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The Finny Tribe: How Coastal, Cosmopolitan New Orleans Satisfied an Appetite for Fish

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Abstract

We examine fishing, fish markets, and fish consumption in New Orleans, Louisiana, using zooarchaeological assemblages of fish remains from four sites located in the French Quarter. The contexts range in age from the early eighteenth to the late nineteenth centuries and varied in function and occupation including French and Spanish households, a hotel, a public garden, and the Ursuline Convent. We use evidence of probable fishing habitats, various marketing practices, and the culinary origins of preferred food fishes to elucidate how the coastal setting of the city and its cosmopolitan inhabitants used fishing and fish to foster local identity.

Keywords Finfish · French colonial · Spanish colonial · Markets · Lake Pontchartrain

Introduction

"The rivers are full of monstrous fish, especially catfish, which is an excellent fish; rays; carp; salmon [sic] and an infinity of other fishes that are unknown in France" (Clark 2007:39). This observation from 1727, nine years after the establishment of New Orleans in 1718, was made by one of the recently arrived Ursuline nuns, Marie Madelaine Hachard, who wrote to her father in France describing the abundance and variety of finfish in her new home. Similarly, the Frenchman Marc-Antoine Caillot, who resided in New Orleans from 1729 to 1731, noted that the Mississippi River, its bayous, and Lake Pontchartrain were home to a great assortment of finfish including massive freshwater drum, catfish, eels, carp [sic], sunfish, alligator gar, bowfin, mullet, angelfish, flounder, trout, sardines, swordfish, and stingrays (Caillot 2013:113-114).

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The young nun and the Frenchman had both noted one of the fortuitous features of the decision to establish New Orleans on the banks of the Mississippi River roughly 161 km (100 mi) from the Gulf of Mexico. Specifically, the site of the eighteenth-century French settlement provided the inhabitants with access to freshwater, brackish, and marine habitats that teemed with great varieties of fishes (Fig. 1). The physical location of the settlement along the Mississippi River and approximately 8 km (5 mi) from a large inland brackish bay (Lake Pontchartrain) was wrought with geographic challenges that linger today, including limited access to high ground, swampy conditions, and frequent flooding (Powell 2013). At the same time, these trying aspects of the settlement location provided access to the estuaries, tributaries, bayous, and other riverine and coastal waters that would afford the residents of New Orleans with abundant and varied finfish and shellfish through time. In addition to supporting fish and fishing activities, these water habitats and the natural resources they provided helped to form and sustain the cultural identity of New Orleans and its diverse inhabitants.

Archaeological excavation and zooarchaeological analysis of fish remains from historical sites in New Orleans provides empirical evidence of consumption practices of finfish through time and by various inhabitants of the city. During the eighteenth and nineteenth centuries, colonial New Orleans underwent multiple political administrative shifts (Table 1) along with waves of immigration and settlement by peoples of disparate origins from across the globe (e.g., France, Africa, Spain, the Canary Islands, Hispaniola, Britain, Germany, Ireland). With the exception of early accounts such as those of Sister Hachard and Marc-Antoine Caillot, most historical documents or historical analyses that mention either fishes or fishing provide indications of fish procurement and sales of fishes in general and economic terms (e.g., Clark 1970, Usner 1992), and few sources specify the types of fishes that were most commonly sold or eaten or where

Fig. 1 Satellite image of SE Louisiana showing major water bodies, water basins, New Orleans, and settlement areas mentioned in the text

they were captured. Archaeological remains of fishes can often provide taxonomic details missing from historical sources that can be used to identify past fishing practices, the habitats where fishes were procured, and consumption patterns.

Here we present the results of zooarchaeological analysis of fish remains from four sites located in New Orleans' French Quarter. The high ground of the French Quarter served as the location of the original settlement of the city and was densely occupied throughout the eighteenth and nineteenth centuries. The contexts are diverse and include French and Spanish domestic households, a hotel, a public garden, and the grounds of the Ursuline Convent. The function of these locales varied through time, even at some of the same properties, as did the cultural and ethnic background of the occupants and/or patrons. The sites range in age from the early colonial period to the late nineteenth and early twentieth century. Even though none of the sites contain diachronic occupations that span all time periods, comparisons between sites with overlapping occupations provide insights into both culinary preferences and procurement practices through time. The zooarchaeological analysis is complemented with information gleaned from historical sources relating to the preferred habitats for fishing, marketing of fishes, commercial advertising for fishes, and restaurant sales of fishes. Therefore, besides identifying their role in subsistence, we demonstrate how fish remains can be used to identify various behaviors and lifeways related to historical settlements in coastal regions.

Similar to many other areas of colonial settlement, fishes were never the primary meat source of New Orleans residents. In colonial and later New Orleans finfish were one component of the broad use of seafood that included shrimp, blue crabs, and crayfish as well as shellfish, particularly oysters. Despite the broad range of seafood available from coastal Louisiana, the zooarchaeological record indicates that a range of fishes were consistently a part of the menu contributing to the culinary creativity that continues to characterize the city to this day. As we describe here, our analysis indicates that people more commonly consumed fishes from local brackish habitats followed by freshwater habitats with the least evidence for fishes from marine settings. And surprisingly, in light of the natural local abundance of fishes, some contexts contain remains of non-local fishes (imported from elsewhere, particularly northern locales) indicating how market forces and personal preferences played a role in the types of fish available and consumed. In conjunction with consumption practices, we examine how the city's economic development, particularly during the nineteenth century and involving the use of the Mississippi River for maritime trade, may have affected fishing and fish use through time. The changing economic development of the city apparently also had a negative impact on the local Native American populations, their fishing practices, and potential sourcing of fish from Native American fishers. And political entities initially enacted policies that altered how and where fishes could be marketed, while later municipal administrative bodies oversaw the construction of infrastructure

Table 1 Timeline of political administrations in New Orleans

Nation	Date
French	1718-1763
Spanish	1763-1800
French	1800-1803
American	1803-present

specifically to serve as fish markets. Besides identifying the dietary uses of fishes, our analysis of zooarchaeological fish remains in conjunction with habitat and historical information provides more holistic insights into the environmental, economic, and culinary life of New Orleans during the eighteenth and nineteenth centuries.

The findings from our zooarchaeological study regarding the acquisition, marketing, and culinary uses of fishes have relevance beyond New Orleans to other coastal settings that are also characterized by the settlement of diverse populations, high fish biomass habitats, and a cultural desire for fish. In colonial settings, analyses of fish remains have been used to provide details on subsistence (e.g., Reitz and Cumbaa 1983; Reitz and Scarry 1985; Scott and Dawdy 2011), cultural interaction (e.g., Bowen 2006; Fradkin et al. 2012; Worth 2012), technological innovation (Colley and Attenbrow, 2012), and over-exploitation (Reitz 2004). Analyses of fish remains from historical sites also have played an important role in studies of habitat exploitation, trade, and food practices within the multicultural fabric of nineteenth-century California, including on island settings (Braje et al. 2014), Gold Rush era San Francisco (Conrad et al. 2015), and in Chinese diaspora contexts (e.g., Collins 1987; Kennedy 2017; Schulz 2002). Milne and Crabtree (2001) have detailed the use of fish across diverse contexts in New York City's Five Points neighborhood, as well as discussed in brief the increased availability in urban contexts of fish shipped on ice beginning in the 1850s. Similar to the analysis presented here, Zierdan and Reitz (2016) use the remains of fishes from colonial Charleston, South Carolina to examine habitat exploitation and economic patterns of fish distribution and consumption in the multiethnic coastal city. These and other studies demonstrate the analytical value of fish remains recovered from urban coastal environments across a number of research themes.

From Salt to Fresh: Water Habitats of New Orleans

Nestled in the Lake Pontchartrain and Mississippi River basins, New Orleans is a coastal city despite its somewhat inland location. French colonial settlement and later growth of the city has always been circumscribed by water bodies (see Fig. 1). Although the Mississippi River dominates the city, the brackish bays to the north and east that constitute lakes Pontchartrain, Catherine, and Borgne form boundaries along with their associated brackish marsh lowlands. Further south along the Gulf of Mexico, the highly productive coastal wetlands consist of abundant salt marsh habitat that grades inland to brackish habitats followed by freshwater marshlands along tributaries and rivers. Southwest of New Orleans (i.e., across the Mississippi River and south of the city), the Barataria Basin is among the most productive aquatic habitats in North America (Chesney et al. 2000). North of the city and inland from the coast, numerous rivers and smaller tributaries drain to the south creating freshwater marshlands that cover a large portion of the basin. The ubiquity of freshwater and brackish marshlands and swamps in conjunction with relatively little well-drained terrestrial habitat made life in the city precarious, particularly during the early eighteenth century, because natural levees and lowlands were prone to seasonal flooding and early artificial levees often failed. By the early-nineteenth century anthropogenic alteration of the landscape including the construction of drainage canals and improved artificial levees served to mitigate flooding and provided some measure of stability that allowed growth of the

city. Engineered water bodies often had the added advantage of facilitating access to fishing habitats.

Initially, travel and communication as well as hunting and fishing activities by French settlers took place either via waterways or overland along natural levees following the practices of the Native Americans who occupied the region at the time of French colonization. Native populations of Choctaw, Houma, Acolapissa, and others used the natural levees that provided dry ground for their settlements, and they traversed the bayous, lakes, and rivers via canoe (Usner 2018). The rich estuarine and freshwater habitats sustained native populations for several millennia with the adoption of horticulture occurring relatively late in the precolonial era (Kidder 2000). Similarly, French colonists relied on fishing and hunting to fulfill much of their sustenance needs as agricultural production of foodstuffs during the eighteenth century was a slow process (Usner 1992).

The various water bodies provided distinct opportunities for fishing. Although the Frenchman, Marc-Antoine Caillot (2013), noted the variety and large size of fishes in the wide and powerful Mississippi River, the river was a dangerous water body to fish during the eighteenth century due to treacherous currents, sandbars, shoals, and abundant debris that often filled it; therefore, less hazardous backwater habitats were preferred by many. Also southwest of the city (across the Mississippi River and south of the city), Bayou Segnette and later in time engineered canals connected the rich Barataria Basin with the Mississippi River and New Orleans' markets. On the east bank of the river and closer to the city, one of the most productive and popular fishing habitats was Lake Pontchartrain, a large inland bay to the north of the initial settlement (see Fig. 1). Access to the lake from the Mississippi River and the French Quarter was achieved along the well-travelled high ground that constituted the natural levees of three principal bayous (Metairie, Gentilly, and St. John) (Fig. 2). Native Americans used these routes for centuries and the largest bayou, St. John, was the mostly widely used colonial route of movement and commercial activity.

Just north of the French Quarter is a high natural ridge that came to be known as Bayou Road that led to Bayou St. John (Bayou St-Jean) (see Fig. 2). This brackish bayou meanders for roughly 6 km (3.7 mi) until it enters Lake Pontchartrain. Because docking along the Mississippi River was too dangerous, French colonists traveled along Lake Pontchartrain and entered Bayou St. John where safe portage could be made between the bayou and the river. The 2 km (1.5 mi) overland route via Bayou Road was used to transport goods to the French Quarter settlement (Fig. 3). Although the route was primarily for commercial activity and some of the oldest residences and plantation houses are located along Bayou Road and Bayou St. John, both the bayou and Lake Pontchartrain provided highly productive and easily accessible fishing habitat for the city's residents.

Improved access to Lake Pontchartrain fishing habitats was achieved through commercial endeavors. During the late eighteenth century a Spanish governor sought to improve commercial water trade, improve drainage in the French Quarter, and reduce the overland route to the bayou and the lake with the construction of the Carondelet Canal, a waterway that extended Bayou St. John inland toward the Mississippi River and the French Quarter another 2 km (1.5 mi) (Campanella 2017) (see Fig. 3). Repairs and improvements to the canal in the early nineteenth century included clearing debris from the bayou, thus creating better lake access. Commercial goods as well as fishes

Fig. 2 Eighteenth century map showing Lake Pontchartrain, Bayou St. John and other prominent bayous, in relation to the French Quarter and colonial settlement of New Orleans. Bayou Road runs from the French Quarter to Bayou St. John (F. Saucier, Carte Particulie're du Cours du Fleuve St. Louis, 1749)

and shellfish, particularly oysters, were transported to the city via luggers – two sail watercraft commonly used for fishing. The route and associated infrastructure (railroad) also opened Lake Pontchartrain to greater fishing. Although the canal was filled in during the early twentieth century, Bayou St. John continued to serve as a waterway to the lake. Unfortunately, during the early twentieth century fishing in the bayou was greatly diminished due to flood control efforts at the mouth of Bayou St. John that restricted the flow of lake water and brackish taxa of finfish into the waterway.

From Water to Table

Moving fishes from the water bodies to food tables in New Orleans was accomplished by various inhabitants of the region. Artisanal fishing (i.e., small-scale fisheries for personal consumption as well as sale) was practiced by Native Americans, Europeans, and both free and enslaved African-Americans with the first commercial fisherfolk emerging in the late 1700s (Fig. 4). Fish vendors operated independently until the late eighteenth century when designated markets were constructed. Even with regulated markets, street vendors and other independent merchants provided fishes for households as well as for restaurants, taverns, and hotels. And the informal exchange of fishes (i.e., gifting or using fishes as a form of currency) was probably practiced through time, but is not well documented.

During the earliest years of the settlement, Native Americans supplied the colonists with much of their food supply, including finfish. Equipped with canoes and their extensive knowledge of both the water habitats and the seasonality of fish fauna, Native

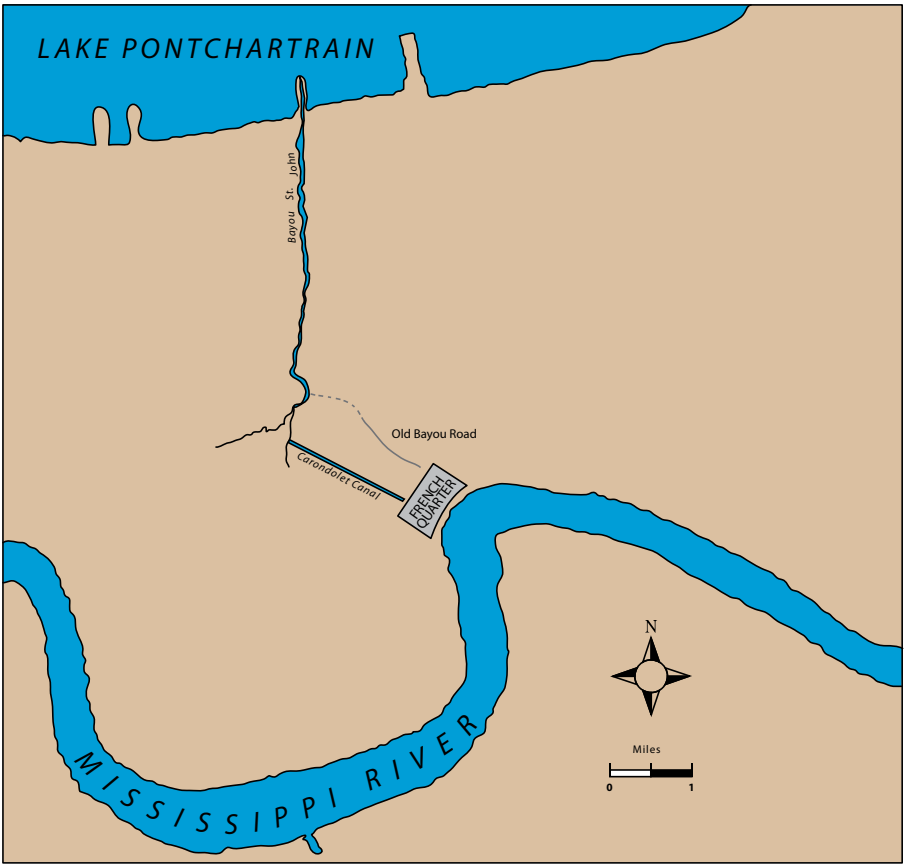

Fig. 3 Location of Bayou St. John, Bayou Road, and Carondolet Canal (map by Susan Duser)

Americans brought fishes to the fledgling colony where they offered their catch on the natural levee of the river along with a great range of vegetable foodstuffs, baskets, animal pelts, and other goods (Usner 1992, 2018). The natural levees served as an open-air market where a multitude of subsistence and other goods were bartered and sold prior to the establishment of regulated markets in the late 1700s (Fig. 5). It is probable that Native Americans captured fishes from a range of freshwater and brackish habitats near the city. And with greater experience and collective memory regarding the temperament of the Mississippi River, it is probable that Native Americans fished the main channel of the river with greater regularity than the colonists. An eighteenth-century painting of the Dumont plantation shows canoes or pirogues in the river (Fig. 6). Through the nineteenth century as Native Americans were disenfranchised and removed from the land, their economic contribution to the city greatly diminished. When Native Americans were systematically moved from the city, particularly under American rule in the 1900s, they came to occupy the coastal marshes south of the city where they continued to practice maritime economies for subsistence self-sufficiency despite their marginalized status (Usner 2018).

Fig. 4 Painting of Lake Pontchartrain Camps by W. H. Buck

Another population that contributed to the fishing culture of New Orleans were Africans and African-Americans. During the eighteenth and nineteenth centuries both free and enslaved individuals of African descent practiced the craft of fishing. Fishing for their owner's table presumably provided a modicum of mobility to enslaved blacks. Along with Native Americans, free and enslaved black residents also marketed fishes on the levees in the early years of the city (Foreman 2019). Oftentimes slaves from either the city or outlying plantations were sent to sell goods that included foodstuffs on behalf of their owners (Usner 1987), and these sales presumably included fishes. In the first quarter of the nineteenth century after the establishment of multiple marketplaces, including a dedicated fish market (Sauder 1981), the architect and designer, Benjamin Latrobe, commented on the numerous African-American vendors in the markets (Latrobe 1951). Additionally, free women of color were often higglers or street peddlers

Fig. 5 Sketch of open air market - *Sunday in New Orleans—The French Market* (Alfred R. Waud, *Harper's Weekly*, August 18, 1866)

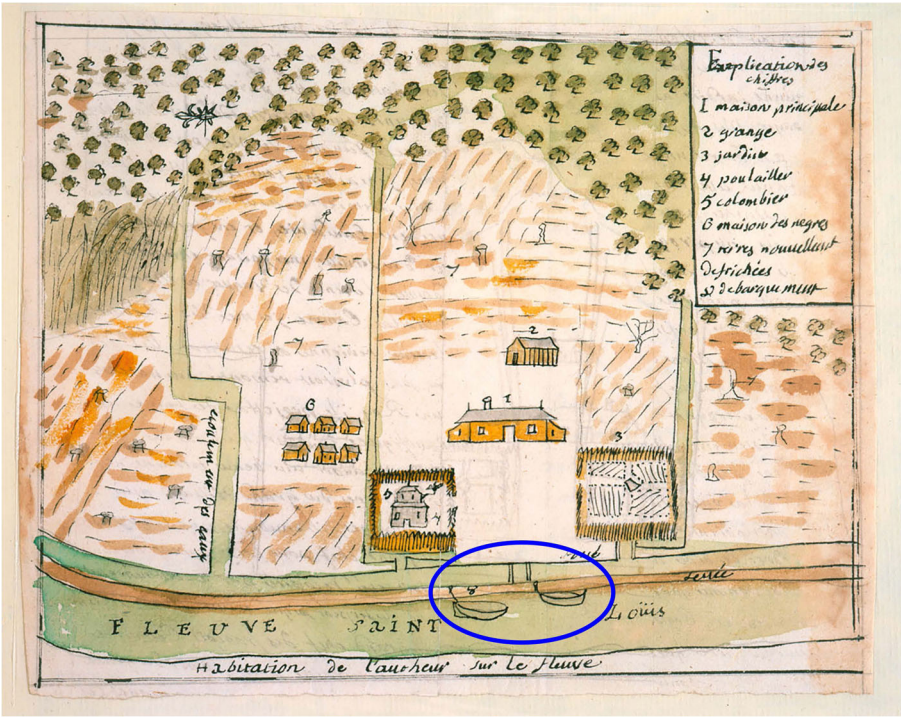

Fig. 6 Plantation down river (below) from New Orleans showing canoes or pirogues tied on the river. Map No. 8 of 23 maps and drawings detached and bound together, from: Dumont de Montigny. Memoire de Lxx Dxx Officiere Ingenieur, contenant les evenemens qui se sont passés à la Louisiane depuis 1715 jusqu'a present [1747]. Ms. memoir adapted by Jean Baptiste Le Mascrier and published as Dumont de Montigny, Mémoires historiques sur la Louisiane. Paris: C.J.B. Bauche, 1753

who offered a range of goods through the city, including fish (Foreman, 2019), a practice that continued into the twentieth century.

The emergence of specialized communities of fisherfolk took place in the late eighteenth century when the city was under Spanish political authority. After Spain took control of the city in 1763, the Spanish governors encouraged Canary Islanders (known as Isleños) to settle in the region along the southern borders of the new Spanish territory where they were expected to serve in a defensive capacity against other European settlers (Din 1988). Incentivized with Spanish land grants, roughly 2000 Isleños settled in several regions of the Spanish colony, but the most successful were those who occupied the bayous and marshes down river of New Orleans in San Bernardo (modern St. Bernard Parish) on the east bank of the Mississippi River (see Fig. 1). It was between the river and Lake Borgne that the Canary Islanders established themselves as fisherfolk and fur trappers (Din 1988; Usner 1992). The Isleño settlements are one of the first communities specifically engaged in commercial fishing (i.e., fishing with specialized equipment who marketed fish beyond community needs) even though the sale of their products in the late eighteenth and nineteenth centuries was probably through middlemen who brought their catch to New Orleans markets.

Regulated markets provided vendors with designated space for the sale of fishes and helped to establish regular clientele (Sauder 1981). The construction of markets was

undertaken by Spanish authorities who were appalled at the disorganization and unsanitary conditions of the varied outlets for vending foodstuffs and other goods. In 1784 Spanish governors established municipal markets owned and operated by the city. The earliest markets rented stalls to vendors to generate municipal income and provided covered space that could be inspected to ensure sanitary conditions. Fires and hurricanes destroyed the first eighteenth century markets, but by the end of the 1700s the large French Market located in the French Quarter was the hub of commercial activity (Fig. 7). Eventually, the city expanded the French Market after 1813 to include designated markets for meat, fruits, vegetables, goods, and fishes (Sauder 1981) (Fig. 7). A new municipal fish market was contracted for construction during the 1840s on the site of a former vegetable market (*Daily Picayune* 11-14-1846). As the city grew during the nineteenth century, other municipal and quasi-public markets were opened in neighborhoods throughout the city (Sauder 1981). The emergence of private markets, general grocers, and specialty stores, including fish markets, did not occur until after 1866 when a city ordinance granted non-public venues permission to operate (Levy and Luzenburg 1870). The success of the private markets eventually led to the demise of the municipal and public markets throughout the city. After the city markets closed, many smaller, neighborhood markets provided seafood, including local, fresh fishes. In addition to the availability of fishes in the city's markets, it is probable that fisherfolk and wholesalers directly supplied commercial establishments, such as hotels and restaurants with their products/catch.

Commercial establishments including saloons, hotels, and restaurants routinely advertised the availability of finfish and shellfish as part of their offerings. A review of the nineteenth century daily newspapers in New Orleans with the greatest circulation (*Daily Creole, Daily Crescent,* and *Daily Picayune*) include numerous announcements of finfish and oysters. For example, in an 1849 *Daily Crescent*, two establishments

Fig. 7 1910 photo of market buildings (Library of Congress)

offered patrons local fresh fish and other foodstuffs: the Franklin House located on Lake Pontchartrain "at the lake end of New Shell Road" (a roadway running along Bayou St. John to the lake) boasts of offering fish (and wild game) of every sort in a bucolic garden setting. Similarly, the Holbrook Oyster Saloon and Restaurant entices patrons with fish and game along with Barataria and Mobile Bay oysters (*Daily Crescent* 1849). A year earlier *Daily Crescent* (1848) included a notice by the Carrollton Hotel offering pompano "…served up in the best style, at a few minutes notice."

Despite the local abundance and variety of fishes, oysters, and crustaceans (crabs and shrimp), commercial establishments also offered imported finfish and maritime foodstuffs from northern locales to the residents of New Orleans. *Daily Creole* (1856) features two ads describing the wholesale and retail availability of fresh northern fishes arriving via steamship including cod, halibut, salmon, herring, and lobsters along with other comestibles. These advertisements demonstrate that fishes were an essential element of New Orleans cuisine during the nineteenth century. The archaeological contexts in this analysis include several commercial establishments as well as residential, religious, and public spaces; therefore the archaeological record can provide finer details about culinary practices at these sites that are generally not documented in historical sources.

Site Contexts

The fish fauna examined here are from four sites located in the French Quarter of New Orleans: St. Anthony's Garden, the Ursuline Convent, the Rising Sun Hotel, and 810 Royal Street (Fig. 8). Initially settled by the French in 1718 and consisting of a gridded layout that today is bound by Canal and Rampart Streets, Esplanade Ave, and the Mississippi River, this sector of the city has been continuously occupied since its initial founding with a mix of residences, commercial venues, city administration, and churches. Some former governmental buildings have been repurposed into museums. Public spaces, most notably the former Place d'Armes (Jackson Square) and the former public garden behind (north) of the St. Louis Cathedral have been components of the French Quarter for many years. The inhabitants and visitors to the French Quarter varied significantly through time depending on the political powers in control and various waves of immigration. Europeans and creole residents, slaves, free creoles of color, itinerant merchants from across the globe, members of religious organizations, and a host of others lived, worked, or made transit through the French Quarter. As described here the occupants and functions of some properties were diverse over time. A summary of the contexts and the temporal range of the occupations is provided in Table 2.

St. Antoine's Garden (St. Anthony's Garden)

St. Anthony's Garden is located behind (north of) St. Louis Cathedral. Today the garden is a private, gated space maintained by the Catholic Church. During the early eighteenth century, a small portion of the garden was originally part of the extended landholdings of an order of Capuchin monks who occupied a residence adjacent to the

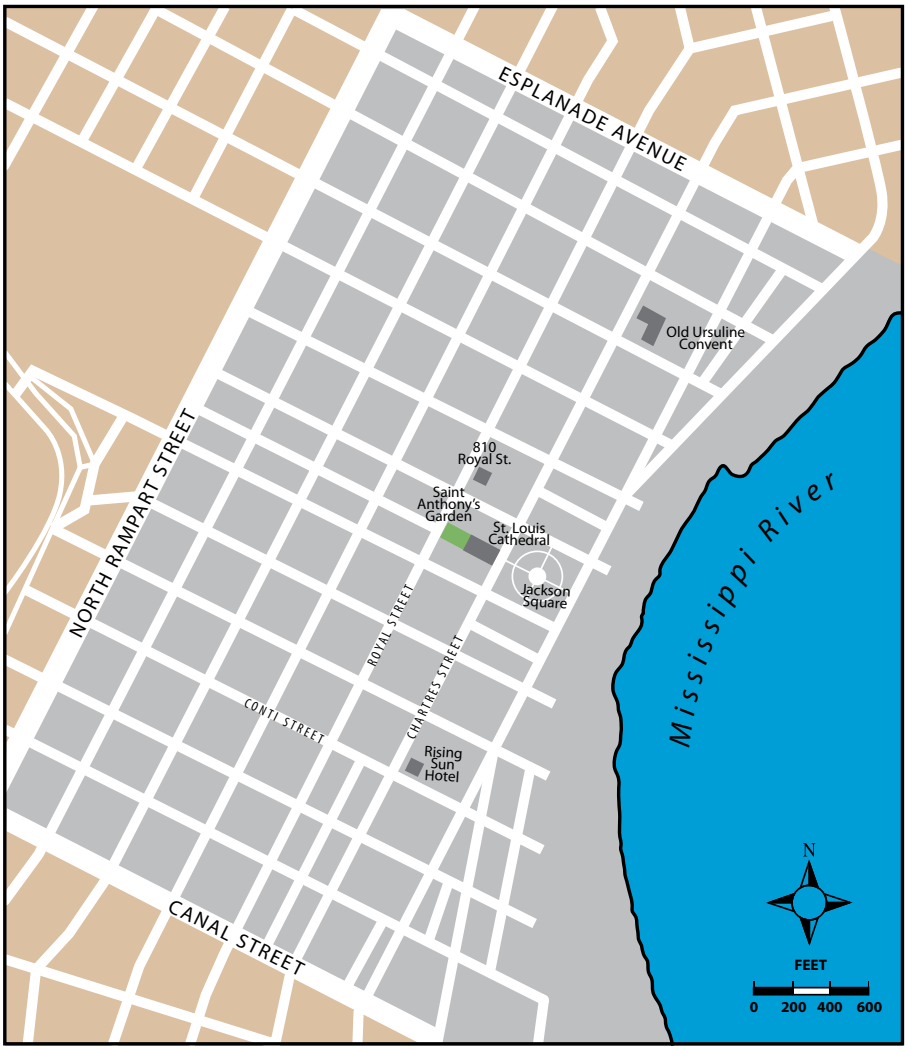

Fig. 8 Map of the French Quarter showing the locations of St. Anthony's Garden, the Rising Site Hotel Site, 810 Royal Street, and the Ursuline Convent (map by Susan Duser)

parish church that would later become St. Louis Cathedral. The original garden was planted to serve the needs of the Capuchins and contained various outbuildings including a chicken coop and a kitchen. In the late eighteenth century, a Spanish curate and namesake of the garden, Père Antonio, resided in a small residence on the garden. After the 1788 "Good Friday" fire that destroyed much of New Orleans, local refugees were allowed to camp on the grounds, eventually resulting in a handful of more permanent residential structures. These were torn down when the city claimed control of the space and converted it to a public garden after 1829, closing off Orleans Street and creating a square behind the Cathedral. The garden is bounded by the Cathedral, Royal St., Pirate's Alley, and Père Antoine Alley. The city enhanced the space during

Table 2 Cultural and Temporal Occupations of The Rising Sun Hotel, St. Anthony's Garden, the Ursuline Convent, and 810 Royal Street

Site Name and Dates	Cultural Affiliation
St. Anthony's Garden	
Early 1700s	Native American and French Colonial Occupation
Mid-1700s-1788	Mid/Late Colonial
1788	Fire refuse
1789-1830s	Late 18th/Early 19th Century
1840-1860	Mid 19th Century
1870s-1920s	Late 19th/Early 20th Century
1930-present	Mid/Late 20th-21st Century
Ursuline Convent	
1717-1740s	First Convent and Land Clearing
1740s-1770	Early Second Convent
1770-1824	Late Second Convent
1824-1870	Archbishopric Context
1870s-1920s	Early St. Marys School
1920s-1970s	Late St. Marys School
1970s-present	Contemporary
Rising Sun Hotel Location	
1640-1718	Early French Colonial Occupation
1720s-1785	French Colonial Garden and Early Chabert Dwelling
ca. 1785-1796	Spanish Colonial Late Chabert Dwelling to post-1794 Fire
ca. 1796-1820	Chabot Boarding house
ca. 1822	Rising Sun Hotel Late Occupation, Fire, and Demolition
1825-1887	Richardson Hotel
1887-1913	Late Richardson Commercial Era
810 Royal Street	
1720-1760	French Colonial Occuptation, including Langlois
1760-1780s	Spanish Colonial Occupation, including Morales and Boudousquier
1790s-1803	Spanish Colonial Occupation, including de Lanzos and Languille
Mid 1800s	Mid 19th Century
1870s-1900	Late 19th Century

the early nineteenth century with the construction of a pavilion, a greenhouse, walkways, a fountain, and an ice cream stand. In the densely built French Quarter, the garden provided a haven where people could stroll, relax, or picnic on the shady grounds. After the Civil War, a gate was constructed around the garden to ensure its closure to the public. The garden fell into disrepair, but was salvaged by the Catholic Church in the 1890s at which time the green space became private, church property. Because the garden is proximate to where the earliest settlement of the city was located, archaeological research provided excellent evidence of the diachronic, and largely public, use of the space.

In conjunction with a restoration project by Cathedral administration, a team of archaeologists conducted a program of excavations in the garden in 2008. The site contains abundant evidence of colonial Native American material related to early exchange practices with the colonists as well as materials dating to the French colonial, Spanish colonial, and American occupations of the site. Two seasons of excavations consisted of six units of variable dimensions located in each quadrant of the garden (from a 0.5 × 5 m trench to a unit that with extensions came to 3 × 2 m), with a total horizontal exposure of 25.5 m (Dawdy et al. 2008a, 2014). Soil was dry-screened through 6.35mm mesh and all eighteenth-century deposits were water-screened in the second season. In addition, 41 flotation samples were screened through 1.7 mm mesh. The fish remains span the occupation and are interpreted as food remains from early colonial market exchange with Native Americans, public gatherings, and picnics.

Ursuline Convent

Arriving from France in 1727, a dozen Ursuline Nuns established a convent and school at Chartres and Ursuline Streets in the French Quarter. One of the main convent buildings constructed during the mid-eighteenth century survived the 1788 fire making it the oldest standing structure in the Lower Mississippi Valley. Other structures and outbuildings were built on the property, and the nuns maintained a garden. Initially, the nuns were charged with overseeing a hospital in the early French colony in addition to education and missionary tasks. As the role of caring for the sick diminished through time, the education and religious role of the nuns gained more prominence (Dawdy et al. 2015).

Archaeological investigations conducted in 2011 consisted of three 1 × 2 m units. All material dating to the nineteenth and early twentieth centuries was dry screened with 6.35 mm mesh. All material dating to the eighteenth century was water screened on the site grounds with 1.7 mm mesh to aid in the recovery of small-sized remains. The recovery methods also consisted of the collection and processing of 29 flotation samples (~10 l) from organic-rich deposits. Excavations uncovered evidence of the early colonial garden, various patio surfaces and walkways, a probable early kitchen, and much evidence of the use of the property as a playground for a nearby Catholic school. Some of the oldest eighteenth-century deposits contained Native American pottery associated with the Natchez Indians supporting historical documents indicating that the nuns took in Natchez widows and orphans following the Natchez uprising of 1729. The early colonial deposits are complemented by abundant materials dating to the mid-nineteenth century. (http://home.uchicago.edu/~sdawdy/ursuline/index.html).

Fish remains from the convent may have been consumed by both the nuns and boarders. In addition to commenting on the size and abundance of riverine fishes, Sister Marie Madeleine Hachard's writing in the early eighteenth century noted that fishes were one part of a very broad diet of wild game and domestic animals as well as many fruits and vegetables that the Ursuline nuns consumed (Clark 2007:39). Sister Hachard also commented that education was provided to the city's inhabitants, but that the Ursuline sisters refused to take cash payments for instruction; therefore, the residents gifted them with many presents (Clark 2007:79). In addition to gifts of live animals

documented by Hachard, other foodstuffs including fishes were probably provided to the nuns in exchange for their educational efforts.

Rising Sun Hotel Site

The Rising Sun Hotel was one of several occupations of the French Quarter location at 535-537 Conti Street. At the time of the archaeological excavations, a gutted building served as a parking garage, but archival information and archaeological investigations revealed that its former residents were varied. The initial occupation consisted of a precolonial Native American encampment followed by a French colonial garden attached to an elite residence, a Spanish colonial residence, a guesthouse or inn, an early nineteenth-century coffeehouse and tavern, the Rising Sun Hotel and tavern, and a brick hotel with a dining hall and billiards room known as the Richardson's Hotel (but also known as the Conti Hotel or the Verandah Hotel). The lot also housed late nineteenth century commercial venues (a shirt factory, a liquor distributor, and a molasses plant) (Dawdy et al. 2008b). Archaeological excavations completed in 2005 successfully identified many of the occupants indicated in the historical records including early French and Spanish colonial occupations and significant evidence related to the nineteenth century hospitality industry (Dawdy et al. 2008b). The fish fauna are significant for their insights into the fare offered at taverns and hotels. Faunal material was recovered from nine 1 × 1 m excavation (Units 1-9 and Unit 4 extension) and from five exploratory postholes. Recovery methods consisted of dry-screening through 6.35 mm mesh as well as collection of 10 l volumetric samples for flotation.

810 Royal Street

Documentary and archaeological evidence point to a convoluted lot history with multiple owners for the 810 Royal Street site; however, historical maps (e.g., de la Tour and Gonichon maps) and archival evidence give a generally reliable timeline for the property (Gray n.d.; http://theartofdigging.com/dr-d-ryan-gray/). By 1731, the 810 Royal Street property was occupied by the Canadian Augustin Langlois, and sometime after this it was transferred to a Spaniard, Juan Ventura Morales. In 1784 the property was purchased by Antonio Boudousquier, who subsequently sold it to Don Manuel de Lanzos following the 1788 fire. de Lanzos is better known as the owner of Madame John's Legacy. Sometime after 1801, the lot was developed into a complex of small structures and a three-story house by Don Francisco Balthazar Languille. Although the floor plan of this complex changed over the years, it remained relatively the same until 2014 when the historic structure occupying the lot catastrophically collapsed.

Fieldwork at the site consisted of the excavation of stratified deposits of roughly 30 m^2 with strong temporal integrity spanning the early colonial period through the late nineteenth century (Gray 2015a, 2015b, 2018). All excavated soils were screened through 6.35 mm mesh, and flotation samples were taken from all cultural contexts excavated at the site. Excavations yielded large amounts of animal bone including a sizeable fish assemblage, and deposits from the site can be broadly linked to all major time periods from the French colonial period through the late 1800s. The fish remains recovered from this site relate primarily to residential fish consumption.

Zooarchaeological Methods

All of the faunal remains from St. Antoine's Garden, the Ursuline Convent, and The Rising Sun Hotel were sent to deFrance at the University of Florida. The 810 Royal Street assemblage was analyzed by Kennedy in the University of New Orleans Archaeology Laboratory, where the collection is curated.

Analysis of the fish remains followed standard zooarchaeological procedure. All of the remains were identified to the lowest taxonomic level possible using modern comparative skeletal collections at (in the case of deFrance) the Florida Museum of Natural History, Environmental Archaeology lab and the Department of Anthropology, Zooarchaeology Teaching lab and (in the case of Kennedy) at the University of New Orleans, Archaeology Laboratory and on loan from Tulane University's Biodiversity Research Institute. Similarities in methodology employed by the two analysts reduces the probability of lab variance. Secondary measures of relative abundance consist of NISP (Number of Identified Specimens). In some cases, fine-screening and water-screening resulted in the recovery of numerous fish scales and small-sized unidentifiable fragments of fish bone that skew the NISP for some contexts (e.g., the Ursuline Convent). However, we use NISP as our discussion primarily measure to discuss the relative abundance of the different fish taxa present in the samples.

Results

The four sites varied significantly in the quantity and variety of finfish remains (Tables 3 and 4). A total of 9,925 fish specimens were found representing 20 families of which eighteen are bony fishes. At least two families of cartilaginous fishes are present including both rays and sharks. The habitats in which these fishes occur is also diverse. Six families are freshwater species, thirteen are brackish water species, and one is a non-local, imported taxon. The spelling and capitalization of fish names follows current guidelines of the American Fisheries Society in which scientific names with both the genus and species names are capitalized (e.g., (*Caranx hippos*, Crevalle Jack), but lower level identifications (e.g., *Caranx* spp., jacks) are lower case names (Page et al. 2013).

The remains from St. Anthony's Garden ($n = 2{,}728$) are the most diverse with at least twenty bony fishes and two cartilaginous fish taxa (Table 5). Fish remains are more common in the eighteenth century earlier colonial contexts than the later nineteenth century deposits. St. Anthony's also has a variety of freshwater fishes including gar (*Lepisosteus* spp.), Bowfin (*Amia calva*), freshwater catfishes (Ictaluridae), suckers (Catastomidae), Bluegill (*Lepomis macrochirus*), Large Mouth Bass (*Micropterus salmoides*), other unidentified species of sunfishes (Centrachidae), and Freshwater Drum (*Aplodinotus grunniens*). Brackish or marine fishes are also diverse including sharks (Carcharhinidae), rays (Rajiformes), American Eel (*Anguilla rostrata*), anchovy (Engraulidae), shad or herring (Clupeidae), jacks (*Caranx* spp.), Sheepshead (*Archosargus probatocephalus*), at least four drum fishes (Sciaenidae), mullet (*Mugil* spp.), and flounder (*Paralichthyes* spp.).

Table 3 Presence/Absence of fish by site and habitat (all fish names in the text and tables follow capitalization guidelines of the American of the American Fisheries Society, Page et al. 2013)

Probable Habitat	Taxonomic Name	Common Name	St. Anthony's Garden	Ursuline Convent	Rising Sun Hotel	810 Royal Street
Freshwater	Lepisosteidae	gar	x		x	x
	Amia calva	Bowfin	x		x	x
	Anguillidae	freshwater eels	x			
	Catostomidae	suckers	x	x		x
	Ictaluridae	freshwater catfishes	x	x	x	x
	Centrarchidae	sunfishes	x		x	x
Brackish	Chondtrichthys	cartilaginous fishes	x	x	x	x
	Engraulidae	anchovy	x			
	Clupeidae	shad, herring	x	x		x
	Ariidae	sea catfishes	x	x	x	x
	Osmeridae	smelts				x
	Mugilidae	mullet	x	x		x
	Sparidae	porgies, sheepshead	x	x	x	x
	Sciaenidae	drums	x	x	x	x
	Paralichthyidae	large-tooth flounder	x			x
Brackish/Marine	Epinephelinae	groupers				x
	Carangidae	jacks, trevallies	x	x		
	Lutjanidae	snappers				x
Non-local	Clupeidae	herring			x	
	Gadidae	cod				x

The largest quantity of fish remains are from the Ursuline Convent ($n = 5{,}201$) (Table 6); however, that assemblage contains a very large number of unidentified fish scales (>3,000) in a single probable kitchen refuse deposit dating to the mid-nineteenth century. Additionally, unidentified fish remains are very common in other time periods as well. The Ursuline Convent fish remains consist of eleven taxa from eight families. The freshwater fishes consist of remains of catfishes and buffalo fish (*Ictiobus* sp.). However, the majority of the fish remains are from bony fish taxa that occur in brackish or marine habitats including shad or herring (Clupeidae), sea catfishes (Ariidae), sheepshead, at least three species of drum fishes, and mullet. One possible ray or skate is present.

The Rising Sun assemblage ($n = 564$) is the smallest of the four assemblages (Table 7). The greatest variety of fishes are present in the eighteenth century French and Spanish colonial occupations with significantly less variety and quantity of fish remains associated with the nineteenth century hotel occupation of the site. The assemblage consists of twelve taxa of which ten are bony fishes and two are

Table 4 Summary of NISP by major taxonomic categories and habitat

Probable Habitat	Taxonomic Name	Common Name	St. Anthony's Garden		Ursuline Convent		Rising Sun Hotel		810 Royal Street	
			NISP	%NISP	NISP	%NISP	NISP	%NISP	NISP	%NISP
Freshwater	Lepisosteidae	gars	19	4.7			2	5.6	1	0.3
	Amiidae	bowfin	15	3.7			1 (cf)	2.8	2	0.6
	Anguillidae	freshwater eels	1	0.2						
	Ictaluridae	freshwater catfishes	76	18.9	7	6.7	1 (cf)	2.8	35	9.6
	Centrarchidae	sunfishes	60	14.9			1 (cf)	2.8	92	25.3
Brackish	Chondrichthys	cartilaginous fishes	5	1.2	1	1.0	5	13.9	1	0.3
	Engraulidae	anchovies	1	0.2						
	Clupeidae	shad, herring	22	5.5	3	2.9	2	5.6		
	Ariidae	sea catfishes	2	0.5	9	8.7	1, 1(cf)	5.6	8	2.2
	Osmeridae	smelts							1(cf)	0.3
	Mugilidae	mullet	16	4.0	20	19.2			12	3.3
	Sparidae	porgies, sheepshead	72	17.9	27	26.0	13	36.1	110	30.3
	Sciaenidae	drums	76	18.9	9	8.7	4	11.1	76	20.9
	Paralichthyidae	flounders	3	0.7					3	0.8
Brackish/Marine	Epinephelinae	groupers							2, 1(cf)	0.8
	Carangidae	jacks, trevallies	1	0.2	1(cf)	1.0				
	Lutjanidae	snappers							1, 2(cf)	0.8
Undetermined	Siluriformes	unspecified catfish	32	7.9			3	8.3	1	0.3
	Sciaenidae/Sparidae	drums/porgies					4	11.1		
Non-local	Clupeidae	shad, herring							1	0.3
	Gadidae	cod							11, 1(cf)	3.3
	Osteichthyes	unidentified fish	2325		5096		526		1078	

cartilaginous. The freshwater fishes include gar (Lepisosteidae), probable Bowfin, freshwater catfishes, probable sunfishes, and freshwater drum. The brackish and marine fishes are rays and/or skates (Rajidae), Hardhead Catfish (*Ariopsis felis*), probable Gafftopsail Catfish (cf. *Bagre marinus*), shad or herring, Sheepshead, Spotted Seatrout or speckled trout (*Cynoscion nebulosus*) and other drum fishes.

The 810 Royal Street assemblage ($n = 1,442$) is the second smallest assemblage, though it contains over 20 kinds of bony fishes spanning freshwater, brackish, and marine habitats and one unidentified cartilaginous fish (Table 8). Fish remains are well-represented in contexts dating from 1720 through the 1860s, and contexts post-dating the 1870s contain limited fish remains. Freshwater taxa, including Bowfin, gar, freshwater catfishes, sunfishes, and Freshwater Drum are more common in early eighteenth century contexts at the site; however, many of these taxa, especially freshwater catfishes, are present throughout the occupational history of 810 Royal Street. Fish found in brackish water are common throughout all time periods, with Sheepshead and Spotted Seatrout being the most consistently identified. Also present are marine catfishes, various drum fishes, snappers (*Lutjanus* spp.), mullet, and flounder. Groupers (*Epinephalus* spp.) are found in deposits post-dating the 1870s. Cod (*Gadus* sp.), a non-local import, is found in contexts dating to between the 1790s and 1803, and the mid-1800s.

Discussion

The archaeological fish remains from these four sites provide empirical evidence of the habitats preferred for fish procurement, the probable commercial venues and distribution practices, and the fishes preferred for meals by New Orleans residences and patrons of these sites through time. One of the strongest patterns discernable from the fish remains concerns the natural habitats that people favored for capturing fishes. All four of the assemblages demonstrate a consistent and diachronic use of brackish water habitats for the acquisition of the majority of the fish taxa. Brackish water fishes that are well-represented at all sites and for most time periods include Sheepshead, marine catfishes, and members of the drum family with Redfish, Black Drum, and Spotted Seatrout being particularly common. After the capture of fishes from brackish habitats, procuring fish from freshwater habitats was the most common practice. Significantly, the variety and quantity of freshwater fishes are more numerous in the earlier, eighteenth century deposits than in later time periods. Freshwater fishes represented in earlier deposits, but that decline in use through time, include gars, Bowfin, and freshwater catfishes. Some freshwater fishes, particularly small-sized suckers and sunfishes, as well as larger-sized buffalo fish and Freshwater Drum, continue to be consumed into the nineteenth century, particularly at the Ursuline Convent. Conspicuously absent in the fish assemblages are remains of individual, freshwater fishes from extremely large individuals of freshwater drum or catfish, such as those described by both Sister Hachard and Marc-Antoine Caillot. Remains of gars from these assemblages represent the largest-sized individual fish recovered. Although freshwater catfishes, buffalo fish, various drum, and several other species can grow to very large sizes, outside of a single large catfish identified in the 810 Royal Street assemblage, the remains of large-sized individuals from these taxa were not present in these samples.

Table 5 St. Anthony's Garden NISP of fish taxa through time

Taxonomic Name	Common Name	Early Colonial	Mid/Late Colonial	1788 Fire	Late 18th/Early 19th Century	Mid-19th Century	Late 19th/Early 20th Century	Mid/Late 20th-21st Century	Totals
Carcharhinidae	requiem shark		1						1
Rajiformes	rays, skates		1	1		1			1
Chondrichthyes	cartilaginous fishes			1					1
Lepisosteus sp.	gar	5	2	7	3				17
Lepisosteidae	gars			1	1				2
Amia calva	Bowfin	1	9	4				1	15
Anguilla rostrata	American Eel	1							1
Engraulidae	anchovy				1				1
Dorosoma sp.	shad		2						2
Clupeidae	shad, herring	3	3	11		1		2	20
cf. Ictiobus sp.	cf. buffalo fish		1						1
Catostomidae	suckers		1						1
Ariopsis felis	Hardhead Catfish		1			1			2
Ictalurus nebulosus	Brown Bullhead			1					1
Ictalurus spp.	freshwater catfishes		1	13	1				15
Ictaluridae	freshwater catfishes	13	19	20	5	1	1	1	60
Siluridae	catfishes		1						1
Siluriformes	catfishes	5	7	18	1				31
Mugil spp.	mullet	1	10	2	3				16
Lepomis sp.	sunfishes, bluegills			3					3
Micropterus salmoides	Largemouth Bass			1					1
Micropterus sp.	bass		1						1

Table 5 (continued)

Taxonomic Name	Common Name	Early Colonial	Mid/Late Colonial	1788 Fire	Late 18th/Early 19th Century	Mid-19th Century	Late 19th/Early 20th Century	Mid/Late 20th-21st Century	Totals
Pomoxis nigromacualtus	Black Crappie			6					6
Centrarchidae	basses, sunfishes	1	5	40	1	1			48
Caranx sp.	jack		1						1
Archosargus probatocephalus	Sheepshead	9	9	13	15		5	1	52
Sparidae	porgies, sheepshead	2	8	5	3	1	1		20
Aplodinotus grunniens	Freshwater Drum		4	5					9
Cynoscion sp.	Seatrout	1	4	2	1		1		9
Micropogonias undulatus	Atlantic Croaker		4		1	1		1	7
Pogonias cromis	Black Drum		1	5					6
Pogonias/Aplodinotus	Black/Freshwater Drum		1		1				2
Sciaenops ocellata	Redfish				1	1			2
Sciaenidae	drums		3	4	4	1		1	13
Sciaenidae/Sparidae	drum/porgies	1	15	11	1				28
Paralichthys spp.	flounder		1			1	1		3
Osteichthyes UID	unidentified bony fishes	158	934	768	250	201	7	7	2325
Total Fishes		**201**	**1050**	**942**	**293**	**211**	**16**	**14**	

Table 6 Ursuline Convent NISP of fish taxa through time

Taxonomic Name	Common Name	1717-1740s	1740s-1770	1770-1824	1824-1870	1870s-1920s	1920s-1970s	Totals
Rajiformes	rays, skates		1					1
Clupeidae	shad, herring				3			3
Ictiobus sp.	buffalo fish				2			2
cf. *Ictiobus*	cf. buffalo fish				26			26
Ariidae	sea catfishes	6	1	1	1			9
Ictalurus sp.	freshwater catfish				1			1
Ictaluridae	freshwater catfishes	1			2			3
cf. Ictaluridae	cf. freshwater catfishes		1	1	1			3
Mugil sp.	mullet	4		1	18			23
Sparidae	porgies, sheepshead		2		2			4
Cynoscion sp.	seatrout							0
Pogonias cromis	Black Drum				1			1
Sciaenops ocellatus	Redfish		1		1			2
cf. *Sciaenops* sp.	cf. drum				1			1
Sciaenidae	drums	1	3					4
cf. Sciaenidae	cf. drum				1			1
Osteichtyhes uid	unidentified bony fishes	629	606	152	3705		4	5096
Total Fishes		**644**	**618**	**154**	**3779**	**0**	**5**	**5200**

The early occurrence of a greater variety of freshwater fishes reflects the procurement of fishes from the Mississippi River, its tributaries, and the freshwater marshes in the Lake Pontchartrain Basin. The earlier use of more freshwater fishes may also indicate an early colonial reliance on fishes that were captured by Native Americans who were more accustomed to fishing the river and backwater marshes. As the Native American population declined through time and was geographically and economically marginalized, their contribution to fishing apparently was reduced even though Native Americans provided other hunted products and vegetable goods to the city's residents (Usner 2018). Freshwater fishing may also have declined because of the greater commercial development along the Mississippi River associated with the booming port and docks during the nineteenth century that probably made fishing the main channel less appealing than other waterways that had less commercial traffic and were more tranquil. Because the population of New Orleans during the late eighteenth century was only ~8,000 inhabitants, there is no indication that the reduction in gar and Bowfin is a reflection of overexploitation and the need to diversify fishing strategies (see Reitz 2004). The decline in the use of freshwater fishes was compensated by an increase in the capture of highly palatable fishes from brackish water habitats in close proximity to New Orleans that contained greater fish biomass than in the freshwater habitats.

Table 7 The Rising Sun Hotel Site NISP of fish taxa through time

Taxonomic Name	Common Name	1640-1718	1720s-1785	ca. 1785-1796	ca. 1796-1820	ca. 1822	1825-1887	1887-1913	Totals
Rajiformes	rays, skates			1					1
Dasyatidae	stingrays		4						4
Lepisosteus sp.	gar		1	1					2
cf. *Amia calva*	cf. Bowfin		1						1
Clupeidae	shad, herring		1	1					2
Ariopsis felis	Hardhead Catfish		1						1
cf. *Bagre marinus*	cf. Gaftopsail Catfish		1						1
cf. Ictaluridae	cf. freshwater catfish		1						1
Siluriformes	catfishes		1	1			1		3
cf. Centrarchidae	cf. basses, sunfishes			1					1
Archosargus probatocephalus	Sheepshead		4	1		1			6
Sparidae	porgies, sheepshead		2	3			2		7
Aplodinotus grunniens	Freshwater Drum	1							1
Cynoscion nebulosus	Spotted Seatrout			1			1		1
Cynoscion sp.	seatrout								1
Sciaenidae	drums		1						1
Sciaenidae/Sparidae	drum/porgies		1	1		1	1		4
Osteichtyhes uid	unidentified bony fishes	12	206	92	27	118	64	7	526
Total fishes		**13**	**225**	**103**	**27**	**120**	**69**	**7**	**564**

Fishes from exclusively marine habitats are rare. Remains from grouper are present in the later deposits (1870s-1900) at 810 Royal Street, but do not occur at the other three sites. Grouper along with some species of snapper are found in Lake Borgne, and they will occasionally enter Lake Pontchartrain (Beall and Kindinger 2002). Similarly, species of jacks will enter Lake Pontchartrain including Lake Maurepas, the smaller and less saline lake located in the western Pontchartrain Basin (Hastings et al. 1987), but jacks as well as snappers and groupers are more common in the marine habitats closer to the Gulf of Mexico (Hoese and Moore 1977). The few identified small-sized cartilaginous sharks and rays may have been captured in the lake waters as well. Therefore, we cannot dismiss the possibility that groupers were caught in the greater Lake Pontchartrain Basin, although it is more probable that they were captured in the eastern water bodies, such as Lake Borgne, that are characterized by higher salinity, and thus a more marine habitat.

The fish remains also provide insights into consumption practices and preferences through time. Although greater development along freshwater habitats may account for

Table 8 810 Royal Street NISP of fish through time

Taxonomic Name	Common Name	1720-1760	1760-1780s	1790s-1803	Mid 1800s	1870s-1900*	Totals
Chondtrichthys	sharks	1					1
Lepisosteidae	gar fishes	1					1
Amia calva	Bowfin	1		1			2
Catostomidae	suckers	1		1			2
Cypriniformes	carps/suckers			1			1
Clupeidae	shad, herrings		1				1
Ariopsis felis	Hardhead catfish			1		2	3
Bagre marinus	Gafftopsail catfish	2		1			3
Ariidae	sea catfishes	1	1				2
Ictaluridae	freshwater catfishes	3	1	7	1	2	14
Ameiurus sp.	Bullhead Catfish			1			1
cf. *Ictalurus furcatus*	cf. Blue Catfish						0
Ictalurus furcatus	Blue Catfish	2		5	5		12
Ictalurus spp.	freshwater catfishes	2	1	3	1	1	8
Siluriformes	catfishes			1			1
cf. Osmeridae	cf. smelts	1					1
Gadus sp.	cod			2	9		11
cf. *Gadus* sp.	cf. cod				1		1
Mugil sp.	mullet	4	1	3	4		12
Epinephalus spp.	groupers					2	2
cf. *Epinephalus* spp.	cf. groupers					1	1
Lepomis sp.	sunfishes	4			2		6
cf. *Lepomis* sp.	sunfishes	1			1		2
Pomoxis sp.	crappies	1					1
Centrarchidae	bass, sunfishes	6		2	3		11
cf. Centrarchidae	cf. bass, sunfishes				1		1
Micropterus sp.	bass	4	5	1	58		68
cf. *Micropterus* sp.	cf. bass	6	2		1		3
Lutjanus spp.	snappers			1			1
cf. *Lutjanus* spp.	cf. snappers		2				2
Archosargus probatocephalus	Sheepshead	12	18	35	8	3	76
cf. *Archosargus probatocephalus*	cf. Sheepshead	7	8	5	2	2	24
cf. Sparidae	porgies		2				2
Sparidae	porgies		2	2	2	2	8
Aplodinotus grunniens	Freshwater Drum	1		2			3
Cynoscion sp.	seatrout	4	4	15	6	1	30
cf. *Cynoscion* sp.	cf. seatrout			1			1
Leiostomus xanthurus	Spot	1	1	2			4
cf. *Leiostomus xanthurus*	cf. Spot			1			1
Micropogonias undulatus	Atlantic Croaker	1			1		2
Pogonias cromis	Black Drum	2	3	1	4		10
cf. *Pogonias cromis*	cf. Black Drum		2		1		3
Sciaenops ocellatus	Redfish		3	8		1	12
cf. *Sciaenops ocellatus*	cf. Redfish		2				2
Pogonias/Sciaenops	Black Drum/Redfish		1		2		3
Sciaenidae	drums	2		3			5
Pleuronectiformes	flounders			1			1
Osteichthyes uid	Unidentified fish	305	314	303	140	16	1078
Total Fishes		**371**	**374**	**411**	**253**	**33**	1442

the reduced use of these fishes, the decline in consumption of freshwater fishes evidenced between the eighteenth and nineteenth centuries may alternatively indicate the emergence of taste preferences for certain species. Today, neither Bowfin, locally known by the French word *choupique* or the Choctaw word for *mudfish* in south Louisiana (Bourgeois 2005), nor gars are sold in commercial markets, but both fishes are locally caught and consumed by some individuals in southeastern Louisiana; although others consider them undesirable or "trash fish" not worthy of consuming (Bourgeois 2005). In contrast, modern palates consider the members of the drum family and Sheepshead as meaty fishes with delicate texture and mild, but flavorful flesh. Today, several species of drum, including the small-sized Atlantic Croakers, and Sheepshead are commonly sold in local New Orleans fish markets, and multiple drum fishes appear on many local restaurant menus. Theses archaeological remains suggest that the inhabitants of these French Quarter sites considered species of drum and Sheepshead highly desirable local fishes during all time periods.

Overall, contexts dating to the eighteenth century contain greater quantities of fish remains and greater taxonomic variety than in later nineteenth century contexts with the exception of the Ursuline Convent where fish remains are relatively abundant through time. The decline in the number of fish remains occurs in both the St. Anthony's Garden when it becomes a public space as well as at the Rising Sun Hotel site when various hospitality venues occupied the site. The small quantity of fish remains in the later deposits from St. Anthony's Garden suggests that fishes, not surprisingly, did not make a preferred meal for public consumption in the garden setting. In contrast, the relative infrequency of fish remains from the Rising Sun Hotel contexts and the abundance of faunal remains from cattle, pig, and sheep in the hotel deposits suggests the hotel patrons more frequently consumed meals of beef, pork, and lamb as compared to fish dishes in the hotel restaurants (deFrance 2018).

The consumption of imported fishes is interesting in light of the variety of local fishes. The use of cod fish at 810 Royal Street is particularly noteworthy as it is the only assemblage of those studied here with cod remains. Cod remains indicate the importation of this fish from the north Atlantic both in the 1790s-1803 and mid-1800s contexts at the Royal St. location. Considering the variety of local fishes available during the late eighteenth-century and that the cod remains date to the Spanish occupation of the city, these imported fish remains may indicate a Spanish preference for a highly familiar fish and not the need to import fish to fulfill religious obligations or the unavailability of fishes in general. Given that icing cod for shipment was not common until the 1850s (Innis 1940:330-331; Jensen 1972, in Milne and Crabtree 2001), the cod from the 1790s-1803 context was almost certainly imported as saltfish; unfortunately, we cannot determine if the cod from the mid-1800s context were brought to New Orleans as saltfish or fresh fish. Both scenarios for the latter cod are possible, particularly in light of nineteenth-century newspaper ads for fresh northern fishes in commercial markets reflecting improvements in steamships and long-distance transport of foodstuffs. Although the total number of specimens from the 810 Royal Street site is relatively small ($n = 11$), the cod remains demonstrate the ability of the cities inhabitants to acquire non-local

fishes. Even though cod are not present at the other three sites included here, the identification of cod remains in New Orleans is not restricted to the Royal St. assemblage. The second author has identified a small number of cod bones at other New Orleans sites both in the French Quarter and in other neighborhoods, as well as the remains of other imported fishes from the North Atlantic including salmon (Kennedy and Gray 2018). The only other possible imported fish are Atlantic herring remains from the Rising Sun Hotel. Although many species of shad and herring (family Clupeidae) are common in south Louisiana waters, the presence of herring in this hotel context may be from either local or imported specimens. If these small-sized fish were imported, they probably arrived to New Orleans in preserved form (e.g., salted, pickled, or packed in oil). The cod and possible imported Atlantic herring remains indicate a more widespread use of imported fish than is otherwise suggested by this study, and along with documentary evidence of fish importation discussed above and presence of other imported fish such as salmon at other New Orleans sites, suggest that a more detailed study of imported fishes and their sale in markets or specialty grocers can add greatly to our understanding of broader historical food supply and consumption in New Orleans.

These four assemblages also contain no or limited remains of some fishes that are either naturally abundant in the region (e.g., flounder and mullet) or that were commonly advertised in restaurant ads in New Orleans newspapers (e.g., pompano). Although it is always difficult to interpret negative evidence, the absence of any pompano remains is surprising and may indicate that they were most commonly served in restaurants, but not consumed in the households or the hotel settings examined here. Alternatively, it is possible that pompano fillets and fillets of other marine fish were sold and consumed leaving no bone refuse. The dearth of flounder remains is also puzzling. Flounder are both abundant in the brackish, shallow water habitats near New Orleans, and they are relatively easy to capture with simple technology (e.g., night gigging). Additionally, their skeletons (both cranial and post-cranial elements) are also highly diagnostic and easy to identify; therefore, it is unlikely that their remains are present but went unrecognized as flounder bones. Mullet remains are most common in deposits at St. Anthony's and the Ursuline Convent and some mullet bones are present in 810 Royal Street, but mullet remains are absent from the Rising Sun Hotel site. Interestingly, there is no indication that mullet were food fish primarily associated with the Spanish occupation of the city, in contrast to other Spanish colonial sites such as St. Augustine, Florida and other colonial contexts in the eastern United States where mullet remains are very common (Reitz 2004; Reitz and Waselkov 2015). The less frequent consumption of mullet at Louisiana sites dating to the Spanish occupation may indicate that Louisiana mullet were deemed unpalatable because the turbid waters of Lake Pontchartrain give them a "muddy" taste in comparison to mullet captured along the southeast Atlantic and Florida Gulf where the waters are less turbid.

The emphasis on brackish waterways and the presence of very few very large fish individuals in these four assemblages suggests that the primary methods of acquiring fishes were either through self-provisioning or purchasing local fishes in the city's markets. The close proximity of waterways in the city would have allowed some

individuals to capture fishes directly for either their own tables or for sale locally. Market purchases of local fishes may have been from individuals who were directly involved in fishing activities in and around Lake Pontchartrain or in the Barataria Basin. During the eighteenth century prior to the establishment of regulated markets, the sellers probably procured fishes as well. With the emergence of regulated markets in the late nineteenth century (Sauder 1981), it is probable that the family members or close affiliates (e.g., extended families, close friends, in-laws) of the fisherfolk who caught local finfish were also the ones who sold fishes in the market settings. The paucity of open marine or very large-sized fishes from either fresh or estuarine waters (i.e. large fishes that required specialized tackle) suggests that commercial fisherfolk selling local catch to either middlemen or market vendors was not practiced during the time periods under consideration. The exceptions to this pattern are those fish importers who secured fishes from northern waters (e.g., cod) or fish specialty products (e.g., possibly herring). As Foreman (2019) has documented, New Orleans markets were a space where many social boundaries were suspended and more fluid interactions took place among people of different ethnicities and social standing.

When compared to faunal remains from sites both in the French Quarter and elsewhere in New Orleans, the trends in fish use at these four sites are consistent with other assemblages. The analysis of faunal remains from two eighteenth century French and Spanish occupations in and near the French Quarter by Scott and Dawdy (2011) found similar freshwater and brackish fishes and the absence of marine fishes. Fish remains from the French and Creole occupation (1715-75) at the St. Augustine Plantation site north of the French Quarter in the Trémé neighborhood consists of gars, Bowfin, freshwater catfishes, Sheepshead, and jacks. The French and Spanish domestic occupations (1730-1800) of Madame John's Legacy in the French Quarter shows that the French inhabitants consumed primarily freshwater fishes (catfishes and Freshwater Drum) along with Sheepshead, while the Spanish inhabitants of the late eighteenth century consumed these same fishes with the addition of sunfishes and brackish drum species. Analysis of fish remains from the excavations of the French Quarter Cabildo site (1800-40) also includes gar, freshwater and brackish water catfishes, jacks, Sheepshead, and Spotted Seatrout or speckled trout (Weinand and Reitz 1992).

When the four French Quarter sites are compared to other colonial occupations in and near New Orleans, some differences are evident. Significantly, the most obvious trend in fish consumption that corresponds to French, Spanish, or early American antebellum time periods comes from the French occupation of the St. Augustine Plantation where there is the almost exclusive use of freshwater fishes in the earliest occupation and an increase in the use of brackish fishes through time (Scott and Dawdy 2011). This is the same pattern in the four French Quarter sites included in this analysis, and similar fish use is noted elsewhere in the southeastern United States. In a synthesis of vertebrate faunal remains from British, French, and Spanish colonial settlements along both the Gulf of Mexico and Atlantic coasts dating from the sixteenth to the nineteenth centuries, Reitz and Waselkov (2015) found that the most common fish remains were from the estuarine species of sea catfishes (Ariidae), mullet (*Mugil* spp.), and drum fishes (Sciaenidae). New Orleans differs from the trends observed by Reitz and Waselkov (2015) in that there is a somewhat greater use of freshwater

fishes in earlier occupations, the diversification of fish use through time, less consumption of mullet, and the consumption of some imported fishes.

This analysis of fish use at four French Quarter sites does not take into account status differences between these occupations nor do we consider the probable multi-ethnic occupation of these contexts. However, our interpretation of the archaeological data provides distinct trends in fish use over time that may transcend status and ethnicity and reflect broader patterns in market availability of fish and fishing habitat use. Our results and patterns identified here can be examined in future research to determine if other habitats were used or if other fish preferences developed outside of the French Quarter. One area where more historical and archaeological research is needed concerns the locations of markets and physical remains associated with markets. The excavation and analysis of sites associated with fishing settlements is also a potential avenue of research. For example, the early settlements of Isleños in Saint Bernard parish would provide data on how these fishing specialists were incorporated into the New Orleans economy.

Another potentially fruitful avenue of study would be the culinary practices related to fish consumption in New Orleans. Additional research could examine methods of fish preparation at the household level by combining archaeobotanical information (e.g., evidence of remains of herbs, spices) along with serving wares to elucidate possible scenarios for how the preparation of fish dishes varied between homes and at hospitality sites and through time. Combining these archaeological data with first-hand historical accounts or cookbooks might also add provide evidence for distinct methods of meal preparation between households.

Conclusion

Our comparative analysis of fish assemblages from four French Quarter sites demonstrates the origins and endurance of distinct fish capture trends and preferences in southeastern Louisiana waterways. An initial somewhat greater emphasis on freshwater fishes is followed by the increased exploitation of brackish water habitats and limited use of marine waterways. The diverse brackish habitats in close proximity to New Orleans, particularly the Lake Pontchartrain and Barataria Basins, provided the inhabitants of the city with a range of brackish water fishes. We also document the emergence of culinary preferences for a relatively narrow range of food fishes. Drum fishes and Sheepshead are perennial favorites as are some members of the sunfish family, suckers, and Freshwater Drums. This study also suggests that both self-provisioning and market sales of fishes were common during the eighteenth and nineteenth centuries. The informal economy and exchange of fishes was probably also practiced, particularly the gifting of fishes to the nuns who resided in the Ursuline Convent. Although empirical evidence of that practice is not evident in the archaeological record, fish remains and accounts by the nuns that fish meals, probably both for religious observations and modesty in consumption practices, were a part of their diet indicating they had access to fishes. We also document the importation of at least two species of non-native fishes that inhabit northern waters providing evidence for more extensive commercial practices than previously documented in New Orleans.

Furthermore, the domestic contexts show greater use of fishes than either public spaces or hotel/hospitality contexts. Future archaeological research could potentially examine the physical location of markets, culinary practices and fish meal preparation in individual households, and the archaeology of early coastal fishing settlements. Fishes and fishing were an important part of the colonial settlement of New Orleans and continued through time. The city's fortuitous, yet precarious, location in the lower Mississippi River delta provided access to diverse habitats with very high fish biomass. The global inhabitants of the city took advantage of the natural abundance of finfish for culinary expression, Catholic religious proscriptions against meat consumption, economic gain, and general sustenance. The practice of fishing, diverse venues for the sale and acquisition of fish, and patterns of fish consumption contributed to the creation of a distinctive New Orleans identity. As this study demonstrates, the examination of zooarchaeological remains from geographic regions with high fish biomass in tandem with the identification of fish procurement strategies, fish marketing, and fish consumption habitats can provide rich insights into the lifeways of colonial and historical urban inhabitants who lived in coastal settings.

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