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New archaeological insights into food and status: a case study from pre-contact Hawaii

Patrick V. Kirch and Sharyn Jones O'Day

Abstract

Social differentiation and hierarchy were more highly developed in protohistoric Hawaii than in any other Polynesian culture. In this paper we draw upon both ethnohistoric and archaeological evidence in order to examine the correlations between social status and consumption of 'luxury' foods. We examine the concept of 'luxury food' from an indigenous, emic perspective, finding that in protohistoric Hawaii the concept most closely correlates to fatty or greasy flesh foods, which were prized both by elites and for ceremonial use (ritual presentation). The zooarchaeological record of four household clusters in Kahikinui, Maui, is then examined in order to test and refine predictions from the ethnohistoric record. While our data confirm differential access to and consumption of prestige flesh foods by elite households, the archaeological data also add new insights. In particular, a pattern of consumption of the indigenous Polynesian rat (*Rattus exulans*) by commoner households is a finding not indicated ethnographically.

Keywords

Ethnohistory; food; Hawaii; household archaeology; zooarchaeology.

Introduction

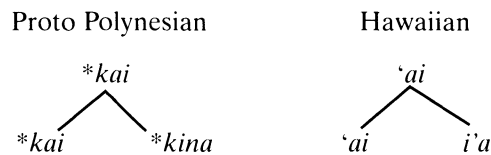
Over the broad sweep of cultural history, the concept of *luxury* – defined by the *Oxford English Dictionary* as 'the habitual use of, or indulgence in what is choice or costly, whether food, dress, furniture, or appliances of any kind . . . sumptuous or exquisite food or surroundings' – might arguably be associated with the rise of differential status and hierarchy. Among small-scale, hunter-gatherer or tribal societies, indulgence in choice foods does take place at times of ceremonial or ritual feasting, but would rarely be considered 'habitual'. With the rise of stratified chiefdoms and particularly with archaic states, however, regular instances of sumptuary consumption by elites become commonplace; indeed, such consumption patterns were frequently used symbolically to define eliteness.

The more than thirty ethnographically documented Polynesian chiefdoms present a marvelous set for cross-cultural comparisons, within a single ‘cultural phylogeny’ or lineage of historically related groups (Kirch 1984; Kirch and Green 2001). These cultures span a range from small-scale groups with minimal hierarchy (such as Tikopia) to societies with thousands (in a few cases, hundreds of thousands) of people ruled by elites, who themselves were hierarchically differentiated into several grades. Kirch recently compared the role of feasting in three Polynesian societies, opining that ‘differences in feasting between Tikopia, the Marquesas, and Hawai’i . . . correlate closely with such attributes as sociodemographic scale, degree of stratification and hierarchy’ (2001: 180). The case of protohistoric Hawaii is especially salient, for Hawaiian society on the cusp of initial European contact was arguably an archaic or incipient state. In Hawaii, ‘the feast was co-opted as a virtual prerogative of the ruling class, less an instrument of power than a pervasive, daily reminder of the immense gulf of social distinctions that separated *ali’i* [chiefs] from *maka’ainana* [commoners]’.

In this paper, we further explore the associations between ‘luxury foods’, status, and hierarchy in protohistoric Hawaii, drawing both upon the archipelago’s rich ethnohistoric record, and upon new archaeological data from the Kahikinui district of Maui Island. We also pay attention to the ways in which luxury or status foods were strongly categorized by gender in protohistoric Hawaiian society.

‘The many smoky fish of the land’: ethnohistoric perspectives on Hawaiian ‘luxury’ foods

As the archaeological data we will be considering dates to the protohistoric period (c. AD 1650–1795), with direct historical continuity to Hawaiian society as documented in the nineteenth century, we begin by reviewing ethnohistoric sources that permit us to set the archaeological evidence in specific cultural context. It is informative to understand that Polynesians in general, and Hawaiians specifically, partitioned food into two fundamental emic categories, a distinction which can be traced back to the ancestral Proto Polynesian (PPN) language (Kirch and Green 2001: 144), and which was retained in Hawaiian:



In both the ancestral and derived classifications, there is a key term (PPN **kai*, HAW *'ai*), which has both the general (semantically unmarked) sense of ‘food’, but also a specific (marked) sense of ‘staple starch food’. To the Hawaiians, food consisted – fundamentally – of starch staples such as taro (or the pounded *poi* derived from this root crop, *Colocasia esculenta*), sweet potato (*Ipomoea batatas*), breadfruit (*Artocarpus altilis*) or yams (*Dioscorea alata* and other species) (Malo 1951: 42–3). Under the cover term *'ai*, however, was a second term (PPN **kina*, HAW *i'a* which derives from PPN **ika*, ‘fish’) which can

be glossed as 'flesh food', or 'that which accompanies 'ai (starch staple)' to make up a meal. Thus while a meal can consist solely of 'ai (in which case it is a poor meal), *i'a* alone cannot make a meal, it can only accompany and embellish 'ai.

The full semantic extensions of *i'a* are particularly interesting to consider. Derived from the ancestral PPN word **ika*, meaning 'fish' (including eels, sharks, etc.), in Hawaiian the term was extended to cover not only teleost fish, but marine-dwelling organisms of all sorts: eels, crabs, octopus, sea urchins, oysters, limpets, periwinkles, nerites, cowries and so forth, all of which were consumed as accompaniments to meals (Pukui and Elbert 1986: 93). More broadly, however, *i'a* also refers to any flesh or other item eaten as a 'relish' with the starch staple, including meat (pig, dog, chicken, other bird), seaweed, vegetable (such as taro leaves) or even salt. This usage of *i'a* is referenced in the Hawaiian proverb, 'the many smoky fish of the land (*ka i'a uahi nui o ka 'aina*)', referring to any flesh food cooked in the earth oven (*imu*) as a tier above the roasting tubers, thus taking on a smoky flavor (Pukui 1983: 150).

What then of a concept of 'luxury food' in protohistoric Hawaii? There is no direct equivalent of the English word 'luxury' in the Hawaiian language (Pukui and Elbert (1986: 477) provide the constructed phrase *mea e ho'ohiwahiwa ai ka noho'ana* as a translation, roughly translatable as 'things that adorn or decorate one's life'). However, the Hawaiian elite (*ali'i*) were noted for their habitually conspicuous consumption of starch staples ('ai), and in this they exemplify the pan-Polynesian association between chiefship and corpulence (Sahlins 1992: 78–9). As a Tongan informant expressed the concept to the ethnographer E. W. Gifford in 1920, 'Can't you see he is a chief; see how big he is' (Gifford 1929: 124). Yet luxury has the implication not merely of excessive consumption, but of that which is special, choice, costly or not generally available. Hence it was not solely in the realm of 'ai that the Hawaiian chiefs indulged their appetites, but with the varied *i'a*, the figurative 'fish' that topped the contents of an earth oven. In particular, flesh foods that were fatty, greasy or oily comprised the luxury foods of ancient Hawaii. This cultural concept is brought out in two additional Hawaiian proverbs: 'Where the mouths are shiny [with fat food], prosperity is there. *E hinu auane'i na nuku, he pomaika'i ko laila*' (i.e., the prosperous have the richest food to eat) (Pukui 1983: 35, proverb 281). And, 'The rich foods of the Triple Hills (*No kohi kelekele a Kapu'ukolu*)'. Kapu'ukolu is a place on Kaua'i, an island known for its abundance, and this saying applied to any abundance of delicious food (Pukui 1983: 245, proverb 2241). In this last proverb, the specific term *kohi* translates as 'fat, rich, as food; fatness' while *kelekele* has a connotation of 'oily, rich, greasy' (Pukui and Elbert 1986: 144, 159). This then, *kohi kelekele* – greasy, fatty, rich flesh food – was the essence of luxury food in protohistoric Hawaii, as indeed throughout most of Polynesia.

As one of the most isolated archipelagoes in the world, the Hawaiian Islands were restricted in the range of naturally occurring terrestrial animals, although the seas yielded a diversity of reef fish, shellfish and pelagic fish, the latter being particularly prized. Domestic pigs (*Sus scrofa*), dogs (*Canis familiaris*) and the jungle fowl (*Gallus gallus*) were all purposefully introduced to the islands by the initial Polynesian colonizers, while the Pacific rat (*Rattus exulans*) may have arrived as a 'stowaway' on voyaging canoes. In addition to these introduced animals, there was a range of endemic landbirds as well as indigenous seabirds. However, by protohistoric times many bird taxa had become either

extinct or highly endangered due to a combination of over-hunting (both for food and feathers) and habitat destruction (James 1995), so that wild birds were a relatively scarce and prized resource. Pigs and dogs, on the other hand, were husbanded and raised as food animals (Titcomb 1969).

The Hawaiian ethnohistoric sources speak to a rich and complex set of symbolic associations between various kinds of flesh food, the pantheon of deities (*akua*), ancestral spirits (*'aumakua*), social status and gender. Pigs, for example, were one of the most important sacrificial offerings presented at major war and agricultural temple rituals (Valeri 1985) and at annual tribute collections (Beckwith 1932: 148–51). Pork was thus the chiefly luxury food *par excellence*, and was forbidden (*kapu*) to women. Dogs, on the other hand, were raised in pens by the hundreds for food, and were the prized flesh food of chiefly women (Titcomb 1969: 6–8). The missionary Ellis described the husbandry of dogs as follows: 'Numbers of dogs, of rather a small size, and something like a terrier, are raised every year as an article of food. They are mostly fed on vegetables; and we have sometimes seen them kept in yards, with small houses to sleep in' (1839, 4: 260–1).

Of particular note was the system of gender-differentiated food prohibitions which were collectively referred to as the *'ai kapu* (eating taboo), and which persisted until 1819 when they were overthrown by the paramount chief Liholiho (Kamehameha II). Among the key features of the *'ai kapu* were: 1) restrictions on which foods could be consumed by women, with most kinds of bananas, coconut, pork, sea turtles, shark, *ulua* fish (Carangidae) and certain other kinds of fish all being taboo; 2) a prescription that the foods of men and women be cooked in separate earth ovens; and 3) the taking of meals by men and women in separate eating houses (Malo 1951: 27–30; Valeri 1985: table 3). While women were not forbidden all luxury foods, the range of *kohi kelekele* available to them was considerably restricted. This is in theory, for it is entirely uncertain to what extent the *'ai kapu* was practiced or adhered to outside the chiefly centers of residence, among the common people of the *ku'a 'aina* or countryside, an issue which archaeology has the potential to address.

Luxury foods in a marginal environment: Kahikinui, Maui

Despite a long tradition of 'midden analysis' in Hawaiian archaeology, there has been little effort devoted to tracing, in the archaeological record, the historical development of the protohistoric Hawaiian system of foods and eating, or to testing predictions from the ethnohistorical record. In part, this reflects a lack of emphasis on 'household archaeology'; a significant exception being the Kawela, Moloka'i project in which Weisler and Kirch (1985) demonstrated that differences between elite and commoner residences were evident in several data sets including architecture, lithics and faunal remains (especially mammal bone). Since 1994, Kirch and his colleagues have carried out a long-term and continuing program of archaeological research in the ancient district (*moku*) of Kahikinui, Maui, one of the few undeveloped regions in the archipelago where regional-scale analysis remains possible (Kirch 1997b). A key component of this project has been the extensive excavation of a series of residential, household sites (Van Gilder and Kirch 1997), yielding new data to examine patterns of inter-household variation (Fig. 1).

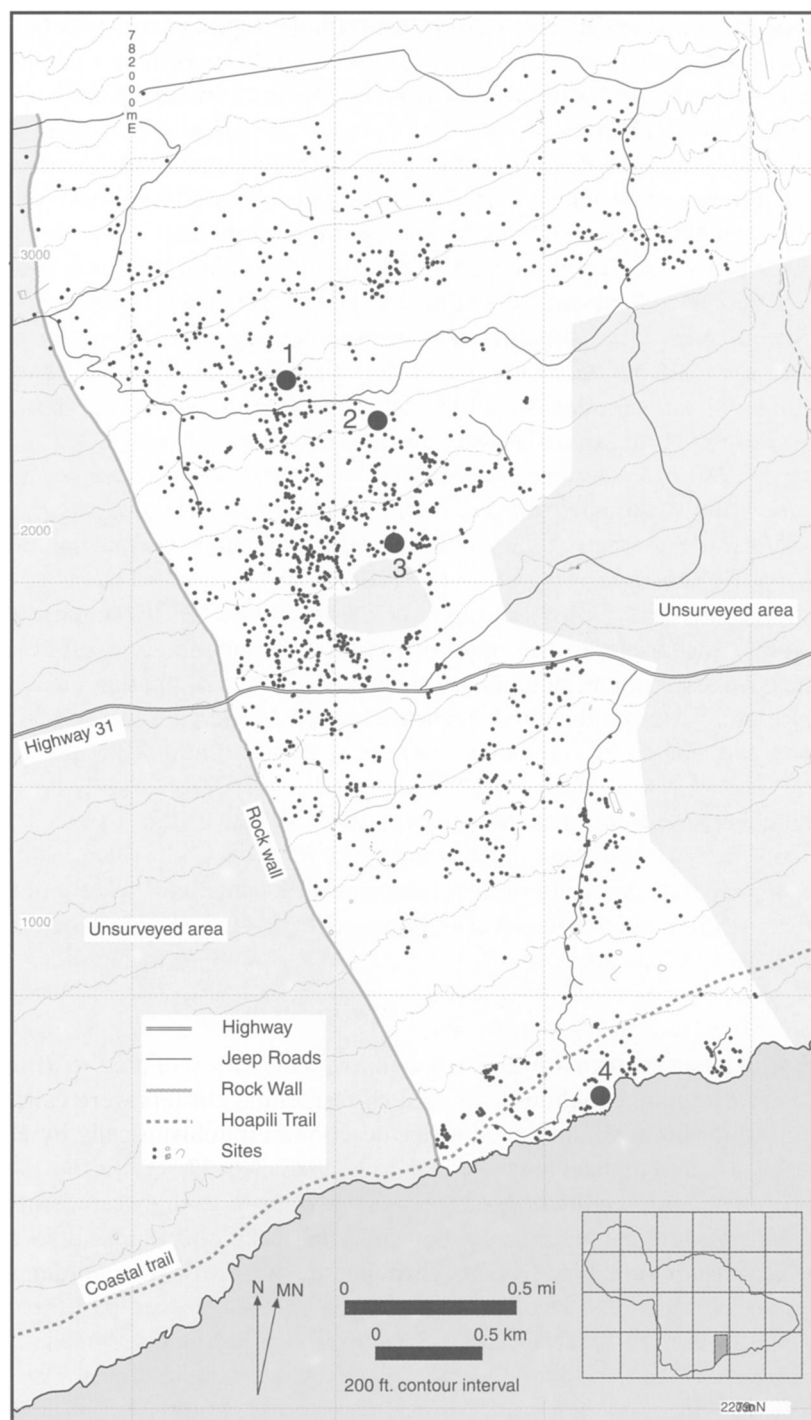


Figure 1 Map of the Kahikinui region, Maui Island, showing the locations of the household clusters analyzed in this paper (1, sites A35-44, -45, -46, -48; 2, site A35-117; 3, site A35-755; 4, sites A35-331, -334, -335).

Situated on the arid, leeward side of Maui, the second largest island in the archipelago, Kahikinui was decidedly a marginal district, both from the perspective of environment and resources and from that of political power. Lying in the rain shadow of Mt. Haleakala, annual rainfall (c. 800–1200mm) in the Kahikinui uplands was sufficient to support crops of sweet potatoes, and probably dryland taro at higher elevations, but the coastal sectors were arid. There are no permanent streams in the district. Annual variation in rainfall is also significant, with droughts common. The restricted agricultural productivity of the land may have been exacerbated by the relatively young lava flows that make up much of the district's substrate, with limited soil development (although nutrient status in such young soils may be high). Under such an agricultural regime, the husbanding of pigs and dogs – which were typically penned and fed on agricultural produce – would have been tenuous, making these foods a particularly 'luxurious' item (see Kirch (2000) on pigs and trophic competition in Oceanic islands).

The potential for littoral and marine exploitation was likewise much poorer than elsewhere on the island, since a fringing reef was absent, the Kahikinui shoreline consisting for the most part of sea cliffs exposed to the typically rough seas of the 'Alenuihaha channel. Thus the biomass productivity of the inshore waters was limited (although various invertebrates such as limpets, cowries and sea urchins are available depending on sea conditions), and access to the open pelagic waters depended on the weather and season. Thus, while marine flesh foods were available in Kahikinui, they too would have been at more of a premium than in ecologically more favored parts of the island.

The zooarchaeological record from Kahikinui households

Here we focus on the zooarchaeological record for four distinct household complexes, two complexes interpreted by us as commoner households and two as elite residences. These interpretations of status are based on a variety of evidence, including architectural complexity, size, presence of fine-grained lithics and faunal assemblages. As with all protohistoric Hawaiian residential sites, these are made up of discrete clusters of architectural features, each feature representing a functionally differentiated structure (eating house, primary dwelling, cookhouse, etc.). Such residential clusters were called *kauhale* (literally, 'group of houses'), and are further described ethnohistorically by Handy and Pukui (1958: 7–14) and archaeologically by Kirch (1985: 248–57).

The first of the commoner households is a cluster of three architectural features (sites A35-331, -334, -335) located close to the coast in Naka'ohu, and called by us the Naka'ohu Kai cluster (see Fig. 1). This cluster is described by Van Gilder and Kirch (1997: 56–9), who excavated a sample of 11m². Site -331 has a calibrated radiocarbon age of AD 1478–1648 (Beta-101452). One of the architectural features at the complex (A35-331) was interpreted as a probable men's house (*mua*), while another (A35-335) was probably the communal dwelling (*hale noa*). The second commoner household referred to here is the Kipapa Uka cluster (sites A35-44, -45, -46, -48), situated at an elevation of 700 meters asl, in the main part of the upland agricultural zone. Here the sample size consists of 39m²; the cluster is described by Van Gilder and Kirch (1997: 54–6). A ¹⁴C sample from site -45 yielded an age of 'modern' (Beta-101451), but a complete absence

of European trade goods indicates that the complex must date to the terminal proto-historic period.

Of the elite residences selected for analysis, one (site A35-755) consists of a set of five adjacent terraces descending down a ridge crest, at an altitude of 550m asl, also within the core of the agricultural zone. Each terrace supported a separate structure, with distinct cooking, sleeping, lithic activity and storage areas. Here our sample size is 20m²; four ¹⁴C dates (Beta-106753 to -106756) indicate occupation during the period from about AD 1640 to 1800. The second elite residence (site A35-117) is an architecturally impressive terrace and walled complex, situated on a high lava ridge (c. 650m asl) amid a complex of stone temple (*heiau*) foundations. The close association with a group of temples, and other aspects of the site including a cache of black-and-white pebbles (used by priests in divination), leads to a tentative interpretation of this site being the residence of a priest (*kahuna*) who officiated at the nearby temples. At site -117 we excavated 18m², and six AMS ¹⁴C dates (AA-38645 to -38650) again indicate occupation from ca. AD 1650–1800. In all sites excavated, there were no signs of significant post-depositional disturbance or intervening taphonomic processes that would confound our interpretation of the zooarchaeological record.

Differential distribution of flesh foods

Faunal data from the selected households in Kahikinui inform our interpretations of luxury foods and status in prehistoric Hawaii. Given the wealth of ethnographic information, we predicted that foods which were either in short supply or reserved for certain groups of people would have differential distribution in the zooarchaeological record. That is, faunal assemblages from elite households should indicate a selective focus on certain prestigious animal food resources, and assemblages from commoner residences should be more diversified and indicative of an opportunistic diet, or relatively broad when compared with the diet of the elites. Due to their socially superior position and ability to control resources, elites had more options for their diet. They were able to select certain foods and demand specific items as tribute without fear of dietary deficiency. Commoners had a more limited consumption of luxury, fatty foods.

The archaeological fauna point to these hypothesized differences in subsistence patterns. Evidence for differential distribution of animal foods between sites can be found both in the *qualitative* range of taxa present and in *quantitative* differences such as frequency of mammals, birds, fish and shellfish. Zooarchaeological variables including bone weight, NISP (number of identified specimens or count) and MNI (minimum number of individuals) were calculated in order to compare assemblages. Zooarchaeological analysis followed standard procedures set out in Reitz and Wing (1999).

A concentration index (CI) was calculated for each of the samples in order to factor out sample-size differences in inter-site comparisons (Table 1). For example, NISP were divided by the excavated area of each site; the higher the concentration index the greater the frequency of animal remains. These data are summarized in Figures 2 and 3. When discussing the frequency or relative abundance of fauna we refer to the CI of particular taxa. The category of 'medium mammal' refers to fragmentary remains of either pig or dog which could not be further identified. Bone that could not be positively identified as

Table 1 Concentration indices (CI) of primary faunal categories for commoner and elite households

Taxa	Commoner households		Elite households	
	CI g	CI NISP	CI g	CI NISP
Chicken	0	0	61	306
Bird (unidentified and non-chicken)	30	92	14	215
Pig	317	346	201	327
Dog	0	0	48	78
Medium-large mammal	243	426	93	294
Rat	55	1035	12	322
Fish	59	1140	89	1703
Shark	0	0	8	33
Shellfish	21809	40364	1271	2440
TOTAL	22513	43403	1797	5718

either pig or dog, due to its highly fragmentary nature, but was clearly one of these taxa is also included in the 'medium mammal' category.

Elite sites contained slightly fewer mammal remains by NISP and weight (Fig. 2), which at first might seem to contradict predictions from the ethnohistoric record. However, the mammal bone found in these sites is of a different nature than that recovered from commoner residences, the result of different cultural practices (*not* different post-depositional processes). Larger fragments and complete elements of pig and dog bone were identified from the elite sites, while the commoner houses contained smaller more fragmentary pieces of bone. The latter material represents small, non-choice cuts of meat. Elite assemblages commonly contained pig (especially young pig) and dog remains. These sites yielded a larger number of pig and dog individuals (MNI), but fewer pig NISP than commoner sites (see Fig. 2). This pattern is likely a result of the highly fragmentary nature of the mammal bone deposits in the commoner households; the NISP or bone count is inflated while the MNI indicates that a lower number of individuals was consumed in commoner sites. Dog bone was recovered only from elite contexts.

The concentration of rat remains associated with commoner households is also significant. Rats accounted for over three times as much of the fauna in commoner deposits. This bone is often fragmentary, burned and covered in carbonized material. If commoners were consuming rats, as the archaeological evidence strongly indicates, then it is likely that elites were not consuming them, perhaps as a show of status or taste, and/or simply because elites obtained sufficient protein from larger terrestrial mammals such as pigs, dogs and pelagic fish.

Our evidence for commoner consumption of *Rattus exulans* in Kahikinui runs counter to the accepted ethnographic picture, which denies that rats were eaten. However, both indigenous and ethnographic sources indicate in some detail that hunting rats with a miniature bow and arrows was a chiefly sport called *pana 'iole* (*pana*, 'bow', '*iole*, 'rat'), although there is no mention of the rat bodies being consumed (Malo 1951: 233; Stokes 1917: 19; Buck 1957: 376–7; Summers 1999: 86; Tomich 1969: 37). For other parts of Polynesia, however, particularly New Zealand (Buck 1949: 103–6) and Mangaia (Buck 1944:

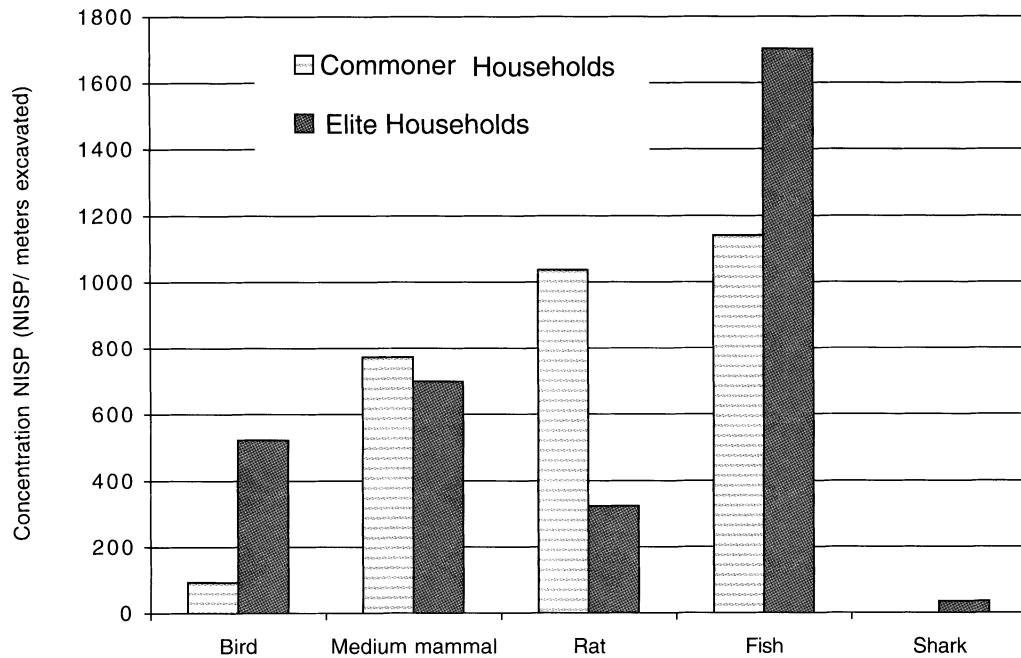


Figure 2 Vertebrate fauna concentration indices by NISP, Kahikinui, Maui.

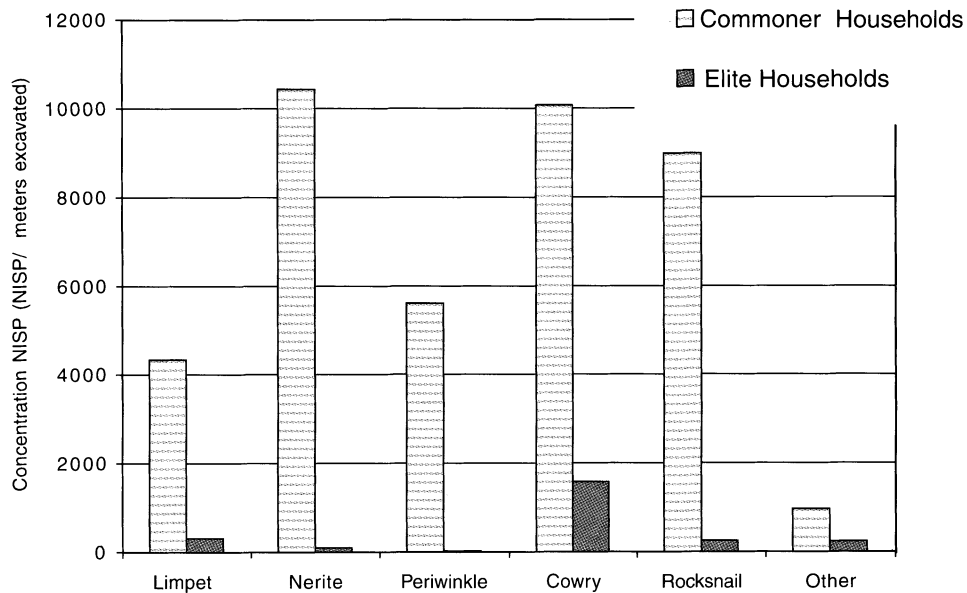


Figure 3 Invertebrate fauna concentration indices by NISP, Kahikinui, Maui.

247), hunting of rats for food is well documented; for Mangaia, this practice is also confirmed by zooarchaeological evidence (Kirch 1997a). Buck comments that 'throughout Polynesia, with the exception of Mangaia, the people deny that their ancestors ate rats', but goes on to note the presence of rat traps in the Cook Islands, Samoa and New Zealand (1949: 105–6). It may well be that the strong European (and particularly missionary) aversion to rats strongly influenced Polynesian dietary views after contact. Our zooarchaeological evidence from Kahikinui has convinced us that, at least in this resource-limited environment, commoners were making use of wild rats to supplement their diet. The matter deserves to be investigated further with zooarchaeological assemblages from sites in other parts of the archipelago.

Another notable pattern relates to bird remains. Concentration indices for bird are five times greater in elite sites (see Fig. 2). Chicken remains were a common component of elite fauna. Other birds identified from the elite residences which did not occur in the commoner assemblages were small species such as honeycreepers and songbirds; feathers from these birds may have been used for making chiefly regalia. The bird bones from site -117, the putative priest's house, are primarily from immature individuals. The size and morphology of the bone indicates that these animals were probably taken from nests when they had reached nearly adult size; however, at this stage they would not have displayed the prized yellow plumage of adults (James, H., pers. com. 2001). Thus these birds were presumably exploited strictly for consumption rather than for their feathers. In marked contrast, no immature bird bone has been recovered from any of the commoner households in Kahikinui.

Concentration indices also indicate that commoner households relied more heavily on the littoral and inshore marine resources, including fish and especially mollusks, than did elite households (Fig. 3). Commoner households contain an abundance of shellfish remains; these sites exhibit a broad-based pattern of marine invertebrate exploitation. For example, nineteen more varieties of shellfish were identified in commoner assemblages than in elite contexts. Commoner households contained a high concentration of nerites (*Nerita* spp.), periwinkles (*Littorina* spp.), cowries (*Cypraea* spp.) and rocksnailed (*Thaididae*). In contrast, elite consumption of shellfish emphasizes a more select group of taxa – especially *Cellana exarata*, a surge-zone limpet, and certain species of large cowrie and cones (*Conus* spp.). *Cellana exarata* occurs closer to shore and grows larger than other limpet species common to Kahikinui assemblages, but it can be risky to obtain during the rough seas which prevail throughout much of the year (Kay 1979; Kay and Magruder 1977).

In a marginal environment such as Kahikinui, prehistoric littoral and near-shore exploitation must have been strictly regulated, as recorded ethnographically (Titcomb 1972). Titcomb documents an account of fishing taboos in Ka'u, on the Big Island of Hawaii where 'A taboo for the inshore fishing covered also all the growths in that area, the seaweeds, and shellfish, as well as the fish' (1972: 14). The informant goes on to describe how regulation and conservation worked:

When the *kahuna* [expert or priest] had examined the inshore area, and noted the condition of the animal and plant growths, and decided that they were ready for use, that is, that the new growth had had a chance to mature and become established, he so

reported to the chief of the area, and the chief ended the tabu. For several days it remained the right of the chief to have all the sea foods that were gathered, according to his orders, reserved for his use, and that of his household and retinue. After this, a lesser number of days were the privilege of the *konohiki* [headman of an *ahupua'a* or district]. Following this period the area was declared open (*noa*) to the use of all.

(Titcomb 1972: 14)

The zooarchaeological record appears to confirm this account, with commoner households consuming different types of marine fauna than elites, and small-sized individuals on average. Invertebrate remains from elite households indicate a more specialized exploitation strategy: they collected (or received from others who collected for them) the more choice shellfish, while commoners consumed what was left over (often a large variety of smaller invertebrates).

Bony fish likewise were more highly concentrated in elite sites. Importantly, the fish remains from elite households contained more groupers (*Epinephelus* spp.), jacks (Carangidae) and sharks (Carcharhinidae), all relatively large carnivorous fish. Because Kahikinui's leeward shoreline is geologically youthful and supports a young burgeoning reef with few top-feeding carnivores, it has fairly low inshore marine resource productivity in comparison with other Hawaiian environments. While the littoral zone is dotted with many tide pools and bays, few are well developed and most do not contain an abundant and or varied fish fauna. Large carnivorous fish would have been important commodities prehistorically, as recorded ethnographically (Buck 1957; Handy et al. 1972); they were reserved for special occasions and consumption by the ruling classes. Remains of these fish are more common in elite residences.

Conversely, the fish remains from commoner deposits were small, of a size and type that could have been collected in tide pools, such as surgeonfish (Acanthuridae). Titcomb (1972) states that no taboos were imposed on a variety of juvenile fishes that inhabit tide pools, including surgeonfishes (Acanthuridae) and parrotfishes (Scaridae). Not surprisingly, these small littoral sized fish had a higher concentration in commoner assemblages.

The gender system and cooking

The Hawaiian ethnohistoric literature strongly associates certain categories of 'luxury' (i.e. fatty, greasy, oily) goods in protohistoric Hawaii with the male gender; females were supposedly denied access to many of these foods, including pig and certain fish. Moreover, a pattern of separate cooking facilities supposedly operated in protohistoric households. Although these patterns are widely discussed in syntheses of Hawaiian ethnohistory, they have not been systematically addressed by archaeologists working on late pre-contact Hawaiian residential sites. A major question remains as to whether such patterns, which were reported primarily by early nineteenth-century Hawaiian writers of the elite class (e.g. Malo 1951), were indeed typical of commoner households.

The data from our Kahikinui household sites tentatively indicate that such gender distinctions in access to preferred flesh foods, as well as intra-household patterns of gender-differentiated cooking, were indeed pervasive patterns even in a marginal district such as Kahikinui. For example, in the Naka'ohu Kai household cluster, pig bone was

concentrated in site A35–331, an architectural feature also notable for its fine-grained basalt debitage, and interpreted by us as a men's house (*mua*). In the Kipapa Uka cluster, structural evidence for dual cooking hearths was excavated in site A35-45, matching evidence from another household cluster in the uplands, with a similar two hearth pattern (A35-752; see Van Gilder and Kirch 1997). More research is required to determine whether these tentative archaeological signals of the '*ai kapu*' system can be discerned at a wide range of household complexes.

Discussion and conclusions

Our data from selected Kahikinui households demonstrate that zooarchaeological remains representing 'luxury' or prized foods are more common in elite-associated sites, as predicted from the ethnohistoric literature. It is essential, of course, to understand that 'luxury' in the Hawaiian context meant flesh foods that were fatty, greasy or oily. In Kahikinui, a relatively marginal environment for both farming and fishing, the ability to obtain quantities of such *kohi kelekele* foods was particularly limited. The elites were better able to pick and choose what they ate, resulting in a comparatively specialized diet of flesh foods. The commoner subsistence strategy, in contrast, was more generalized and opportunistic.

The variation in the range of fauna and the overall makeup of elite and commoner zooarchaeological assemblages can be interpreted as a reflection of status within the socially differentiated protohistoric Hawaiian chiefdom, and as the outcome of hierarchically regulated access to certain kinds of culturally important food resources. Large limpets and cowries, cones, large fish and sharks, birds, pigs and dogs all fell into the category of particularly desirable luxury foods, and these are more prevalent at the elite residence sites. In contrast, commoner residences have higher overall quantities of shellfish, but of smaller or 'inferior' species.

The archaeological data, however, do not merely confirm predictions from the ethnohistoric record; they also add new insights. The most striking pattern *not* predicted ethnohistorically is the discovery that commoner residences exhibit large quantities of rat bone, with taphonomic evidence indicating that rats were consumed as food. Ethnohistoric sources refer only to a chiefly sport of rat hunting, yet it is clear from our data that in Kahikinui, commoner households turned to this small, abundant mammal to augment their diet.

In sum, while commoners and elites in Kahikinui shared a similar resource base, they differed in their exploitation of or access to specific items. Luxury foods were key resources that had limited availability in Kahikinui prehistorically for both social and ecological reasons; their consumption closely reflects the developed sociopolitical hierarchy of this protohistoric archaic state.

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