

A NICE PLACE TO LIVE AND WORK: COMMUNITY STRUCTURE AT YAGI

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ABSTRACT

The early Jomon community that was based at Yagi on the Pacific shore of southwestern Hokkaido had access to a wide array of rich natural resources, but a limited number of spaces suitable for habitation. In addition to creating distinctive cultural and ecofactual assemblages, these conditions impacted the distribution of features across the Yagi site. This paper discusses the structure of the Yagi site in light of the community's reconstructed subsistence technology and the results of both excavation and magnetic surveys.

THE YAGI PROJECT

The Yagi project was an international archaeological investigation aimed at understanding the ecology and economy of an Early Jomon community in southwestern Hokkaido. Fieldwork carried out between 1978 and 1980 with the support of the National Geographic Society, the National Science Foundation and the Social Science and Humanities Research Council of Canada, gathered information on the resources available to the people of Yagi and on the plants (Crawford 1983), animals (Bleed and Bleed 1981; Bleed *et al.* 1989) and technologies (Bleed 1992) those people actually used. The nature of the Yagi community itself was investigated with both excavation and proton magnetometer survey of a large portion of the site (Bennett 1981). This paper presents the results of that latter work and describes the structure of the Yagi community in light of the economic patterns of the people who lived there. As background, we will first describe the Yagi's community's physical setting and summarize its reconstructed economic patterns.

THE YAGI SITE AND ITS SETTING

The Yagi site is located on the Pacific coast of the Oshima peninsula which forms the curved tail at the southwest corner of the island of Hokkaido (Figure 1). The peninsula is separated from the rest of the island by the relatively narrow Oshamambe lowlands. Towards its southern end, the Oshima peninsula divides into two shorter peninsulas. The Matsumae peninsula is on the west and to the east, on the Pacific side, is the Kameda peninsula.

Administratively, Yagi is located in the town of Minamikayabe which occupies approximately 20 km along the Pacific coast near the southern end of the Kameda peninsula. This portion of the coast faces the relatively sheltered waters of Uchiura Bay, not the great expanse of the Pacific. The full force of Pacific storms and *tsunami* thus rarely reach the area. The oceans in front of Minamikayabe are quite rich so that most of the 11,000 people of the town are somehow involved in either offshore fishing or kelp gathering.

Topographically, this portion of the Oshima coast is rugged and broken. The ends of the Kameda peninsula are marked by large volcanoes – Mt. Komagatake to the north and Mt. Esan at the southern tip. Between these is a series of wooded mountains which rise up to 1000 m above sea level. The crests of these mountains are within 10 km of the Pacific coast. The rivers which drain their western sides are, therefore, slow flowing and pass through broad valleys. On the Pacific side, however, the descent is much steeper and the many small rivers that drain this side pass through V-shaped valleys.

The major areas of level land in Minamikayabe are two coastal terraces which run discontinuously along much of the length of the town. Even these are frequently interrupted

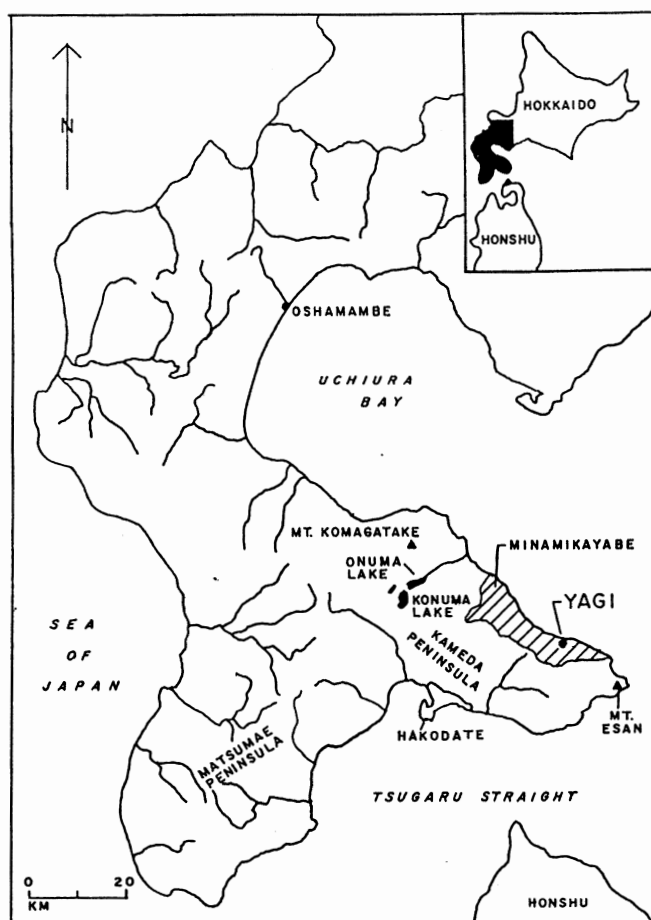


Figure 1: Southwestern Hokkaido, showing the location of the Yagi site.

by river valleys and areas where rocky outcrops reach down to the sea. The lower, "road terrace" is 6-8 m above sea level and very rarely more than 100 m wide. Most of the people of modern Minamikayabe live on this narrow strip of land. Behind the road terrace, the land rises abruptly to another set of terraces which are between 40 m and 50 m above sea level and up to 800 m in width. These are called "field terraces" today since they are now mostly covered with garden plots. Like most of the other prehistoric sites known from this coast, Yagi sits on one of these field terraces. In the vicinity of the site the terrace is some 700 m wide and is backed by low mountains averaging 500 m in height. The terrace on which the Yagi site is located overlooks the mouth of the Yagi River which empties into the Pacific only 400 m from the site. Another small river, the Osatsube, bounds the terrace some 900 m up the coast from the site. The Yagi site is thus surrounded by low mountains, the Pacific Ocean and small rivers.

The early Jomon community sat on level ground at the northeastern corner of the Yagi terrace. Both excavation

and the distribution of surface materials indicate that the site extended right to the edge of the terrace where the land falls steeply away. The slopes are now heavily wooded, but erosion on these slopes may have removed some of the cultural deposits.

The environs of the Yagi site must be considered very rich. As described elsewhere (Bleed and Bleed 1981), the immediate Yagi catchment included virtually all major environments present anywhere in southern Hokkaido. This meant, of course, that as long as local resources were not depleted, there was no need for long-distance hunting or gathering forays away from the community. Furthermore, the environments near Yagi presented a rich array of wild plant, animal and fish resources in a series of seasonal peaks. Reconstruction of the optimal hunting patterns for the Yagi community suggests that there was no season when desirable game was not available (Bleed *et al.* 1989). Without leaving their home community the people of Yagi could, therefore, have accessed a number of different kinds of plant and animal resources in the course of a single year.

Other lines of evidence support this reconstruction and, furthermore, suggest that hunters from the Yagi community may have concentrated many of their food processing activities and other work at their home village. The rugged terrain of the Oshima coast presented Jomon residents with very few level areas so that activities would have to be concentrated in spots like the Yagi terrace (Bleed *et al.* 1980). Beyond that, the Yagi stone tool assemblage appears to include a very wide range of tools. In statistical terms, the assemblage is both rich and "diverse", indicating that a very wide range of activities was undertaken at the site (Bleed 1992).

Against the background of these results and reconstructions, it becomes interesting to investigate the range and distribution of architectural features at the site to see what they suggest about how the Yagi terrace was used by its Jomon inhabitants.

EXCAVATED ARCHITECTURAL FEATURES AT YAGI

In the three field seasons, a total area of 734 m² was excavated along the northeastern and eastern margins of the Yagi terrace (Figure 2). A number of different kinds of features were discovered in this area.

Domestic Structures

Five separate structures that can be interpreted as "houses" were partially or fully exposed. Three of these were roughly circular, semi-subterranean structures with floors that had been dug as much as 50 cm into the site surface. The circular houses all measured about 6 m in diameter. Another semi-subterranean house had an ovoid floor plan that measured

nearly 9 m x 11 m. Finally, a portion of a large but apparently lightly-built structure were also partially exposed.

Pits and External Features

In addition to these domestic structures, a number of other features were also exposed in the northern part of the terrace. These include four separate round-bottomed pits, all of which were found to be essentially sterile. Local archaeologists interpret these as burials from which all skeletal remains have decayed. All of these pits were found on the northern part of the site. A large concentration of lithic debris was also found on the very northern margin of the site suggesting that the area had been intensively used for flintworking.

No domestic structures were found in this area, but a great many other cultural features were present. These include a thick accumulation of rich humus, pottery, stone tools and ecofactual remains as well as a large number of unmodified cobbles that must have been brought up to the site from the Yagi River. These cobbles were not found

arranged in a recognizable order, but they reflect a major labour investment in this area. We interpret the postholes to be reflections of racks or markers that stood in this area. All this appears to indicate that this part of the site was extensively used, potentially in several different ways.

The rear portion of the terrace was tested to show the cultural deposit in this part of the site to be thinner and apparently different from that toward the seaward edge of the terrace. The only pits exposed in this portion of the site were two deep, narrow trenches. One of them is a "T-pit" of the sort that is common on the margins of Early Jomon sites in Hokkaido. The other, smaller pit had a cache of ground stone adze bits. The functions of these features are not clear but they appear not to have been either storage or waste pits. The paucity of tools suggests that this area was occupied but not used as extensively as the terrace "front".

Limited testing indicated that although there was a thin surface scatter of artefacts toward the west, few if any features were built in the centre of the terrace.

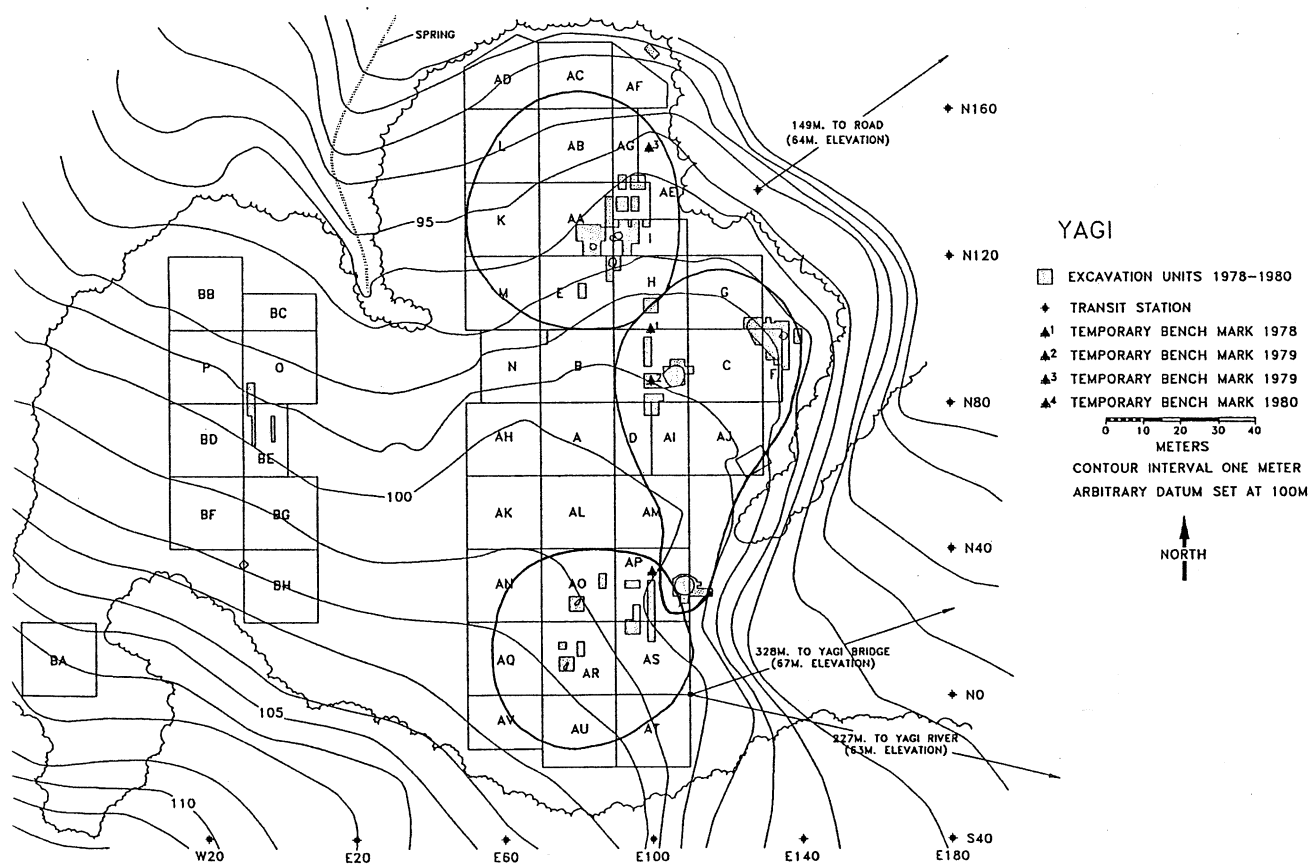


Figure 2: The Yagi site showing excavated areas, magnetometer grid and subdivisions of the site.

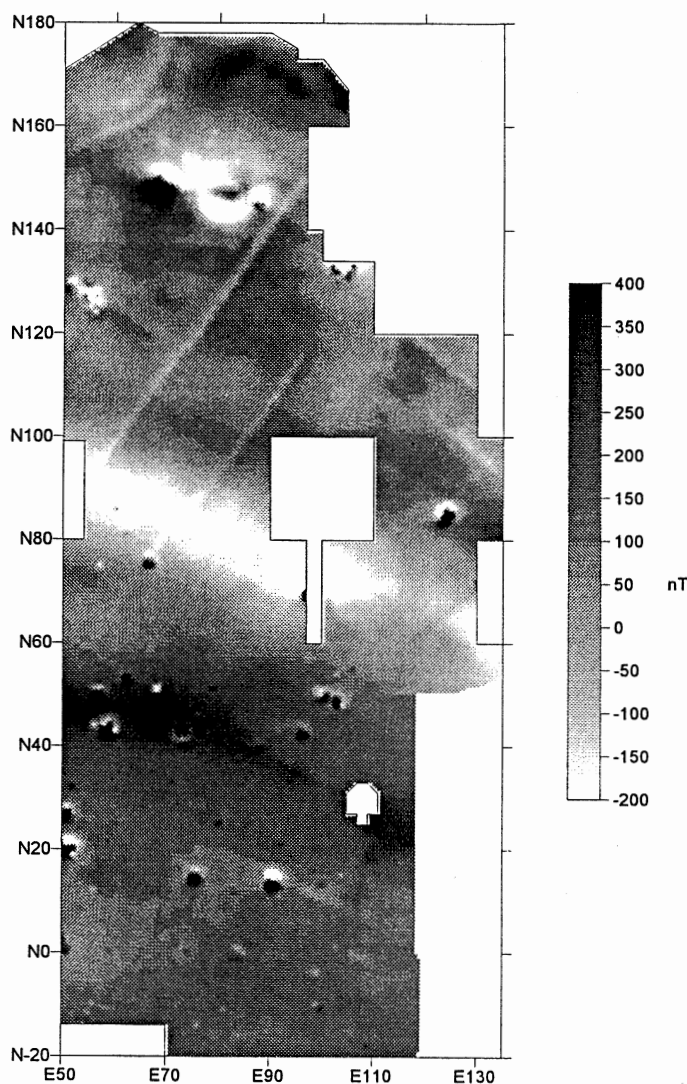


Figure 3: Magnetic map of the eastern portion of the Yagi site.
North is toward the top.

MAGNETIC SURVEY RESULTS

To augment the excavation results and to examine a wider portion of the Yagi terrace, a program of magnetic surveying was begun during the 1978 field season and significantly expanded in 1979. A total area of 1.58 hectares was surveyed (Figure 3). Magnetic surveying was done in 20 m blocks. Initial tests indicated that the soils of the Yagi site have high magnetic susceptibility so that these techniques seemed a very appropriate way of locating buried features across the terrace.

In fact, magnetic surveying at Yagi presented a number of problems. Some of these were straightforward logistical difficulties caused by the intense cultivation of the site. Nets, trees and metal equipment on the site slowed data

gathering. More seriously, terraces, paths, plot margins, buried manure tanks and other recent features presented magnetic anomalies that clouded evidence of prehistoric uses of the site. "Filtering" the data in various ways clarifies them, but we were never able to use magnetic information to identify specific features at a predictive level.

Correlation between magnetic anomalies and excavated features

Attempts to investigate the correlation between magnetic anomalies and buried features were frustrated by several conditions. First, schedules were such that excavations had to begin before the survey could be completed so that some parts of the site could not be surveyed. Furthermore, we were not able to excavate in all portions of the site so that not all potentially interesting anomalies could be tested. Several of the small features which were discovered in surveyed portions of the site appear not to have caused measurable anomalies. Furthermore, most of the anomalies that were selected for testing during the third field season turned out to be natural irregularities in the volcanic soil horizons of the site. In only two cases was it possible to clearly examine the anomalies caused by domestic structures.

The entire area over one of the round houses, House 6 near the eastern half of the terrace, was surveyed, but as luck had it, the feature was located beneath a ridge of a garden plot so that no clear magnetic "signature" could be identified.

The largest of the houses offers a slightly clearer situation (Figure 3). In this case, the archaeological feature appears to be marked magnetically not by a specific isolable anomaly, but rather by a paired low and high area. This kind of anomaly is cryptic, but it indicates that when considered in conjunction with excavation results, survey results do help to identify the major occupation zones of the Yagi community.

OCCUPATION ZONES OF THE YAGI COMMUNITY

Obviously it would have been ideal if the magnetic data from Yagi were clear enough to make specific features stand out identifiably, but that was simply not possible. Stepping back from the search for specific features, considering broad patterns in the magnetic data, and comparing excavation and magnetic results does, however, make it possible to identify architecturally distinctive patterns of the Yagi site. These areas, in turn, bring us back to a consideration of the link between the Yagi site structure and the economic patterns which have been reconstructed for the community. Four magnetically and archaeologically distinctive areas within Yagi can be identified (Figure 2).

The North Seaward Margin

This area includes the extreme northern edge of the site. Only small isolated pits, individual postholes, and large areas of sheet midden were found in this area. Most of the magnetic anomalies noted here appear to be either recent or natural. Aside from these, the magnetic signature of the area consists of smooth undulations and subtle variations that cannot be linked to specific features. It seems unlikely that any semi-subterranean houses or other large structures are located in this part of the site. Instead this area appears to have been used for a number of other activities.

The Level Terrace Rear

This area is located toward the back of the Yagi terrace on the level land at the base of the hills behind the site. With a generally thinner humus layer than other portions of the Yagi terrace, this area presents a simpler and more uniform magnetic image than other parts of the site. Isolated features constructed in this region created some magnetic anomalies, but most of the irregularities in the magnetic field appear to be either recent or natural. This part of the terrace was occupied by the people of the Yagi community, but more extensively than the seaward margin of the site.

The Terrace Centre

Unoccupied level portions of the 40 m terrace apparently formed a distinctive ecological community. Crawford (1983) has suggested that the disturbed vegetation near Jomon communities may have been economically very important. Still, although this part of the terrace was close to the Yagi community, test excavations and magnetic surveying in the centre of the Yagi terrace produced essentially no evidence that this area was occupied by the people of Yagi.

The East-Facing Valley Margin

Both excavation and magnetic results indicate that the centre of the Yagi community was located on the eastern margins of the terrace, overlooking the mouth of the Yagi River. The magnetic signature of this part of the site is a convoluted mixture of magnetic highs and lows that appear to reflect an area of relatively intensive construction. While these cannot be used to locate specific features, they define an area of occupation within the site.

CONCLUSIONS: OCCUPATION ZONES OF THE YAGI COMMUNITY

Excavations and magnetic survey indicate that the people of Yagi built their homes in a relatively compact area along the eastern margin of the terrace overlooking the mouth of the Yagi River. This location afforded a fine vista of the

surrounding coast and put the community within 400 m of both fresh and salt-water resources. At the same time, there is nothing apparent about the Yagi terrace that makes it significantly more attractive than any of a number of other similar locations along the Oshima coast. The uniformity of resources in the area seems to be more remarkable than the peculiarities of specific locations. The physical environment may have had little to do with why Yagi was an attractive location for settlement.

With the data in hand we cannot know the exact number of houses that were built at Yagi, but the extent of the site, the area of intensive occupation, and the location of non-residential areas within the community can be estimated.

The central part of the community, where domestic structures were raised, covered an area of some 3150 m². The Yagi terrace was occupied several times during the Jomon era, but the major occupation occurred early in the Early Jomon period. Excavation at Yagi revealed no evidence of super-positioning of domestic structures. This might suggest that the community did not last as long as other Jomon sites that have been investigated along the Oshima coast. Given the size and distribution of the excavated features and the size of the occupied area, we can estimate that the total number of domestic structures that made up the Yagi community was in the order of fifteen.

The seaward edge of the terrace was closest to the coast and river mouth resources. This area appears to have been used as a multi-purpose area in which a number of work tasks were carried out. This area covered about 2700 m² or just slightly smaller than the portion of the community devoted to domestic structures.

The level portions of the terrace toward the hills behind the domestic centre were also used, but much less intensively. Pits and other features were created in this part of the site across an area of some 3600 m². It was, however, used more intensively than the seaward edge of the site.

Overall, then, it appears that houses covered much less than half of the Yagi "site" and that areas around the domestic core of the community were an important part of what went on there.

The site structure revealed by excavations and magnetic survey is not surprising. On the contrary, it fits well with the economic patterns that have been reconstructed for the Yagi community. Ecofactual remains, the artefact assemblage and theoretical consideration of the resources and terrain of the Yagi catchments, combine to suggest that Yagi was a multi-purpose base used throughout the year for a wide variety of processing activities. The proximity of resources and the paucity of alternatives would have focused many processing activities at the site. Yagi truly appears to have been a good place to both live and work.

BLEED, WEYMOUTH AND BENNETT: A NICE PLACE TO LIVE AND WORK

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