7 / *Maya Archaeology and Population Estimates in the Tayasal-Paxcaman Zone, Peten, Guatemala*

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The Carnegie Institution of Washington evinced the first interest in the Tayasal-Paxcaman Zone. Sylvanus G. Morley, director of Carnegie's Maya program, was convinced that Tayasal was one of three key sites for understanding Maya prehistory (Kidder 1950:1). Morley believed Uaxactum would provide data on the Preclassic and Classic periods, Chichen Itza on the shift from the Classic to Postclassic, and Tayasal on the latest Maya. Thus, from early on, Tayasal was viewed as critical for understanding late Maya prehistory, largely because of the belief that the site was the capital of the last independent Maya kingdom of the Itza, who were finally conquered by the Spaniards in A.D. 1697 (see D. Chase and A. Chase 1986b).

Archaeologists who have worked in the Lake Peten area (Map 7.1) went there primarily to find Postclassic remains (post–A.D. 950 for the Tayasal-Paxcaman Zone), but evidence of earlier occupation proved to be far more plentiful (A. Chase 1979, 1983, 1985a, 1985b). In the early 1920s Morley's excavation program at Tayasal was halted after two years when it became clear that it was uncovering almost exclusively Classic remains. In the 1950s George Cowgill (1963) succeeded in finding Postclassic remains on Flores and on the shores of Lake Peten. Fueled by Cowgill's success, a University of Pennsylvania expedition excavated at various sites on the

Tayasal Peninsula in search of Postclassic remains in 1971. Because large-scale Postclassic architecture was not encountered, however, a decision was made to conclude excavations after the first season; a 1977 season tied up loose ends.

The 1971 and 1977 research defined an area of settlement known as the Tayasal-Paxcaman Zone (A. Chase 1983:6–12). This zone of approximately 90 km² was concentrated on the uplands of the peninsular spine. The entire peninsular spine between the northern and southern arms of Lake Peten was found to exhibit almost continuous settlement. Although different settlement nodes could be recognized (such as Tayasal, Cenote, and Paxcaman), archaeological evidence for habitation was continuous between these nodes, albeit not as dense as within the centers themselves. However, because distinct nodes or epicenters existed on this spine which could be considered "sites," the entire area was designated a "settlement zone."

Even a cursory view of the prehistoric occupation within this zone reveals that the specific population history of any given site differs from that of its neighbors. The spatial distribution of settlement for any given temporal frame is likely to follow similar rules and patterns, but these guidelines vary from one spatial frame to another. The population also appears to have moved freely over time. Yet when viewed collectively, it seems to have grown continually within the zone until the onset of the Postclassic Period. The data also make it clear that sampling schemes focusing only on mounded constructions and higher terrain are likely to misjudge the actual population history.

Methodological Considerations and Data Base

Although the problems of interpreting excavations are apparent in all aspects of archaeological reconstruction, they are critical in demographic work, where small variations in temporal assessment or functional assignment may drastically change population totals. Other important questions arise with regard to archaeological interpretation and the potential equivalencies among different kinds of data. What constitutes a unit of demographic presence: a building itself or a modification of it; a primary deposit consisting of refuse or a cache or a burial? Or can material from fill indicate demographic presence? (See Coe and Haviland 1966 for problems in associating fill and people at Barton Ramie, Belize.) How do these units compare with others garnered from areal clearing or excavation of special deposits? How specific or gross a unit are we talking about? The answers to these questions produce dissension over whether such a data

base can be used as a source of cultural, behavioral, spatial, or temporal information.

Regardless of the excavation strategy, not all excavations completely uncover constructions; structures are often sampled by test pit, trench, and/or areal excavation. Usually only a small portion of a building or platform is exposed or has its temporal dimensions defined. If only a fraction of a building is sampled, it is quite possible that the excavations may present a skewed representation of dates of construction and function(s). However, such partial samples generally form the building blocks for wider interpretations concerning chronology and demography or function and process. These statements certainly hold true for the Tayasal-Paxcaman Zone. For this reason, it is necessary critically to review the data base with respect to the temporal fames used and the spatial units recorded.

Timeframes

Analysis of the Tayasal materials from 1977 through 1983 resulted in the establishment of a tentative chronological framework for the zone, originally cross-dated to other preexisting sequences in the Peten. The phase dates presented here are slightly realigned (Table 7.1); this realignment is based on further analysis of the Tayasal pottery, on the viewing of other central Peten collections, and on firsthand knowledge of well-dated contexts from Santa Rita Corozal (D. Chase 1982; D. Chase and A. Chase 1986a, 1988) and Caracol (A. Chase and D. Chase 1987a, 1987b). Although this realignment is usually in the neighborhood of only plus or minus 50 years, it presents an entirely different demographic curve for the sites of Cenote and Tayasal and, by extension, the entire zone.

Under the original temporal frame established for the zone (in which Hoxchunchan was dated A.D. 400–600 and Pakoc A.D. 600–700; see Table 7.1 for revised dating), both Tayasal and Cenote would appear to have experienced Early Classic Hoxchunchan declines in their populations, but with the shift of 50 years to the succeeding Pakoc phase in the adjusted timeframe, a smooth demographic development is seen from the Late Preclassic through the Terminal Classic periods in the zone. This suggests that the population depression during the Early Classic claimed for other Peten sites (Willey 1977:394–97) may be a product of excavation methodology *and* temporal assignation. It should be further noted that, at least for the Tayasal-Paxcaman Zone, the use of an 11.3.0.0.0 correlation (see A. Chase 1986: 117–21) to interpret the data would also eliminate the severe drop in population now seen during the Early Postclassic Chilcob phase. It is quite evident that even slight changes in the temporal frame can produce drastic revisions in demographic profiles.

Dating, Contemporaneity, Occupation, and Context

A problem in the construction of any population history is the establishment of contemporaneity. Population reconstructions for Maya sites with long histories of occupation are useless unless an assessment can be made as to which of the defined units of the site were used and inhabited at the same time. Most Maya buildings are constructed of what is colloquially known as "fill"—material placed in the core of a structure to provide a firm, flat foundation for a platform that raises the building mass above ground level. Much archaeological interpretation in the Maya area is based indirectly on this core material, particularly when special deposits such as burials, caches, or primary refuse are missing. However, dating or any other interpretation of excavated construction core requires careful evaluation of the activities that led to its deposition. Such an assessment is problematic because Maya fill may result from a single effort or from accretionary efforts and may be carried in from almost anywhere at the site. Thus, the fill, though always somewhat earlier in date than the construction that encases it, frequently includes items of mixed or uncertain associations, especially if earlier constructions or dump sites are raided for building materials. In small excavation samples, particularly those generated by test pits, it is often extremely difficult to assess such context. Mistakes here can lead to errors in interpretation and, if such a sample contributes to the larger picture, to errors in site or regional synthesis.

The Tayasal-Paxcaman Zone has a large number of primary deposits directly associated with pottery vessels, allowing the construction of a tightly seriated sequence (A. Chase 1983:Table 3). Thus many of the loci used in the construction of the tables presented here were assessed on more than the simple presence and absence of sherd materials. Rather, the inference of occupation was derived from the dating of actual construction or use-related events recovered from the excavations. Optimally, occupation was established based on the recovery of special deposits consisting of caches, burials, or refuse; this was possible in 6 out of 8 Cenote investigations and 30 out of 99 Tayasal investigations. In the other excavations occupation was established through the use of stratigraphy, seriation, and spatial considerations.

The use of these techniques at Tayasal, however, calls for a cautionary note. Without the careful consideration of context, it would have appeared that Late Preclassic occupation of the zone was extremely heavy—for at least a half-dozen constructions dating to the Middle Postclassic Period contained only large Preclassic sherd materials in their cores. Based on sherd counts alone, these could be interpreted as Preclassic constructions reoccupied during the Postclassic Period. Contextual analysis, however, made clear that these constructions were entirely Postclassic and that Post-

classic peoples were mining earlier loci, not necessarily close by, for fill (cf. A. Chase 1983:696).

Apart from determining when something was built, other problems exist in any excavation sample. For instance, how long was a structure occupied? The Tayasal-Paxcaman data suggest that an answer would have to be based on both time period and kind of construction. As a rule of thumb, it appears that the more effort expended on any particular locus, the longer that locus was generally occupied. Many well-constructed loci exhibit a long history of occupation. As no natural earth occurs in any of these loci, it is usually predicated that they were occupied continually. In particular, because of the labor invested, it is likely that well-plastered constructions were occupied longer than unplastered or poorly plastered buildings. Thus, units of time approaching 100 or 150 years are acceptable figures for the occupation of better-built buildings, whether continually or cyclically lived in. The flimsily constructed buildings generally representative of nonmounded constructions, and especially characteristic of the Postclassic, were probably occupied for no longer than 50 years. This interpretation is based not only on the available building materials, but also on the general lack of rebuilding found in Postclassic constructions and on the uniformity in associated ceramic deposits. Nevertheless, to attempt to make different use-life predictions within the same time era based on the various kinds of buildings is exceedingly difficult or even fruitless without more extensive excavation. It is, however, interesting to note that, if all buildings are held constant, the general demographic curves in the Tayasal-Paxcaman Zone are not significantly altered whether the occupation span is considered to be uniformly 50, 100, 150, or 200 years.

One further issue needs to be raised—the existence of "invisible constructions" (Bronson 1968; D. Chase, this volume; Pyburn, this volume). These undoubtedly exist in the Tayasal-Paxcaman Zone. Based on the excavation sample, they are numerous, but it is not easy to give a quantitative estimate. Part of this difficulty is due to the research design used in the epicenters of the mounded Classic Period sites. The 1971 excavations focused on mounded constructions on the mainland spine centers without sampling vacant areas. However, when vacant areas were sampled along the lakeshore of Tayasal, every test pit dug revealed some evidence of occupation. Thus, estimating a figure for the Tayasal-Paxcaman Zone which may account for the unmapped invisible construction is problematic. It is also difficult to tell if the percentage of invisible constructions differs for each time period. I have always believed, however, that the mounded constructions visible in the Tayasal-Paxcaman area were not the residences of the poorest inhabitants of the zone. For purposes of population reconstruction, a figure of 37.4% invisible constructions might be proffered; this figure is based arbitrarily on the overall percentage of nonmounded struc-

tures found and investigated at the site of Tayasal. Nevertheless, this figure could just as easily be doubled based on the same data.

Settlement Data

The Pennsylvania Tayasal Project mapped a variety of settlement concentrations and excavated numerous Postclassic remains as well as a far larger amount of earlier materials. Besides Cenote, Tayasal, and Nima, the mainland sites of Yachul, Chaltun Grande, Chaja, Michoacan, Tres Naciones, and Paxcaman (north) were mapped during 1971 or 1977, and the islands in Lake Quexil and Lake Peten were mapped during 1977. The 1971 excavations focused on Cenote, Tayasal, and Nima (Map 7.1). Seven structures were intensively excavated at Cenote, and data from an eighth construction were recovered in 1977 (A. Chase 1983:85–354). Information pertaining to '99 constructions is extant for Tayasal. Twenty-six of these constructions were investigated by trenching, partial areal stripping, or some combination of these two techniques; the rest were sampled by means of test pits (A. Chase 1983:355–1057). Two additional structures were tested at Nima (A. Chase 1983:1098–1139), one with a slightly expanded test pit and the other with a small trench. A total of 51 burials, representing 56 individuals, was recovered by the Pennsylvania Project; 8 additional burials representing 8 individuals (all Late Classic Hobo) were recovered by the Guthe excavations (A. Chase 1983: Table 37).

Cenote

Excavations into seven different structures were undertaken in 1971 at Cenote; all involved trenching, areal stripping, or some combination of the two. In 1977 information was recorded concerning a looted building in which an early Late Classic (Pakoc) burial had been encountered. Taken collectively (Table 7.2), the Cenote excavations reveal an epicenter that must have blossomed after the Late Preclassic and presumably dominated the Tayasal Peninsula in the Early Classic era, only to be overtaken by Tayasal itself during the Late Classic. Perhaps significantly, the Cenote data demonstrate a smooth development out of the Late Preclassic into and through the Early Classic without any disruption of population. Additionally, Protoclassic ceramic modes are clearly evident from the earlier part of the Early Classic; these modes do not appear to be intrusive to the zone but apparently are part of a ceramic continuum (A. Chase and D. Chase 1983, 1987c:53) and indicate that there was no population replacement in the Tayasal-Paxcaman Zone during this era. The site yielded no Postclassic material.

Mapping at Cenote showed a total of 107 structures in an area of approximately 0.5 km². Most of these remains were easily visible in the savanna; additional structures exist in the surrounding bush. Although Cenote was definitely a primary node of settlement in the Tayasal-Paxcaman Zone and exhibits sizable constructions, its overall mapped density of structures is quite low. Even if one were to assume that the site was twice its mapped size, this would indicate a density of only 214 structures/km²—not large by any calculation. Cenote's maximum population during the early part of the Late Classic Period could only have been in the neighborhood of 1200 (see below for mode of calculation).

Tayasal

After it was realized that Postclassic remains were not to be found at Cenote, excavations were emphatically shifted to Tayasal, a site heavily occupied throughout most of its prehistory (Table 7.2). Initial excavations focused on the mounded structures found on the peninsular spine. With very few exceptions, the remains here proved to be earlier than Postclassic. As a result, excavations were again refocused, this time to vacant-terrain areas along the Tayasal lakeshore. Here an extensive and widely scattered test-pit program encountered, in a majority of the tests, the Postclassic remains that were being sought, suggesting that almost any semi-level area along the lakeshore was once a locus of late occupation.

The Tayasal excavations are interesting for several reasons. Approximately 25% of the 399 mapped structures have been investigated by a single test pit, multiple test pits, trenches, or some combination of areal stripping and trenching (Table 7.3). These different sampling methods demonstrate, first, that all Early Classic (Yaxcheel and Hoxchunchan) and early Late Classic (Pakoc) occupation is less likely to be encountered in a single test pit than in any other form of excavation; this finding suggests that single test pits would likely underrepresent these time periods (at least for Tayasal). Second, because excavations took place in both mounded and nonmounded constructions (Table 7.4), these same time periods are likely to be underrepresented in nonmounded constructions (at least along the Tayasal lakeshore). Third, the data clearly show that excavations into mounded constructions to the exclusion of vacant-terrain investigations would likely significantly misrepresent the amount of Postclassic settlement. Finally, the data demonstrate that locational factors enter into the excavation sample. A consideration of those structures excavated on the peninsular spine as compared to those excavated along the lakeshore (Table 7.5) shows an inverse relationship between Early Classic/early Late Classic and all Postclassic constructions. Structures dating to Yaxcheel, Hoxchunchan, and Pakoc times tended to be on the

higher peninsular spine, whereas Postclassic constructions tended to be near the lakeshore; excavation samples excluding one or the other locale would severely misrepresent the overall occupational history of the site. Interestingly, no matter how the sample is broken down, Tayasal exhibits widespread Late Preclassic and late Late Classic settlement both on the peninsular spine and on the shores of Lake Peten.

Mapping at Tayasal revealed a total of 399 structures over an area of approximately 2.5 km^2. Because only about 40% of this mapped area was intensively recorded and the other 60% was merely surveyed for the larger constructions, the actual structure total for the 2.5 km^2 is probably in the neighborhood of 532 structures (assuming that 25% of the structures are still to be mapped). If we assume that Tayasal is approximately 5 km^2 in size, we find that mapping will likely reveal a total of about 1,064 structures. With a 60% occupation rate at any one time (a figure extrapolated from actual excavation percentages for Hobo times, when population was at a maximum at Tayasal), this would mean a total population of 3064 to 3575, without any correction factor for vacant terrain. Correcting for vacant terrain would significantly raise the overall Tayasal population (again, based on Tayasal excavation percentages, anywhere from 37.4 to 75% and maybe higher), yielding totals ranging from 4210 to 6256 for the Late Classic Hobo era.

Nima

In a final expansion of the successful Tayasal testing program, text excavations were made in two small mounds at Nima, on the northwest corner of the Tayasal Peninsula. These two investigations recovered stratified remains suggesting the existence of a continuous sequence from the Late Classic through the Middle Postclassic. Surface collections make it clear that the area had been used not only for habitation, but also as burial ground from the Late Preclassic era through the Late Postclassic Period (Table 7.2). Mapping at Nima revealed only three mounded structures. Density figures derived from both Nima and Tres Naciones suggest that the outlying sites in the Tayasal-Paxcaman Zone approached a density of only approximately 30 constructions/km^2.

Absolute Population in the Tayasal-Paxcaman Zone

Although it is clear that population centers shifted over time within the Tayasal-Paxcaman Zone, it is likely that a sizable population existed within the region at any one time (Table 7.2). Thus, while Cenote may have been

in "decline" during the later part of the Late Classic era, Tayasal was "booming" and much of the area between Tayasal and Paxcaman was probably densely settled. Similarly, while Cenote was booming during the Early Classic era, Tayasal was densely settled but not quite in control of its future. Inverse relationships in settlement and population may therefore be seen at different sites within the zone over time.

In an attempt to get at absolute population numbers for the zone, the area has been tentatively subdivided into two types of natural regions: those likely to be heavily occupied and those less likely to be occupied. The densest settlement in the Tayasal-Paxcaman Zone corresponds with areas of higher topography and poorer soils (A. Chase 1983:1225–27). This part of the peninsula, the Tayasal spine, encompasses a region of about 8 km^2. A region of lesser settlement rings the spine, occupying an estimated 18 km^2. The remaining 64 km^2 represent a region of lower terrain that slopes into Lake Peten to the north and the south and into a marshy area to the east.

In order to calculate maximum settlement figures, it is necessary to estimate first how many structures are present within the Tayasal-Paxcaman Zone (Table 7.6). Mapping tended to concentrate in nodal areas. On the peninsular spine an area of slightly over 4 km^2 was mapped, yielding a density of 221.08 structures/km^2. If we assume that there are 8 km^2 at this structure density, a total of 1768.64 structures would exist for the upland region. The next densest area of settlement, surrounding the spine, is estimated (for the purposes of absolute population considerations) as being half as densely occupied as the spine. This 18-km^2 region thus yields a total structure count of 1989.72. By far the largest area of the Tayasal-Paxcaman Zone, the 64 km^2 of low terrain, was not densely occupied. Here only 1920 structures are estimated to exist based on the mapped totals of only 30 structures/km^2 found in the lakeside sites of Nima and Tres Naciones. Thus, the approximately 90-km^2 Tayasal-Paxcaman Zone probably houses a grand total of 5678 mappable structures.

Based on the fact that only 56.57% of the structures sampled at Tayasal yielded materials from the Late Classic Hobo, when the zone reached its zenith in terms of overall habitation, it is estimated that only 60% of the predicted mappable buildings were constructed or used during the Late Classic era, yielding a total of 3407 buildings. Because the exclusion of 40% of the sample is probably large, this total is assumed to represent habitation units and can be multiplied by a figure ranging from 4.8 (Wilk 1984:Table 9.2) to 5.6 (Redfield and Villa Rojas 1934; cf. Haviland 1970) inhabitants/structure to yield a population figure of 16,354 to 19,079 for the entire zone. This figure, however, is considered low, even though no correction has been applied for nonresidential buildings. It is likely that a high number of invisible constructions exist in the Tayasal-Paxcaman Zone. Based on the Tayasal sample of nonmounded constructions, these

invisible constructions minimally comprise 37.4% of the overall sample and are likely to be double this figure. Thus, the overall population estimate for the zone presumably needs to be increased by anywhere from 37.4 to 75% of the total mapped structures.

Based on the figures above, the actual absolute population in the Tayasal-Paxcaman Zone is estimated to have ranged from a low of 21,951 to a high of 33,272. Such an estimate is within the realm of reason. For the zone as a whole, this means an overall density of 250 to 341 individuals/km^2. For the more densely settled spine, the population occupying the high ground would have ranged from 6861 (858/km^2) to 10,400 (1300/km^2). For the less densely settled area between the spine and the lakeside, the population would have ranged from 7719 (429/km^2) to 11,700 (650/km^2). The sparsely inhabited 64-km^2 area would have held between 7371 (115/km^2) and 11,172 (174/km^2) individuals.

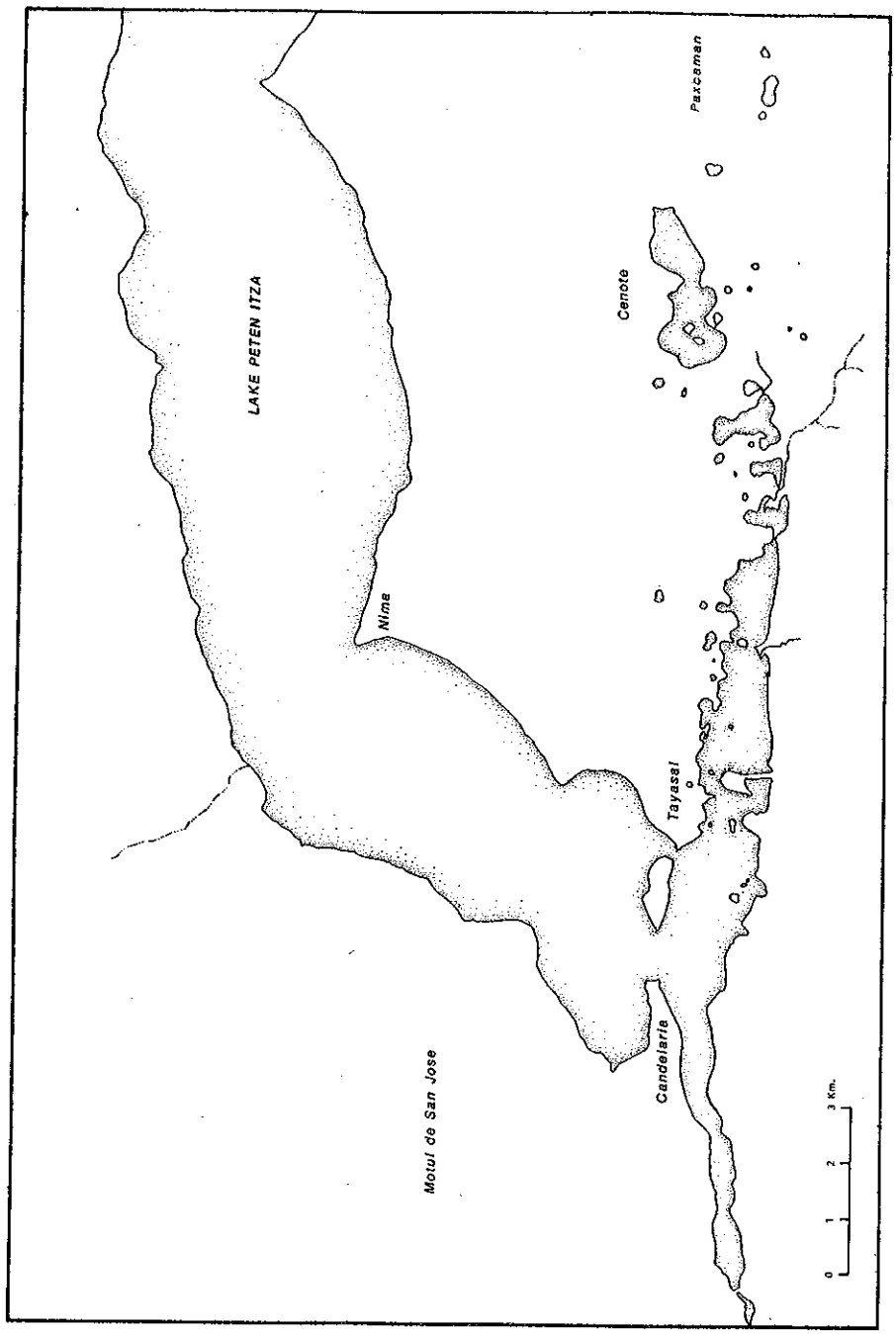
Interpretations and Conclusions

From the standpoint of prehistoric population history, the Tayasal-Paxcaman Zone data are interesting for several reasons. They generally represent a smooth development from the Preclassic to Postclassic with a slight depression between the Classic and Postclassic periods, according to current interpretations of this timeframe. The Early Classic Period in the zone does not show any loss of population, but rather appears continuous, with preceding periods indicating an ever-increasing population through the end of the Late Classic. However, this picture could be altered with only slight temporal adjustments to the parameters given to the various phases. In this light, a cautionary note must be sounded concerning simple acceptance of interpretations of cultural decline and abandonment at various sites during the Early Classic.

An additional caution must be added to our understanding of the Early Postclassic Period. As reconstructed for the Tayasal-Paxcaman Zone (Table 7.2), there is a drop in population during the Early Postclassic in the neighborhood of 60%. Although this is drastic, it is not the almost complete exodus seen at the sites of Tikal and Uaxactun. It must be noted, however, that if the current correlation is ever altered in favor of another, this population depression would be eliminated (see A. Chase 1986:120–21). Regardless of the temporal scheme, by the Middle Postclassic the population of the Tayasal-Paxcaman Zone is again approaching its Classic Period limits. In contrast, the later Postclassic settlement pattern has shifted dramatically in the zone, for no longer is the peninsular ridge being occupied nor are large constructions being built; instead, smaller, often invisible, house platforms are being massed in the low-lying terrain around the shores of Lake Peten (A. Chase 1979, 1983, 1985a, 1985b).

That such population shifts occurred earlier in prehistory can be seen in the data from Cenote, Nima, and Tayasal. No single primate center emerges over time within the zone. Cenote clearly peaks during Yaxcheel (Protoclassic or early Early Classic), Hoxchunchan (later Early Classic), and Pakoc (early Late Classic) times whereas epicentral Tayasal peaks during Pakoc and Hobo (later Late Classic and Terminal Classic) times and lakeshore Tayasal peaks during Cocahmut (Middle Postclassic) times. Thus, differential settlement is distinctly visible in the broader temporal patterns within the Tayasal-Paxcaman Zone.

Even on a synchronic level the settlement of the zone cannot be understood by reference to a single site nor could a simple archaeological testing program define the zone's prehistory; rather, a broad perspective combined with an intensive excavation program is needed to garner data important to the overall region. Additionally, excavations in areas devoid of mounds are imperative, as many of the Postclassic structures at Tayasal are not visible on the ground surface. Thus, an excavation program concentrating only on mounds or raised structures would totally miss and misinterpret the Postclassic settlement system of the Tayasal-Paxcaman Zone. The vacant-terrain excavation undertaken by the 1971 Pennsylvania Project centered on the shore of Lake Peten and the steeper terrain between the lake and the peninsular spine; a similar program on the spine might encounter other hidden spatial patterns pertaining to earlier temporal horizons of the zone (based on data gathered for Tikal by Bronson 1968). An assessment of the Tayasal data, however, makes it clear that archaeological programs, at least in the southern lowlands, that ignore vacant terrain likely will misjudge both the temporal and spatial aspects of Maya settlements. Likewise, excavations within different topographic areas will augment and change the view of population history. Different excavation strategies additionally affect the recovery of relevant data. Finally, by viewing the Tayasal-Paxcaman Zone as a whole, we gain a better perspective on its component parts and are able to place each within its correct milieu, thus permitting a more accurate interpretation of regional dynamics.



Map 7.1 The Tayasal-Paxcaman Zone.

Table 7.1 Tayasal-Paxcaman Zone: Dates for the Ceramic Complexes

Period	Complex	Dates
Middle Preclassic	Chunzalam	750–250 B.C.
Late Preclassic	Kax	250 B.C.–A.D. 250
early Early Classic	Yaxcheel	A.D. 250–400
late Early Classic	Hoxchunchan	A.D. 400–550
early Late Classic	Pakoc	A.D. 550–700
late Late Classic	Hobo	A.D. 700–950
Early Postclassic	Chilcob	A.D. 950–1200
Middle Postclassic	Cocahmut	A.D. 1200–1450
Late Postclassic	Kauil	A.D. 1450–1700
Historic	—	A.D. 1700–1850

Table 7.2 Tayasal-Paxcaman Zone: Occupation Adjusted for 100-Year Average Use-Life

Complex	Number of Cases			Adjustment Factor	Adjusted Cases			Relative Population		
	Tayasal (N = 99)	Cenote (N = 8)	Total[a] (N = 109)		Tayasal	Cenote	Total	Tayasal	Cenote	Total
Chunzalam	4	1	5	1/5	0.8	0.2	1.0	4	4	4
Kax	69	3	71	1/5	13.8	0.6	14.2	62	11	56
Yaxcheel	21	6	27	1/5	14.0	4.0	18.0	63	76	71
Hoxchunchan	25	7	32	1/1.5	16.7	4.7	21.3	75	89	85
Pakoc	26	8	36[a]	1/1.5	17.3	5.3	24.0	77	100	95
Hobo	56	5	63[a]	1/2.5	22.4	2.0	25.2	100	38	100
Chilcob	21	0	23[a]	1/2.5	8.4	0	9.2	38	0	37
Cocahmut	46	0	48[a]	1/2.5	18.4	0	19.2	82	0	76
Kauil	10	0	10	1/2.5	4.0	0	4.0	18	0	16

[a]Includes two excavations at Nima

Table 7.3 Tayasal: Amount of Excavation and Frequency of Period by Excavation Type

	Test Pit (N = 62)		Multiple Test (N = 11)		Trench (N = 17)		Areal/Trench (N = 9)		All Structure Excavations (N = 99)	
Period	Number	%	Number	%	Number	%	Number	%	Number	%
Chunzalam	2	3.23	1	9.09	1	5.88	0	0	4	4.04
Kax	48	77.42	9	81.82	11	64.71	1	11.11	69	69.70
Yaxcheel	9	14.52	3	27.27	9	52.94	0	0	21	21.21
Hoxchunchan	9	14.52	2	18.18	10	58.82	4	44.44	25	25.25
Pakoc	11	16.13	4	36.36	8	47.06	3	33.33	26	26.26
Hobo	29	46.77	8	72.73	12	70.59	7	77.78	56	56.57
Chilcob	11	16.13	2	18.18	6	35.29	2	22.22	21	21.21
Cocahmut	25	40.32	11	100.00	6	35.29	4	44.44	48	48.48
Kauil	2	3.23	1	9.09	5	29.41	2	22.22	10	10.10

Table 7.4 Tayasal: Excavations in Mounded and Nonmounded Constructions

	Nonmounded (N = 37)		Mounded (N = 62)	
Period	Number	%	Number	%
Chunzalam	2	5.40	2	3.20
Kax	27	72.97	42	67.74
Yaxcheel	7	18.92	14	22.58
Hoxchunchan	4	10.81	21	33.87
Pakoc	4	10.81	22	35.48
Hobo	21	56.76	35	56.45
Chilcob	12	32.43	9	14.52
Cocalhmut	27	72.97	19	30.64
Kauil	6	16.22	4	6.45

Table 7.5 Tayasal: Excavations by Location

	Tayasal Spine (N = 31)		Lakeside (N = 68)	
Period	Number	%	Number	%
Chunzalam	2	6.45	2	2.94
Kax	15	48.39	54	79.41
Yaxcheel	10	32.26	11	16.18
Hoxchunchan	13	41.94	12	17.65
Pakoc	13	41.94	13	19.18
Hobo	22	70.97	34	50.00
Chilcob	5	16.13	16	23.53
Cocahmut	4	12.90	42	61.76
Kauil	1	3.23	10	14.71

Table 7.6 Tayasal-Paxcaman Zone: Mapped Structures and Structure Density by Site

Site	Mapped Structures	Mapped Area (km^2)	Structure Density (structures/km^2)
Islands			
Islote Grande	2	0.02364	84.60
Piedra Rajada	1	0.001	1,000.00
Santa Barbara	14	0.0282	496.45
Pedregales	3	0.02	150.00
Lepet	6	0.385	15.58
Flores	—	0.131	—
Quexil (2)	24	0.04	600.00
All island structures (excluding Flores)	50	0.49784	100.43
Mainland			
Nima	3	0.10	30.00
Yachul	101	0.346	291.90
Chaltun Grande	138	0.365	378.00
Chaja	36	0.06	600.00
Tres Naciones	12	0.40	30.00
Michoacan	65	0.1558	417.20
Paxcaman	63	0.1848	340.90
Cenote	107	0.50	214.00
Tayasal	399	2.50	159.60
All mainland structures	924	4.6116	200.36
Spine structures	909	4.1116	221.08
Lakeside (excluding Tayasal)	15	0.50	30.00
Entire Zone (mapped)	974	5.10944	190.63