Kroeber and Collier 1998) and Palpa (Isla 2009: 129). One aspect of burial position at cemetery 734, the arms folded across the chest, is also observed in Early Intermediate Period burials from both the Palpa and Nazca Valleys (Drusini *et al.* 2001: 160; Isla 2009: 131). Moreover, the range of artifacts associated with the looted funerary contexts from cemetery 734 in the lower Ica Valley in the form of ceramics, textiles, faunal and vegetal remains, appears to be broadly similar to those observed in Palpa (Isla 2009: 131).

The two dated individuals from cemetery 734 (at CAL A.D. 470-625 and CAL A.D. 570-675, see Cadwallader *et al.* 2015: Table 3), fit within the Late Nasca period (Unkel *et al.* 2012: 2299). Thus the radiocarbon dates for this disturbed funerary context coincide with its dating by the material culture remains.

Middle Horizon Funerary Contexts

Both the cemeteries of 398 and 755 in the Ullujaya basin share some features of burial archaeology, including the size, shape and alignment of their extant tombs, and of course the material culture remains. Isla (2009: 134) identifies "three main grave types [for the Middle Horizon in Palpa]: simple or uncovered pits, *barbacoa* and roofed pits surrounded by a quadrangular stone structure, and roofed funerary chambers with a stone enclosure in the upper part" (and see also Pezzia 1968; Conlee 2011). The funerary contexts of the lower Ica Valley are heavily disturbed by looting but certainly elements of *barbacoa* tomb architecture can still

be discerned amidst the shattered remains of site 398 (FIG. 7A). The artifacts observed in the looted cemeteries of the lower Ica Valley are also similar to those described for Palpa and Nazca, including ceramic types, copper artifacts and semi-precious stone beads (Isla 2009; Conlee 2011). Although simple pit burials are observed at site 755, its most distinctive funerary contexts, the very large rectangular *barbacoa* chambers, are of considerably larger dimensions than those described for Palpa (Isla 2009). Pezzia (1968: 244-247) describes and illustrates a 1953 excavation in Ullujaya of an intact "Gallery or collective tomb [an] important vestige of 'Chulpaca A' of the Ica Culture" (our translation), which would seem to share precisely those features of architecture, location, orientation and material culture, which we note at cemetery 755. Pezzia (1968: 246, our translation) describes a *barbacoa* roof of "strong huarango timbers". Within were multiple funerary bundles wrapped with plain and decorated cotton textiles and measuring "86 cm in diameter and 47 cm in height".

Pezzia (1968: 230, 252-253) defines Chulpaca A (following Uhle's excavation of the type site) as the very beginning of the Late Intermediate Period (i.e. Ica Phase 1), which is striking in view of the radiocarbon dates from these cemeteries. Three out of four individuals from these cemeteries date to the period between CAL A.D. 900 and 1200 (Individual 53 from cemetery 755 dated to CAL A.D. 1040-1148, and Individuals 91 and 1010 from cemetery 398, dated to CAL A.D. 912-1047 and CAL AD 995-1109, respectively, see Cadwallader *et al.* 2015: Table 3).

These dates suggest a continuous occupation of the lower Ica Valley during the latter half of the Middle Horizon, and through into the beginning of the Late Intermediate Period. Indeed, seven radiocarbon dates from the deepest parts of the predominantly Late Intermediate and Late Horizon site of H-8 in the Samaca Basin (Arce *et al.* 2013), calibrated using IntCal13 (Hogg *et al.* 2013) according to stratigraphy in OxCal version 4.2 (Bronk Ramsey 2009) suggest a foundation boundary for that site of A.D. 954-1139 (2 σ).

This time, during which the Wari Middle Horizon is presumed to have been collapsing on the south coast, is poorly defined, even in terms of material culture (see Lyon 1966; Pezzia 1968: 230, 252-253; Menzel 1976: 5, herein all defined as Middle Horizon 4, as explained above). In part this is because of the paucity of the published archaeological record for this period. Yet it is precisely in this poorly understood context that the combination of radiocarbon dates and material culture from funerary context cemetery 755, is so interesting. For, until now, no radiocarbon dates have yet been derived from Middle Horizon contexts on the south coast after A.D. 830 (Conlee 2010: 99), with many scholars using this to suggest some sort of hiatus in occupation here until around A.D. 1200, the widely accepted date for the start of the Late Intermediate Period on the south coast (Conlee 2010; Unkel *et al.* 2012; Sossna 2015).

Moreover, the burial archaeology Pezzia describes in Ullujaya and which we observe here for funerary contexts in cemeteries 398 and 755 resonates too with Julio C. Tello's (cited by Menzel 1964: 46-47) early twentieth century descriptions of Middle Horizon burials in Collungo, Nazca of:

“large, oblong rectangular chambers lined with rectangular adobes, and covered with a roof of huarango poles and clay plaster. The huarango poles show signs of having been cut with a tool, unlike those in the Nasca style which are burnt off ... The orientation of the Middle Horizon 2 tombs is east-west, the entrance being from the west. In all these respects the tombs are like Middle Horizon tombs from the Ica Valley described by Aldo Rubini”

... and in Menzel (1968: 71) of:

“great rectangular chamber[s] roofed with hardwood logs (algarrobo), resting on a support of rectangular adobes. The tomb faced west, where it had an opening, evidently a doorway. Tello suggests that this entrance probably served for repeated interments

in the same tomb ... they contained several mummy bundles with artificial heads ... clothed in fine, decorated shirts and accompanied by arms, various utensils, and votive offerings”.

Similarly constructed tombs, dated to Middle Horizon 1 and 2, have also been recorded at the site of La Tiza in the Nazca Valley, although these had openings to the east (Conlee 2011: 48), suggesting some regional variation in funerary practices. The presence and sizes of entrances into tombs is commonly taken to indicate their repeated use, and the radiocarbon dates from the two cemeteries support such an idea with cemetery 755 also yielding a date of A.D. 663-765, which falls in Nasca 8 or Chakipampa at the start of the Middle Horizon, suggesting that the tombs may have been in use for over 300 years. Moreover, all these descriptions and the vestiges of funerary practices we observe for the Middle Horizon in Ullujaya show striking similarities with those of the subsequent Late Intermediate Period on the south coast, to which we turn next.

Late Intermediate Funerary Contexts

Of all south coast funerary contexts, those of Phases 6-10 of the Late Intermediate Period are the best understood thanks to Menzel’s (1976) recapitulation and analysis of Uhle’s unpublished 1900 excavations at the Soniche cemetery, Ica Vieja. Menzel synthesizes this with, among others, Cieza de León’s 1553 account to offer a rich description of funerary architecture, but also of the associated burial practices. In summary the salient features of elite burials include: interments accompanied by household members in deep structured tombs; large funerary bundles with face masks; quantities of burial furniture, often in pairs and including fine ceramics, musical instruments, slings, weaving tools, metal artifacts and elaborately carved huarango burial marker posts; quantities of food and drink and; sacrificed camelids; and, one or more later tomb re-entries and associated rituals (see Cieza de Leon 1995 [1553]: 197),

including the painting of fleshless bones, particularly skulls, with “red ochre”, subsequently re-deposited in burial urns (Menzel 1976: 221-245). Lower social orders were buried in much shallower, unstructured single interments with fewer goods and without subsequent re-entry rituals (see also Pezzia 1968).

Fragments suggestive of all these details can still be discerned amidst the shattered remains of cemetery 1003, for instance the traces of at least one of the elite deep structured tombs described for Soniche and the evidence for the painting of faces with red pigment. Moreover, Menzel (1976: 222) notes, “the use of large, structured graves with multiple burials and entrance ways has antecedents as early as Epoch 2A of the Middle Horizon. Many items of the Middle Horizon tombs parallel those that appear in the deep, structured Late Intermediate tombs and must be presumed to be related to them by tradition”. This too is reflected in the funerary architecture of cemeteries 398 and 755 discussed above, and the occurrence at cemetery 755 of clam shells containing red pigment, conceivably associated with the rituals of tomb re-entry that have been documented for the subsequent Late Intermediate Period.

The two individuals dated from cemetery 1003, putatively attributed to the Late Intermediate/Late Horizon by association with Ica Phases 6 to 10 material culture, are separated by several hundred years. There are few radiocarbon dates for this period, although Unkel *et al.* (2012: 2299) date its start in Palpa to A.D. 1180. The earliest date from 1003 (Individual 74, CAL A.D. 1091-1208) falls just prior to that date while the other (Individual 31, CAL A.D. 1480-1635) lies in the Late Horizon, or indeed during the early Colonial Period (Cadwallader *et al.* 2015: Table 3). As described above, cemetery 1003 has been looted extremely destructively using a bulldozer. There are, however, two large Late Intermediate Period settlement sites in the Samaca basin, H-8 and H-9 (see Cook 1994; Beresford-Jones 2011), the latter almost adjacent to funerary context 1003, from where we presume the people buried at cemetery 1003 once lived. The material cultures of all these sites are the same – Late

Intermediate Ica 6, Chincha-influenced Ica 7 and 8, Late Horizon Ica 9 and early Colonial Ica 10 styles (including, for instance, glass beads) are all present. This was a time when the Ica culture, briefly free of the Inca yoke and before the full onset of the Spanish, enjoyed a brief renaissance (Menzel 1976).

Conclusions

A number of important conclusions can be drawn from the lower Ica Valley funerary contexts and their associated radiocarbon dates presented here.

Firstly, in all cases, our radiocarbon dates confirm our putative assignation of funerary contexts to culture epoch based upon their material culture remains. Comparison with radiocarbon dates from Palpa (Unkel *et al.* 2012) show that the dating of the ceramic chronology holds true across the south coast area. This research also importantly shows that looted remains can be placed within a proper chronological framework, despite the disturbed contexts from which they come (and see also Isla and Reindel 2008; Gerdau-Radonic and Herrera 2010) and thus these remains can be used as a source of direct evidence, e.g. stable isotope analyses of human remains about ancient diet, mobility and social distinctions (see Cadwallader 2013).

Secondly, the shifting pattern of funerary contexts over some two millennia speaks to a wider story of landscape change in the Ullujaya and Samaca basins of the lower Ica Valley (see Beresford-Jones 2011 for a detailed discussion of those changes). All funerary contexts, of all time periods, are to be found along the western edges of the basins. Perhaps this was corresponding to the direction of the setting sun, or perhaps it was to keep gradually desiccating ancestors upwind of the living. Certainly, none are located on the river's eastern bank. All tombs with discernible orientation face east-west. Furthermore, since the dead were buried at the margins of fertile land, their locations trace a steady shrinkage of those margins over time.

Some of the earliest funerary contexts recorded here dating to the Late Ocucaje – Nasca transition such as site 1004 are located high on the Tablazo de Ica well beyond the river floodplain today, a trend that has been noted elsewhere (Cook 1999). Even more strikingly, the relict river terraces of these basins which bear the traces of Early Intermediate Nasca agricultural landscapes in the form of relict canals, etc. have by later time periods now become suitable places to bury the dead. This location for some Middle Horizon and subsequent Late Intermediate Period funerary contexts shows that by then these terraces were high and dry: beyond the reach of productive agriculture. Thus a Middle Horizon and Late Intermediate landscape of the *dead* is set amidst the traces of a Nasca landscape of the *living*.

Thirdly, there are suggestions that some two millennia ago burials during the Late Ocucaje – Nasca transition period may have been carried out within habitation sites, and that one such habitation site was located high on the edge of the sedimentary plateau overlooking the Samaca basin. If so, that location, far above the vegetated and watered river floodplain and exposed to the region's strong wind, today seems incongruous and must be accounted for either by strategic reasons and/or by changes in the geomorphology of these basins since that time. More certainly this burial archaeology suggests some degree of cultural continuity between Ocucaje and the subsequent Early Intermediate Nasca period: a continuity which is, of course, also evident in aspects of the archaeological record, not least in their iconographies.

Fourthly, a paucity of settlement sites combined with other archaeological data is widely taken as indicating some sort of environmentally or socially induced crisis on the south coast sometime during, the Middle Horizon, or upon its collapse, and the start of the Late Intermediate some three centuries later (inter alia Drusini *et al.* 2001; Silverman and Proulx 2002; Eitel and Machtle 2009; Conlee 2003, 2010; Beresford-Jones 2011; Unkel *et al.* 2012, Fehren-Schmitz *et al.* 2014, Sossna 2015).

Yet the funerary and radiocarbon data we present here suggests that, at least in the case of the lower Ica Valley, occupation may have been continuous here throughout this period of apparent demographic collapse (and there are other, related contexts in the Ullujaya basin, including cemeteries 752 and 208, see FIG 1). Indeed, the juxtaposition of relatively large, apparently richly endowed, communal funerary contexts with simple pit burials in cemetery 755 (FIGS. 8A-B), and in other funerary contexts in sites such as 752 in Ullujaya, suggests that this occupation sustained significant social differentiation (following Menzel 1976: Chapter V). The implication, then, of our definition of funerary contexts from cemeteries 398 and 755, and parts of cemeteries 1003, as Middle Horizon 4 is that the echoes of Wari influence lasted considerably longer on the south coast than previously thought.

As discussed above, there is little systematic, published evidence specifically of mortuary practice for this period on the wider south coast beyond piecemeal details, although large-scale surveys of the wider south coast are revealing more information about Late Intermediate settlement and demography (e.g. Conlee 2003, 2010, Isla 2009, Sossna 2015, Haburaj *et al.* 2017). In so far as it exists (see Pezzia 1968, Menzel 1976, Neudecker 1979, Rowe 1986, Carmichael 1991, Conlee 2011) that evidence suggests various forms of subterranean, sometimes collective, burials for the south coast similar to those first described by Uhle (1924) for Ica and Chincha. While, Weinberg *et al.* (2016), for instance, discuss Late Intermediate mortuary contexts in the piedmont of the Chincha Valley, they draw a distinction between those and the lower Chincha Valley where “burial practices dating to the LIP come in a variety of subterranean, distinct forms (Uhle 1924 [1901])”.

Some of the apparent dearth of archaeological remains from the south coast for this time may, we suggest, be taphonomic. Cemeteries were designed to allow large group internments with easy access for periodic reentry, and therefore highly visible and especially vulnerable to looting on an almost industrial scale since extant examples were seen by Uhle and Tello. A

second reason may be an artefact of the radiocarbon calibration curve which, worldwide, is problematically flat for the first couple of centuries since AD 1000 (Cadwallader *et al.* 2015).

Finally, the burial archaeological record of Late Intermediate Period in the lower Ica Valley shows, just as it does more widely, direct and intimate links with that of the preceding Middle Horizon. The similarities in funerary architecture and indeed associated funerary practices suggest significant cultural continuity between the two periods. Just as Menzel (1976: 222) long since observed, “the similarities in customs are not surprising when we consider that [their] ancestors ... had once lived under the Huari Empire”.

Writing just after the Spanish conquest, Cieza de León reported that throughout the arid Peruvian coast one could see: “The great walls and apartments in which each lineage had its established place to bury its deceased ... and certainly it is marvelous to behold the great number of these dead among the sands and dry places, with their clothing worn and decayed by the passage of time” (Cieza de León (1995 [1553]: 197, our translation).

In Cieza’s descriptions (1995 [1553]: 196-201) the living communed with a veritable landscape of the dead, in which millennia of burials outside the fertile river floodplains enjoyed extraordinary preservation in this arid climate. While the funerary contexts of antecedent generations must have been obvious — indeed many in Ica were marked with huarango ancestor posts — it seems these contexts were never interfered with, as the fortunes of various societies waxed and waned on the south coast. Centuries subsequent to Spanish conquest have, of course, witnessed the wholesale ransacking of those funerary contexts for the vestments, goods and implements with which their ancient interments were provided for their afterlives. Depressing though that might be for today’s archaeologist, it is nonetheless somewhat heartening to know that the discarded remains of the ancient interments themselves might still yield valuable data, not least through the latest bioarchaeological techniques.

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Figure Captions

Figure 1 Map of the archaeology of the Samaca and Ullujaya basins, lower Ica Valley, south coast Peru, highlighting the seven sites discussed. Originally published in Cadwallader *et al.* 2015 under a CC BY licence.

Figure 2 Map of the Late Ocucaje sites 1001 and 1002, Samaca basin.

Figure 3 Map of the Late Ocucaje site 1004, together with adjacent geoglyphs, Samaca basin.

Figure 4 Finds and contexts from Late Ocucaje site 1004.

Figure 5 Maps of Late Nasca/Middle Horizon site 734 (bottom) and Middle Horizon site 398 (top), Ullujaya basin.

Figure 6 Map of Middle Horizon site 755, Ullujaya basin prior to recent destruction.

Figure 7 Finds and contexts from Middle Horizon site 398, Ullujaya basin.

Figure 8 Finds and contexts from Middle Horizon site 755.

Figure 9 Location of the Late Intermediate Period site 1003, Samaca basin.

Figure 10 Finds from the Late Intermediate Period site 1003.

Figure 1

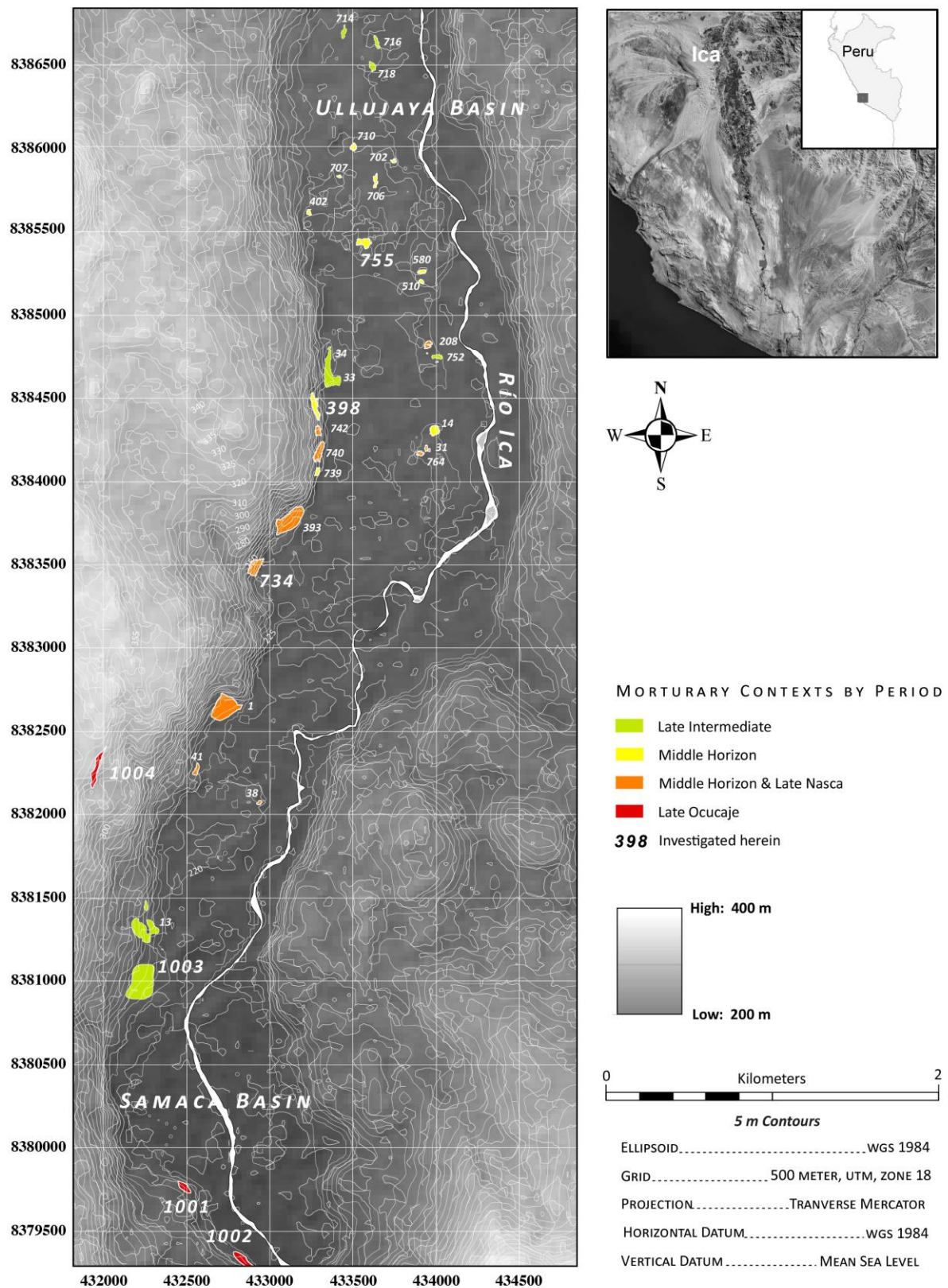


Figure 2

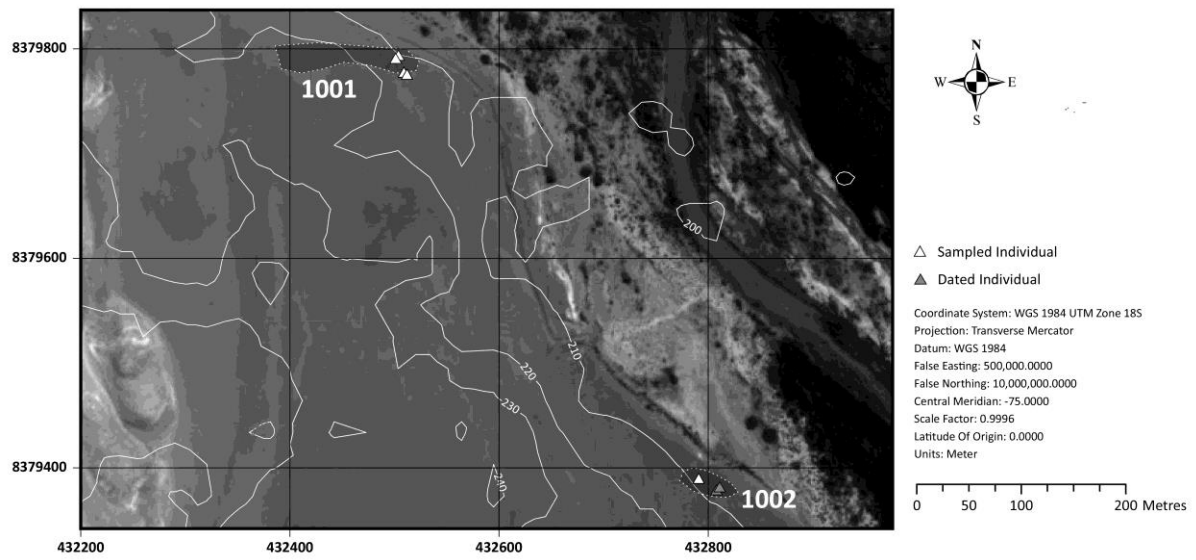


Figure 3

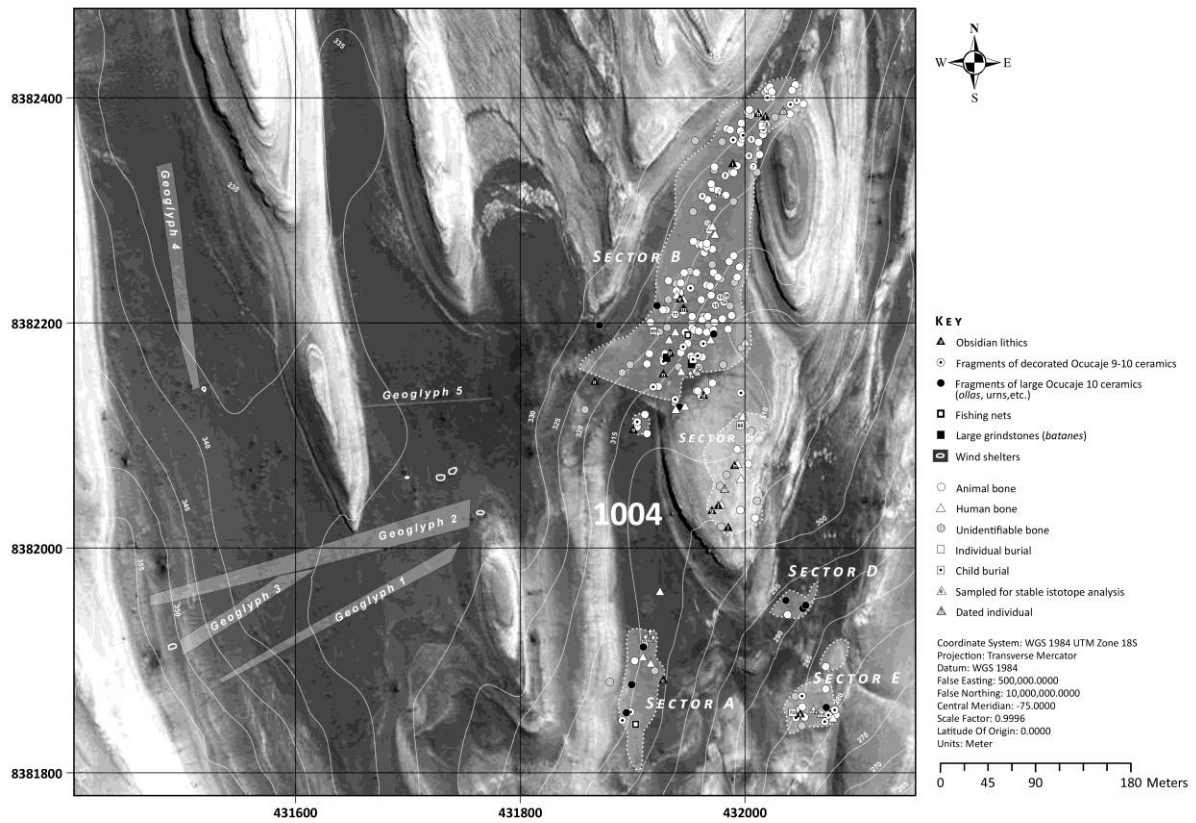


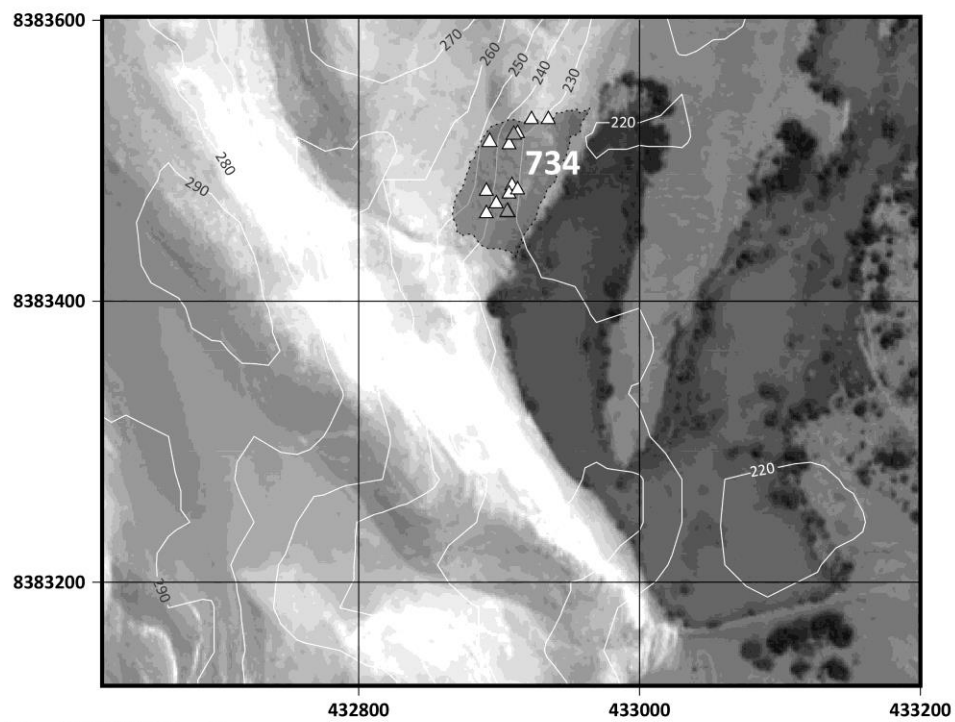
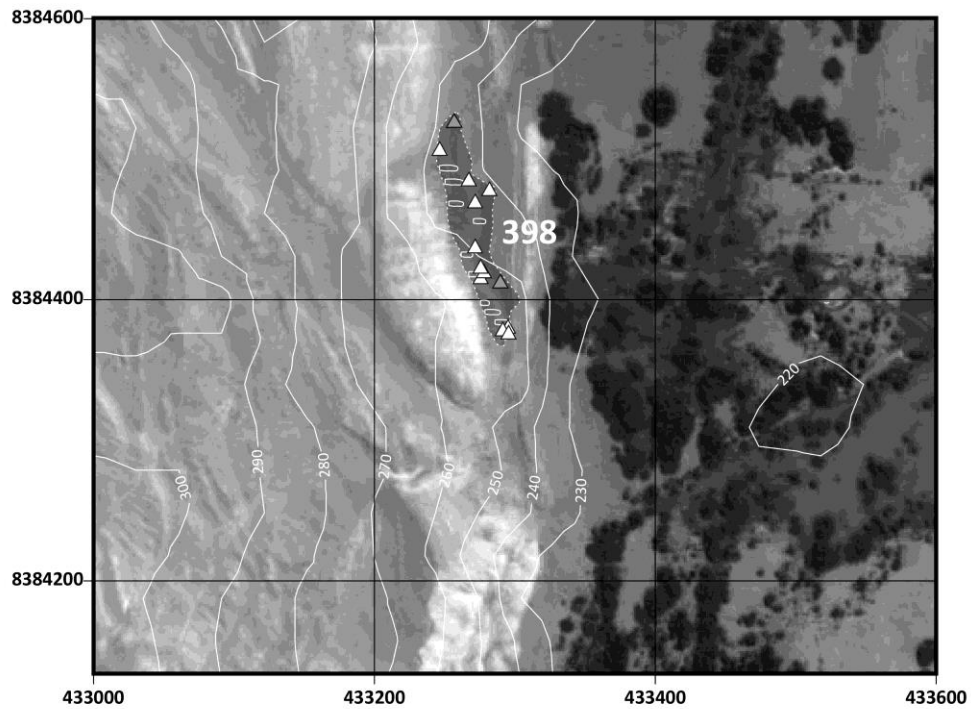
Figure 4

Figure 5



Top to bottom:

- A-C Ocucaje 9 / 10 pottery fragments (cf. Menzel et al. 1964): A – designs in negative (Sector A); B – burnished blackware with incised designs (Sector B); C – incised with post-firing resin-painted designs (Sector B).
- D Green granite pestle stone (Sector B).
- E Obsidian point (Sector B).
- F Panpipe fragment (Sector B).
- G Child burial in small circular pit (Sector B).
- H 'Paracas' stem-stitch embroidered textile fragments (Sector B).
- I Late Ocucaje urn fragments (Sector B).
- J Marine and terrestrial mollusc remains (Sector B).



Coordinate System: WGS 1984 UTM Zone 18S
 Projection: Transverse Mercator
 Datum: WGS 1984
 False Easting: 500,000.0000
 False Northing: 10,000,000.0000
 Central Meridian: -75.0000
 Scale Factor: 0.9996
 Latitude Of Origin: 0.0000
 Units: Meter

- △ Sampled Individual
- ▲ Dated individuals

0 45 90 180 Metres



Figure 6

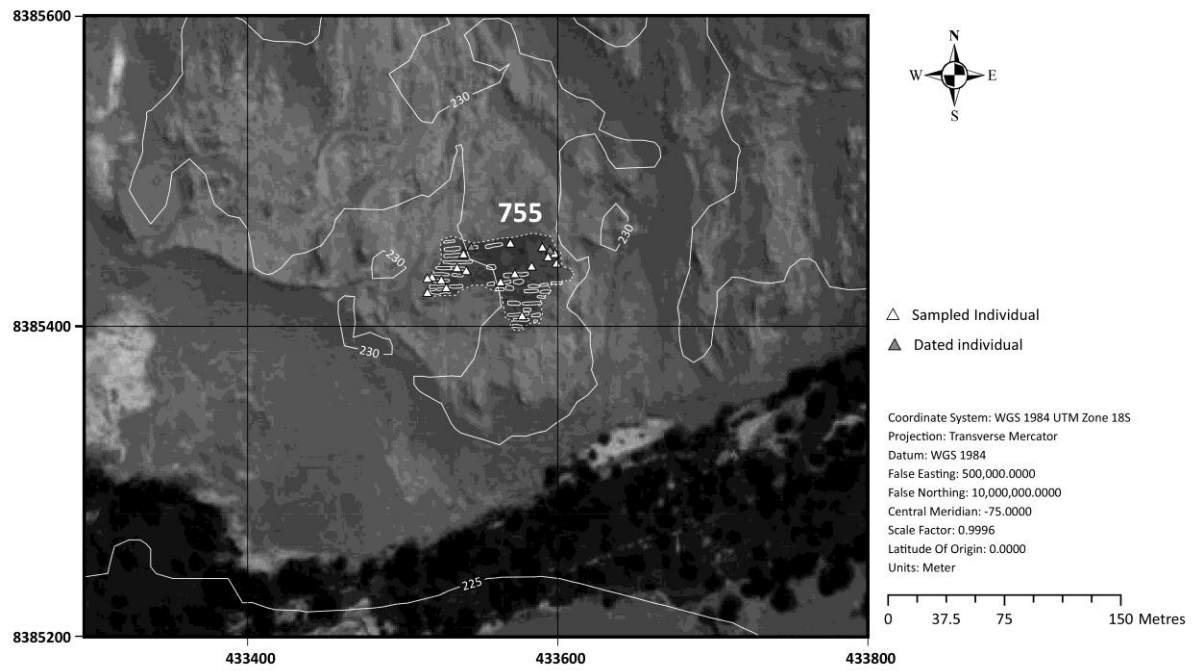


Figure 7



Top to bottom:

- A Interior of looted 'barbacoa' gallery tomb with huarango beam roof.
- B Weaver's basket.
- C Middle Horizon Epoch 2B pottery fragments.
- D Plain weave tie-dyed textile fragment.
- E Naturally mummified llama neonate.

Figure 8



Top to bottom:

A Single interment in round cut pit.

B Rectangular gallery tombs with vestiges of barbacoa roofs.

C Quantities of unspun and partly spun raw cotton discarded from looted funerary bundles.

D Middle Horizon pottery fragments from Epoch 2B; and 'Chulpaca A' (Pezzia 1968) or 'Early Ica Epigonal' (Kroeber & Strong 1924) – herein Middle Horizon 4 (Menzel 1964 and Menzel 1976)

E&G Fragments of supplementary warp faced textiles (cf. Pollard Rowe 1979).

F Clam shell (*Cumingia mutica*) containing vestiges of red pigment.

H Cotton funerary bundle base.

Figure 9

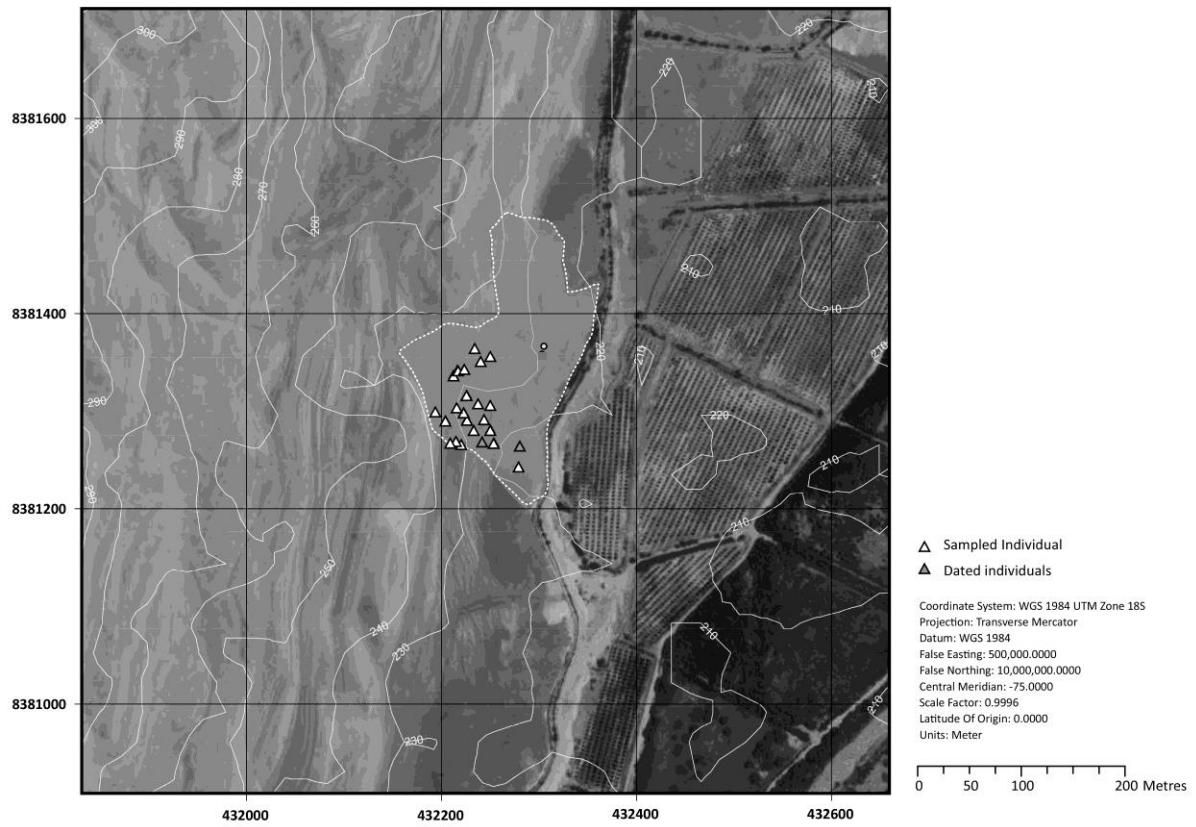


Figure 10



Left to right:

A Naturally mummified human head (Sample 39)
with red pigment on facial skin marked.

B Late Intermediate Period pottery fragments
(cf. Menzel 1976).



Author Biographies

Lauren Cadwallader (Ph.D., 2013, University of Cambridge) is currently an Open Access Research Advisor at the University of Cambridge. Her research interests include Andean isotopic dietary studies and more recently scholarly communications.

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Figure 1

[Click here to download Color figure Figure1-Colour.jpg](#)

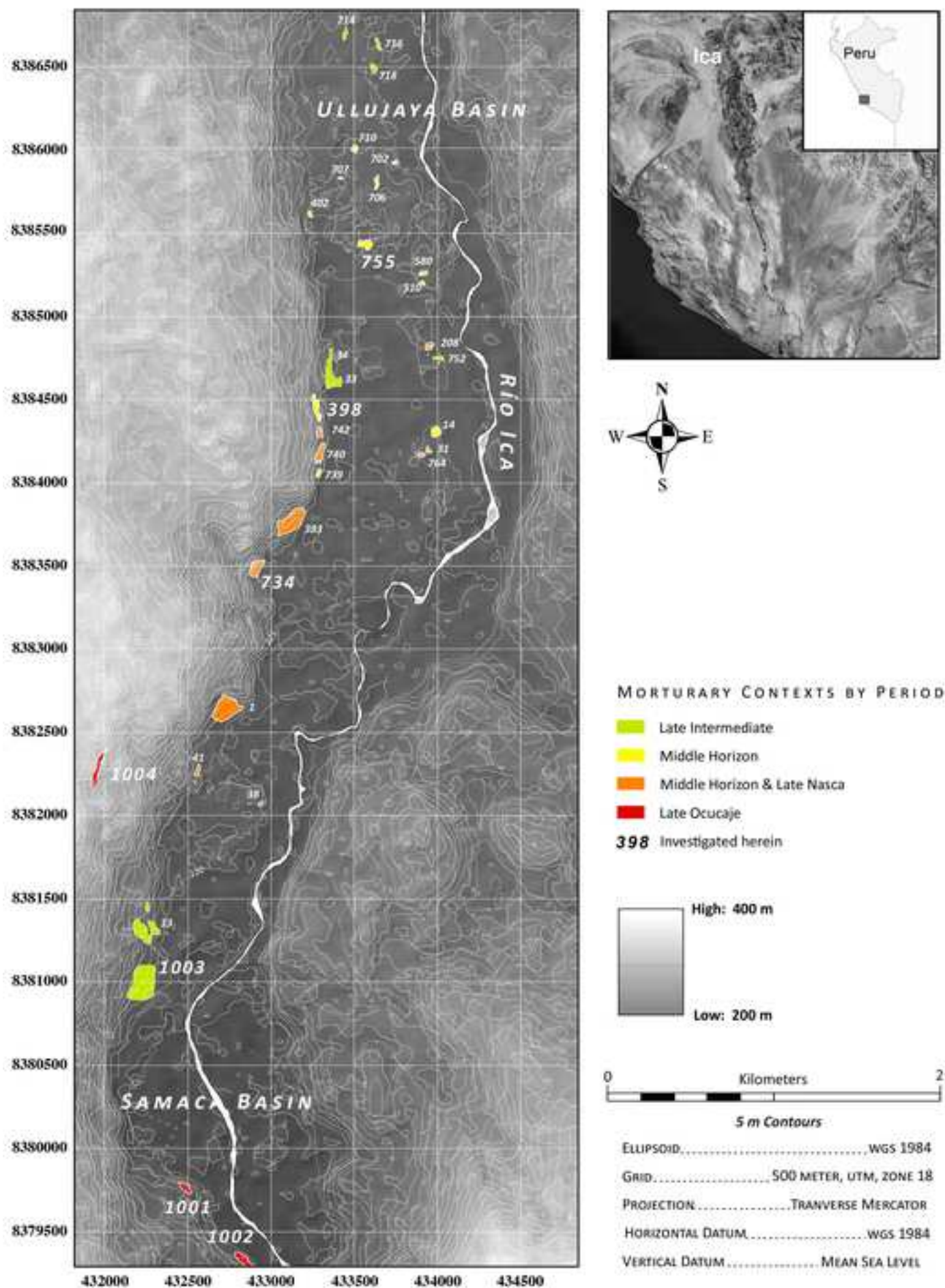


Figure 2

[Click here to download Non-color figure Burial_Archaeology-JFA-Figure_2.jpg](#)

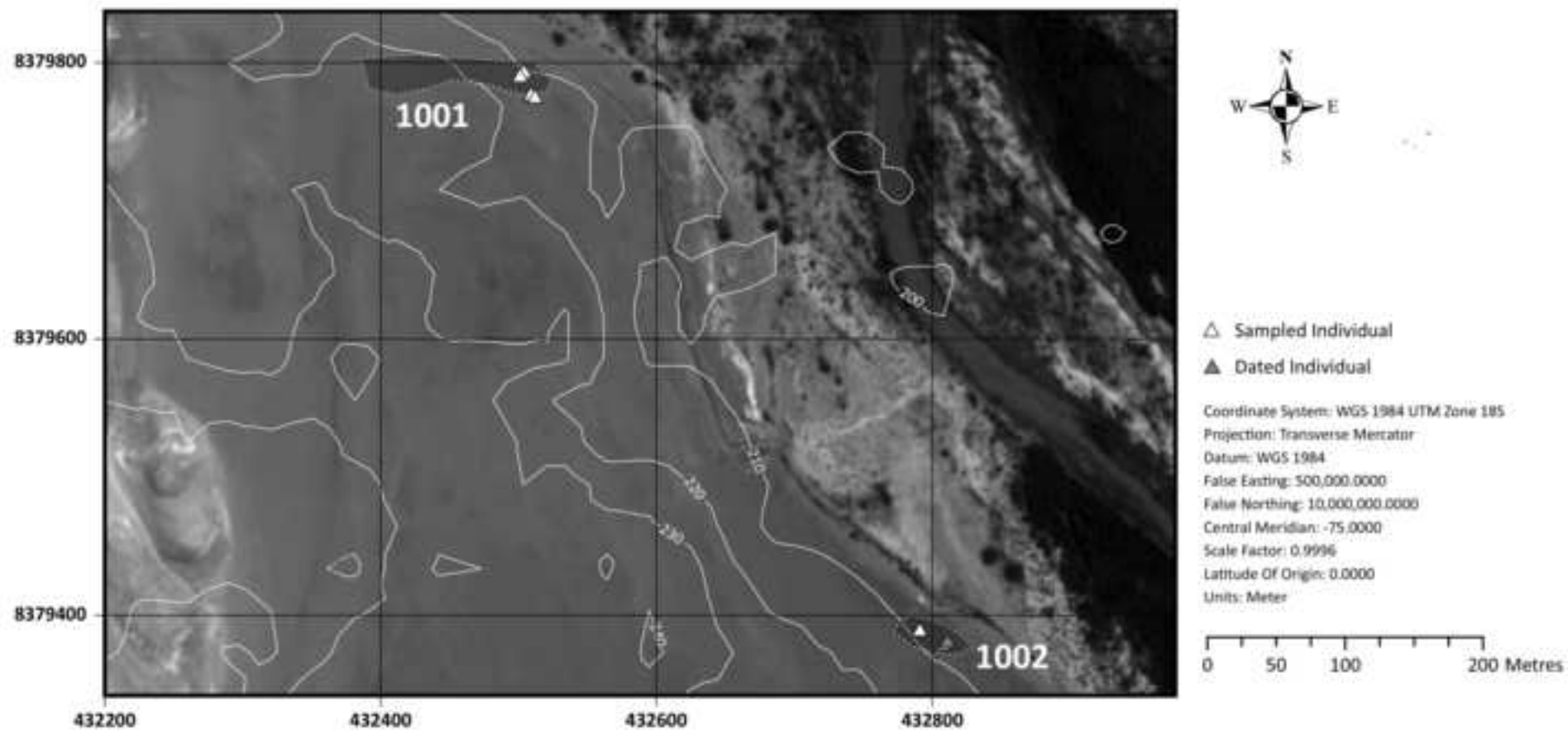


Figure 3

[Click here to download Non-color figure Burial_Archaeology-JFA-Figure_3.jpg](#)

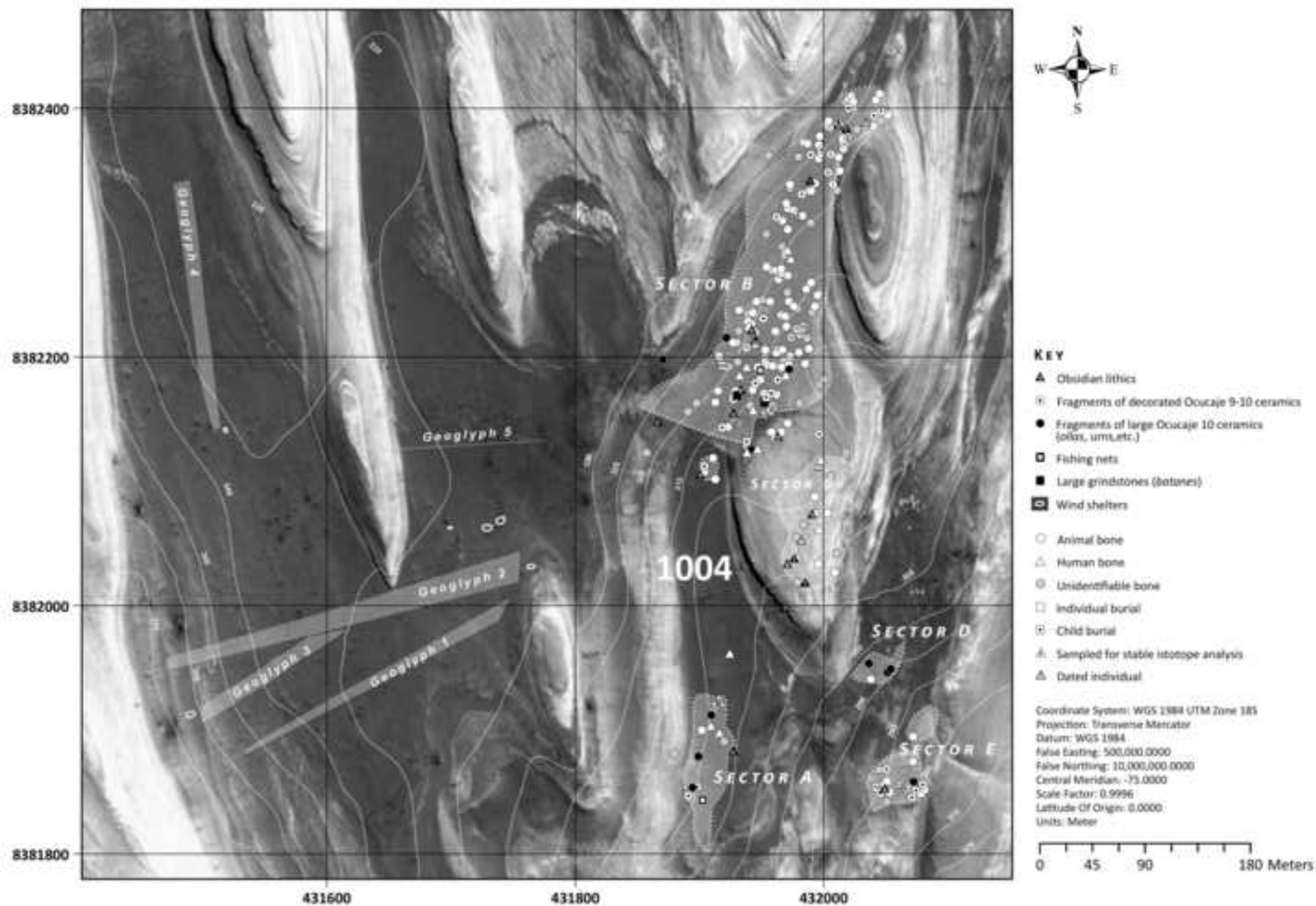
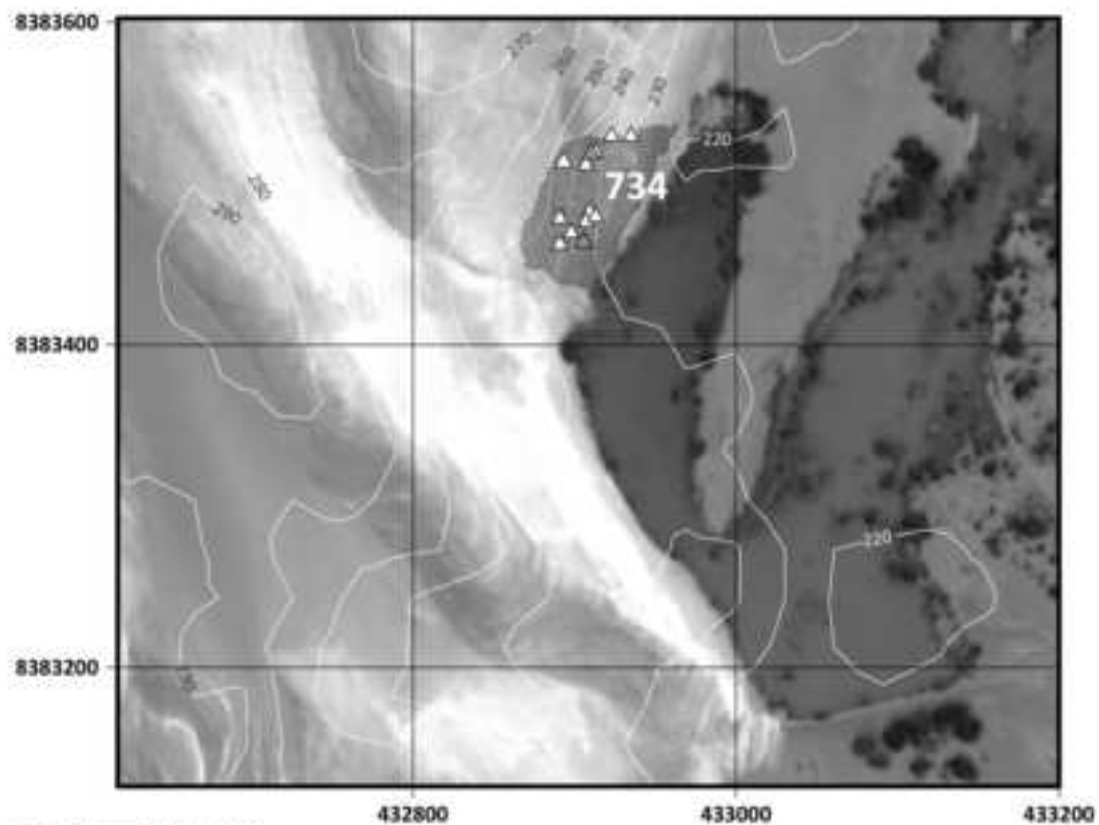
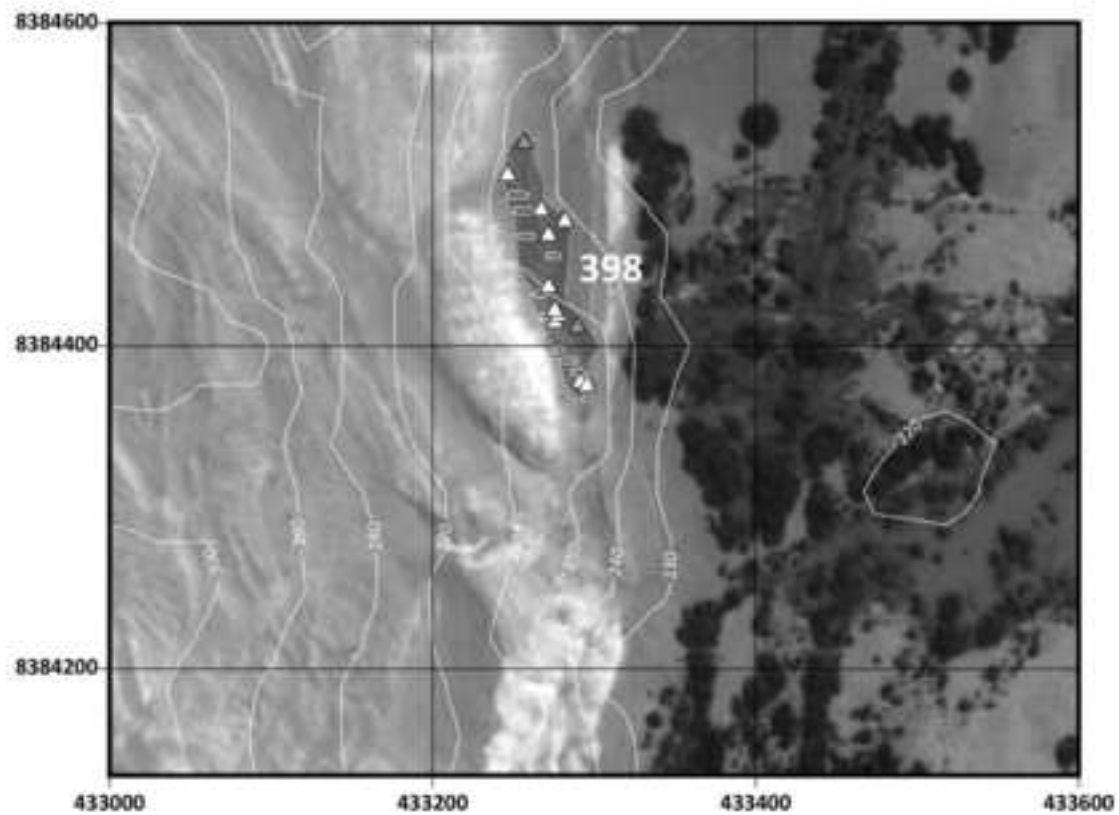




Figure 5



Coordinate System: WGS 1984 UTM Zone 18S
Projection: Transverse Mercator
Datum: WGS 1984
False Easting: 500,000.0000
False Northing: 10,000,000.0000
Central Meridian: -75.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter

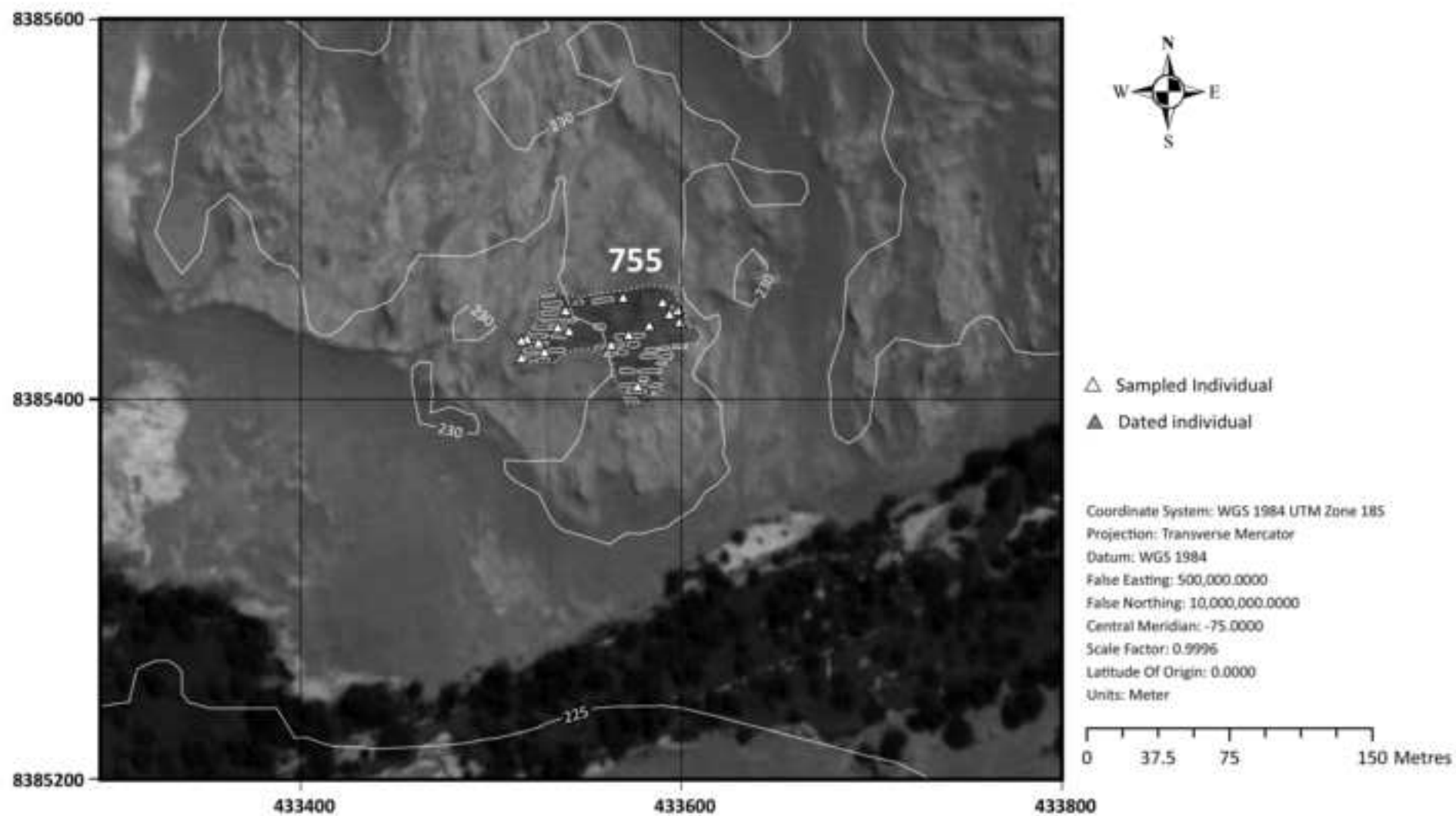
- △ Sampled Individual
- ▲ Dated individuals

0 45 90 180 Metres



Figure 6

[Click here to download Non-color figure Burial_Archaeology-JFA-Figure_6.jpg](#)







Top to bottom:

A Single interment in round cut pit.

B Rectangular gallery tombs with vestiges of barbacoa roofs.

C Quantities of unspun and partly spun raw cotton discarded from looted funerary bundles.

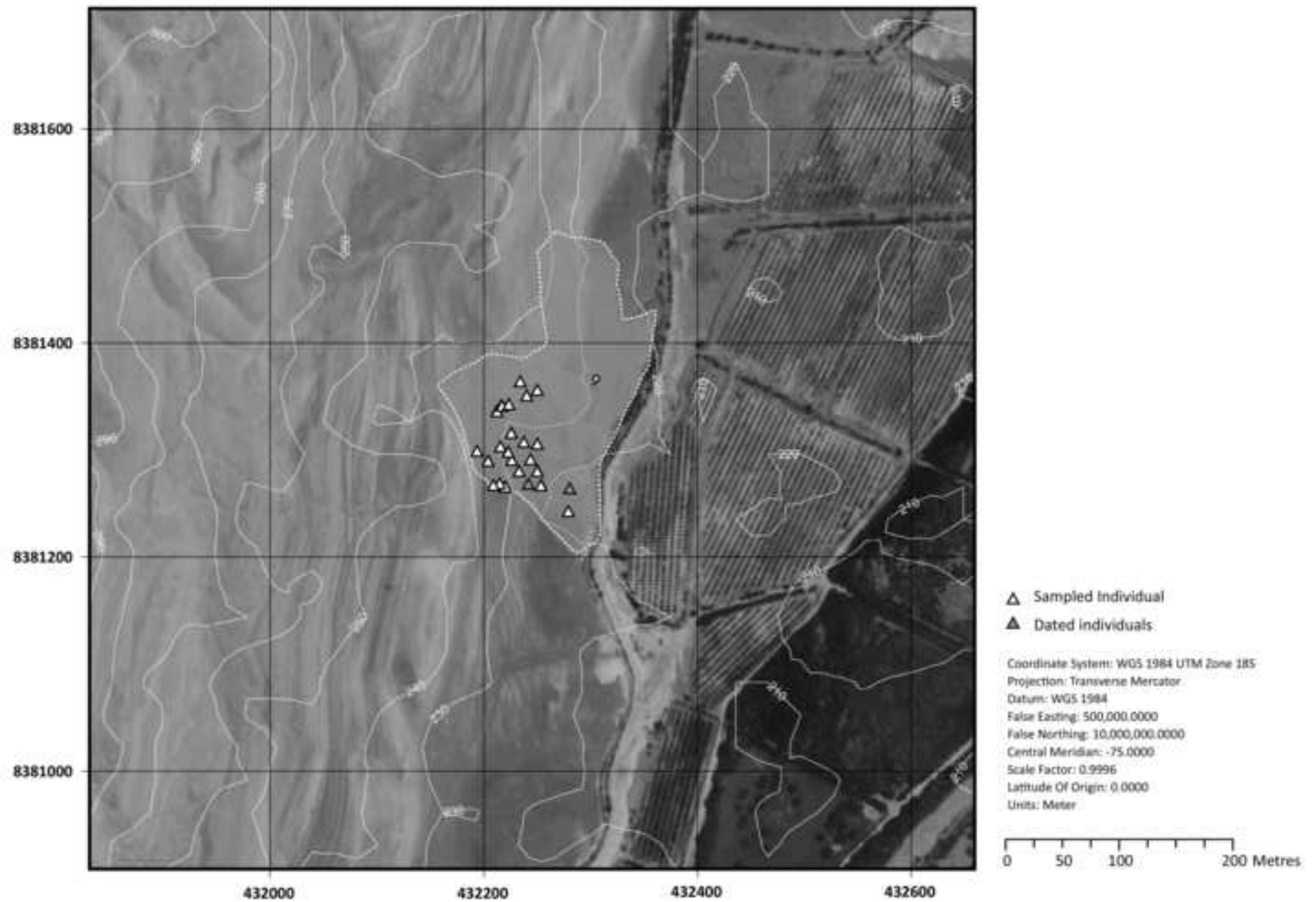
D Middle Horizon pottery fragments from Epoch 2B; and 'Chulpaca A' (Pezzia 1968) or 'Early Ica Epigonal' (Kroeber & Strong 1924) – herein Middle Horizon 4 (Menzel 1964 and Menzel 1976)

E&G Fragments of supplementary warp faced textiles (cf. Pollard Rowe 1979).

F Clam shell (*Cumingia mutica*) containing vestiges of red pigment.

H Cotton funerary bundle base.

Figure 9





Left to right:

- A Naturally mummified human head (Sample 39) with red pigment on facial skin marked.
- B Late Intermediate Period pottery fragments (cf. Menzel 1976).