CYLER CONRAD AND ALLEN PASTRON

Galapagos Tortoises and Sea Turtles in Gold Rush-Era California

On October 22, 1845, Marine Second Lieutenant Henry Bulls Watson anchored in the west Mexican harbor of Manzanillo on board the sloop-of-war *Portsmouth*. After being at sea for eight days out of Mazatlan, the crew enjoyed the tranquil paradise, and Watson wrote of the beautiful harbor, rising mountains, dense vegetation, and quaint village on the beach. "Every thing," he wrote, "seemed to promise a most pleasing and delightful sojourn for a few [days]."[1] Particularly striking to Watson was the sea, which "seemed alive with the various kinds of fish and turtles."[2] For Watson, the turtles were an exotic curiosity, and he could not have imagined in 1845 that within a few short years these sea turtles (Family Cheloniidae) would become a delicacy for the California Gold Rush populations of San Francisco and Sacramento. Where Watson saw nature, miners saw food.

While a visitor to Manzanillo today may observe sea turtles at local preserves, sanctuaries, or aquariums, a sea turtle within the harbor or off the coast is a rare sight. Over-exploitation for consumption, commercial utilization for products made from turtle carapace (shell), and habitat destruction has dramatically reduced the number of sea turtles.[3] The same is true for the remaining Galapagos tortoise (*Geochelone nigra*) populations. While the whaling and sealing activity in the Pacific Ocean during the late-eighteenth and early-nineteenth centuries resulted in initial tortoise and sea turtle exploitation, their continued consumption and importation into Alta California by the argonauts of the Gold Rush brought native populations to the verge of extinction. Their near extinction today is a reminder of the long ecological reach of California's Gold Rush history.

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ECOLOGY OF THE SAN FRANCISCO BAY IN THE GOLD RUSH ERA

Prior to the arrival of argonauts in the late 1840s, food in Alta California consisted of a fairly restricted dietary regime. Although native Californians made extensive used of indigenous flora and fauna, the Spanish, Mexicans, and Americans generally relied on monocultural food systems derived from Mediterranean seeds, vines, trees, and livestock. Spanish Californians focused their diet on beef, while generally ignoring locally available wild game.[4] Fruit and vegetable utilization largely revolved around the consumption of wheat, barley, corn, grapes, and citrus, with only small-scale gardens providing any abundance of the latter resources. Pork was consumed rarely; rather, pigs were slaughtered for lard that was considered an excellent cooking product. Sheep provided wool, and there were very few goats on the landscape. Wild game was hunted for special occasions, and generally only Anglo American visitors to the region prior to the Gold Rush enjoyed hunting to any great extent. Tule elk (*Cervus elaphus nannodes*) and mule deer (*Odocoileus hemionus* spp.) were killed to provide superior quality hide and tallow, but many accounts describe their carcasses abandoned after commercial processing, with little to no attempt made to consume the meat.[5] Importation of food and utilization of wild resources dramatically increased after the onset of the Gold Rush, when the high population influx resulted in a need for increased resources and more efficient livestock production.[6]

During the Gold Rush, the sudden need for abundant quantities of food spurred the rise of a market economy which, in turn, drove the introduction of new indigenous foods—mammalian, avian, and molluscan fauna, specifically—into the marketplace.[7] It also reduced several indigenous species to near extinction. Tule Elk numbers dropped from approximately 500,000 in the early 1800s to less than two dozen by 1860.[8] Several bird species also suffered irreparable diminishes—significantly on the Farallon Islands.[9] The infamous egg war on the Farallon rookeries caused serious declines in several avian species including Cassin's Auklets (*Ptychoramphus aleuticus*), Tufted Puffins (*Fratercula cirrhata*), Common Murres (*Uria aalge*), and Cormorants (Family Phalacrocoracidae). Americans found the eggs flavorful and nutritious and consumed millions of them, devastating indigenous bird populations throughout the nineteenth century. Nor did mollusks escape the butchery. The demand for oysters was exceedingly high during the Gold Rush, but the argonauts found the Native Pacific Oyster (*Ostrea lurida*) smaller and not as delectable the Eastern Oysters (*Crassostrea virginica*) to which they were accustomed.[10] Ironically, to solve this problem, Native Pacific Oysters were imported from Shoalwater Bay (now Willapa Bay), Washington to seed the oyster beds in the bay because they were larger, and tastier, than their San Francisco Bay counterparts. During the 1850s and 1860s, importers reached further afield, bringing in "Mexican Oysters"[11] (*Ostrea irridescens* or *Ostrea chilensis*) and, after the completion of the transcontinental railroad, Eastern Oysters.[12] Not only did these latter species outcompete native oysters for habitat, but their importation caused additional non-native species to appear in the bay, including the invasive Softshell Clam (*Mya arenaria*) and Eastern Mudsnail (*Ilyanassa obsolete*), helping to spur habitat competition and losses in the native mollusk populations.[13] As these few examples indicate, the extraordinary demand for food during the early Gold Rush resulted in increased exploitation of native wild species throughout this region in a holistic and destructive fashion.

JOURNEYING TO CALIFORNIA

The story of the sea turtle's demise begins, necessarily, with a story of argonaut travel and diets. Due to the difficulty, and length, of overland continental crossings to California during this time, sea routes became increasingly popular. Two sea routes were primarily taken; one traveled down the eastern seaboard of the United States and South America, around Cape Horn, and up the Pacific coast to San Francisco. A second sea route, which was the faster of the two, required sailing to the east coast of Central America (usually Panama), taking an overland passage across the Isthmus, and catching a vessel to San Francisco on the Pacific coast. Since oceanic travel was most popular during the Gold Rush, a substantial amount of maritime traffic along the Pacific and Atlantic coasts of North and South America occurred during the late 1840s and 1850s.[14]

Maritime travel was not a luxurious experience during the Gold Rush. In almost all cases, vessels were overcrowded, dirty, dark, and relatively unpleasant. One salient reason for the poor conditions of sea voyages during this time was the absence of fresh food, exacerbated by the nonexistence of refrigeration. Meals typically consisted of salted pork, fish, or beef, hard and usually moldy bread, beans, and several forms of pudding and soup.[15] These were foodstuffs that could be stored for a considerable amount of time, although mold, rot, bugs, and a lack of culinary diversity caused disagreeable experiences for many passengers.[16] In one account, William Swain, who was en route to Panama from San Francisco, returning home, wrote:

> If the bread was bad, the pork was worse. Not that it was wormy. No, no, it was too strong for that. Worms know what is palatable and take good care not to get into such pork barrels . . . Many and many a savory ten-pound morsel of ox carrion was tossed overboard that must have proved a vomit for a shark. If not disposed of in some such effectual way, it would appear at the next table.[17]

Not only were the meals unpalatable, but also they lacked critical nutrients that fresh food provided. A considerable danger confronting passengers on long sea voyages was the risk of scurvy.[18] Scurvy stems from a deficiency in vitamin C, and since vessels could only store fresh fruits and vegetables with vitamin C for the first one to two weeks before they would rot, having fresh food was a considerable delicacy.[19] Occasionally crewmembers were lucky enough to catch a whale, porpoise, fish, or sea bird, but that was a rare treat.[20] What passengers of vessels truly desired, and nutritionally needed, was a consistent supply of fresh meat that would provide diversity and nutrients to their diet. Passengers and crews sailing through the Pacific during the Gold Rush found an answer in sea turtles and Galapagos tortoises.[21]

Sea turtles, and tortoises in the Galapagos, were abundant along the entire Pacific route. Hawksbill (*Eretmochelys imbricate*), Leatherback (*Dermochelys coriacea*), Olive Ridley (*Lepidochelys olivacea*), Loggerhead (*Caretta caretta*) and Green (*Chelonia mydas*) sea turtles all inhabit the maritime routes frequented throughout this region during the nineteenth century.[22] Green and Loggerhead turtles were much more abundant than Hawksbills, Olive Ridleys, or Leatherbacks, but all were taken opportunistically by passing vessels when encountered. During the nineteenth century, sea turtles also ranged further north than they do today, or perhaps were in greater abundance further north than today. While a sea turtle spotted in the San Francisco Bay today would spur local news activity and statements of caution and protection for the lone swimmer, during the 1850s and 1860s, sea turtles frequently appeared in northern California

waters.[23] Such sizeable quantities of sea turtles could be found resting on the coast between San Francisco and Monterey in 1851 that they were even captured and sold in San Francisco markets.[24] In one intriguing 1864 account, a group of sea turtles that were let loose in the San Francisco Bay after being imported from the Mexican coast were spotted in the North Bay.[25] Luckily for the turtles, the men out sailing that day were not, "prepared with the proper implements," to capture the animals and they escaped unharmed.[26] Samuel C. Upham even wrote that, "[s]everal turtles have been seen floating on the surface of the water at no great distance from the brig," while aboard the steamship *Panama* off the coast of California near San Luis Obispo on July 23, 1849.[27]

Beginning in the late eighteenth century, crews and passengers journeying to California regularly commented on the abundance of sea turtles both along the coast and in the open sea of the eastern Pacific. Sailing off the coast of Los Cabos, near contemporary Cabo San Lucas, in 1793, Captain James Colnett wrote, "the sea, at this time, was almost covered with turtles."[28] As recounted earlier, Second Lieutenant Watson wrote of the abundance of sea turtles at Manzanillo during the 1840s.[29] Additional evidence of this abundance comes from Charles Ellis. Onboard the brig *North Bend* in 1849, he wrote of a large sea turtle floating close to the vessel.[30] Thought to be sleeping, the captain lowered a boat to capture the resting animal, but as they neared, "he slowly raised his head, took a peep at them and disappeared."[31]

Luckily for some vessels, sea turtles did not always escape; they were caught and brought to the galley in preparation for a sea turtle buffet. George Denham, journeying to San Francisco in the schooner *Rialto*, wrote on March 24, 1849 that a large sea turtle was spotted floating near the vessel.[32] After harpooning the turtle through its shell, it was brought onboard and made into a fresh meal for the passengers.[33] A similar experience occurred for Alfred Doten onboard the bark *Yeoman* in 1849, when a Loggerhead turtle was spotted close the vessel.[34] A boat was lowered and a chase ensued; after being captured, the two hundred-pound turtle was hoisted on deck and prepared for dinner. Doten writes that, "we shall live 'high' after this."[35] These experiences were not rare. In general, sightings and capturing of sea turtles in the eastern Pacific during the early Gold Rush years were frequent, and maritime passengers were quick to describe, capture, and eat them whenever possible.

Not only could turtles and tortoises be eaten fresh, if taken live they could be kept on board for weeks or months at a time. Sea turtles and tortoises have a unique physiological adaptation to survive for extended periods, sometimes years for Galapagos tortoises, without needing food or water.[36] Recent documentation indicates that sea turtles caught in the Gulf of California could be kept alive for two to three weeks if their flippers were correctly bound so that they would not harm themselves during transport.[37] Interestingly, Galapagos tortoises have adapted to their native dry volcanic island habitat by storing water within their neck.[38] Passengers and crews were thus not only able to consume fresh tortoise meat, but have a small supply of fresh potable water onboard when tortoises were captured and stored. Sadly, these physiological adaptations resulted in sea turtles and tortoises becoming perfect cargo for long sea voyages in which both fresh food and water were scarce. In a sense, these creatures were the refrigerators that the argonauts needed so dearly.

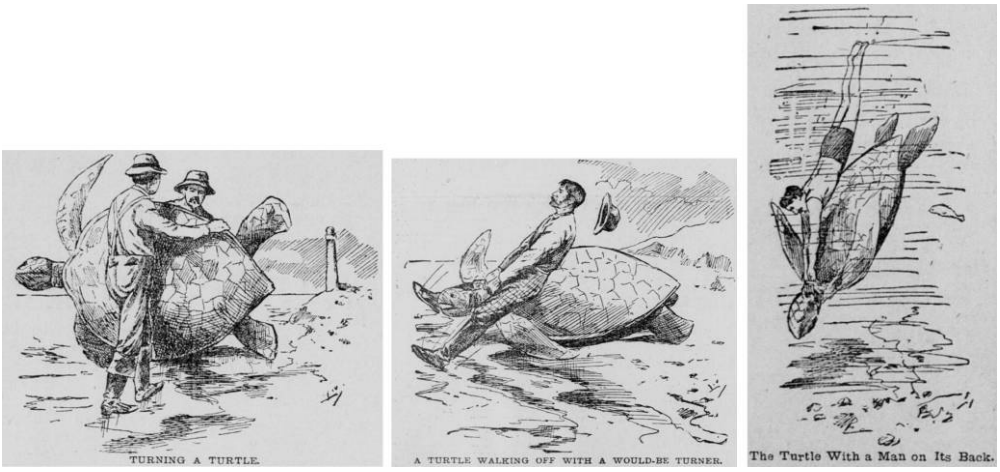
Generally, sea turtles and Galapagos tortoises were captured in a process referred to as "turtle turning," or "turpining."[39] When either species was sleeping, resting, or moving about,

these creatures became easy targets for prowling hunting crews, whether in the Galapagos Islands or along the beaches of North and South America. All that a tortoise or turtle hunting crew needed to do was simply track down the animal, flip it on its back, and tie its flippers or legs together before transporting it back to the vessel. Once upon their back, the tortoises and sea turtles were helpless to move or escape. Tying the legs together and thrusting a pole underneath the knot to carry the animals also provided a means to transport these generally large reptiles. One particular example describes the turtle-turning process well. A stop in the Galapagos Islands in August of 1849 by the bark *Canton* provided the opportunity for passengers to disembark on tortoise and sea turtle expeditions. Descriptions of these events wonderfully capture turtle-turning activities, "[o]ne had but to turn them over on their backs, where they lay helpless until their captors were ready to carry them on board."[40]

As easy as this process was, one difficulty commonly encountered by turtle-turning crews was the enormous weight of the animals themselves.[41] Of course, this did not stop the efforts of the *Canton* passengers, as a delicious tortoise meal was too delectable to pass up.[42] Joseph Kendall was one of the passengers onboard the *Canton* during this time who also noted that terrapin, both tortoises and sea turtles, were found in abundance on the islands.[43] In a single day, twenty sea turtles were captured on the beach, and when the *Canton* left the islands a total of sixty tortoises and sea turtles were onboard. Even though an abundance of animals was identified on the islands, Kendall's shipmates were also quick to note that tortoises were becoming increasingly rare in the immediate beach regions as early as 1849, suggesting a shifting biogeography as a result of over-exploitation.[44] Terrapin crews began to travel further inland to capture tortoises and carry them to vessels offshore. Some crews travelled upwards of four miles inland for these tortoises, known as "back terrapin." Kendall also writes that a small population of island slaves was known to collect tortoises in pens and sell them to arriving vessels for a sizeable profit, generally upwards of three thousand dollars.[45] As intriguing as this sounds, it seems more likely that Kendall was describing members of the Ecuadorian penal colony banished to the Galapagos during this period. Regardless, the creation of a semi-permanent market for tortoises increased their rate of overall decline.

Additional evidence of "turpining" comes from a *Daily Alta California* article describing how Californians would canoe out to sea turtles, flip them on their shells, and capture them.[46] Once again, this not only shows the ease of capturing these creatures but also suggests that sea turtle populations were more abundant further north during this time. Overall, historian Oscar Lewis provides the most illustrative description of "turpining" during the mid-nineteenth century, "[t]here were two varieties, sea and land turtles, both so large that two men could lift only one with difficulty, and—like the birds—they showed no fear of human beings, whom they permitted to approach with complete unconcern."[47] Lewis helps to express that, during the Gold Rush, argonauts were fully capable and prepared to exploit and consume terrapin whenever they were encountered.

Many records describe the ease of "turpining," but capturing sea turtles was inevitably not always a successful venture. Historical records provide a wealth of data during this time, but it is important to note that argonauts may have only been interested in describing successful hunting activities while journeying to California. Because of this, it is important to describe how turtle-turning crews may have failed. A late-nineteenth-century article in the *San Francisco Call* provides rare evidence of this fact.[48] Reflecting on a sea turtle hunt on the Gulf



This series of drawings (viewed left to right) depicts the difficult and somewhat amusing experience of trying to capture a sea turtle along the Gulf Coast of Mexico in December of 1894. Clearly, the sea turtles at hand did not wish to be captured. While this article describes a hunt on the eastern coast of Mexico, it provides an accurate depiction of the difficultly and effort put into capturing sea turtles throughout the nineteenth century.

Adapted from "By the Light of the Moon: The Sport of Turtle Turning," *San Francisco Call*, December 30, 1894.

Coast of Mexico (not the Gulf of California) in 1894, the authors provide an entertaining account of their struggle to capture a large, egg nesting female. After trying unsuccessfully to capture the Green turtle by hand, an oar was eventually used to flip it. At this point, the author, spotting a Loggerhead, jumped onto its back in an attempt to flip the reptile and was subsequently thrown and dragged into the sea with the animal. A few days later the author attempted a different type of sea turtle capture. After capturing live turtles, they were kept in an underwater corral approximately eight feet deep. Thus, the author was required to swim into the corral and capture a live sea turtle while submerged. As he writes, "[i]t was evidently a trial of endurance, and spurred on by the applause of the audience on the fence, I clung to the shell desperately."[49] Only after the sea turtle tired was he able to bring him to the surface. While this turtle hunt occurred in the late-nineteenth century, similar events certainly occurred during the Gold Rush era.[50] Doten provides one expressive account when the *Yeoman* stopped at San Berto, one of the Revillagigedo Islands off the coast of Mexico in the eastern Pacific and known as Mexico's 'Little Galapagos', on September 4, 1849.[51] After spotting two or three sea turtles climbing up the beach, he and a shipmate went after one to try and flip it, but, "before we could turn him over on his back a sea came and washed him clear."[52]

SEA TURTLES IN SAN FRANCISCO

Although the journey to Alta California for the Gold Rush provided the opportunity for argonauts to capture and consume sea turtles and Galapagos tortoises, it was their arrival in San Francisco and Sacramento that hastened the over-exploitation of these reptiles.[53] Beginning with the onset of the Gold Rush in 1848, sea turtles and Galapagos tortoises became a frequent sight in both cities.[54] Franklin Mead arrived in San Francisco in October

1849 with thirty Galapagos "terrapins," and sold seventeen quickly after arriving in the city for a profit of more than fifty thousand dollars, a remarkable sum for that time.[55] Historian John Hittell estimated that a dozen or more sea turtles were brought to San Francisco every month during the 1850s.[56] Of course, exact species or counts were not consistently provided during this time but on July 1, 1850, Collins, Cushman & Co. on Sacramento Street in San Francisco received "a few of those terrapin, said to be the most delicious eating in the world," for sale.[57] A "fine green turtle," was also served as soup and steaks at the Baltimore Restaurant on February 15, 1850 and as the advertisement describes, "[t]hose in want of something rich and rare had better give us a call."[58] The schooner *Jacob R. Ryerson* was reported on March 14, 1850 to have traveled south down the California coast in search of Green turtles and returned with a great quantity of them. "Soups and steaks will now be the order of the day," writes the *Daily Alta California*. An article in the paper only a day later has a humorous take on the new sea turtle arrivals brought by the *Jacob R. Ryerson*:

> Ho! Ye Epicures!—Only imagine, O ye San Franciscans, what a *trout* is in store for you, in the shape of *Green Turtles*, which have just arrived in the schooner Jacob M. Ryerson [sic], from down the coast. Do, General, tell us where we can see these *trota* of trout, and we will walk our trotters immediately to view the *piscine* remains![59]

Another advertisement for the Baltimore Restaurant on this same day in 1850 indicates that a two-hundred-pound Green turtle was to be served again as soups and steaks to the epicures of this establishment, likely brought by the *Jacob R. Ryerson*.[60]

Realizing the demand for foodstuffs, a merchant named Alfred G. Osbun voyaged into the southwestern Pacific in search of a variety of goods to import into San Francisco including pigs, chickens, yams, and sea turtles during 1850. When he returned to the city he was initially only able to sell his single Green turtle captured in the Pearl and the Hermes Islands. Despite arriving with ten to fifteen tons of yams, and fifteen hundred cocoa nuts Osbun writes, "[w]e sold nothing yet but our Turtle. We sold it [today] for [eighteen dollars and thirty-three] cts. per pound, it weighed only 17 pounds."[61] Additional importation evidence comes from the schooner *Cecil*. By the end of 1850, during three days in November, "a lot of splendid Green Turtle," were for sale after arriving onboard the schooner at the foot of Jackson Street in San Francisco.[62] These descriptions indicate that already, in the course of the first two years of the Gold Rush, tortoises and sea turtles were brought and sold in San Francisco markets in large abundance, and as Hittell previously described, this process continued throughout the 1850s and into the late-nineteenth century.

By January 1851, specific advertisements for terrapin began to appear with greater frequency in San Francisco newspapers. The Venitian [sic] Restaurant on Jackson Street in San Francisco provides an early example of this. Here, Green turtle soup and steaks were served from noon to seven p.m. by Joseph for "lovers of good eating."[63] Only a month later in February the schooner *Fame* arrived in San Francisco having sailed for twenty-two days from Bonita Island with sixty imported turtles.[64] There seems to have been a focus on exceptionally large Green turtles during this time period, with both the Venetian Restaurant serving, "[o]ne of the largest and finest Green Turtles ever brought to this market," and the Washington Restaurant serving a, "[m]ammoth Green Turtle," in soups and steaks on February 9, 1851.[65] Such an abundance of turtles were in San Francisco during the early 1850s that races were

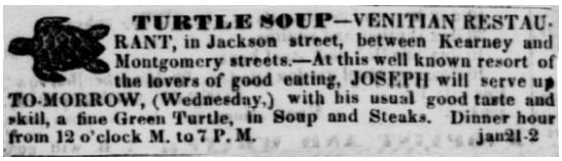
arranged between restaurant owners' stocks of turtle.[66] Races between turtles were proposed to start at the Pioneer House on Montgomery Street and end at the Nightingale in the Mission, with the turtle winners being made into meals of soup and steak for the encouraging fans.

Incidentally, San Franciscans were quick to write about the lucky sea turtles that, against all odds, managed to escape the city. In July 1851, for example, a hundred sea turtles were being stored in the yard of a restaurant owner off the main plaza, likely Portsmouth Square, in San Francisco. The turtles escaped and were seen, "perambulating the streets in true turtle style through the whole day."[67] One sea turtle managed to reach the Clay Street Wharf and slipped into the water where he, "struck a bee line for the Farrallones [sic]."[68] The author continues to write rather amusingly that, "[p]robably by this time he is recounting the manners and customs of the San Franciscans to his fellow turtles."[69] Only a few days later, another Green turtle was lucky enough to break free from a cord tying him in front of a restaurant off the plaza in San Francisco and escape down Clay Street never to be seen again.[70] The author also suspects that this turtle slipped to freedom into the bay.

Descriptions of the abundance of turtles in the city during this time continue through the early 1850s. In October 1851, the brig *Iturbide* arrived in San Francisco sixteen days out from Magdalena Bay, Mexico, lying at the foot of Long Wharf, with a, "fine lot of green turtle," 250 to be exact.[71] Green turtle soup is listed on the menu for Allen & Parker's Restaurant in San Francisco in October 1853, and in a particularly unique sea turtle advertisement for Chandler & Lewis's in San Francisco on May 26, 1855, a postscript provides evidence of the enormous size of the sea turtle consumed, "P.S.—this Terrapin was delivered of 320 eggs, and the soup will doubtless be *egg*scellent."[72] Such high demand for sea turtles resulted in a continuous sea turtle importation market during the later 1850s:

> Green Turtle! Green Turtle! Notice to Hotels and Restaurants–A constant supply of fresh green turtle (only three days from the Turtle crawl,) will be received on every trip of the steamer Senator, from San Diego. As only a limited number will be received on every trip, it is requested of parties wishing to purchase on arrival of the boat, to leave their orders with the undersigned, on the 2d or 17th of each month to insure delivery. A small lot (assorted sizes) now on hand, in splendid condition, and for sale in lots to suit. R. E. Raimond, 105 Front street, near Washington, San Francisco.[73]

The importation of sea turtles did not stop after the height of the Gold Rush ended in the 1850s. Demand for fresh food on long voyages at sea, and the delicious nature of terrapin meat, drove their consumption throughout the late-nineteenth century in Alta California and placed extreme pressure on populations already experiencing steep declines.



Advertisements for Green sea turtles appear in many San Francisco newspapers during the Gold Rush. Little sea turtle images, like the one appearing in the upper left corner, were a common visual tool used to draw readers to the advertisement.

This ad appeared in the January 21, 1851 edition of the *Daily Alta California*.

GALAPAGOS TORTOISES IN SAN FRANCISCO

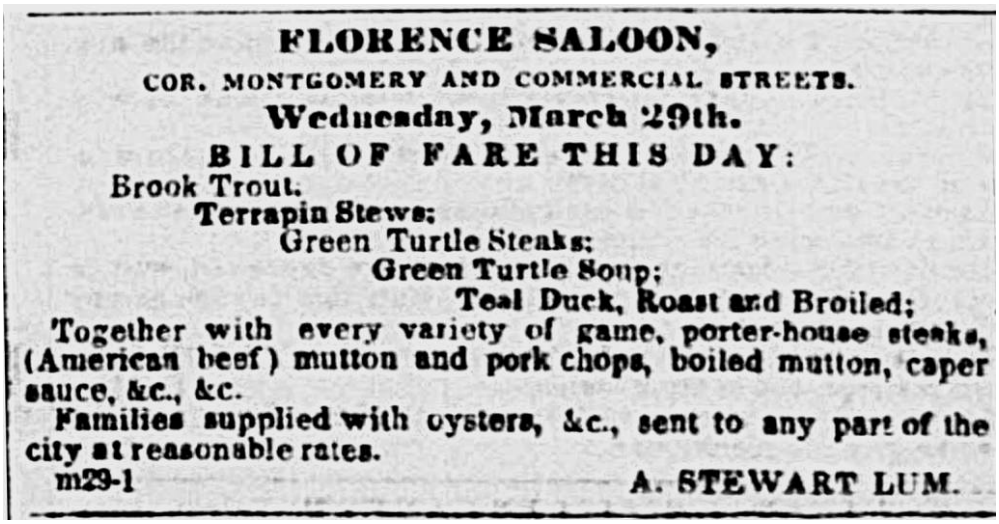
Galapagos tortoises were subject to the same over-exploitation and subsequent population losses during the Gold Rush. Many a tortoise found its way into the markets, dishes, and stomachs of the terrapin epicures of San Francisco. As early as 1850, ships took direct voyages to the Galapagos to procure terrapin for the abundant tables and mouths in San Francisco. In 1849, B.B. Redding witnessed the capture of ninety-two Galapagos tortoises, weighing between 450 and 600 pounds; these tortoises were sold on arrival in San Francisco for more than the value of the cargo of lumber on board his vessel.[74] Caspar Hopkins journeyed to the Galapagos Islands on the schooner *Tremont* in early 1850 hoping to capture upwards of one hundred tortoises to sell in San Francisco for about fifteen hundred dollars apiece.[75] Hopkins successfully completed the journey to the Galapagos, but after searching smaller islands in the archipelago, he was unsuccessful in capturing a single tortoise. After hearing that captured tortoises were for sale at Stephen's Bay on Chatham Island, Hopkins and his shipmates decided to purchase, rather than capture the reptiles. Unfortunately, whaling crews preceded their arrival and bought all of the terrapins, leaving Hopkins to pursue the whaling vessels at sea and buy only thirty-five terrapin from the whalers two days later.[76] Only twenty of these terrapin survived the tables of the schooner and were sold on arrival in San Francisco for almost three hundred dollars a piece.

Shipments of Galapagos tortoises to San Francisco varied between vessels, but by 1851 the abundance of tortoises imported to the city increased substantially compared to the three years prior. One epicure wrote of living in San Francisco in 1851 and proudly described the diversity of food available to consumers in the city. When describing the "good things" at the Jackson House and Lafayette Restaurant plaza he writes, "on it are trotting about, literally 'on their last legs,' a score or so of turtle, ready and willing to be manufactured into soup."[77] This same year also saw a dramatic increase in tortoise consumption throughout San Francisco:

> Twenty-five thousand pounds of live Terrapin flesh was brought to San Francisco the other day by Capt. Plummet of the schooner Roe. The editor of the Courier acknowledges the receipt of one of these 'beauties.' The Courier says that Capt. P. proposes to keep a regular trade in the article, bringing them from the Gallipagos [sic] islands. The terrapins, of all sizes and weights, run about the hold and deck of vessels, as lively and as well contented, apparently, as they were when taken from the mountains of Chatham [I]sland, nearly two months since. The Courier says these animals will live twelve months without food of any kind.[78]

Two additional records in 1851 support this conclusion. First, the schooner *Providence* arrived in San Francisco on May 6, 1851, seventy days from the Galapagos Islands with "turtles" onboard, and second, only a month later, in June, a substantial number of terrapins arrived in San Francisco onboard the brig *Zene*, fifty days from the Galapagos Islands, ready for the epicures of the city.[79]

Importation of tortoises continued at a remarkable pace throughout the 1850s in San Francisco. The schooner *WA Tarlton* arrived in San Francisco on May 14, 1855 after forty-five days at sea with 580 terrapin onboard.[80] This account suggests that terrapin entrepreneurs were at this point more interested in the economic benefit of tortoises than in their own comfort on long sea voyages, as 580 terrapin would have made for cramped quarters on a



FLORENCE SALOON,

COR. MONTGOMERY AND COMMERCIAL STREETS.

Wednesday, March 29th.

BILL OF FARE THIS DAY:

Brook Trout.
Terrapin Stews;
Green Turtle Steaks;
Green Turtle Soup;
Teal Duck, Roast and Broiled;

Together with every variety of game, porter-house steaks, (American beef) mutton and pork chops, boiled mutton, caper sauce, &c., &c.

Families supplied with oysters, &c., sent to any part of the city at reasonable rates.

m29-1 A. STEWART LUM.

A typical Galapagos tortoise or sea turtle meal consisted of either soup or steaks, as displayed here in an advertisement placed in the March 29, 1854 *Daily Alta California* for the Florence Saloon, in San Francisco. These meals were considered the highlight of many culinary experiences for argonauts during the Gold Rush.

schooner.[81] An advertisement for Patten's restaurant on Sansome Street in 1854 also states that, "without exception they do serve up the finest terrapin soup it has been our good fortune to partake of, and we would say to all lovers of a good lunch, call and try his soup."[82]

Forty-niners also eagerly described the delicious nature of terrapin, an aspect of the importation process that only further drove tortoise and sea turtle consumption. Hopkins went as far to write that a Galapagos tortoise "is deemed a choice luxury, even more than that of the green turtle."[83] Not only were mentions of taste described by the Gold Rush population, but also mentions of the remarkable size of Galapagos tortoises appeared during this time. In one extraordinary account, a "[m]ammoth Terrapin," brought to San Francisco from the Galapagos was recorded as weighing 585 pounds.[84] These examples show that tortoise populations, like sea turtles, were consumed in detrimental quantities throughout the Gold Rush years. Unfortunately for the terrapin, their importation into Alta California did not stop in San Francisco.

SEA TURTLES AND GALAPAGOS TORTOISES IN SACRAMENTO AND BEYOND

Although most terrapin consumption occurred in San Francisco proper during the Gold Rush, the reptiles were also imported and consumed far inland. In May 1855, the *Daily Alta California* reported the departure of a schooner from San Francisco with five hundred Galapagos tortoises bound for Pleasant Ranch, twelve miles south of Sacramento, "[t]he animals seem to enjoy themselves amazingly, which will not appear strange, when the fact that they had eaten nothing since leaving the Galapagos Islands, is taken into consideration."[85] These tortoises were described as enjoying "grazing on the banks of the Sacramento."[86]

Prior to 1855, descriptions of sea turtles and Galapagos tortoises were not as common in Sacramento newspapers as they were in San Francisco newspapers, but what evidence does appear suggests that the market for these animals flourished. Early indications of this come from an auction sale by J.B. Starr & Co. on July 2, 1850 in Sacramento, which lists one large-sized turtle for sale.[87] By January of 1851, at the Hole in the Wall restaurant in Sacramento, turtle soup and steak was advertised for dinner, suggesting their continued importation during this time.[88] Terrapin were apparently quite popular in Sacramento with advertisements urging diners to arrive early for the meals.[89] Instances of macabre humor appeared as well, with one advertisement describing a delicious meal of turtle soup at the Woodcock restaurant, and after the meal "the last epoch of the 'history of the Gallipagos [sic]' will then be discussed."[90] Evidence of terrapin arriving in Sacramento also comes from an importations list in February of 1851, listing sixty turtles being brought to the city.[91]

The Orleans Hotel was a popular venue for sea turtle soup and steaks during this time with many advertisements placed in Sacramento newspapers.[92] One unfortunate Green turtle, weighing 150 pounds, was captured off the coast of Mazatlan, Mexico and imported to the Orleans Hotel only to find itself made into "delightful soups," for one Count Bidleman and his friends, guests of the hotel.[93] The Orleans Hotel was delighted with the terrapin, writing, "[u]nder the new order of things in the culinary department of this well established public house, patrons find no reason to be otherwise than highly pleased."[94] Importation of terrapin during the early 1850s must have been sizeable in Sacramento because, by 1855, a "boarding house" was needed to hold fifty new Galapagos terrapins at the corner of O and Front Streets.[95] The author mentions that, "[a]s they are all corralled in one apartment, they present, in their associative capacity, a novel and interesting appearance."[96] It is impossible to tell the exact number of terrapin brought to San Francisco and Sacramento during this time, but what is clearly understood is that throughout the Gold Rush, Californians heavily imported and consumed these reptiles.

Evidence of terrapin importation and consumption in Alta California also comes from beyond Sacramento, further into the San Joaquin Valley, and in the foothills of the Sierra Nevadas. During the 1850s, newspaper accounts indicate that sea turtles and tortoises made it as far north as Marysville, California and as far east as Volcano, California. A menu for the White Mansion on High Street in Marysville lists turtle soup for the morning lunch on May 31, 1851, as described in the *Marysville Daily Herald*.[97] In 1855, an advertisement for Frank's Restaurant in Marysville also lists turtle soup on the menu, and a bill of fare for Christmas Day 1857 indicates that both sea turtles and Galapagos tortoises were imported to the gold mining town.[98] One intriguing account of Hepburn, the "fat man," describes that he prepared an, "*olla podrida* of fat things, fit for Epicurus and all the rest of the gods," at the Club House on D Street.[99] These fat things included, "bears and beeves [sic] and beavers, turkies [sic], turtle and terrapins, pork and poultry, veal and venison, ox-tail and oysters," with Hepburn challenging consumers, "[i]f you don't believe it go and see."[100]

Sea turtles and tortoises as far north as Marysville, California is astounding evidence of the breadth of this activity during the 1850s, yet the importation of at least a small quantity of Green turtle to Volcano, California is simply stunning. During the winter of 1855, "[n]inety pounds of green turtle 'gone in!' It was so cold and stormy in Volcano night before last that one of these 'quadrupeds,' (?) of the above weight, fattening for Christmas, at the Antelope

Restaurant, froze to death."[101] Where this sea turtle was imported from is not listed, but we can infer that at least one Green turtle took part in a astonishing journey from the waters of the eastern Pacific Ocean, through the San Francisco Bay, and up the river systems of the San Joaquin Valley before arriving in Volcano, California, only to perish before being served as a meal of turtle soup and steak.

EXPLAINING THE DECLINE OF THE TERRAPIN DURING THE NINETEENTH CENTURY

In Paul Chambers' history of Galapagos tortoises he suggests the whaling and sealing activities during the late-eighteenth and early-nineteenth centuries caused the main decline in Galapagos tortoise populations.[102] These whaling and sealing fleets in the eastern Pacific found rich whaling grounds near the Galapagos Islands, and throughout the region as a whole. Needing food, just as the argonauts would, they found tortoises and sea turtles to be delectable and life-saving animals, since they provided dietary diversity and aided in protection against scurvy. Chambers writes that in 1831, two to three hundred tortoises could be captured in the Galapagos Islands within five to six days, but by 1860, a week of hunting for tortoises resulted in less than one hundred captured.[103] While these activities likely did cause initial declines to tortoise populations, we argue that it was the onset of the Gold Rush in 1848 that pushed tortoise and sea turtle populations to the brink of extinction.

Whaling activities were diminishing by the 1830s; as the whalers left, the much more massive Gold Rush population arrived. The arrival of the argonauts meant that not only were sea turtles and tortoises captured and consumed during long sea voyages, as the whalers and sealers had done before, but now they were captured and *imported* into Alta California in substantial numbers—a new and significant shift in exploitation. This combined consumption and importation process brought about the over-exploitation of terrapin during the mid- to late-nineteenth century, the effects of which are still felt today.

By 1855, maritime passengers stopping in the Galapagos already began to comment on the rapidly declining tortoise populations, "[f]rom fifty to three hundred [tortoises] are often taken by single ships. There are but a few remaining now, and most of those are small."[104] An article in the *Daily Alta California* on May 26, 1855 stresses that the trade of the terrapin dealers capturing Galapagos tortoises in order to, "furnish turtle soup to the epicures of San Francisco," is problematic for the whalers because of the immense numbers taken to San Francisco during this time. This is important because it suggests that the whalers and sealers did not provide as substantial an impact to native terrapin populations as the Gold Rush argonauts did. Furthermore, the author continues to write that, "[a]t the rate the last cargo was disposed of, there will be a lively demand for them in the San Francisco market."[105] A disturbing record of this decline was noted even as early as 1850, when a terrapin hunter arrived in the Galapagos and wrote, "[w]e reached the empty houses, surrounded as they were with acres of terrapin shells, announcing the apparent extinction of the species."[106] This loss was readily apparent and these records paint a sorrowful depiction of this devastation during the Gold Rush.

Howard C. Gardiner provides another intriguing look at the declining populations in sea turtles during this time. While he was voyaging home aboard the ship *Sylph* in 1857, he

stopped in Manzanillo, Mexico, just as Second Lieutenant Watson had twelve years prior.[107] As they departed the harbor, bound for Panama, Gardiner writes of a markedly different sea turtle encounter than Watson's. Seeing a large log and carefully watching it, so as not to hit it with the *Sylph*, Gardiner writes, "[a]s I came near it, I saw something moving, which convinced me that the log had at least one passenger, which closer inspection showed was an immense turtle."[108] Guessing that the turtle was feeding on the crustaceans attached to the log, he continues to describe that; "the reptile slid from its perch into the ocean depths, perhaps to return later and regale itself on the crustaceans which regard for its own safety had induced it temporarily to abandon."[109] Watson and Gardiners' accounts of Manzanillo harbor could not be more different in this regard. While Watson describes the abundance of sea turtles in the mid-1840s, Gardiner writes of the retreat of the sole sea turtle for fear of its safety. The Gold Rush had clearly left its mark on the native sea turtle populations throughout this region.

After the height of the Gold Rush the importation of Galapagos tortoises and sea turtles continued in San Francisco and the greater Bay Area, but at a much lower rate. By 1896, restaurants in San Francisco were known to trade a single live sea turtle between their restaurants in order to advertise for fresh Green turtle soup.[110] In reality, only mock turtle soup was served because there was not enough sea turtle left to provide fresh meals, and this lone sea turtle was merely used for advertising purposes. After a few weeks of trade between restaurants, the sea turtle would be killed and the genuine meat sold to a single restaurant for the authentic course.[111]

In the late-nineteenth century, scientific interest in Galapagos tortoise and sea turtle populations began to emerge. Since Galapagos tortoise populations suffered more dramatic population loss due to their limited numbers and isolated habitat, a stream of scientific expeditions occurred to study the distribution and speciation of the tortoises. These expeditions were valuable because they brought the plight of tortoises, and, to a much lesser extent, sea turtles, to the attention of the rest of the world. Damage was already done to Galapagos tortoises, but because of the resurgence of interest in protecting and understanding these animals, conservation and preservation for their future was ensured.[112] It was during this period, in 1900, that the naturalist G. M. Green, from San Francisco, voyaged to the Galapagos Islands to study the dwindling populations of tortoises and brought back twenty-eight tortoises to study and sell.[113] It is important to note here that during the scientific expeditions of the late-nineteenth and early-twentieth centuries, the methodology of conservation was to bring back tortoises for protection at institutions instead of protecting them in their natural habitat. Ironically, this continued the decline in native populations of these species.

Green's expedition from 1900 to 1901 also appeared to be aimed more at commercial value than true conservation and study. They, "went after tortoises known to be on the islands . . . that would find a purchaser in the markets of the world," and because of this spent five days carrying a 527-pound tortoise down a mountain and then onboard the schooner *W. S. Phelps*.[114] An expedition aimed at slightly more scientific exploration, was that of Walter Rothschild in 1897.[115] While data was taken on tortoise size, abundance, and other general characteristics, Rothschild was more interested in bringing back tortoises to his estate in England than the true conservation of these species. He did, however, bring to light the extremely small numbers of tortoises left in the Galapagos, an

important fact that helped spur the California Academy of Sciences (CAS) expedition a few years later. In fact it was not until the CAS expedition between 1905 and 1906 that a robust and holistic understanding of Galapagos tortoise populations was recorded and published.[116] The groundbreaking work of the CAS expedition provided the first true speciation of the tortoise populations and documented the serious condition of the remaining tortoises.[117]

Gradually, from the end of the nineteenth century to the beginning of the twentieth century, the attitude towards Galapagos tortoises and sea turtles had shifted from delicious meal to endangered species, and a species to protect. It was not until the establishment of legal protection that the consumption and commercial exploitation of these reptiles ended. The Galapagos Islands are now listed as a UNESCO World Heritage Site and the remaining tortoises are legally protected and conserved for future generations. Many locations where sea turtles were historically captured along the west coast of North and South America are now also protected as marine sanctuaries. These more recent developments have helped spur tortoise and sea turtle protection and population growth after the substantial impacts which occurred during the nineteenth century.

CONCLUSIONS AND FUTURE RESEARCH

Between 2010 and 2012, the Cultural Resource Management firm, Archeo-Tec, based in Oakland, California, completed the archaeological testing and data recovery program for Thompson's Cove (CA-SFR-186H), a Gold Rush-era site located on the original shoreline of Yerba Buena Cove in San Francisco.[118] Cultural deposits at the site date from the 1840s, through the nineteenth century up to 1907, with the most abundant and substantial deposits dating to the height of the Gold Rush from 1848 to 1855. While a manuscript of the complete summary and interpretation of the zooarchaeological assemblage at the site is currently in preparation, two unique and significant taxa were identified and recorded by the author. In deposits dating to the initial Gold Rush (1849-1851), two humeri specimens from a Galapagos tortoise and one phalanx from an unidentified sea turtle species were identified.[119] An extensive search of the zooarchaeological records of the San Francisco Bay area, including published and grey literature and personal communications, suggest that this is the first skeletal evidence uncovered of Galapagos tortoise and sea turtle consumption within any archaeological sites in Alta California. We hope that with this discovery and the historical documentation of tortoise and sea turtle importation described herein, a new focus on investigating and furthering this record may occur. In this rare case, the zooarchaeological record at Thompson's Cove now verifies the historic record for the region, and we hypothesize, or rather emphasize, that with further historical and archaeological research and testing aimed at identifying tortoise and sea turtle consumption, further evidence of this process will be discovered.

Ultimately, the impact of capturing and importing Galapagos tortoises and sea turtles into Alta California during the Gold Rush had direct consequences on the native abundance and distribution of these reptiles in the eastern Pacific Ocean. Conservation programs and protection status for these species are helping to sustain tortoise and sea turtle populations for the future, but the impacts of over-exploitation initially caused by the whalers and sealers,

and continuing as a result of the Gold Rush maritime traffic have left lasting impacts on these creatures' populations. It is highly unlikely that the absolute numbers of sea turtles and tortoises imported into the San Francisco Bay will ever be known, but from what evidence does exist, these numbers would have been significant. Hopefully with additional zooarchaeological investigations we may better understand the distribution of these species in this region. As noteworthy as Galapagos tortoise and sea turtle importation into Gold Rush-era Alta California may be, it is important to note that the argonauts of this dynamic era continued to devastate local native populations of mammals, birds, reptiles, fish, and mollusks throughout the nineteenth century. Little did the first forty-niners realize, but their arrival in Alta California, although successful in shaping and forming the San Francisco Bay area into the global center of commerce and industry that it is today, would prove to be ecologically devastating. Hopefully, through continued conservation and protection, Galapagos tortoise and sea turtle populations can continue to expand and grow to the stable populations found in this region prior to the onset of Euro American exploration of the Pacific during the late eighteenth and nineteenth centuries.

NOTES

1. Charles Smith, ed., *The Journals of Marine Second Lieutenant Henry Bulls Watson 1845–1848* (Washington, D.C.: History and Museums Division Headquarters, U.S. Marine Corps, 1990), 56. We are continually grateful to Kale Bruner for her thoughtful advice and encouragement in our tortoise and sea turtle research endeavors. Thank you as well to Jim Delgado for the many insights and guidance about Gold Rush-era history, archaeology, and comments provided on an earlier draft of this manuscript. Thank you to Teresa Steele, Carol Spencer and Jeanette Wyneken for providing invaluable tortoise and sea turtle identification advice. We are also grateful to Heather Yager at the California Academy of Sciences for providing access to the Galapagos tortoise archival image collections. Finally, C.C. sincerely thanks Emily Jones, for her continued support, inspiration, and comments on previous drafts of this manuscript.
2. Ibid.
3. Volker Koch, Wallace Nichols, Hoyt Peckham, Victor de la Toba, "Estimates of sea turtle mortality from poaching and by-catch in Bahia Magdalena, Baja California Sur, Mexico," *Biological Conservation*, 128 (2006): 327–334; Wallace J. Nichols, "Biology and Conservation of Sea Turtles in Baja California, Mexico" (Ph.D. dissertation, University of Arizona, 2003). Sea turtle numbers have steadily decreased since the late eighteenth and nineteenth centuries because of maritime and terrestrial hunting for food and commercial purposes. This essay documents the impact that the Gold Rush had on sea turtle and Galapagos tortoise populations.
4. Scott Stine, "Hunting and the Faunal Landscape: Subsistence and Commercial Venery in Early California" (M.A. thesis, University of California, Berkeley, 1980), 1–139. Stine's unpublished masters thesis provides an excellent description of the exploitation of native and domestic fauna throughout the San Francisco Bay region. Guy McClellan, *The Golden State: A History of the Region West of the Rocky Mountains; Embracing California, Oregon, Nevada, Utah, Arizona, Idaho, Washington Territory, British Columbia, and Alaska* (Philadelphia: William Flint & Company, 1872), 342–344; William Health Davis, *Seventy-Five Years in California* (San Francisco: A.J. Leary, 1929), 395; Zooarchaeological evidence from the San Francisco Bay Area and greater California region indicates that cattle dominate the assemblages at many pre-Gold Rush sites. Barbara Voss, *The Archaeology of Ethnogenesis: Race and Sexuality in Colonial San Francisco* (Berkeley: University of California Press, 2008), 236–239; Stephen W. Silliman, *Lost Laborers in Colonial California* (Tucson: University of Arizona Press, 2004), 159; Thomas A. Wake, "Social Implications of Mammal Remains from Fort Ross, California," in *Proceedings of the Society for California Archaeology*, 7 (1994), 23; Sherri Gust, "Faunal Analysis and Butchering," in Jay D. Frierman, ed., *The Ontiveros Adobe: Early Rancho Life in Alta California* (Santa Fe Springs: Greenwood and Associates, 1982), 1–222; Historical documentation describes that sheep were primarily utilized for wool during the early and mid-nineteenth century, with upwards of 360,000 pounds of wool exported from California in 1855. McClellan, *The Golden State*, 342. Goats are conspicuously missing from many early nineteenth century assemblages, and appear to only be consumed during periods of scare food supply. In the early 1840s, five or six goats were placed, and left alone, on Yerba Buena Island in San Francisco Bay. By 1849 hundreds of goats lived on the island, causing the creation of the colloquial term 'Goat Island.' Goats from the island were only taken when meat was scarce and were "considered acceptable," during the Gold Rush. Davis, *Seventy-Five Years in California*, 184. Also during the

Gold Rush, pigs were imported for food in large quantities to feed the bolstering population of San Francisco. Allen Pastron and Eugene Hattori, eds., *The Hoff Store Site and Golf Rush Merchandise from San Francisco, California* (Germantown: Society for Historical Archaeology, 1990), 82–94; "Advertisements," *Weekly Alta California*, October 25, 1849.

5. Auguste Duhaut-Cilly, *A Voyage to California and the Sandwich Islands, and Around the World in the Years 1826–1829* (Berkeley: University of California Press, 1999), 136.
6. Steven W. Hackel, Children of the Coyote, Missionaries of Saint Francis: Indian-Spanish Relations in Colonial California, 1769–1850 (Chapel Hill: University of North Carolina Press, 2005).
7. Stine, "Hunting and the Faunal Landscape," 1–139.
8. Dale McCullough, *The Tule Elk: Its History, Behavior, and Ecology* (Berkeley: University of California Press, 1969), 9.
9. David G. Ainley and T. James Lewis, "The History of the Farallon Island Marine Bird Populations, 1854–1972," *The Condor* 76 (1974): 432–446; California Coastal Commission, *California Coastal Resource Guide* (San Francisco: State of California, 1987), 158–159; Robin W. Doughty, "San Francisco's Nineteenth-Century Egg Basket: The Farallons," *Geographical Review* 61 (1971): 554–572; Charles S. Greene, "Los Farallones De Los Frayles," *The Overland Monthly* XX (1892): 226–246.
10. Mitchell Postel, "A Lost Resource Shellfish in San Francisco Bay," *California History* 67 (1988): 26–41.
11. The distribution of these oysters extends to New Zealand, which is why Mexican Oysters may be misleading and is placed in quotation marks.
12. Postel, *A Lost Resource*, 28; Fredric Nichols, James Cloern, Samuel Luoma, and David Peterson, "The Modification of an Estuary," *Science* 231 (1986): 567–573.
13. Michael Josselyn, *The Ecology of San Francisco Bay Tidal Marshes: A Community Profile* (Washington D.C.: U.S. Fish and Wildlife Service, 1983), 53. John Skinner, *An Historical Review of the Fish and Wildlife Resources of the San Francisco Bay Area* (Sacramento: Resources Agency of California Department of Fish and Game, 1962), 109.
14. Ibid.
15. Delgado, *To California By Sea: A Maritime History of the California Gold Rush* (Columbia: University of South Carolina Press, 1996), 29; Oscar Lewis, *Sea Routes to the Gold Fields* (New York: Alfred A. Knopf, 1949), 78; J.S. Holliday, *The World Rushed In: The California Gold Rush Experience* (New York: Simon and Schuster, 1981), 414–415; John E. Pomfret, ed., *Journal of a Voyage from New York to Panama via Rio Valparaiso Callao & Peyta, Onboard the US Mail Steam Ship California Commanded by Cleveland Forbes California Gold Rush Voyages, 1848–1849* (San Marino: The Huntington Library, 1954), 155. As these authors describe and reflect, almost all diary entries from passengers on vessels during this time indicate that food quality was extremely poor. Additionally, although this food was shocking for the Gold Rush passengers, it was standard fare for maritime vessels during this era. In one diary account by John Stone he writes, "they were all served yesterday with pea soup, of which every pea in it had contained a black bug, and bugs and all had been boiled up together. Historian Oscar Lewis quotes a passenger on board the Canton, "[w]e receive half a pint of the stinking, rusty brackish fluid twice a day and each man disposes of it as he sees fit." Albert G. Osbun writes on his 1849 voyage to San Francisco onboard the steamer Oregon writes, "[o]ld strong salted meat & sea biscuit with black bitter coffee & no sugar is the general bill of fare." John Haskell Kemble, ed., The Diary of Albert G. Osbun 1849–1851 To California and the South Seas (San Marino: The Huntington Library, 1966), 21.
16. Along with the numerous primary historical sources documenting this, Charles Schultz provides an excellence summary of food and drink on maritime vessels headed to San Francisco during 1849. Charles R. Schultz, *Forty-Niners' Round the Horn* (Columbia: University of South Carolina Press, 1999), 71–99.
17. Quoted by historian J.S. Holliday in *The World Rushed In*, 414–415.
18. Chambers, *A Sheltered Life*, 94–95; Kenneth Carpenter, *The History of Scurvy and Vitamin C* (Cambridge: Cambridge University Press, 1986), 1–43.
19. Hopkins, "A Business Expedition," 94. Hopkins, attempting to import sweet potatoes and onions from South America to San Francisco in early 1850 describes the difficulty in keeping produce fresh. Rotten potatoes had to be tossed into the sea constantly, and while attempting to pickle onions, "[t]he cargo steamed like compost. It bred millions of white maggots, which swarmed all of the ship, berths, lockers, cabin and all."
20. Pomfret, *Journal of a Voyage*, 17; Walter Van Tilburg Clark, ed., *The Young Argonaut Book No. 1–2 Mar 18, 1849–July 8, 1851 The Journals of Alfred Doten 1849–1903 Vol. 1* (Reno: University of Nevada Press, 1973): 4, 5, 21. Doten writes of shooting sea birds and harpooning porpoises while journeying to San Francisco around Cape Horn in 1849. During the voyage of the *Pacific* to San Francisco in 1849, Jacob Stillman wrote of a whale hunt that almost capsized the vessel. After hooking a whale, "[t]he rest of [the whales] attracted by the struggle of their suffering comrade all kept around him, and soon we found ourselves in the middle of the whole school, rising all about us and threatening to capsize us," eventually after many hours of struggle they were forced to abandon the hunt and settled for two killed albatrosses instead. Salvador A. Ramirez, *From New York to San Francisco Via Cape Horn in 1849: The Gold Rush Voyage of the ship "Pacific" An Eyewitness Account* (Carlsbad, CA: The Tentacled Press, 1985), 118–119. Garrett W. Low, traveling to San Francisco onboard the ship *Washington*

Irving in 1851 wrote on March 31 that a penguin was caught. Kenneth Hanley, ed., *From the Journal of Garrett W. Low: Gold Rush by Sea* (Philadelphia: University of Pennsylvania Press, 1941): 121, 139. Low also writes, after switching vessels in Valparaiso and now onboard the *John Bertram*, that on April 25, 1851, a fourteen and one-half pound "bonita," was caught. Richard Hunt Hale wrote of enjoying, "a dainty supper of fried dolphin," on the brig *General Worth* on December 21, 1849 during his voyage to San Francisco. Carolyn Hale Russ, *The Log of a Forty-Niner* (Boston: Goodman Brothers, Inc., 1923), 21.

21. Chambers, *A Sheltered Life*, 93–115. As documented by Chambers, when the sealing and whaling fleets arrived in the Pacific during the late eighteenth century and discovered the Galapagos Islands tortoise populations, they quickly realized and exploited nutritional benefits of capturing and storing tortoises for food during long sea voyages.
22. John Behler and F. Wayne King, *The Audubon Society Field Guide to North American Reptiles and Amphibians* (New York: Alfred A. Knopf, 1979), 478; Agnese Mancini and Volker Koch, "Sea Turtle Consumption and Black Market Trade in Baja California Sur, Mexico," *Endangered Species Research* 7 (2009): 1–10; Kyle Houtan, John Kittinger, Amanda Lawrence, Chad Yoshinaga, V. Ray Born, and Adam Fox, "Hawksbill Sea Turtles in the Northwestern Hawaiian Islands," *Chelonian Conservation and Biology* 11 (2012): 117–121.
23. "Endangered Sea Turtles Spotted Off SF Coast," *CBS News San Francisco*, last modified Aug. 7 2012, online at http://sanfrancisco.cbslocal.com/2012/08/07/endangered-sea-turtles-spotted-off-sf-coast/, accessed Oct. 5, 2013; "Boaters urged to slow after rare sea turtle spotted in Bay," *KTVU.com*, last modified Oct. 27, 2012, online at http://www.ktvu.com/news/news/local/boaters-urged-slow-after-rare-sea-turtle-spotted-b/, accessed Oct. 5, 2013.
24. "City Intelligence," *Daily Alta California*, February 12, 1851.
25. "Terrapin," *Daily Alta California*, September 29, 1864.
26. Ibid.
27. Samuel C. Upham, *Voyage to California Via Cape Horn Together With Scenes in El Dorado, In the Years 1849–'50* (Philadelphia: Self-Published, 1878), 206.
28. Quoted by Nichols, "Biology and Conservation," 143.
29. Smith, ed., *The Journals*, 56.
30. Charles Ellis, "Journal of a voyage," 21. Many argonauts wrote of sea turtle sightings during their voyages to San Francisco. Charles Williams also wrote, onboard the *Pacific*, of seeing large turtles near the vessel while journeying up the South American coast to the harbor of Callao. Ramirez, *From New York*, 126.
31. Ibid. In 1848, Cleveland Forbes, onboard the steamer *California*, provided a passing account of a sea turtle spotting when he wrote, "saw a very large Loggerhead Turtle on the surface of the water asleep and a Bird was perched on his back taking his rest as unconcerned as possible." Pomfret, *Journal of a Voyage*, 206. William B. Osborn also wrote of capturing Green turtles off the coast of Panama in 1844. William B. Osborn, "Narrative of a Visit of Six Weeks to San Francisco in 1844," manuscript on file at the Bancroft Library, Berkeley, California (1877).
32. George Denham, "Journal of George Denham in Schooner *Rialto* on a Voyage from Holmes Hole to California," manuscript on file at G.W. Blunt Library, Mystic Seaport Museum, Inc. (1849): 14, accessed October 17, 2013 http://library.mysticseaport.org
33. Ibid.
34. Clark, *The Young Argonaut*, 19.
35. Ibid.
36. Kemble, *To California*, 161–161. Osbun travelled throughout the Pacific as a merchant after being unsuccessful in the gold fields. In a conversation with the captain of his merchant brig *Rodolph*, he wrote on August 29, 1850 that, "[o]ur Green Turtle is still alive, & about as active as when we first took him. I am told he will live so for several months. He neither eats or drinks. I am also told by Capt. Pease that a species of land Tarrapin is found on the Gallipagos Islands, that will weigh 600 pounds, that it is as much as 6 men can do to carry one of them suspended on poles. They are most excellent for eating; whalers eat large quantities of them. He says he has taken them there & kept them 8 months or so on his vessel & that they were then as active & apparently as healthy as when first taken aboard . . . He says whalers have informed him that they have had them aboard upwards of a year, without eating or drinking & still active & healthy." Chambers, *A Sheltered Life*.
37. David Caldwell, "The Sea Turtle Fishery of Baja California, Mexico," *California Department of Fish and Game* (1963), 145.
38. "Water Carrying Tortoise," *Pacific Rural Press*, June 11, 1881; Chambers, *A Sheltered Life*, 96.
39. "By the Light of the Moon: The Sport of Turtle Turning," *San Francisco Call*, December 30, 1894, 13; Chambers, *A Sheltered Life*, 95.
40. Lewis, *Sea Routes to the Gold Fields*, 123.
41. Eventually, capturing tortoises became so popular that a noticeable decline was seen throughout the Galapagos Islands and terrapin teams were required to travel further and further inland to capture tortoises and return them to their vessels. Chambers, *A Sheltered Life*, 95–96. Female tortoises generally stayed closer to shore, which resulted in large losses of females during the peak of tortoise exploitation. Incidentally, this also

negatively affected the rebounding of the tortoise population because of the loss of considerable numbers of reproducing females. In 1925, Charles Townsend attempted to approximate the total number tortoises captured between 1831–1868 using ships logs. He estimated that a total of 10,373 tortoises were captured during this period, with 5,432 captured during the 1840s and 1850s alone. Charles Townsend, "The Galapagos Tortoises in Their Relation to the Whaling Industry," *Zoologica* IV (1925): 55–135. This number represents only a minimum estimate considering that many ship logs would record stopping in the Galapagos Islands, but not the total number of tortoises taken. From whaling ships alone, Townsend estimates that around 100,000 tortoises were taken from the islands between 1790 and 1830.

42. Lewis, *Sea Routes to the Gold Fields*, 123. In Lewis's historical summary of this period, he writes that tortoise meat was, "tender and delicately flavored meat." Chambers research into Galapagos tortoise consumption also details the positively described taste of tortoise meat. Chambers, *A Sheltered Life*, 93–102.
43. Joseph Kendall, *A Landsman's Voyage to California* (San Francisco, 1935), 112–116. Kendall writes that the beaches of the Galapagos, and specifically Catham Island (now San Cristobal) where they disembarked, were littered with shells and bones or many deceased animals. As a gift for his daughters, he collected a bag of Galapagos shells to bring with him to San Francisco.
44. Ibid.
45. Ibid. Currency converted into contemporary U.S. dollars using: http://futureboy.us/fsp/dollar.fsp. All future currency examples will be converted in this same standard.
46. "Reptiles," *Daily Alta California*, July 25, 1858.
47. Lewis, *Sea Routes to the Gold Fields*, 157–158.
48. "By the Light of the Moon: The Sport of Turtle Turning," *San Francisco Call*, December 20, 1894.
49. Ibid.
50. Charles H. Stevenson, "Report on the Coast Fisheries of Texas" in *United States Commission of Fish and Fisheries Part XVII* (1889 to 1891): 373–420. Stevenson writes that during the late-nineteenth century in the Gulf of Mexico, and along the Texas coast, Green turtles were taken whenever encountered. Occasionally they would be caught as by-products in bay seines, but once captured they sold for 100.72 – 377.71 dollars per dozen. Generally young Green turtles were captured in this process; this is unsurprising given that the Gulf Coast of Texas is a nesting ground for Green turtles. Adult Green turtles are recorded as being captured at Aransas Bay, Texas. In 1869, Stevenson writes that beef-packers started canning Green turtle in Aransas Bay. A factory was later established in Fulton, Texas and Green turtle canning continued there throughout the nineteenth century. Nets were used to capture the turtles while feeding, providing a more effective method of capture than flipping turtles on the beach, and then they were kept in "crawls," which are under water pens meant to keep turtles alive and fresh for many months prior to canning. Interestingly, Stevenson writes that by 1889–1891 Green turtles were declining in abundance along the Texas coast because of the canning activities.
51. Clark, *The Young Argonaut*, 45. Historical accounts also indicate that sea turtles were imported from the Sandwich Islands (Hawaiian Islands) during this time. Houtan *et al.*, "Hawksbill Sea Turtles," 117–121.
52. Ibid.
53. John Walton Caughey, *Gold is the Cornerstone* (Berkeley: University of California Press, 1948), 213. William M'Collum, *California As I Saw It* (Santa Barbara: Talisman Press, 1960), 162. M'Collum quotes Lyman Bradley in 1850 when he writes that along with imports of Oregon and Chilean flour, and salted fish and meat from the United States, "[v]essels touching at the Gallipago Islands ("Terrapin Islands") carry [from] there fine terrapins." Robert Margo, *Wages and Labor Markets in the United States, 1820–1860* (Chicago: University of Chicago Press, 2000), 124. Margo makes a brief mention of goods imported into San Francisco during the Gold Rush, including Galapagos Islands turtle meat.
54. By 1848, mentions of "green turtle" being imported to San Francisco appear in early tariff notifications in Alta California newspapers. "Tariff Bill," *The California Star*, November 25, 1848.
55. Rand Richards, *Mud Blood and Gold: San Francisco in 1849* (San Francisco: Heritage House, 2009), 48. The log of the brig *Vesta*, bound for California during the spring of 1849, lists that over the course of two days, six "turpin," were captured for the journey to San Francisco. Townsend, *The Galapagos Tortoises*, 55–135.
56. John S. Hittell, *The Commerce and Industries of the Pacific Coast of America* (San Francisco: A.L. Bancroft & Company, 1882), 367.
57. "Assorted Merchandise," *Daily Alta California*, July 1, 1850.
58. "Epicure, Attention!!" *Daily Alta California*, February 15, 1850.
59. "Green Turtle," *Daily Alta California*, March 14 and 15, 1850. All italicizes within this quote and all subsequent quotes reflect the original author's emphasis.
60. Ibid.
61. Kemble, *To California*, 170.
62. "Ho! Ye Epicures!" *Daily Alta California*, November 13, 1850; "Ho! Ye Epicures!" *Daily Alta California*, November 14, 1850; "Ho! Ye Epicures!" *Daily Alta California*, November 15, 1850.
63. "Turtle Soup," *Daily Alta California*, January 21, 1851; "Turtle Soup," *Daily Alta California*, January 22, 1851.
64. "Importations," *Daily Alta California*, February 4, 1851.

65. *Daily Alta California*, February 9, 1851.
66. "Sporting Extraordinary," *Daily Alta California*, July 28, 1851.
67. "Turtles," *Daily Alta California*, July 14, 1851.
68. Ibid.
69. Ibid.
70. "Perseverance," *Daily Alta California*, July 20, 1851.
71. "Shipping Intelligence," *Daily Alta California*, October 5, 1851. "Turtle-Turtle," *Daily Alta California*, October, 8, 1851.
72. "Green Turtle Soup Will Be Served," *Daily Alta California*, October 20, 1853; "Terrapin Soup," *Daily Alta California*, May 26, 1855. Considering that modern mean egg counts for sea turtle nests range among species from fifty to two hundred eggs, this must have been a large-sized female. Behler and King, *The Audubon Society*, 475–478.
73. R. E. Raimond, "Green Turtle!" *Sacramento Daily Union*, October 17, 1857.
74. "Water Carrying Tortoise," *Pacific Rural Press*, June 11, 1881.
75. Hopkins, "A Business Expedition," 88–96.
76. Ibid.
77. "Living in San Francisco," *Daily Alta California*, February 13, 1851. The original newspaper article is not clear as to the species of 'turtle' described here. Given the contextual clues (i.e., legs), it is hypothesized that this article describes Galapagos tortoises.
78. "A Cargo of Terrapins," *Sacramento Transcript*, March 15, 1851.
79. "Shipping Intelligence," *Daily Alta California*, May 6, 1851; "Terrapin," *Daily Alta California*, June 30, 1851.
80. "San Francisco Marine List," *California Farmer and Journal of Useful Sciences*, May 17, 1855; "More Terrapins," *Sacramento Daily Union*, May 15, 1855.
81. Depending on the size of the hold, this could vary, but 580 terrapin is substantial.
82. Epicurus, "Terrapin-Terrapin-Terrapin Soup," *Daily Alta California*, March 26, 1854.
83. Hopkins, "A Business Expedition," 91.
84. "Mammoth Terrapin," *Sacramento Daily Union*, May 18, 1855.
85. "Terrapin on a Ranch," *Daily Alta California*, May 26, 1855.
86. Ibid.
87. "Auction Sales," *Sacramento Transcript*, July 2, 1850. It is important to note that native to California is the Desert tortoise (*Gopherus agassizii*) and the Pacific Pond turtle (*Actinemys marmorata*). During the Gold Rush it appears that these reptiles were not utilized or consumed in the Bay Area, especially given the native habitat of Desert tortoises in southeastern California, far from the Bay Area. Or, if they were, these records are much smaller, and virtually absent, in comparison to the robust history of sea turtle and Galapagos tortoise consumption.
88. "Turtle Soup," *Sacramento Transcript*, January 16, 1851.
89. "Turtle Soup," *Sacramento Transcript*, February 5, 1851.
90. "The Woodcock," *Sacramento Daily Union*, May 16, 1851.
91. "Importations," *Sacramento Transcript*, February 6, 1851.
92. *Sacramento Daily Union*, November 5, 1853.
93. "Turtle Soup," *Sacramento Daily Union*, November 7, 1853.
94. Ibid. Throughout 1854, advertisements for Green sea turtle meals at the Orleans Hotel in Sacramento can be found. *Sacramento Daily Union*, March 21, 1854.
95. "The Terrapin Business," *Daily Alta California*, May 26, 1855. "Terrapin Boarding House," *Sacramento Daily Union*, May 26, 1855.
96. Ibid.
97. "White Mansion," *Marysville Daily Herald*, May 31, 1851.
98. "Frank's Restaurant," *Marysville Daily Herald*, December 25, 1855; *Marysville Herald*, December 25, 1857.
99. A Spanish delicacy cooked in a clay pot, also known as 'Spanish stew.'
100. Ibid.
101. "Freezing A Turtle," *Marysville Daily Herald*, December 11, 1855. As a note of explanation, the original author's question mark after "quadruped" possibly stems from the confusion over what to call the flippers of a sea turtle.
102. Chambers, *A Sheltered Life*, 93–104.
103. Chambers, *A Sheltered Life*, 104.
104. "Gallipagos Islands," *Daily Alta California*, February 16, 1855.
105. "The Terrapin Business," *Daily Alta California*, May 26, 1855.
106. Hopkins, "A Business Expedition," 92.
107. Howard Gardiner and Dale L. Morgan, ed., *In Pursuit of the Golden Dream: Reminiscences of San Francisco and the Northern and Southern Mines, 1849–1857* (Stoughton, MA: Western Hemisphere, 1970), 271.
108. Ibid.

109. Ibid.
110. "Peddles the Same Green Turtle to Many Restaurants," *San Francisco Call*, October 11, 1896.
111. Ibid.
112. Albert Gunther, "Description of the Living and Extinct Races of the Gigantic Land-Tortoises. Parts I. & II. Introduction, and the Tortoises of the Galapagos Islands," *Philosophical Transactions of the Royal Society of London* 165 (1875): 251–284; John Van Denburgh, "Expedition of the California Academy of Sciences to the Galapagos Islands, 1905–1906: The Gigantic Land Tortoises of the Galapagos Archipelago," *Proceedings of the California Academy of Sciences* II (1914): 203–374; Chambers, *A Sheltered Life*, 220. The historic and current population of Galapagos tortoises drifted to the Galapagos Islands chain from mainland South America approximately two to three million years ago as described by Adalgisa Caccone, Gabriele Gentile, James Gibbs, Thomas Fritts, Howard Snell, Jessica Betts, and Jeffrey Powell, "Phylogeography and History of the Giant Galapagos Tortoise," *Evolution* 56 (2002): 2052–2066. Once on the main islands of the archipelago, additional drifting events eventually led to the evolution of several subspecies inhabiting smaller and more recent islands in the Galapagos chain. The earliest accounts of distinct subspecies on separate islands generally was based upon the shape and size of tortoise carapace, see Gunther, "Description of the Living and Extinct Races of the Gigantic Land-Tortoises." It was not until an expedition to the Galapagos Islands in 1905–1906 that the California Academy of Sciences identified and recorded the distribution of all tortoise subspecies throughout the Galapagos Islands, see Van Denburgh 1914 and Joseph Slevin, "The Galapagos Islands A History of Their Exploration," *Occasional Papers No. XXV of the California Academy of Sciences* (1959): 1–140. Samuel Garman, "The Galapagos Tortoises," *Memoirs of the Museum of Comparative Zoology at Harvard College* XXX (1917): 1–290.
113. "Monster Turtles from Galapagos Islands," *Los Angeles Herald*, May 19, 1901.
114. "Elephant Tortoises Brought From the Galapagos Group," *San Francisco Call*, May 8, 1901.
115. Chambers, *A Sheltered Life*, 144–172; "Rothschilds Expedition on the Galapagos Islands," *Los Angeles Herald*, April 13, 1902.
116. Chambers, *A Sheltered Life*, 218–224.
117. Ibid.; "Rare Finds made by California Scientists in the Galapagos Islands," *San Francisco Call*, December 23, 1906; "Where Turtles Grow to Enormous Sizes," *San Francisco Call*, July 24, 1909; John Van Denburgh, "Expedition of the California Academy," 203–374; Joseph Slevin, "The Galapagos Islands," 1–140.
118. Allen G. Pastron, Richard D. Ambro and Andrew Gottsfield, "Archaeological Testing Plan, 717 Battery Street Project," prepared for MXB Battery LP, San Francisco (2010). On file at the San Francisco Planning Department, San Francisco, California; Allen G. Pastron and Richard D. Ambro, "Results of the Archaeological Testing Program at the 717 Battery Street Project, City and County of San Francisco, California," prepared for Gardner Combs, Northwest Realty Advisors (2010). On file at the San Francisco Planning Department, San Francisco, California; Allen G. Pastron and Kale Bruner, "Final Archaeological Resources Report for the 717 Battery Street Project, City and County of San Francisco, California" (2014). Report from Archeo-Tec, Oakland, to Northwest Realty Advisors, San Francisco, California.
119. The humeri specimens were not able to be refitted due to fragmentation but it is believed that they are from the same humerus since they were excavated from the same context and share the same morphological characteristics. The archaeofaunal manuscript is currently in preparation for the *International Journal of Historical Archaeology*.