

The Utilization of Candaba Swamp from Prehistoric to Present Time: Evidences from Archaeology, History and Ethnography

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Abstract

Candaba Swamp, popularly known as “*Pinac*,” is one of the most panoramic wetland in the Philippines. It is located in Candaba, Pampanga, Central Luzon Island, Philippines. Aside from being the location of one of the oldest settlements in Central Luzon, it is a famous site because of its diverse and multiform fauna and flora and its exotic ecosystem. The whole swamp is about 32 000 hectares during rainy seasons but is then reduced to 10 000 hectares during the dry or summer seasons. Presently, the swamp is utilized all throughout the year. During summer which is every January to May, the swamp is primarily used for rice and watermelon production. From June to December which is usually the rainy season, the swamp serves as a fishing ground and stop over of migratory birds from Siberia and China. This paper discusses the utilization of the Candaba Swamp from prehistoric to the present time and uses different data from different disciplines for each time epoch. For the prehistoric time, archaeological data was mainly used to elucidate the importance of the swamp to the people inhabiting it. On the other hand, archaeological data, historical account and other archival data were employed to discuss the exploitation of this wetland especially during the time when the entire country is under the Spanish colonialization. Finally, for the present time, ethnographic data and archival records were used to show the significance of the swamp to the present people of Candaba, Pampanga, Central Luzon, Philippines.

Candaba Swamp, popularly known as “*Pinac*,” is one of the most panoramic wetland in the Philippines situated in 15°05’North, 120°53’East. It is located in Candaba, Pampanga, Central Luzon Island, Philippines (Figure 1). Aside from being the location of one of the oldest settlements in Central Luzon, it is a famous site because of its diverse and multiform fauna and flora and its exotic ecosystem. The whole swamp is about 32 000 hectares during rainy seasons but is then reduced to 10 000 hectares during the dry or summer seasons. Presently, the swamp is utilized all throughout the year. During summer which is every January to May, the swamp is primarily used for rice and watermelon production. This is the reason why Candaba was given the platitudes, “Rice Granary of Central Luzon” and “Fruit Basket of Central Luzon.” From June to December which is usually the rainy season, the swamp serves as a fishing ground and stopover of migratory birds from Siberia and China. When it is underwater, the vegetation is pivotally composed of water lilies, lotus, water hyacinths, and some aquatic reeds. These wetland sites are usually used by wildlife specifically of migratory birds like egrets, wild ducks

from China, herons and kingfishers during the migration period when the whole Northern Hemisphere is covered with ice and snow. During this period, Candaba swamp is an egregious place to conduct birdwatching, thus making it an internationally important wetland. It also serves as a habitat of other wildlife fauna such as small mammals, reptiles and amphibians.

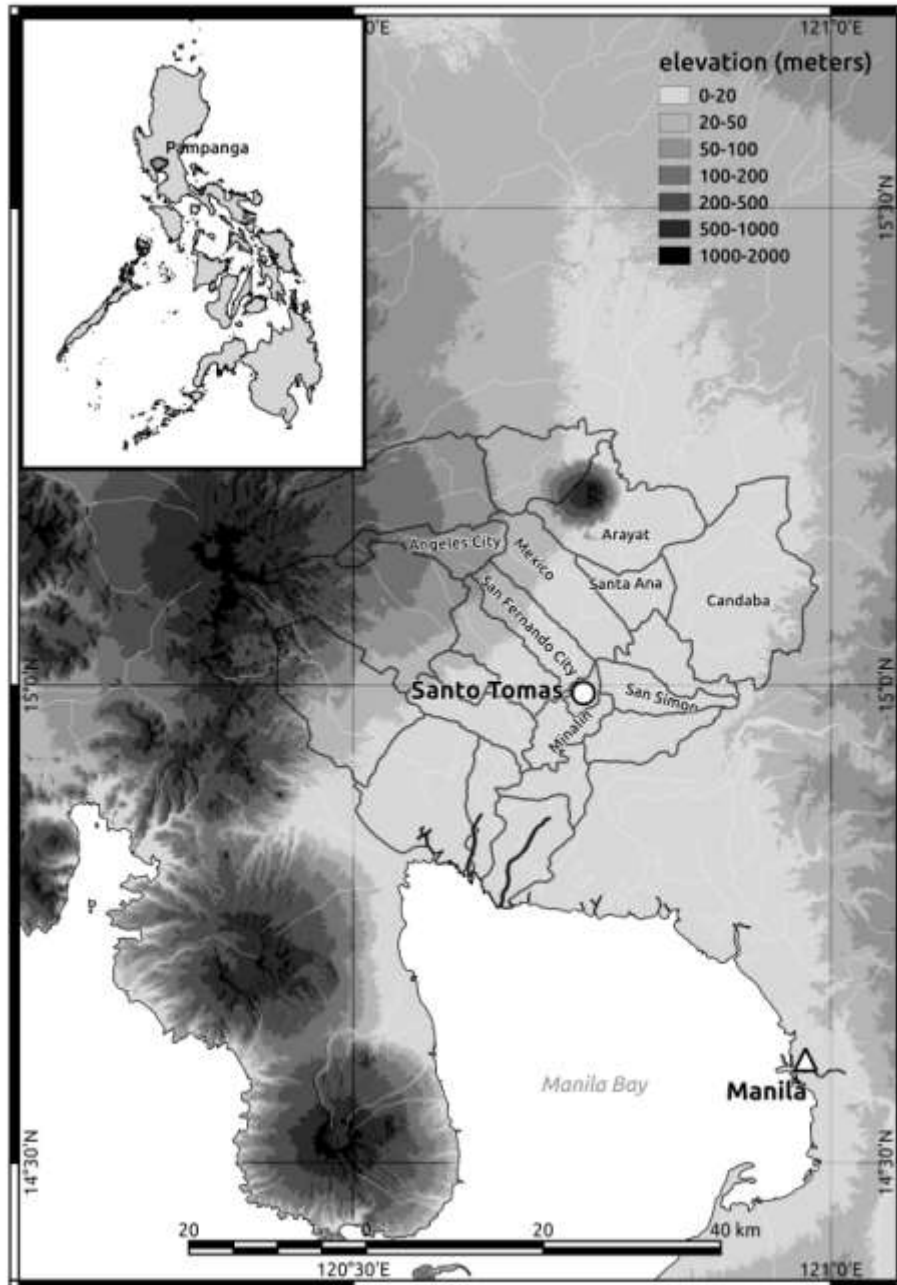


Figure 1. Map of the Philippines showing the Province of Pampanga and the town of Candaba

According to a local legend, a tall forested mountain used to stand in the present location of Candaba Swamp. However, the local people are abusing the mountain by cutting the trees for their house constructions. A giant named Cargen Cargon became

angry to the people of Candaba because the trees that are being cut from the forest are being spoiled. When really mad, Cargen Cargon pulled up the mountain and transferred it to the present location of the mountain in the town of Arayat. The land depression from the uprooting of the mountain became the present location of Candaba Swamp.

Geologically, the Candaba Swamp emerge during the end of Pliocene epoch through the natural process of accretion or deposition of the sediments from the two major rivers that surrounds the swamp (Alvir 1950). As Angat River deposited heavy sediments at its junction with the Pampanga River around Baliuag, Plaridel, Pulilan and Calumpit, these deposits or broad alluvial fan, dammed up the flood plain of the Pampanga River and thus forming the Candaba Swamp. Therefore, Alvir (1950) concluded that Candaba Swamp is part of the natural development in the course of lateral planation of the Pampanga River with the help of the Angat River.

This study discusses the utilization of the Candaba Swamp from prehistoric to the present time and uses different data from different disciplines for each time epoch. For the prehistoric time, archaeological data was mainly used to elucidate the importance of the swamp to the people inhabiting it. On the other hand, archaeological, historical account and other archival research were employed to discuss the exploitation of this wetland especially during the time when the entire country is under the Spanish colonialization. Finally, for the present time, ethnographic data and archival records were used to show the significance of the swamp to the present people of Candaba, Pampanga, Central Luzon, Philippines.

Candaba Swamp in Neolithic to Protohistoric Period (3000 BC to 1500 AD)

Candaba is considered one of the oldest settlements in Luzon because in the 1930s, H. Otley Beyer recovered an adze made of basalt with a length of 36.4 cm, width of 9.8 cm and thickness of 4.53 cm (Beyer 1947). He called it the Candaba Neolithic Adze and is now considered a National Cultural Treasure in the Philippines. He theorized that this stone tool was used to cut down trees and shape and carve boats. He also dated the artifact to 3000 BC. Thus, if people are already making boats around this period, it is possible that they are using boats to do some fishing in the deeper part of the swamp. They are also travelling some distance to do some activities like trading or exchanging their products and produce with the other people living in nearby polities.

Evidences of Metal Age and Protohistoric Period in Candaba Swamp were inferred from the results of the initial archaeological studies conducted in the area and from some Spanish accounts that were written by early missionaries and chroniclers. In May 2002, an archaeological site was discovered by the author with his friends while conducting bird watching in Candaba Swamp (Gaillard and Mallari 2002; Melendres 2004; Mallari 2006). The site is located at a place called Donya Simang which is situated between the boundary of the villages of San Agustin and Paligui, right in the center of the Candaba Swamp (Figure 2). The site was exposed when an elevated road leading to the bird camp was constructed. Most of the artifacts were broken and surface finds. Fortunately, the

artifacts especially the earthenware, trade ceramics, metals and other ecofacts can still be analyzed and dated.



Figure 2. The Donya Simang Site in Candaba Swamp

Most of the artifacts found in Donya Simang are indigenous undecorated earthenware (Figure 3). However, some of the sherds have distinct designs. According to Dr. Wilhelm Solheim (2008, pers. com.), these earthenware sherds with incised, combed and carved designs are examples of Beyer's Iron Age Pottery with dating between 1000 AD to 1500 AD. Surprisingly, an earthenware sherd from a rim of a small pot with incised, carved and punctuated designs and traces of hematite was also found in the site (Figure 4). Dr. Solheim dated it to even before 1000 AD. The presence of the designs and hematite suggests that this ceramic is for some special ritual performances.



Figure 3. Sherds of undecorated earthenware rims from Donya Simang dated to 1000 – 1500 AD



Figure 4. Sherd of a rim of a small pot with incised and carved design and traces of hematite made even before 1000 AD

The Donya Simang site also contained numerous oriental trade ceramics from China dating back to 1300 – 1600 AD. Sherds from brown glazed stoneware jar (Figure 5) and whiteware qingbai dish (Figure 6) were found in the site. These are similar to the ceramics excavated at Babo Balukbuk, Porac, Pampanga in 2002 that were used as grave goods (Melendres 2008). They have a dating of 13th to 14th century. The site also contained blue and white porcelain dated to the Hongzhi period (late 15th to 16th century). Sherds from a jarlet (Figure 7) and dish (Figure 8) were recovered in the site.



Figure 5. Chinese stoneware jarlet with flattened globular form (13th – 14th century)



Figure 6. Sherd from a Chinese whiteware bowl with qingbai glaze (13th – 14th century)



Figure 7. Sherd from a Chinese blue and white jarlet (late 15th – 16th century)



Figure 8. Sherd from a Chinese blue and white dish (late 15th – 16th century)

And during the early Ming trade ban, a lot of Southeast Asian ceramics notably those from Thailand and Vietnam filled the vacuum left by Chinese ceramics. During the 14th century, ceramic production in Thailand and Vietnam increased and became internationally famous. Sherds of celadon bowl made in Si Satchanalai, Thailand were also found in Donya Simang (Figure 9). They have translucent green glaze with black speckles in their body. They usually have scars from firing supports in their bases. They have a dating of between 15th to 16th century.



Figure 9. Sherds from Thai celadon bowl with floral incised design in the exterior (15th - 16th century)

Stonewares which were manufactured in Binh Dinh, Central Vietnam were also recovered from Donya Simang. One is from a dark green glazed stoneware jar (Figure 10) and another from a stoneware dish. The dating for these ceramic is 15th century. Diem (2001) believes that the ceramic production in Binh Dinh seized in 1471 when Viet forces conquered the Cham capital of Vijaya and when the surrounding area was annexed by the Dai Viet kingdom.



Figure 10. Sherd of a dark greenish glazed stoneware jar from Binh Dinh, Central Vietnam (late 15th – 16th century)

The people of Candaba Swamp may also have metal craft technology even before the Spanish colonialization. Mallari (2004) recovered iron slags recovered in Magumbali, another village in Candaba Swamp. They are not associated with any oriental trade ceramics from China or Southeast Asia, thus, this site was being used as a workshop for metal working during the pre-Spanish time. Metal implements are of utmost important for the people of since they need them in their daily life especially in plant and animal exploitation and even in warfare. This can also be inferred from the richness of the lexicon or vocabulary of the natives of Candaba for the different kinds and sizes of metal implements.

In terms of animal husbandry and exploitation, the Magumbali Site (Mallari 2004; Manese 2006) has showed what animals were being hunted or domesticated and consumed by the people before the arrival of the Spaniards in Candaba. They found bones of pigs, deers, rice field rats, goats, ducks, dogs, chickens and other birds. Surprisingly, all of these animals are still being raised, caught and eaten by the local people of Candaba except for deer since it no longer exist in the swamp.

From early Spanish writings, Candaba is only known for its ruler. His name is Dionisio Kapolong, a son of Rajah Lacandula who is the ruler of Tondo Manila. He had regular contact and trade with the people of the northern tribes. He would regularly travelled to north, by boat through the Pampanga River and its tributaries, to trade for gold with the Isinay people in the upper Magat River Valley (Scott 1994). He is exchanging trade goods from Pampanga and Manila such as Chinese and Southeast Asian trade ceramics and beads for the gold being mined and crafted by the fierce Northern tribe people of Luzon. Ceramics and beads are of great importance for the people of the Northern Philippines because these tradewares were treasured as heirloom pieces and frequently used as bride prize, dowry or as a status of wealth. Actually, Kapolong made good use of this connection when he accompanied four Spanish expeditions across the Caraballo and into the Cagayan Valley sent by Governor General Gomez Perez Dasmaringas in 1591 to subjugate the people of Northeastern Philippines (Scott 1994).

The prehistoric and pre-Spanish sites of Donya Simang and Magumbali in the heart of Candaba Swamp proves that there are human settlements right in the middle of the wetland. Though the sites were destroyed by modern development in the area, we can still see some glimpse of the lifeways and culture of the people that occupied these sites. The people of Candaba Swamp have elaborate material culture where they have earthenware, oriental trade ceramics and metal implements. For the earthenware, it is not clear if these were made by local potters of Candaba or traded from elsewhere but for the oriental tradeware ceramics from China and Southeast Asia, definitely, these were not locally made. The presence of oriental tradeware ceramics specifically from China, Thailand, Vietnam and possibly Japan shows that there is a trading system or exchange relations going on among the people of Candaba and people from other places. It is more likely that these ceramics originated from foreign traders from Manila and then transported to Candaba through the waters of Pampanga River.

Based from the other archaeological surveys conducted in Candaba (Melendres 2004), the people of prehistoric Candaba Swamp also have elaborate burial practice just like the other people in the Philippines where they bury the dead with some grave goods. The burial found in Pescadores site has blue and white ceramics and animal bone while the skeletal remains from Bambang site has two blue and white ceramics and one dragon jar stoneware. Based on ethnographic studies, the placing of grave goods has served diverse purposes for early Filipinos. Generally, personal possessions are placed with the body. Some believed that these materials were needed by the dead person in the next life. Others think that grave furniture are gifts for the ancestors of the deceased individual. It was believed that if an individual was richly furnished endowed with all these items, he or she will be received warmly in the next life but coldly if they have little or no burial goods. Grave goods were also thought to ward off evil spirits that might devour the remains of an individual (Baretto, 2002).

Candaba Swamp from the Spanish Period to Present Time (1575 AD to Present)

Up until the Spanish period, the Donya Simang Site was still being inhabited by people as indicated by the presence of numerous indigenous earthenware pottery as well as oriental trade ceramics from China and from Japan. Three types of blue and white porcelain were found in the site and these are: Swatow (Zhangzhou) wares and Kraak wares from China and Hizen or Arita wares from Japan. All of these ceramics were traded during the Galleon or Manila-Acapulco Trade. This means that the people that owns these are powerful and wealthy for them to have an access to these kind of materials.

Majority of the trade ceramics from Donya Simang are Swatow (Zhangzhou ware). Swatow ware derived its name from Shantou (Swatow in Dutch records) in China, an old junk port along the southeastern coast of Guandong near Fujian. Swatow wares are coarse wares produced in a number of kilns not far from the port of Shantou from where these coarse porcelains and stonewares are exported (Adhyatman, 1999). The dating for Swatow ware is late 16th to 17th century. Most of the Swatow wares in Donya Simang are sherds from plates, mainly with chrysanthemum and floral design in center (Figure 11) and a

flying dragon (Figure 12), dishes with stylized floral design and branches of trees and yuhuchun vase with floral design in exterior.



Figure 11. Sherd from a large plate decorated with floral spray (zhe zhi) in the center. Zhangzhou, China (Late 16th - 17th century)



Figure 12. Sherd from a large plate decorated with a flying dragon in the center Zhangzhou, China (Late 16th - 17th century)

Kraak wares were also found in Candaba. Kraak wares were produced in the kilns of Jingdezhen, China (Rinaldi 1989). These porcelains appeared as new type of porcelain in the second half of the 16th century up to 17th century. In Candaba, most of the Kraak wares are sherds from plates with some Buddhist motifs and panels in their cavetto, small dishes with a bird in a branch of a tree (Figure 13) and small bowls with a garden scene in its center.



Figure 13. Sherd from a blue and white small dish with a bird sitting on a branch of tree and panels on the cavetto Jingdezhen, China (Mid 16th - 17th century)

In Donya Simang, we also found two sherds of Arita wares. These are sherds from blue and white dish and plate (Figures 14 and 15). These porcelains of Japan were manufactured in Hizen or Arita and are dated to 17th century (Mitami 1983).



Figure 14. Sherd from a blue and white plate with floral motif on the cavetto Hizen or Arita, Japan (17th century)



Figure 15. Sherd from a blue and white dish with high foot and river scene in the middle Hizen or Arita, Japan (17th century)

Historically, Candaba Swamp is a huge parcel of land where its ownership is being transferred from one person to another and was utilized mainly for rice production and for fishing. Based from Spanish documents, Candaba was first awarded as an encomienda or estate-grant to Alferes General Amador de Arriaran in 1571 (Gatbonton 1933). Then, in 1591, the encomienda of Candaba was given to Don Juan Ronquillo and Don Goncalo de Ballesteros (Blair and Roberstson 1903 – 1909 Vol. 8:102). In 1743, the Spanish government of Candaba was in trouble because the Augustinians Order of the Roman Catholic Church, who were first to put up a missionary in the area, are claiming that they own some of the lands in Candaba Swamp (Gatbonton 1933:14). This is why in 1881, it was decreed that all the land owners in Candaba should obtain “titulo real” or real land title (Gatbonton 1933:38). A lot of land surveyors arrived in the town to measure and delineate the lands in the Candaba Swamp to avoid any fightings among the landowners. The name of the old owners of the lands in the swamp are now presently used as the names for those locations such “Donya Simang” (which means a rich woman named Simang). In the 1918 land census in Candaba Swamp, it was documented that there are 1906 haciendas or land titles of which 11 348 hectares are being tilled and cultivated for agriculture while 7345 hectares are for non-agricultural purposes such as for residential area and fishing

grounds (Gatbonton 1933:13). Thus, during the Spanish colonialization up to American occupation, the Candaba Swamp is a huge but divided parcels of lands, both for agriculture and aquaculture, where most of the owners are members of the wealthiest and powerful families of the town. Currently, almost 30,000 hectares of the swamp is being utilized for agriculture and aquaculture and 2,440 hectares is still swamp and marshland and the rest is for built up or residential area for the people of Candaba.

In the 1970, a comprehensive research on the development of Pampanga Delta and Candaba Swamp was undertaken for the National Economic Development Authority of the Philippine Government and for the United Nations Development Programme (DPWTC 1976). In particular, the study was able to report on the utilization of Candaba Swamp both in agriculture and aquaculture in the 1970s. Surprisingly, up to now the Candaba Swamp is still being used in the same way although with some additional products and usage.

Currently, most of the land in Candaba Swamp is privately owned. In the rainy season when all the lands are underwater, the entire swamp (which look like more of a lake) become a communal ground when everyone is free to catch fish. However, when the water level subsides during the dry season, the land owner have the exclusive right to harvest the fish within the confines of their dikes that they constructed around their land. This fishing method is called "*salandra*" where the water is released from the dikes and the water gates are fitted with screens or nets to catch whatever fish carried by the water when the area is drained (Melendres 2002). The local people are utilizing some equipment and techniques to fish in the swamp such as using fish nets, fish traps, fish hooks, electrified nets and sticks and sometimes just their bare hands and using paddled or mechanized boats. Examples of fishes that are commonly caught in the swamp includes: tilapia or Saint Peter fish, mudfish, carp, catfish, eel, salmon catfish, gourami, climbing perch fish, goby, rohu, and silver fish. Aside from fish, the Candaba people also gather and catch shrimps, crabs, clams, mussels and snails for food in the swamp and even rice field rats and Philippine pythons.

In the 1970s up to now, the Candaba Swamp during dry season is mainly use for rice production (DPWTC 1976). Rice is generally grown twice a year – during the wet and dry seasons, respectively. In some areas that are near the heart of the Candaba Swamp, they can only plant once a year and normally after the flood subsides which is around November or December. Aside from rice, the Candaba Swamp is now being used to cultivate and grow sugarcane, watermelons, melons, corn, peanuts, cucumber, winter melon, and numerous types of vegetables like bitter melon, tomatoes, okra, green beans, luffa, eggplant and squash. Right now, fruit bearing trees are also being propagated in the swamp such as mango, coconut, banana, jackfruit and papaya.

Since floods are recurrent in the area, livestock and poultry production in Candaba Swamp is slowly increasing over the past years (DPWTC 1976). At the moment, the people are raising carabaos or water buffaloes, pigs, chickens, ducks, goats, sheeps, and cows. Duck raising is what Candaba Swamp most known for chiefly for its duck products

which includes salted eggs and an exotic cuisine called “*balut*” or boiled unhatched duck eggs eaten as delicacy in the Philippines.

Nowadays, from June to February, Candaba Swamp serves as a fishing ground and stopover for migratory birds from Northern Hemisphere especially of birds from China and Russia. Before year 2000, the local people are even hunting these birds for food such as the wild ducks, egrets, herons, and swamp hen to name a few. However by 2000 the local government of Candaba came up with a local ordinance that forbids the hunting and killing of the migratory birds in the swamp. So now, these birds are becoming tourist attractions for visitors. The local government even commissioned a faunal census of the birds in the swamp. Majority of the birds are wild and migratory ducks, egrets, herons, plovers, bittern, warblers, kingfishers, shanks, sandpipers, moorhens, swamp hens, sparrows, owls, doves, plovers, falcons, cranes, bulbuls and sometimes even eagles.

Concluding Remarks

There is a stable increase of human occupation in Candaba Swamp from the Spanish period to the present time based from the population census of the town. In 1582, in the first census that was conducted in Candaba by the Spaniards, there are only 2,000 people in the town. In 1612, it increased to 3,600 individuals. In 1853, the population of Candaba grew to 8,299. By the time the Americans occupied the country, there are 11,783 persons living in and around the swamp. Finally, according to the last census of the town in 2010, there are now 102,399 individuals living and benefiting from the fruits and produce of Candaba Swamp.

Using different fields or disciplines, this study was able to show the different usage of the Candaba Swamp from the prehistoric time up to the 21st century. It shows that the swamp is being utilized in the same way then and now, for food collection and production and for habitation of the people. However, certain parts of the swamp and marsh are now being reclaimed for human settlement and for fishpond, animal and poultry farms constructions. Houses and other human structures are being built more and more towards the swamp due to unavailability of lands in the peripheral area of the wetland where water is not that high when the swamp transform to a lake due to increase volume of water brought about by the rainy season. Thus, the local government must come up with good zoning plans and a sustainable ecological strategy for the utilizations of lands in the area in addition to for the protection of the unique ecosystem of the swamp especially of its fauna and flora.

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