

New evidence of the Formative in the Amazon: A stilt village culture in Maranhão, Brazil*

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ABSTRACT

The Formative period (c. 4000 to 2000 BP) in the Latin-American continent was characterized by human occupations along the sea coast, rivers, and lakes as well as in the interflaves and highlands. In Brazil, there is a tendency nowadays to deny the existence of the Formative due to an alleged Amazon population vacuum in this period. Studies in the precolonial stilt villages in the Baixada de Maranhão, along with earlier research elsewhere in Brazil, confirm that the Formative did indeed exist in Brazil and suggest these sites in Maranhão were the last Amazon frontier of the Formative of its eastern portion.

KEYWORDS: Formative, Amazon, Stilt Villages, Archeological ceramics

NUEVA EVIDENCIA DEL FORMATIVO EN LA AMAZONÍA: UNA CULTURA DE PALAFITOS DE MARANHÃO, BRASIL

RESUMEN

El período Formativo (circa 4000 a 2000 AP) en el continente Latinoamericano se caracterizó por ocupaciones humanas a lo largo de la costa, ríos, y lagos, y en los interflujos y las sierras. En Brasil, existe ahora una tendencia a negar la existencia del Formativo debido a un supuesto vacío poblacional amazónico en este período. Los estudios en los palafitos pre-coloniales de la Baixada Maranhense, junto con investigaciones anteriores en otras partes de Brasil confirman que el Formativo ciertamente existió en Brasil y muestran que estos sitios posiblemente fueron la última frontera del Formativo en la Amazonía en su parte oriental.

PALABRAS CLAVE: Formativo, Amazonía, Palafitos, Cerámica arqueológica

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1. Introduction

The Formative concept was initially elaborated by Steward (1948), to place prehistoric populations in the American continent within a periodization that privileged historical changes over time, from 4000 to 2000 BP. Regarding to material culture; this was characterized by the growth of ceramic production associated with incipient agriculture. Willey and Phillips (1958) perfected the term and associated it to a cultural stage. For these archaeologists, the Formative would be characterized by sedentary societies, especially those located in the highlands of Central America, such as the early Mexican cultures, which developed staple maize (*Zea mays*) and/or manioc agriculture (*Manihot Esculenta*). The intention of Willey and Phillips (1958) was to draw a comparative panorama of American cultures with those of the Old World during the Neolithic period defined by Childe (1950).

Based on these pioneering studies, Meggers, Evans and Estrada (1965) proposed that the Valdivia site, in the coast of Ecuador, could be the oldest Formative site in South America (6000 BP), with the oldest ceramics in the Americas. Based on their ceramic seriation, the Formative would not necessarily be a cultural stage, but a well-defined period in time. However, because of the diffusionist approach of these archaeologists, they claimed that this pottery had a transpacific origin in the Japanese culture of Jomon (Estrada et al. 1962). According to these researchers, maize, for example, was diffused into Ecuador and Peru from Mesoamerica at 3500 BP (Meggers and Evans, 1965).

Ford (1969) makes the discussion more complex by mentioning that the development of agriculture does not always coincide with the emergence of ceramics, giving examples such as the societies that established themselves on the Peruvian coast and in the highlands of Mexico, where agriculture already existed before the beginning of the ceramics. For this archaeologist, the Formative, more than a cultural stage, is part of a cultural process. The geographer Carl Sauer (1968), furthermore, suggested

that the process of domestication may have begun during the initial sedentarism made possible by the intensive fishing and shellfishing carried out in the early Holocene along rivers and coasts. Along the Atlantic coasts and Amazonian rivers of lowland South America, several different examples of early Holocene Archaic pottery cultures relying on fishing and shell-fishing have been excavated and dated at shell-middens dating between 8000 and 4500 BP (Roosevelt 1995). The earliest Archaic pottery is sand tempered but the later Archaic pottery varies from sand tempered ware to shell-tempered ware. Its decoration is scant and differs from culture to culture but includes red coloring, incision, grooving, and punctation though not adorns. Soot on the outside indicates that pottery was used for cooking, and the majority of the food remains appear to be estuarine or riverine fish, along with the shellfish.

2. The Formative in South America

Valdivia is one of the best known Early Formative sites in South America (Estrada et al. 1962) (Figure 1). Located on the coast of Ecuador, its pottery is tempered with shell and sand and is characterized by incisions on the rims, which are often thickened and/or flanged.

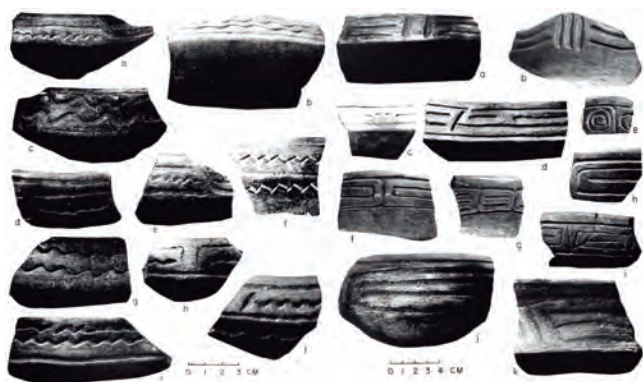


Figure 1. Valdivia Broad-line Incised decoration. In Meggers et al. 1968: 317 and 320.

Formative sites with even earlier dates were registered in Colombia, such as San Jacinto (5700 BP) and Puerto Hormiga (4875 BP) (Angulo-Valdés, 1981). The main temper of San Jacinto and Puerto Hormiga pottery is vegetable fiber, in contrast the Ecuadorian styles. For Reichel-Dolmatoff (1977), the Colombian Formative is characterized by sites that are located in strategic points of the landscape, such as the beach, estuaries, lakes and rivers, places with ample collection of food resources. In this way, aquatic food resources may have played a preponderant role leading to agricultural practices during the Formative, as Sauer (1968) had suggested. In some of the early Formative Colombian cultures, such as Malambo, discussed below, were found pottery griddles that could be used for the consumption of manioc (*Manihot Esculenta*). According to Reichel-Dolmatoff (1977), the tubers and seeds manioc would have propitiated human sedentarization, which with population increase, and then the formation of more complex societies, with the institutionalization of political and religious practices. He also hypothesized that in the later Formative maize might have become a staple food, which also could have been cooked on griddles.

One of the most important sites in the Colombian Formative is the Malambo (3200 BP to 2000 BP), which belongs to the Middle and Late Formative (Figure 2). Located on the edge of a lake to the south of the current city of Barranquilla, it has incised and modeled ceramics and thick ceramic griddles possibly associated with the production of manioc. According to Reichel-Dolmatoff (1965), the Malambo ceramic style spread to the northeast of South America and thence to the Amazon basin.

The main characteristics of this ceramic style are polished surfaces, the use of sand as temper, and shallow incisions on the rims of the vessels, sometimes with the presence of zoomorphic modeling. To the same researcher, the incised and modeled ceramics of the Malambo Tradition are similar to those of the Barranroid series from Venezuela; the Monagrillo Tradition in

Panama; Valdivia and Machalilla; Guyana and Middle Amazon; Kotosh in the Peruvian Andes, and the Antilles, and its origin would have been in the north of Colombia, he thought.



Figure 2. Malambo elaborately modeled and incised ceramic rims and vessel sides. In Angulo-Valdés, 1981: 23.

Colombian sites of the Late Formative are also found on the Caribbean coast, in the lower Magdalena, such as Plato y Pinto. Encompassed in the so-called Zambrano Tradition of Second Incised Horizon (2200 BP), these sites have very well elaborated pottery, tempered with sand and characterized by shallow incised decoration on the rims that forms parallel lines and cross-hachures in short lines, sometimes showing red paint. These sites would be associated with the production of maize (*Zea mays*) and not manioc (*Manihot Esculenta*), since a large amount of manos and metates were found in them, though not yet actual maize specimens (Reichel-Dolmatoff, 1978). According to Reichel-Dolmatoff (1986), this pottery style is similar to that of Machalilla, on the Ecuadorian coast, and would have originated in the Colombian Caribbean coast.

It is clear that from 4000-3500 BP, archaeological styles of elaborate pottery also spread throughout the Amazon, mainly near freshwater and floodplain resources (Oliver, 2008). The styles have been called "sloping horizons" because closely related

styles nonetheless can be very different in their dating (Roosevelt 1997). In the middle Ucayali river basin, Peru, on the shores of Lake Yarinacocha, the Tutishcainyo Tradition produced sand-tempered pottery with zoned-hachure and incised decoration (Lathrap, 1970; Solís, 1992; Myers, 2004). Although early Tutishcainyo has not yet been dated, later Formative phases at Yarinacocha fall at c. 2500 BP. Related groups associated with the Bagua Tradition occupied the banks of the Urubamba River during the Middle-Late Formative (2200-2900 BP), also in Peru. These societies made their living from fishing and agriculture, making ceramics with high quality incised decoration. This pottery is also smoothed, brushed, burnished and has reinforced direct rims with incision and zoned-hachure, sometimes using red and orange paint as well.

The La Gruta-Ronquín complex of the Saladoid/Barancoid Tradition, in Venezuela, had a large number of thick ceramic griddles possibly used to process manioc (*Manihot Esculenta*). The culture extends from c. 4500-1700 BP (Cruxent and Rouse, 1958-1959; Roosevelt, 1980, 1997, 2016; Vargas Arenas, 1981; Zucchi, 1992) (Figure 3). The early phases had grooving on thickened or flanged bowl rims and vessel sides, often with elaborate zoomorphic adornos. The later phases continued these characteristics but added more elaborate incised animal-effigy designs on the sides of bowls and simplified the adornos. The paste of the main pottery wares of the early phases, La Gruta and Ronquín, is tempered mainly with grit, but in the later phase, Corozal, some pottery is tempered with grit and other wares contain cauxi. A minor ware decorated with simpler rectilinear incision had grog-temper in all these phases. Initial maize cultivation in the tradition is documented by rare carbonized maize kernels dated directly to c. 1800 BP. The rare Formative maize race of the Corozal phase is a highland one, whereas after the Formative maize becomes a staple according to stable carbon isotope ratios of human bones, the maize race used is a tropical lowland one. Both races are still in use today in South America

(Roosevelt, 2016). Roosevelt's faunal finds from the sites show a predominance of smaller aquatic fauna.

The eponymous Barrancas pottery style of the lower Orinoco seems to follow the Saladero phase, type-site of the Saladoid Tradition, and Barrancas is followed by Los Barrancos. All the styles share characteristics such as grit temper, but the Barrancas style is much more elaborately decorated than the Saladero style, and Los Barrancos style even more so. Their chronology is not yet fully explored but seems to compare roughly to the middle and later Formative, c. 3000-1500 BP (Cruxent and Rouse, 1958: 211-233; 1959: Plates 89-98; Oliver, 2014; Rouse and Cruxent, 1963: 80-90; Sanoja, 1979). Most of the pottery consists of bowls with incision on the rims and sides and modeled incised adornos on strap handles. Rims are frequently flanged, and vessel sides sometimes also, or shaped with a carina. As in the middle Orinoco, the identifiable iconography of the adornos and effigy vessels is mainly zoomorphic

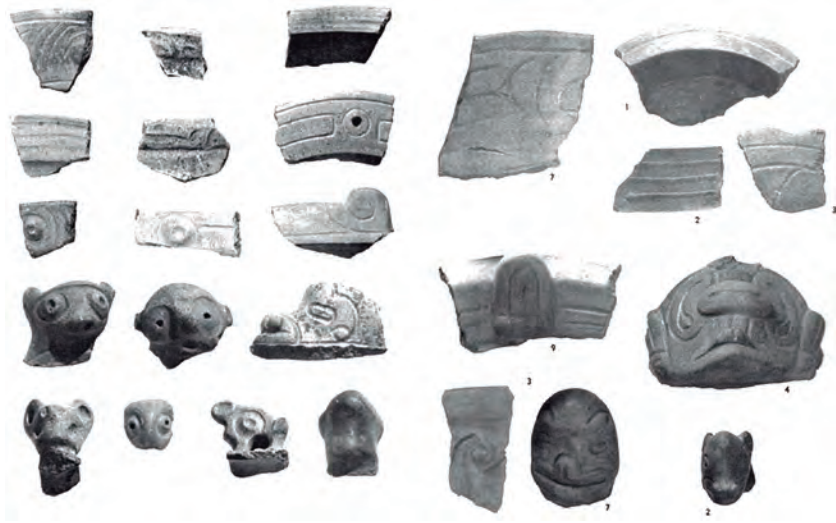


Figure 3. Middle Formative Saladoid/Barranoid Tradition sherds from the Orinoco. Left, Ronquin Sombra style, Middle Orinoco. In Roosevelt, 1980. Right, Barrancas style, Lower Orinoco. In Cruxent and Rouse 1958-1959.

In Surinam, an early style of the Saladoid/Barrancoid Tradition featuring zoned hachure, as well as the characteristic white and red painting and modeled-incised adornos, was found at Kaurikreek with dates between 4200 and 3750 BP., but the tradition continued in that country until about AD 200 at Wonotobo Falls and even later at other sites. On the coast of Suriname, for example, at 1700 BP human groups of the late Saladoid-Barrancoid Tradition began to build mounds (Veersteg, 2001), which were built in stages, with the archaeological material concentrated in the layers with the greatest amount of black earth (terra preta de índio). Two mounds were built in a flooded area with evidence of plant cultivation in the form of raised-fields agricultural landscapes. The oldest pottery in the mounds is called Early Mabaruma and according to Veersteg (2008), it belongs to the Barrancoid series. This pottery is characterized by wide incisions on the lips of the everted or flanged rims, in addition to the existence of elaborate modeled-incised adornos and some thick griddles. The temper of this older pottery with the incisions is mixed, composed of caraipe, shell, quartz grit, charcoal and mica (Figure 4).



Figure 4. Mabaruma Barrancoid ceramics. In Veersteg, 2008: 310 and 311.

3. The Formative in Brazil

In the Lowlands of eastern South America, the discussion has not advanced much on this topic of the Formative spread of elaborate pottery styles and incipient agriculture. Some theoretical advances came with the discussions of Roosevelt (1999, 2016) and Oliver (2001, 2011). Both authors argue that between 3000-2000 BP in Amazonian sites there was a large amount of pottery vessels used in the preparation, consumption and storage of food, in addition to other very elaborately decorated ones used in ceremonial activities involving feasting and mortuary practices. The interpretation is that agriculture of some kind provided most of the calories for food consumption and for subsistence, with fishing, hunting and gathering of other plants secondary as part of this process of food resources. However, very little work has been done on the food remains of most Formative site levels.

Scatamacchia (1994) discussed the subject in a more reflective way. For the investigator, the main problem for the lack of archaeological work on the Formative was precisely the researcher's difficulty in recognizing the characteristics of this long-lived cultural stage in the archaeological material, in addition to the small amount of literature on the subject in the Lowlands of eastern South America. This researcher is in favor of using the concept as it is in accordance with its characterization as a stage of human development marked by sedentary life, food production and broader use of ceramics. Finally, she considers the use of the term Formative as necessary in order to compare the different human stages of this development across the American continent.

In Brazil, sites of the Ananatuba phase of Marajo Island and Pocó-Açutuba Tradition, in the Middle Amazon, are considered to belong to the Formative (3000 BP to 1700 BP), in addition to the sites of the Manacapuru phase of the early Christian era, framed within the Incised Rim Traditions and Zoned-Hachure Tradition (Meggers and Evans, 1957, 1961; Hilbert, 1968; Lima, 2008);

these cultures would be from the middle and final period of the Formative (from 3000 BP to 1800 BP). Several of the Formative sites on Marajo are earth mounds with fired clay stoves [e.g., the Ananatuba phase Castanheira site (Simões 1969)].

In the 1950s, Hilbert (1955) found very old ceramics on the banks of the Pocó River, a tributary of the Nhamundá in the lower Amazon, and he called the Pocó phase the lowest archeological layer of archeological sites, in whose upper strata Konduri ceramic predominates. The Pocó phase has its correlates with the Barrancoid pottery or Incised Rim Tradition (Hilbert and Hilbert, 1980). The authors placed the Pocó phase in a chronology ranging from 2100 BP to 1900 BP (Hilbert and Hilbert 1980: 9), comprising a period prior to the formation of black earth sites. In the upper Madeira, the Teotônio site also seems to have a Formative occupation. The V layer of the site, which goes from 120 to 230 cm. in depth, was associated with pottery of the Pocó-Açutuba style and dated to 3200 BP in the middle Formative. The style had grooved-incised lip flanges tempered with caraipe and painted in various shades of red and orange (Miller, 1999; Mongeló, 2016). Recently Neves et al. (2006) transformed the Pocó phase into the Pocó Tradition because it has a wide distribution in Amazon, and pushed the chronology earlier to 2300 BP.

In lower Tapajós, Gomes (2006) excavated early Formative archaeological sites with occupations between 3800-3600 BP, belonging to the Zoned-Hachure Tradition, and also later sites with occupations in the beginning of the Christian era associated with the Incised Rim Tradition. Among the pottery examples of this last Tradition are griddles, which the archaeologist associates with plant food production. Gomes (2006) makes a comparison of the material she excavated with those older in northwestern South America, such as Valdivia, and pointed out that of the 14 types of decoration defined by Meggers et al. (1961), 6 were present in the lower Tapajós styles.

As far as the chronology, Pocó pottery found by Guapindaia

(2008) in the region of the Trombetas dated from 2100 BP to 1800 BP. Also in Pará, in the southeast region known as Salobo, human occupation of Formative was also present (Imázio da Silveira et al. 2008). Non-shellmound ceramist groups established themselves in that region between 2500 and 1500 BP.

Sedentary settlements with elaborately decorated pottery were also widely dispersed at the confluence of the Negro and Solimões rivers, and their stylistic correlates were the Barrancoid sites in Venezuela defined by Cruxent and Rouse (1958-1959). According to Lathrap (1970), the sites of the Incised Rim Tradition appeared first in Middle Amazon and later migrated to Venezuela, and he associated them with groups that speak Arawak languages. However, the Middle Amazon has not yet produced Formative sites of the earliest phases, which do occur widely in Venezuela.

According to Lima (2008) and Neves et al. (2014), the main ceramic characteristics of the Middle Amazon Formative sites, dated from 1900 BP to 1700 BP, are the use of incisions with long parallel or crisscross lines, everted lips forming flanges, medial flanges or carinas, punctate and brushed excisions and the abundant use of freshwater sponges, known as cauxi. There may be the use of a few elaborate zoomorphic appliqués on the lip flanges and the use of painting, usually orange or red, as well as occasionally polychrome on a white slip. At the Açutuba site, the pottery bowls found often had a rim flange and was tempered with cauxi and grog, and decorated with orange and red paint (Figure 5).

With regard to surface treatment, smoothing predominates, followed by brushing, with accordion being the technique used to produce the vessels. The variability of the vessels is great, with many types of contours, with lip flanges thicker than the bulge of the vessels, and the lips are always flat. Mesial flanges are also present. In Lake Amanã (Figure 6), in Middle Amazon, pottery associated with the Caiambé phase dated to 1600 BP century also have rim flanges with elaborate incisions and modeled-incised adornos (Hilbert, 1968; Gomes, 2015). These elements of material

culture are at the base of the sites, and are associated with the black earths, but Neves et al. (2014) avoid associating them with the Formative, even with this clear stylistic and temporal link to Formative cultures in the lower Orinoco and Guiana coasts.



Figure 5. Açutuba Incised Rim Tradition pottery. In Neves and Lima, 2011: 215.



Figure 6. Incised Rim Tradition pottery at Amaña Lake, Middle Amazon. In Santos, 2015: 116.

Neves (2007) has rejected the importance of the Formative stage because according to him there is a comparative void of human occupation in the Middle-Late Holocene in Amazon. For Neves (2007:7), this population vacuum occurred for two reasons: 1. plant cultivation was never the main food resource of these societies; 2. Adverse climate change discouraged settlement. Regarding the first point, he feels that these human groups would be characterized by great mobility and opportunistic exploitation of natural resources based on the collection of fruits and molluscs and hunting. For Neves, during the Formative, there were not sedentary societies, although the archaeologist admits that the Ananatuba phase of Marajó, cultures of the lower Tapajós and upper Madeira are exceptions and that they present substantial, continuous occupations over time during the Holocene. Regarding the climate, there were visible climate changes between the Middle and Late Holocene, in the form of a transition from a drier Amazon to tropical forests, according to Neves.

In this sense, Formative societies lived in a drier period, which he felt would lead to the aforementioned population vacuum. For Neves (2007:8), there is no evidence of cassava cultivation in the Amazon, including, “it may not even exist”. In 2000 thousand years of occupation in the middle Amazon until today, no evidence of cassava cultivation has been found, according to the archaeologist. Only at the beginning of the Christian era does he think a sudden increase in human occupations occurred, along with major changes in landscapes, such as large villages and paths connecting them, black earth with great fertility indicating human action, construction of mounds with elaborate ritual pottery and large-scale trading networks. Thus, this author considers that the Formative cultures from the millennia before the beginning of the Christian era remained more or less the same all that time (Neves 2007). However, of course, a number of archaeologists have found sites of Formative styles related to the different sloping horizons, and, presumably, the dense occupations and landscape changes of later prehistory came out of some sort of prior occupation there,

despite Neves' suggestions.

It may be that Formative sites have not been found as extensively as other-period sites in the tropical lowlands because their location vis-a-vis water sources is different due to changes in the water table. Most living sites would be located near a stream, lake, or river in order to get water to drink, cook with, and bathe in. During the Formative there were several ocean-level lowstands (Alves de Moraes et al. 2021), and at those times waterside sites would have been lower down in the landscape than later sites. Archaeologists who expect to find sites on dry land now, may miss such sites.

4. The Formative Lago do Souza stilt village site

Relevant to the issues about the nature of the Formative stage, recent archaeological work in Brazil has demonstrated a long-term human occupation of villages elevated upon stilts in the estuary of the state of Maranhão, eastern Amazon, Brazil (Navarro, 2018, 2021; Navarro et al. 2017; Navarro et al. 2021; Roosevelt and Navarro, 2021). 25 radiometric datings carried out on the stilts and on the carbon crusts (soot) on the ceramic vessels show a human occupation in flooded areas from the Archaic period (6736 BP) to the later period of Amazonian prehistory in the common era (1000 BP). In several of the pottery styles of the Baixada, we found strong similarities to complexes in northwestern lowland South America, the Amazon and Orinoco basins, and the coasts of the Guianas, described above.

The Baixada is located between the Golfão Maranhense and the western coast of the state and has a climatic regime characterized by most of its rain in the first half of the year, and by drought in the second; similar to the lower Amazon floodplain regime (Figure 7). Due to its recent geological formation formed by a Quaternary regional coast system with fluvial-marine deposits, the Baixada Maranhense configures a rosary-like pattern of water bodies formed by hydrographic basins and lakes that form during

the dry season (Ab'Saber, 2006). It is the largest concentration of lakes in the northeast of Brazil, where Lake Açú is found.

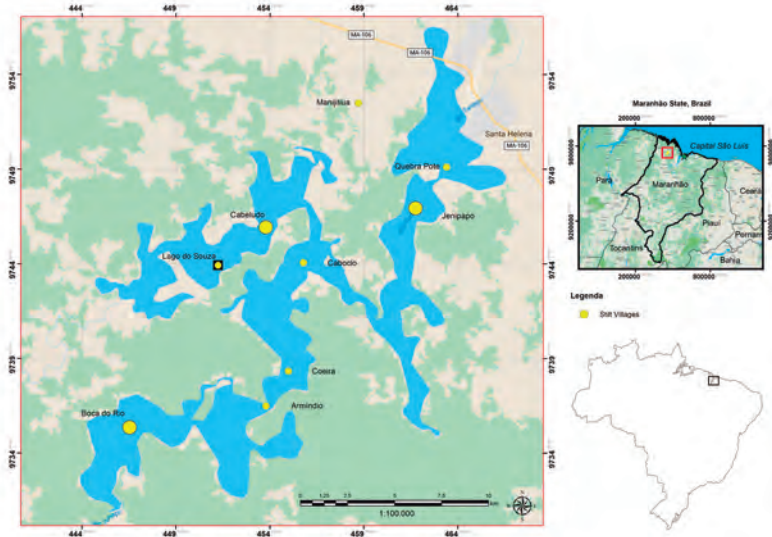


Figure 7. Map of the stilt villages highlighting the Lago do Sousa Formativo site. The LARQ-UFMA collection.

The Baixada has been considered a RAMSAR site since 1971, according to a treaty signed in the Iranian city of the same name, because with its humid landscape, it provides the ideal conditions for the migration of many species of birds from various continents that breed in this rich aquatic ecosystem. As part of the Area of Endemism of Belém, the city at the mouth of the Amazon only 500 km distant, a physiographic region between the Pindaré and Tocantins rivers, with an extension of 243,000 km², the Baixada Maranhense is characterized by a diverse and rich fauna, in which fish, mammals, amphibians, reptiles and birds stand out (Martins and Oliveira, 2011; Navarro and Silva Júnior, 2019). Also noteworthy are several human-managed plant species, especially palm trees, such as buriti (*Mauritia excelsa* L.), açáí (*Euterpe oleraceae* Mart.) and babassu (*Attalea speciosa*).

One site in particular in the Baixada drew attention for

its large amount of pottery with incised lip flanges comparable to those of Formative sites further north along the Guiana coasts and Amazon and Orinoco interior. The Lago do Souza site (2° 18'16.7"S 45° 25'50.9"W) is located on the Paruá River, a tributary of the Turiaçu, in the Baixada Maranhense region, within the Legal Amazon. This micro-region, which is within an Environmental Protection Area (APA) is formed of thirty-five municipalities in an area equivalent to almost 20 thousand km² (Farias Filho, 2019). The archaeological site of Lago do Souza is located, therefore, in a rich ecological complex, which was intensively exploited by the peoples who inhabited it in the pre-colonial period. The site was discovered by Raimundo Lopes (1924) who pointed out its peculiar pottery, characterized by incisions on the rims, as different from that of other sites on stilts in the region. It was rediscovered by the Archeology Laboratory of the Federal University of Maranhão (LARQ-UFMA) in the 2016 archeological campaign. The site has not yet been mapped and only a few surface collections have been carried out with the authors of this article. The stilts of the site are completely submerged. At the time of the river's flood, the depth of water on top of the site reaches 5.10 meters, but in the dry season, the water depth is only 20 centimeters. Three radiocarbon datings were made on soot from the ceramics and from the stilts, dates which converge with that of the Late Formative period, as shown in the table below:

| Site | Convencional Date | Calibrated Date (2 sigma) | Calendaric Date (2 sigma) | Material | BETA Number Laboratory |
|---------------|-------------------|---------------------------|---------------------------|----------|------------------------|
| Lago do Souza | 1950±30 BP | 1926-1785 BP | 24-165 AD | Soot | 492358 |
| | 1820±30 BP | 1785-1775 BP | 165-175 AD | Wood | 430862 |
| | 1990±30 BP | 1938-1830 BP | 12-120 AD | Wood | 515392 |

Table 1. Radiometric dates of the Lago do Souza site. LARQ Collection.

The analysis of 81 ceramic sherds reveals certain

characteristic cultural traits of the Formative (Table 2), as shown below. Everted and flanged rims predominate. The most recurrent lips are rounded or flat ones, but some examples with hollow rims are also present. The form of the ceramic containers is complex, and some bowl examples have medial carinas. The main manufacturing technique involves smoothed coils. Many pots have firing burn marks, burnish marks, and wear marks. As for firing conditions, reduction firing predominates. The tempers in ceramic paste are formed by both mineral grit and cauxi (freshwater sponge spicules), both tempers that are found in many Formative pottery complexes described above. There are also, to a much lesser extent, mica and grog. The outstanding decoration technique is incision or grooving, which is focused on the rims of the vessels. These incisions form geometric lines arranged in a variety of ways, most of which are horizontal or triangular lines that run along the entire length of the lip. Sometimes the incisions form hatched areas also outlined by geometric lines, in this case, in general quadrangular. Other surface treatment techniques present are brushing, usually on the outside of the vessel. Some specimens also have a red painted rim. Several of them have carbonic crust or soot on the outside, thus indicating their use in fire for possibly the preparation of food (Figure 8).

| EVERTED RIM | COMPLEX FORM | DIRECT RIM | FLANGE EVERTED RIM | HOLLOW RIM | FLAT LIP | ROUNDED LIP | TAPERED LIP |
|-------------|--------------|------------|--------------------|------------|----------|-------------|-------------|
| 5 | 79 | 1 | 74 | 2 | 46 | 24 | 7 |

| OXIDANT FIRING | REDUCER FIRING | MINERAL TEMPER | GROG TEMPER | CAUXI TEMPER | MICA TEMPER | COILED | MODELED | CARINATED |
|----------------|----------------|----------------|-------------|--------------|-------------|--------|---------|-----------|
| 7 | 72 | 79 | 15 | 81 | 38 | 80 | 1 | 79 |

| FIRING MARK | SMOOTHED | BRUNISHED | BRUSHED PAINT | INCISION | ZONED-HACHURE | SOOT |
|-------------|----------|-----------|---------------|----------|---------------|------|
| 36 | 80 | 3 | 39 | 5 | 70 | 18 |

Table 2. Technological characteristics of 81 ceramic sherds from the Lago do Souza site.



Figure 8. From left to right. Examples with medial carina with incision, zoned hatching, a modeled figurine foot with incision, another medial carina with soot, a sherd with red painting and brushed ceramic sherd. Collection LARQ.

Formative ceramic vessels in Ecuador, Colombia and Venezuela, and the Guianas compare to those of Lago do Souza in the shape of the vessels, tempers and incised decoration of the flange-like everted rims (Figures 9 and 10-10.1). The presence of zoned hatching and zoned cross-hatching also links the pottery decoration of Lago do Souza to Brazilian and Peruvian styles such as Ananatuba and Tutishcainyo.

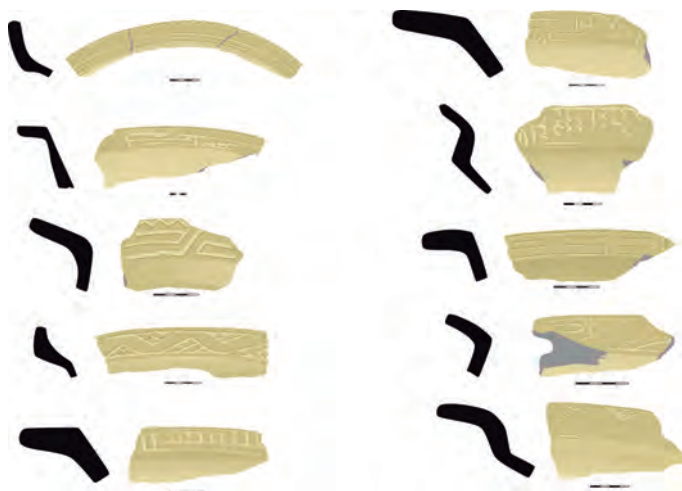




Figure 9. Shapes of ceramic vessels and types of incisions at the Lago do Souza site. Drawings Collection LARQ.

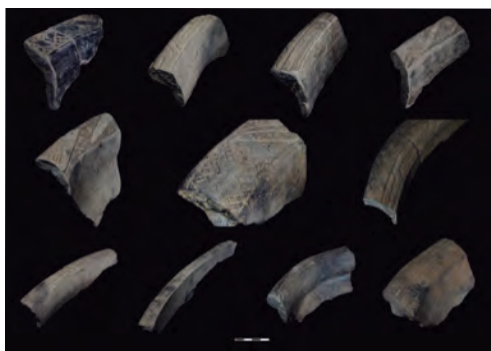


Figure 10. Shape and incised decoration of the rims. Drawings Collection LARQ.

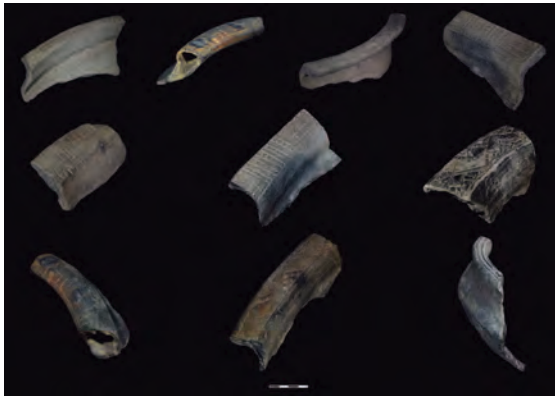


Figure 10.1 Shape and incised decoration of the rims. Drawings Collection LARQ.

For example, of the 12 types of decorated pottery classified by Meggers et al. (1965), the Valdivia Broad-Line Incised type shows the greatest similarity. Dating back to 3400 BP, these vessels were made using the coiled technique, tempered with sand and shell and with incised decoration on the rims, mostly formed by parallel horizontal or undulating lines that run along the entire rim; zoned-hachure specimens also occur (see Figure 1). The later-dated Malambo ceramics are also tempered with sand mineral and have horizontal incised lines or grooves along the entire length of the rim, although the Malambo specimens also have modeled adornos (see Figure 2). The flanged and triangularly thickened rims at Lago do Souza resemble the rim shapes both of the earlier and later Formative phases of the middle Orinoco (Roosevelt 1997) and of the Barrancoid phases in the lower Orinoco (Cruxent and Rouse 1958-1959). The vessels with rim incisions forming linear horizontal patterns at the Açutuba, Amanã Lake and Teotônio sites, all in the Brazilian Amazon, are also very similar to those of Lago do Souza; these wares are tempered with cauxi, like the Lago de Souza pottery (see Figures 5, 6 and 11). However, most similar to those of Lago do Souza are the shapes of the ceramic vessels as well as the rim incisions in

the pottery of the Barrancoid series along the Guiana coasts (see Figures 3, 4, 8, 9 and 10).



Figure 11. 100% of the ceramic sherds collected at the Lago do Souza site have cauxi as the main temper. Collection LARQ.

5. Conclusion

As pointed out at the beginning of this article, from a regional perspective, Formative societies in the tropical lowlands preferred to live in coastal and estuary areas or more inland areas close to water resources such as lakes and rivers. The Lago do Souza site also follows this pattern, being in an estuarine area and in the presence of freshwater lakes. The construction of the settlement on the Turiçu river from 1900 to 1700 BP sharpens these characteristics even more, since these peoples could make available aquatic resources practically next to their villages, such as fish and crustaceans. The clay used to make their ceramic vases may have come from the lake where the site is located, since this mineral appears to be of good quality for ceramics.

The lake landscape was therefore ideal for village life in many ways. The very use of woods of the *Androanthus* genus, namely, the ipê trees, for the stilts of the village shows an aquatic cultural practice, since these woods are resistant to rotting in water.

Recent studies conducted by Navarro et al. (2021) illustrated the management of ipê trees in the lake villages. The human effort to manage, cut, transport and place thousands of stilts in the riverbed (such as the Boca do Rio and Cabeludo sites have about a thousand each) for the construction of the villages indicates that the lake landscape was a long-lasting favorite cultural choice in Baixada Maranhense. Knowledge of the subsistence patterns of this new late Formative culture will have to await excavation at the site. Processing of its sediment by fine screening and soil flotation and sampling for pollen and phytoliths can be expected to provide examples of the plants and fauna exploited by the people.

Meggers and Evans (1961) used the term Incised Rim Tradition for later Formative archaeological sites in the Amazon basin to avoid the use of the word Barrancoid, because that term defined complexes in northeastern South America that combined the rim incisions with elaborate modeling of adornos and effigy vessels, such as the Nericagua and Cotua de los Caros and Barrancas and los Barrancos phases in Venezuela. In Brazil, phases of this Incised Rim Tradition include Mangueiras on the island of Marajó, Manacapuru, Paredão and Caimbé on the middle Amazon and Boim on the middle Tapajós. Thus, from now on, the Lago do Souza stilt village should also be considered as a new phase of the Rim Incised Tradition in the easternmost portion of the Amazon. Despite its lack of elaborate modeling, Lago do Souza pottery is very like most other Formative styles in how they shape bowl rims and how they incise decoration on them.

As pointed out by Zeidler (2008), archaeologists now accept that the Formative was not constituted by cultures that necessarily spread in different places from one source, but by a series of independent cultures that emerged in different places and influenced each other in different directions and different ways at different times. They had their origins in the Archaic intensive fishing cultures and eventually became sedentary, cultivating maize and manioc, fishing, and making ceramic and polished stone artifacts, cultural traits that would be eventually be shared

in their spheres of interaction.

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