

**ANCIENT MAYA CANOE NAVIGATION AND ITS IMPLICATIONS FOR  
CLASSIC TO POSTCLASSIC MAYA ECONOMY AND SEA TRADE:  
A VIEW FROM THE SOUTH COAST OF BELIZE**

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**Abstract**

*In addition to the direct evidence of ancient Maya canoe travel from wooden canoe paddle from the K'ak' Naab' salt works, ancient Maya settlement of offshore islands from the Late Preclassic through the Postclassic periods documents waterborne travel. The Preclassic Butterfly Wing shell midden, the Classic Maya trading port of Moho Cay, and the Classic to Postclassic trading port of Wild Cane Cay are highlighted in this paper. A variety of trade goods were transported along the Yucatan, linking dynastic Maya leaders from distant cities. The seafaring skills of the ancient Maya, their interest in exotic trade goods, and the complex organization of Maya society have parallels among Caribbean island societies. Similarities in coastal adaptation and exploitation of marine resources further tie the ancient Maya to ancient peoples in the circum-Caribbean region.*

**Résumé**

*À l'instar de la découverte d'une pagaie en bois dans les salines de K'ak' Naab', attestant la pratique des voyages en canoë par les Mayas anciens, les sites insulaires côtiers occupés par les Mayas anciens, du Préclassique tardif aux périodes post-classiques, nous éclairent sur leur habitude des voyages par eau. Il s'agit notamment de mettre ici en lumière les amas coquillier préclassique de Butterfly Wing, le port de commerce maya classique de Moho Cay, ainsi que le port de commerce maya classique et postclassique de Wild Cane Cay. Divers biens commerciaux ont été transportés le long du Yucatan, reliant ainsi les familles dirigeantes mayas de villes éloignées. Les compétences maritimes des anciens Mayas, leur intérêt pour le commerce de produits exotiques, et l'organisation complexe de leur société présentent des parallèles avec les sociétés insulaires des Caraïbes. Des similitudes dans l'adaptation côtière et l'exploitation des ressources marines existent entre les anciens Mayas et les anciennes populations de la région circum-caraïbe.*

**Resumen**

*Del Preclásico Tardío al Postclásico Tardío hay evidencia de la práctica de viajar por el agua entre los Mayas. Es evidenciado no solamente por evidencia directa como el caso del remo de canoa de madera de la mina de sal K'ak' Naab', sino también por los asentamientos Mayas en islas litorales. En este artículo se enfoca en el conchero Butterfly Wing del Preclásico, el puerto comercial Maya Clásico de Moho Cay y el puerto de comercio del Clásico-Postclásico de Wild Cane Cay. Una gran variedad de productos de*

*comercio fueron transportados a lo largo de la península de Yucatán, vinculando líderes dinásticos Mayas en ciudades distantes. Las competencias marítimas de los antiguos Mayas, su interés en el comercio de mercancías exóticas, y la compleja organización de la sociedad Maya tienen paralelismos entre las sociedades insulares del Caribe. Las similitudes en la adaptación a la costa y la explotación de los recursos marinos aún más vinculan los antiguos Mayas con los pueblos antiguos en la región del circum-Caribe.*

### **Introduction**

Although some researchers have suggested there was travel and trade between the Maya area and islands in the Caribbean (Harlow 2006; Wilson et al. 1998), there is no firm evidence. Morphological similarities in chert tools between the two areas (Wilson et al. 1998) may be explained by similar uses for the tools; moreover chert is chemically variable within outcrops and so chert artifacts have proven difficult to chemically characterize to particular locations, unlike obsidian, which is quite uniform in trace elements. The discovery of a new jadeite locality in Cuba (García-Casco et al. 2009) provides a closer possible source for jadeite artifacts than the Motagua River valley of Guatemala, previously known as the major source of jadeite and other greenstones used by the ancient Maya and others throughout Mesoamerica and Central America (Harlow 2009). The possibility of direct contact between people in the Caribbean islands and the Maya area remains possible, given the facility of boat travel in both areas, but there appears to have been no significant cultural impacts.

More important for archaeologists working in both areas, are the many similarities in the maritime economies that might benefit from more comparisons. The proximity to the sea meant that there often were similar adaptations in throughout the circum-Caribbean area, including the coast of the Maya area. There was the shared practice of negotiated political relations manifested by feasting events, and the demand for rit-

ual and status paraphernalia—such as jade, gold and exotic marine shell—by the dynastic Maya leaders and by Caribbean island chiefs. In this paper, I discuss the use and importance of the sea to the ancient Maya to provide a comparison for other cultures in the circum-Caribbean region.

### **Maya Canoe Travel and Trade**

Island communities, trade goods, and artistic depictions of canoe paddlers document that the ancient Maya were proficient canoeists for travel and trade along rivers, on the sea around the Yucatan peninsula, and offshore (see McKillop 2006). The decentralized political structure of the Classic period civilization (AD 300-900) meant that political power was brokered more by negotiation than by the centralized authority backed by military force characteristic of some other ancient civilizations such as the Aztec, Inca, or Teotihuacan (McKillop 2006). Negotiated power was mediated by movement of people and goods: Oxygen isotopes of bone of the founder of Copan, K'inich Yax K'uk' Mo', indicate he came from the west, likely the Tikal area (Buikstra et al. 2004). His depiction in Teotihuacan regalia with typical Teotihuacan “goggle eyes” on Altar Q at Copan underscores his affiliation with central Mexico (Sharer 2004). The dynamics of water travel, particularly maritime trade, changed over time, reflecting the rise of complexity in the Late Preclassic (300 BC- AD 300), the Classic Maya civilization focused on the interior of the southern lowlands, and

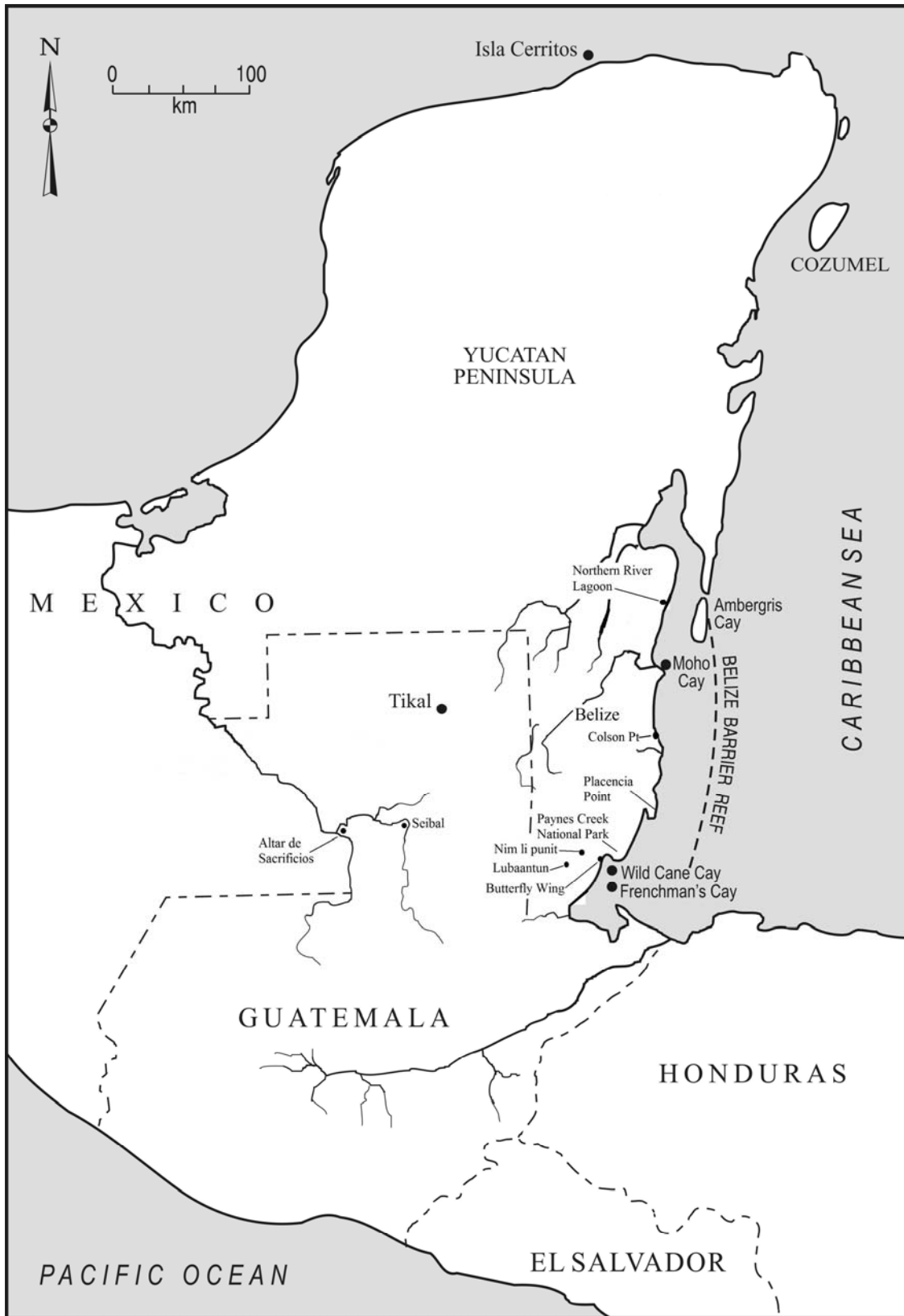


Figure 1. Map of the Maya Area Showing Sites Mentioned in the Text (by Mary Lee Eggart, LSU).

the Postclassic society focused in the northern Maya lowlands.

The only direct evidence of canoe travel is the Late Classic wooden canoe paddle from the K'ak' Naab' saltwork in southern Belize (McKillop 2005a). However, various other lines of evidence indicate enduring water transportation by the ancient Maya. The earliest known inhabitants of the Maya area were Paleoindians, descendants of people who migrated from Asia at the end of the Pleistocene, and then either skirted the glaciers by boat or followed an ice-free corridor through the glacier and into what is now mainland United States by 11,500 years ago. They traveled farther south on foot, populating the Americas within a thousand years (Lohse et al. 2006; McKillop 2006).

The earliest firm evidence of ancient coastal canoe travel is documented by Late Preclassic settlement of the Maya islands of Moho Cay and Cancun (Andrews et al. 1974; McKillop 2004). Moho Cay was a trading port at the mouth of the Belize River. Widespread Late Preclassic coastal settlement on the coast of Belize and the Yucatan peninsula of Mexico (see Eaton 1978; Freidel 1979; McKillop 1989a) points to coastal travel and trade at this time, although the coast may have been settled by inland people who did not venture out to sea. Species of marine fish that are not accessible from the shore are documented later at both coastal and inland communities indicating boat travel (Emery 2004; McKillop 1984, 1985).

David Freidel (1979) makes a convincing argument for the rise of social complexity in the Late Preclassic at the coastal community of Cerros in northern Belize, where coastal trade drove interregional interaction and exchanges of preciosities among elites. Late Preclassic or Proto-classic settlement at Butterfly Wing in

southern Belize (McKillop 1996) at the mouth of the Deep River points to canoe travel, with obsidian linking the community to trade with the Maya highland outcrops of Ixtepeque and El Chayal (McKillop 2005b). There is another Late Preclassic shell midden on Cancun (Andrews et al. 1974). Early Classic settlement of Maya islands, including Moho Cay, as well as Wild Cane Cay and Pelican Cay in southern Belize, documents continuity of sea travel and trade (Figure 1).

### *Classic Period Maya Sea Trade*

Although the geographic focus on the Classic Maya civilization was inland with dozens of cities and their polities, the sea was critical to their acquisition of salt and other marine resources, as well as a transportation avenue for goods and resources from farther away. The Paynes Creek salt industry in southern Belize developed to meet the biological demand for salt by Maya, as documented by trade goods from inland cities in Belize and adjacent Guatemala (McKillop 2005a). Unit-stamped pottery vessels and figurine whistles at the Paynes Creek salt works share styles with Lubaantun in southern Belize, and communities farther west in adjacent Guatemala, notably Altar de Sacrificios, Seibal, and the Petexbatun (McKillop 2007a, 2008). The salt works were abandoned at the end of the Classic period when the market collapsed with the abandonment of the inland cities.

The coastal-inland connection of the Classic Maya civilization extended to other resources, including seafood. Lange's (1971) provocative model that seafood provided a protein base for the inland Maya has some support: tuna bones from the central Belize coast were cut for drying or salting for storage or perhaps inland trade (Graham 1994); Valdez and Mock (1991)

regard salt production at Northern River Lagoon in northern Belize as geared toward salting meat for inland trade, on the basis of the presence of briquetage (pottery from boiling brine) and animal bones at the site. Certainly isotopic evidence (White et al. 2001a) and marine resources at inland communities (Emery 2004; McKillop 1984, 1985, 2004, 2005b) document inland transport, but in limited quantities.

The sea was central to the ritual ideology of the Classic Maya. The sea was the source of ritual paraphernalia including stingray spines for bloodletting, hallucinogenic secretions from the *Bufo marinus* frog, and imagery equating the sea with the underworld and creation (McKillop 2005b). The sea also was a transportation avenue for goods and resources from farther away, including obsidian, jadeite, and pottery. Inland trails and rivers clearly were central to the movement of goods and people. Chemical analyses of the bones of Yax K'uk' Mo' indicate he originated from the west, likely Tikal (Sharer et al. 2004). His depiction with goggles and Teotihuacan regalia on Altar Q - a carved stone with images of dynastic leaders of Copan - link him with Teotihuacan, suggesting complex political ties beyond the Maya area. An Altun Ha pottery vessel in a Late Classic burial from Copan likely represents a gift during a meeting between dynastic leaders or their representatives, cementing a trade, marriage or other alliance. Chemical analysis of human bone and teeth from an Altun Ha individual buried with green obsidian from the Pachuca source in central Mexico and chipped into Teotihuacan style figures indicated the person was from Altun Ha. He was not a foreigner. This information suggests the gift was made during a royal visit and was ultimately interred with the recipient (White et al. 2001b).

The expansion of coastal Maya settle-

ment in the Late Classic period, the abundance of trade goods, including obsidian, at coastal sites, all the inland Maya demand for coastal resources and goods from more distant lands, point to canoe transport in the Late Classic. The Late Classic demand for obsidian at inland Maya sites in the southern lowlands was largely met by the Maya highland sources of El Chayal and Ixtepeque (Braswell 2004; Dreiss and Brown 1989; McKillop 1989b; Nelson 1980). Much of the obsidian was transported from the Maya highlands, down the Motagua River, and then north along the coast of Belize (Hammond 1972; Healy et al. 1984; McKillop et al. 1988), passing the trading ports of Wild Cane Cay (McKillop 2005b), False Cay (Graham 1994), Placencia (MacKinnon 1989), Moho Cay (McKillop 2004), Marco Gonzalez (Graham and Pendergast 1989) and San Juan (Guderjan and Garber 1995) on Ambergris Cay, and Santa Rita on the mainland coast (Chase and Chase 1989; McKillop 2005b; McKillop and Healy 1989), connecting with coastal ports around the Yucatan, such as Isla Cerritos (Andrews et al. 1989).

The coast may have been used to acquire goods from farther away in the Classic period. They include a *tumbaga* (gold alloy) artifact from Altun Ha (Pendergast 1970), mercury from under a ball court marker at Lamanai (Pendergast 1982), and jadeite from the Motagua River outcrops, marine shells from the Pacific (Feldman 1974), and obsidian from central Mexico (Spence 1996).

### ***The Classic Maya Trading Port on Moho Cay***

The island trading port on Moho Cay was well situated to participate in coastal-inland trade up the Belize River, sea trade along the coast, and the exploitation of estuarine resources in the coastal waters

(McKillop 1984, 2004). Moho Cay is located in the mouth of the Belize River, which provides access to communities in western Belize and the Peten District of Guatemala. Although only one field season of excavation was possible at the site since it was destroyed for tourism development prior to the planned second field season, research indicates Moho Cay was a permanent settlement dating from the Late Preclassic through the Postclassic periods. Excavations revealed burials associated with Early Classic Tzakol 3 and Late Classic Tepeu 1 and 2 pottery characteristic of the Peten region. People were buried under houses of perishable pole and thatch.

A variety of goods and resources brought to the island by boat, either from direct procurement or trade, indicate enduring reliance on waterborne transportation by the Moho Cay Maya (McKillop 2004). Imported stone tools include grey obsidian from the Maya highland outcrops of El Chayal and Ixtepeque (Healy et al. 1984), greenstones likely from the Motagua River basin of Guatemala, and high quality chert from the Colha region of northern Belize. A midden dominated by manatee (*Trichechus manatus*) and queen conch (*Eustrombus gigas*; McKillop 1984), underscore facility with boat travel and knowledge of the sea. Stylistic similarities of the pottery lie with ceramics from Altun Ha and the Peten region.

### ***Maya Canoe Travel***

Although both the inland and coastal Maya had knowledge of canoes, travel on the sea required specialized knowledge of currents, weather, shoals, and navigation likely only known to the coastal Maya. Inland canoe travel along rivers in small paddling canoes is depicted incised on bones from Tikal's burial 116, Temple 1 (Triak 1963). River travel requires knowl-

edge of currents, such as paddling upstream close to shore in the rainy season when the rivers are flooded and there are strong downstream currents. In contrast, the sea has more hazards, including lack of shoreline visibility, a greater expanse of available travel, hidden shoals and fauna, and heavy seas and bad weather (McKillop 2005b). Control of the sea by the coastal and island Maya would have given them control of the production and distribution of maritime resources (such as salt, stingray spines, shells, and seafood) and trade goods from farther away. Goods were traded along the coast within the Maya area, such as Maya highland obsidian transported along the coast or an Altun Ha emissary bearing gifts to a Copan dynastic leader. The sea may have been used to transport goods from farther away, such as tumbaga gold from Central or South America traded to Altun Ha (Pendergast 1970).

### ***Sea Faring in the Caribbean and Maya Areas***

Were the Caribbean and Maya areas linked during the Classic Maya period by trading ventures, perhaps traders sent as emissaries as in the later Aztec *pochteca*? Both in the Maya and broader circum-Caribbean areas, including the Caribbean islands and the "intermediate area" of lower Central America, political power was mediated by negotiations marked by feasting events where gifts were exchanged. In later times, the Aztec *pochteca* (long-distance traders) exchanged gifts from the Aztec king with political leaders outside the Aztec empire. The *pochteca* and their king were looking for resources of interest that could be acquired either by negotiating trade alliances or by conquest and tribute payment, such as chocolate in the Soconusco area of Pacific Guatemala (Voorhies 1989). The greater the travel dis-

tance, the more likely trade alliances were negotiated, due to difficulties of controlling geographically distant areas by military force.

### ***The Rise of Postclassic Maya Sea Trade***

The sea became a major transportation avenue for the Postclassic Maya. Following the collapse of the dynastic Maya polities in the southern lowlands by AD 900, the coastal-inland relationship ended—at least in the southern Maya lowlands. The coastal and island Maya developed new alliances with emerging polities in the northern Maya lowlands, first at Chichen Itza and Tulum, and then at Mayapan. The place of coastal Maya within the negotiated political economy of the inland Maya dynastic polities ended. The Postclassic witnessed new opportunities and new alliances: There were independent coastal polities such as Wild Cane Cay (McKillop 2005b) and those linked to nearby inland polities such as Isla Cerritos' alliance with Chichen Itza (Andrews et al. 1989). The outward perspective of Postclassic Maya politics contrasted sharply with the inward perspective of the Classic polities of the southern Maya lowlands. Although the Classic Maya traded extensively outside the Maya area, developed complex relations with Teotihuacan, and participated in coastal trade, the population was overwhelmingly in the interior of the Yucatan, focused on an agricultural economy, and predicated on negotiated alliances, including raids and battles, among inland polities. With the abandonment of most inland cities and the collapse of the political economy of the southern lowlands, the existing coastal transportation routes were used by coastal communities and ports, expanding and re-directing virtually all long-distance, even medium to short distance, trade along the coast.

### ***Postclassic Trading Port on Wild Cane Cay***

The trading port of Wild Cane Cay expanded exponentially after the Classic Maya collapse and the collapse of the Paynes Creek salt industry (McKillop 1989b, 1996, 2005b). During the Late Classic, Wild Cane Cay likely controlled the inland transport of salt from the Paynes Creek salt works (McKillop 2005a). There was an 800% increase in the amount of obsidian traded to Wild Cane Cay that was left at the port, likely as payment for services such as housing traders, docking and warehousing (McKillop 1989b). Polyhedral obsidian cores were transported to Wild Cane Cay with prismatic blades produced for local distribution to surrounding coastal communities (McKillop 1996). The lack of conservation of this scarce resource in the production of blades (as measured by blade width and also by the cutting edge to mass ratio), as compared to other Maya communities, underscores the regular supply and/or availability of obsidian at Wild Cane Cay (McKillop 2005b).

The Postclassic Maya on Wild Cane Cay secured their place in the geopolitics of Maya society as autonomous traders. They constructed stone architecture using coral rock as foundations (McKillop 2005b; McKillop et al. 2004). Excavations in Fighting Conch mound revealed six buildings with individuals interred with a variety of exotic trade goods that marked their place in a sea trade economy: A young woman from burial 10 was interred in the bound-captive position depicted on Maya painted pots (on her stomach with her legs folded and hand and foot bones commingled behind her back). She was not buried in a tomb like other Fighting Conch burials, but directly on the floor of a demolished building. She was placed as a dedication to the next building, with coral rock

foundation of the subsequent structure placed on top of her grave. She was buried

with a Las Vegas polychrome vessel imported from Honduras (Figure 2).



Figure 2. Trade Pottery from the Maya Trading Port of Wild Cane Cay, Belize. a), Las Vegas Polychrome from Honduras excavated from Fighting Conch burial 10; b) Tulum Red (Payil Red) excavated from Fighting Conch burial 11/12; c) Tohil Plumbate from Pacific Guatemala (unprovenanced).



Another grave from Fighting Conch mound is that of a young man buried in a hearth with three stones, reminiscent of the Maya ideology of creation and celestial navigation: The man was buried in a seated position in a rock hearth, on a bed of charcoal, but not burned. In the ashes below the wood charcoal there were three trade goods (obsidian, chert, and groundstone) identifying him as a trader, but importantly also linking him to the three hearthstones of the Maya creation story, which also are the three stars that mark the constellation Orion (Freidel et al. 1995; McKillop 2005b: Figures 6.25-6.26); Tedlock 1986)—surely used in the past for sea navigation.

The individual in burial 8 in Fighting Conch mound was interred with a Terminal Classic, gouge-incised vessel reminiscent of Fine Orange (McKillop 2005b: Figure 6.19), with gold foil in the finger coral into which the rock tomb was placed. Gold foil is only known from a handful of Postclassic Maya communities, linking Wild Cane Cay to a trade with lower Central America or South America (McKillop 2005b).

Burial 11/12 was accompanied by a Tulum Red (or Payil Red) vessel, stylistically identical to vessels from Tulum and sites in northern Belize, such as Lamanai and Colha (McKillop 2005b: Figure 6.31). Ties to the Pacific coast of Guatemala include Tohil Plumbate pottery from the Pacific coast of Guatemala (Figure 2).

The coastal Maya, like the Caribbean island settlers, were expert at canoe navigation and the exploitation of maritime resources. The Wild Cane Cay Maya ventured offshore to mainland rivers for the “jute” snails (*Pachychilus* sp.), a highly-desired food (Healy et al. 1990). Armadillos, paca, and peccary were hunted from the mainland. Estuarine resources included

manatee, snappers, barracuda, groupers, and a variety of shells. Reef species included parrotfish and doctor fish available farther offshore on reefs and saltier seas. Shells were abundant, with most species available nearby but deeper water species also present, such as a *Spondylus* sp. Shell disk in a child’s burial from Fighting Conch mound (McKillop 2005b: Figure 6.32a). The diversity and abundance of marine resources attests to the boating skills and knowledge of fishing as well as awareness of the dangers and potential of the seas as a food basket. The outward world view of the Postclassic Maya, their expertise in sea trade and travel, and the demand for exotics opened a world only surpassed by the arrival of the Spaniards in the sixteenth century.

### Conclusions

The coastal Maya were proficient seafarers, with the K’ak’ Naab’ canoe paddle providing direct evidence of canoe travel. The Late Preclassic provides the first clear evidence of sea trade, with island settlement on Cancun and Moho Cay, as well as the coastal settlements of Cerros and Butterfly Wing. The Classic period witnessed the development of coastal-inland trade relations, with the coastal Maya supplying marine resources, ritual paraphernalia to underwrite the ideology of the Maya, and a link to sea trade for resources from farther away. There was an expansion of sea trade after the collapse of the inland polities in the southern Maya lowlands. Some trading ports like Isla Cerritos became ports for inland cities, whereas others, like Wild Cane Cay, developed into autonomous coastal polities. The opportunistic coastal Maya entered a new era of sea trade, linking a wider world of Mesoamerica and Central America.

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