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Far from shore: archaeology of seafood canneries and offshore commercial fishing

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The nineteenth and twentieth centuries were a transformative time for ocean ecosystems, marked by overfishing, habitat degradation, and a series of other anthropogenic perturbations. In the northeast Pacific, the creation of canneries from Alaska to Mexico drove commercial fisheries for tuna, salmon, sardines, and other fishes by opening new markets around the world and fishing for or importing fishes from equally distant places. Here, we synthesize archaeological investigations of nineteenth and twentieth century offshore capitalist fishing industries in the northeast Pacific, using the region's coastal canneries to illustrate emerging opportunities in environmental archaeology. Archaeology has an important role to play in research on the historical ecology of the origins of offshore capitalist commercial fishing and connections to the global acceleration of the mid twentieth century, especially through interdisciplinary research that integrates archaeology, historical records, and archaeological/historical museum specimens.

KEYWORDS

California, great acceleration, Northwest Coast, Pacific Coast, Salmon, Tuna, zooarchaeology

1 Introduction

During the nineteenth and twentieth centuries, human influence on ocean ecosystems rapidly accelerated and expanded to distant realms of the open ocean (Holm, 2012; Jackson et al., 2001; Smith, 2012). The increase in global fishing during the early to mid twentieth century was spurred in part by the growth of canneries and expanding global markets (Love, 2006; Smith, 2012). The scale and magnitude of human fishing effort expanded again following World War II, as fishing fleets were increasingly industrialized and fisheries moved even further offshore (Finley, 2016; Holm, 2012; Pitcher and Lam, 2015). Holm (2012) called the fisheries of the second half of the twentieth century a “great acceleration,” fueled by the use of former wartime ships and emerging technology following the end of World War II. These innovations and shifting market dynamics ultimately led to the collapse of several once-productive fisheries. The intensity of twentieth century industrial fishing, in turn, spurred the creation of global regulatory and management frameworks (Finley, 2016; Juan-Jordá et al., 2022). The quick and dramatic increase in capitalist commercial fishing and subsequent industrialization also had impacts on land, including

infrastructure that still remains in use or surrounds us today (Finley, 2016; Newell, 1987; Ross, 2010).

Despite its global significance and links to the Anthropocene debate (Braje, 2015; Steffen et al., 2015), few studies have sought to explore the nineteenth to twentieth century great acceleration and expansion of capitalist commercial fisheries from an archaeological perspective. In this mini review, we highlight the research potential of environmental archaeology to evaluate the evolution of commercial fishing and the causes and consequences of the great acceleration from the nineteenth century to the present. Our focus is on the northeast Pacific from Alaska to Baja California, particularly the rise of canneries focused on finfishes like salmon (*Oncorhynchus* spp.), tuna (*Thunnus* spp. and *Katsuwonus pelamis*), and Pacific sardine (*Sardinops sagax*), but the implications of our work apply to other canneries (fruits, vegetables, shellfish, etc.), are global in scope, and can be readily applied to other regions (e.g., Jeffery et al., 2023; Newell, 1987, 1991; Ross, 2010, 2011, 2013). We start by reviewing research on the archaeology of commercial fishing in the northeast Pacific and its emphasis on transnationalism, diaspora, industry, and infrastructure. We use this synthesis as a springboard to highlight emerging historical ecological research and the prospect for environmental archaeology focused on the great acceleration and the future sustainability of ocean ecosystems.

2 Commercial fishing and archaeology

Fishing has a deep history along the North American Pacific Coast as Indigenous peoples engaged in fishing, trade, and exchange, for over 13,000 years (Braje et al., 2021). Capitalist commercial fisheries commenced in the area following European colonization and the forced displacement of Indigenous peoples and rapidly accelerated in the nineteenth and twentieth centuries (Love, 2006; Smith, 2012). Early capitalist commercial fisheries were integrally linked to the canning industry, with the first cannery on the West Coast of the United States established in 1864 near Sacramento, California, focused on chinook salmon from the Sacramento River (Love, 2006). A series of canneries based on salmon, sardines, tuna, abalone, and other marine foods appeared rapidly in the late nineteenth and early twentieth centuries across the northeast Pacific from Alaska to Baja California (and around the world). After World War II, commercial fishing became increasingly industrialized with scientific research growing alongside these fisheries and signs of declining stock yields (Finley, 2016).

Despite the techniques and approach for canning emerging in Europe at the close of the eighteenth and onset of nineteenth century, the canning industry was in many ways a product of the Americas, making the northeastern Pacific an excellent region for investigating the intersection of canneries, archaeology, and ecology (Morris, 1934). Archaeologists have long been interested in the archaeology of canneries, associated industrialization, and the people working at canneries or living nearby. In a study focused on the maritime whaling industry with implications for all industrial fishing, Gibbs (2022) notes that an archaeological approach to the maritime industry goes well beyond what happened in the water as it covers the structures, landscapes, vessels, communities, objects,

and historical records such as catch data. Below we highlight progress on cannery research, especially those focused on finfishes, on the North American Pacific Coast and place this in the context of archaeological research at other seafood canneries around the world. Our mini review draws on key published sources and those readily available in the cultural resource management literature.

2.1 Research in the Pacific Northwest

Working in British Columbia and integrating a variety of historical documents, including fire insurance records, as well as archaeological surveys, Newell (1987, 1991, 1996) documented the infrastructure and locations of numerous salmon canneries. By the end of the nineteenth century, the Pacific Northwest hosted the largest salmon industry in the world (Newell, 1987). While a few of these canneries continue as packing plants today, most are obsolete or were destroyed over time (Newell, 1987, 1991). Photo reconnaissance (stereoscopic) of historical cannery sites and review of plans and maps documented the unique coastal landforms where canneries were placed, including areas where fluctuating tidal conditions pose challenges for conducting industrial archaeological research (Newell, 1987). This survey work paved the way for understanding the relation of structures to environmental features, the ethnic and gender composition of the workforce, company housing conditions, and the lives of a culturally and linguistically mixed and often segregated workforce of fishers and cannery workers (Newell, 1991). At the Warrendale cannery in Oregon, excavation and surface collection also explored the nature of acculturation and the maintenance of Chinese identity in the late nineteenth and early twentieth centuries, providing a complement to Newell's research further to the south (Fagan, 1993).

Workforce segregation was later tested by Johnson (2019) in an archaeological study of the Shepherd Point Cannery in Alaska that operated from 1917-1945 and reportedly mostly employed Chinese workers. Investigation of two different mess halls, including historical research and archaeological mapping, excavation, and artifact analysis could not discern any segregation of the workforce from analysis of 252 artifacts, but did determine that Japanese ceramics were also present at this cannery.

Another phase of cannery research in the Pacific Northwest also focused on Japanese and Chinese transnational, diasporic communities (Ross, 2010, 2011, 2013, 2021). At British Columbia's Ewen cannery, Ross (2010, 2011, 2013) presented excavated data and artifact analyses that helped document the everyday lives of multiethnic communities working at the canneries. This includes the nature of social drinking that indicated traditional Asian beverages were consumed alongside new western drinks, which suggests the maintenance of distinct ethnic identities and movement into a new cultural sphere (Ross, 2010). Investigating the broader nature of the new transnational lives of Japanese and Chinese workers and families at Ewen Cannery, Ross (2011) noted mixed patterns of consumption with the Japanese largely eating a mix of traditional and westernized meals, while Chinese workers largely ate only traditional meals. Only small amounts of faunal remains are reported at any of these sites, but include pig and domestic mammal remains, shellfish, and bird and fish bones (Ross, 2010, 2011). These patterns further highlight the

trends and transitions of Asian diasporic communities in early British Columbia, a focal point of cannery archaeology in the Pacific Northwest to date (see Ross, 2013, 2015; Wilson, 2024; Ross, 2021 for additional discussion).

2.2 Research in Alta and Baja California

In California, archaeologists have explored similar themes, with these studies occurring primarily as part of state or federal cultural resource compliance projects or Masters' theses. At Monterey's famed Cannery Row, for instance, [Architectural Resources Group \(2001\)](#) documented the multiethnic and scientific community at the famed site of Steinbeck's *Cannery Row*, including partially intact cannery buildings and domestic structures. While no excavation or detailed analyses were reported, there is much to build on for future work, including adding an archaeological component to the many historical syntheses of Cannery Row ([Hemp, 2022](#); [Thomas, 2006](#)).

In a large Cultural Resource Management (CRM) project, [Vargas et al. \(2016\)](#) evaluated five buildings associated with Terminal Island canneries, including four Star Kist buildings and a distribution station used between 1950 and 1990 ([Figure 1](#)). Terminal Island was an important focus of commercial tuna fishing in the San Pedro Harbor area of Los Angeles County and home to a vibrant Japanese immigrant community ([Figure 1](#); [Hirahara and Knatz, 2024](#)). Canneries began at San Pedro in 1893 with the California Fish Company (Cal Fish), primarily focused on mackerel and sardine ([Love, 2006](#); [Nicolay, 2017](#)). Early experiments in canning tuna were unsuccessful as the fish did not sell at market, but interest in tuna exploded during World War I, such that in the 1920s 11 canneries operated at the Port, with a large fishing village and 6,600 workers ([Love, 2006](#); [Nicolay, 2017](#); [Rick et al., 2025](#)). By the end of the 1920s, 75% of all tuna canned in California came from Terminal Island ([Nicolay, 2017](#)). A series of trenches and features were excavated on Terminal Island, documenting Japanese fishing residents, numerous domestic and other artifacts, and large concentrations of fish bones and scales and other animal bones, but none of the fish bone has been identified to species ([Vargas et al., 2016](#)).

[Nicolay \(2017\)](#) conducted additional analysis of the [Vargas et al. \(2016\)](#) excavated data, exploring transnationalism and diaspora issues highlighted by [Ross \(2010, 2011\)](#). Focusing on the consumption patterns of the pre-World War II era Japanese American community at Terminal Island, [Nicolay \(2017\)](#) documented this important community from its emergence as one composed largely of males to a vibrant community of families, restaurants, shops, and houses to its decline from the forced removal of people of Japanese descent to internment camps and destruction of much of the property during World War II ([Hirahara and Knatz, 2024](#)). Investigation of some 30 archaeological features, aerial photos and maps, and 3,023 artifacts, included household debris, construction material, and food waste like bone and shell. The shellfish assemblage was dominated by black and red abalone, but vertebrates were generally not identified further. Although there is a mix of American and traditional foods, it remains unclear if any fishes were taken from the cannery itself ([Nicolay, 2017](#)).

Additional CRM research at San Diego's Barrio Logan, another important area of early twentieth century tuna canneries and fishing, focused on analysis of maps and other documents, especially those relating to housing for Japanese employees located near cannery buildings ([Smith et al., 2011](#)). Excavation at archaeological site CA-SDI-20232 in the restaurant depot at the Fish Camp Kushimoto no Kyampu camp, an area adjacent to and behind the Van Camp (Premier) cannery, provides additional insights into the lives of people working at the canneries ([Van Wormer and Walter, 2012](#)). For example, several Japanese American families lived in this area in the mid-1920s and household, kitchen, garment, consumer, and other artifacts highlight the emergence of a unique Japanese American identity ([Van Wormer and Walter, 2012](#)). Faunal remains include undifferentiated fish, mammal, and bird bone, including fowl and domesticated mammals (e.g., sheep, cattle, pig), but the fish remains were not identified to more specific taxonomic categories.

Also in the San Diego area, archaeological and historical research at San Diego State University uncovered a 1936 historical mural with images of the tuna industry in the region from fishing activities to dock workers to the fish processing and canning lines ([Figure 2](#); [Farnsworth, 2025](#); [Mallios, 2023](#); [Mallios and Purvis, 2006](#)). These two 1930s era murals depict San Diego's cannery and tuna fishing industries and highlight other important forms of research into the nature of twentieth century fishing, transnational communities, and global industries ([Farnsworth, 2025](#)). These murals, alongside archaeological excavations, and historical documents reveal the rich network of data available to understand the archaeology of capitalist commercial fisheries and their broader social, economic, and ecological implications ([Quinney and Cesarini, 2009](#)).

Similar to the CRM research in Alta California that highlights the potential of archaeological research on canneries, [Busto-Ibarra \(2015, p. 102\)](#) provides photos of a 1930s era tuna fish packing company near Cabo San Lucas, Mexico (Campana de Productos marinos de Cabo San Lucas), which operated into the 1970s. One of the cannery structures still exists and, along with other outposts for processing turtles and sharks, may present a prime area for future research like the projects on Terminal Island and Barrio Logan.

2.3 Research beyond the northeastern Pacific Coast

Elsewhere in the Pacific, studies in Australia and Micronesia highlight the value of an archaeology of early commercial fishing, canneries, and linkages to the present day ([Bowen, 2004](#); [Jeffery et al., 2023](#); [Myles, 2022](#)). In New South Wales, Australia, for example, historical archaeological research explored canneries and associated infrastructure like ice works, drying racks, tree scars, and salmon pens as part of the regional landscape of early commercial fishing ([Bowen, 2004](#)). Similarly, on Kangaroo Island, South Australia, the spatial distribution of buildings and objects at a late nineteenth century fish cannery, spurred partly by an influx of recent Chinese immigrants, were explored using historical documents, photogrammetry, features, artifacts, and shellfish from



FIGURE 1

Two views of the Terminal Island Star Kist Tuna plant. Top. In 1963 (courtesy of the Los Angeles Maritime Museum) while the cannery was in its heyday of operation. Bottom. The abandoned facility in 2025 showing the same view and an area planned for future development and reinvestment. Sites like these are a key opportunity for industrial archaeological research on canneries.

excavations and historical sources (Myles, 2022). Jeffery et al. (2023) provide insights into commercial fisheries by emphasizing underwater archaeological heritage in Micronesia related to the tuna fishery that is still in operation today and a source of economic development and pride in the region. This work highlights the rise of the tuna fishery and examines the repurposing of military vessels for tuna fishing as a little-studied yet significant aspect of maritime cultural heritage deserving further research (Jeffery et al., 2023). Collectively, these studies illustrate the important archaeological work conducted on the emergence of commercial fishing in the Pacific.

On the North American Atlantic Coast, archaeological research at turtle kraals associated with a cannery in Key West, Florida focused on the sea turtle industry and provides an important example of historical ecology associated with commercial fishing of the cannery era (Guiry et al., 2024; Malcolm, 2013). This Key West research traces the intersections between Caymanian turtle, traditional ecological knowledge, and the twentieth century turtle hunting industry, pairing these data with stable isotope analysis of turtle bones and providing insights for conservation efforts of Caribbean sea turtles (Guiry et al., 2024). To the north in the Chesapeake Bay region, Chidester (2004) provides a synthesis of



FIGURE 2

(A) Section of the mural "San Diego's Industry" by George Sorenson at San Diego State University, which illustrates aspects of the tuna industry including processing and the cannery assembly line (Photo by S. Malios, Malios 2006). (B) Albacore tuna taxidermy in the collection of the Harvard Museum of Comparative Zoology. This tuna was caught at Catalina Island in 1908 (catalog #29262; Photo by T. Rick). (C) Statue of a tuna fisherman in San Pedro Harbor, Los Angeles, CA that is part of a larger memorial about the importance of the historical tuna fishery in the area (Photo by T. Rick).

several seafood and vegetable/fruit canneries in Maryland that have been used to explore themes around industry and labor. While beyond the scope of this mini review focused on the northeastern Pacific, research and analysis of historical documents, historical architecture, and industrial archaeology of other coastal regions are prolific and will be important for building on our assessment and conducting future research on canneries around the world.

3 Emerging trends and directions for environmental archaeology

Through industrial archaeological research on commercial whaling in Australia, Gibbs (2022) notes that much work needs to be done to "span the land-water divide." This is particularly true for the environmental impacts of capitalist fisheries, like the tuna, salmon, shellfish, and other canneries that have been the subject of research on the Pacific Coast of North America and elsewhere around the world. On land, industrial archaeology can assess the effects of infrastructure and industry where the facilities operated, but tracing these effects on the ocean can be more difficult. Catch data represent an important way to assess people's impacts on and relationships with the sea. However, there are often

few physical specimens (i.e., bones and teeth) of the harvested fish themselves available for analysis. We note that exceptions to this do occur (e.g., Caribbean turtles), so this issue may not affect all taxa being processed (Guiry et al., 2024). Although faunal remains are present in excavations of the habitation sites where canneries are located, they often contain small amounts of fishes that may differ from the species processed by the extractive industry in which people were working, but we caution that some of these fish assemblages have not been fully analyzed (Nicolay, 2017; Ross, 2013). The processing of tuna and other fish by-products (bones, viscera, etc.) varied through time and geographically, but cannery by-products were often transformed into fish meal, oil, fertilizer, pet food, and other products that would have left few, if any, physical remains behind (Finley, 2016; Love, 2006). As an example of how to combat this issue, we identified museum specimens of *Thunnus* spp. (tunas) contemporaneous with cannery operations that are housed in vertebrate zoology and other collections and searchable in web-based engines like VertNet and iDigBio (Rick et al., 2025).

We identified 94 records of historical museum tunas spanning the late nineteenth century from across the northeastern Pacific from Baja California to Alaska (Rick et al., 2025). This includes a specimen collected directly from the Terminal Island canneries in 1966. We also identified a specimen in the zooarchaeological comparative collections at the University of California, Santa

Barbara, from the Terminal Island cannery in 1976. These specimens provide a way to connect museum and archaeological collections across disciplines to help understand the fisheries of the cannery era, highlighting the value of zooarchaeological comparative collections to historical ecological research. To that end, we are engaged in stable isotope analysis of these historical fishes (including the zooarchaeological specimens) to reconstruct foodwebs and changing environments of offshore habitats. Ancient DNA analysis of these specimens will add another layer to understanding the effects of these massive fisheries on fish populations and offshore ecosystems. This approach demonstrates how an interdisciplinary environmental archaeology and zooarchaeology of capitalist commercial fisheries around the world is central for linking the industrial archaeology of land-based infrastructure, historical records, and catch data with specimens of the fishes themselves (Rick et al., 2025).

4 Conclusions

In the northeast Pacific and around the world, fisheries greatly expanded through the nineteenth and twentieth century, aided in part by the development of canneries and the growth of global seafood markets. These efforts paved the way for the post-World War II great acceleration of industrial fisheries and associated human impacts on ocean ecosystems (Holm, 2012). Archaeologists have made important contributions to understanding the canning industry as places where early diasporic communities lived, thrived, and shared identities and traditions, providing insights into multiethnic communities (Guiry et al., 2024; Newell, 1991; Nicolay, 2017; Ross, 2010, 2011, 2013). Our mini review documents the potential for an environmental archaeology of offshore fisheries and canneries, similar to work on the historical ecology of sea turtles (Guiry et al., 2024), that can expand on previous archaeological research by integrating work on biological museum specimen collections with archaeological and historical documents research (e.g., Rick et al., 2025). This work dovetails with the growing emphasis on the zooarchaeology of the modern era and an archaeology of the contemporary as a way for archaeologists to document the value of archaeology's transdisciplinary approach for understanding human environmental interactions in the recent past (Caraher, 2024; Tourigny and Gordon, 2022). Similarly, the focus on canneries and associated fisheries complements recent efforts to understand the archaeology, history, and ecology of other diverse communities in the northeastern Pacific during the nineteenth to twentieth centuries, prior to and contemporaneous with the cannery era (Bentz and Braje, 2017; Conrad et al., 2015; Kennedy et al., 2022; Royle et al., 2024). Ultimately, research on capitalist offshore fishing provides a key opportunity to demonstrate the relevance of archaeology to contemporary issues facing our planet and society.

Author contributions

TR: Writing – review & editing, Conceptualization, Writing – original draft, Funding acquisition. TB: Conceptualization,

Investigation, Writing – review & editing. LB: Investigation, Writing – review & editing. EE: Investigation, Writing – review & editing, Conceptualization, Funding acquisition.

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References

- Architectural Resources Group (2001). *Final Cannery Row Cultural Resources Survey Report Document*. Monterey: Prepared for the City of Monterey.
- Bentz, L., and Braje, T. (2017). Sea of prosperity: foundations of the California commercial abalone fishery. *Int. J. Hist. Archaeol.* 21, 598–622. doi: 10.1007/s10761-016-0389-7
- Bowen, A. (2004). Material evidence for early commercial fishing activities on the far South Coast of New South Wales. *Austr. Hist. Archaeol.* 22, 79–89.
- Braje, T. J. (2015). Earth systems, human agency, and the Anthropocene: planet earth in the human age. *J. Archaeol. Res.* 23, 369–396. doi: 10.1007/s10814-015-9087-y
- Braje, T. J., Erlanson, J. M., and Rick, T. C. (2021). *Islands Through Time: a Human Ecological History of California's Northern Channel Islands*. Lanham, MD: Rowman and Littlefield. doi: 10.5771/9781442278585
- Busto-Ibarra, K. (2015). Historical archaeology of Baja California Sur. *Pacific Coast Archaeol. Soc. Q.* 51, 91–116.
- Caraher, W. R. (2024). *The Archaeology of Contemporary America*. Gainesville, FL: University Press of Florida. doi: 10.5744/florida/9780813069968.001.0001
- Chidester, R. (2004). *A historic context for the archaeology of industrial labor in the state of Maryland*. (Master's Thesis). University of Maryland, College Park: ML
- Conrad, C., Gobalet, K. W., Bruner, K., and Pastron, A. G. (2015). Hide, Tallow, and terrapin: gold rush-era zooarchaeology in Thompson's Cove (CA-SFRI-168H), San Francisco, California. *Int. J. Hist. Archaeol.* 19, 502–551. doi: 10.1007/s10761-015-0297-2
- Fagan (1993). "The Chinese cannery workers of Warrendale," in *Hidden Heritage: Historical Archaeology of the Overseas Chinese 1876-1930*, ed. P. Wegars (New York, NY: Baywood Publishing Company), 215–228.
- Farnsworth, S. M. (2025). *Historical murals as archaeological artifacts: a San Diego state university case study*. (Master's Thesis). San Diego State University, San Diego.
- Finley, C. (2016). *The Industrialization of Commercial Fishing, 1930-2016*. Oxford Research Encyclopedia of Environmental Science. Oxford: Oxford University Press. doi: 10.1093/acrefore/9780199389414.013.31
- Gibbs, M. (2022). "Maritime industry: whaling," in *The Oxford Handbook of Industrial Archaeology*, eds. Conlin Casella et al. Oxford: Oxford University Press. doi: 10.1093/oxfordhb/9780199693962.013.15
- Guiry, E., Kennedy, J. R., Malcom, C., Miller, M., Hall, O., Buckley, M., and Szpak, P. (2024). Archaeological evidence for long-term human impacts on sea turtle foraging behavior. *R. Soc. Open Sci.* 11:204120. doi: 10.1098/rsos.240120
- Hemp, M. K. (2022). *Cannery Row: The History of John Steinbeck's Old Ocean View Avenue and Its Connections to the Pacific Northwest, 5th Edn*. Washington, DC: The History Company.
- Hirahara, N., and Knatz, G. (2024). *Terminal Island: Lost Communities on America's Edge*. Santa Monica, CA: Angel City Press.
- Holm, P. (2012). World War II and the 'Great Acceleration' of North Atlantic Fisheries. *Glob. Environ.* 10, 66–91. doi: 10.3197/ge.2012.051005
- Jackson, J. B. C., Kirby, M. X., Berger, W. H., Bjorndal, K. A., Botsford, L. W., Bourque, B. J., et al. (2001). Historical overfishing and the recent collapse of coastal ecosystems. *Science* 293, 629–637. doi: 10.1126/science.1059199
- Jeffery, B., Perrin, M., and Yamafune, K. (2023). From small beginnings to a leading world industry: the connection of micronesia underwater cultural heritage with tuna fishing industry. *J. Marit. Archaeol.* 18, 23–46. doi: 10.1007/s11457-023-09352-9
- Johnson, N. M. (2019). *Archaeology of two segregated mess halls at Shephard point Cannery near Cordova, Alaska*. (Master's Thesis). Department of Anthropology, University of Alaska, Anchorage.
- Juan-Jordá, M. J., Murua, H., Arrizabalaga, H., Merino, G., Pacoureaux, N., and Dulvy, N. K. (2022). Seventy years of tunas, billfishes, and sharks as sentinels of global ocean health. *Science* 378:eabj0211. doi: 10.1126/science.abj0211
- Kennedy, J. R., Bingham, B., Flores, M. F., and Kemp, B. M. (2022). Ancient DNA identification of giant snakehead (*Channa micropeltes*) remains from the Market Street Chinatown and some implications for the Nineteenth-Century Pacific world fish trade. *Am. Antiq.* 87, 43–58. doi: 10.1017/aaq.2021.61
- Love, M. S. (2006). "Subsistence, commercial and recreational fisheries," in *The Ecology of Marine Fishes: California and Adjacent Waters*, eds. L. G. Allen, D. J. Pondella, and M. H. Horn (Berkeley, CA: University of California Press), 567–594. doi: 10.1525/california/9780520246539.003.0022
- Malcolm, C. (2013). *The history and archaeology of the Key West turtle fishing industry*. Key West, FL: Report for the Mel Fischer Heritage Society.
- Mallios, S. (2023). *Historic Walking tours of SDSU: Celebrating 125 years with 12.5 Scholarly Strolls*. San Diego, CA: Montezuma Publishing.
- Mallios, S., and Purvis, N. J. (2006). *Uncovering local art and industry: The discovery of hidden WPA-era murals at San Diego State University*. *San Diego State University Occasional Archaeological Papers*, 1, 17–30. Available online at: <https://soap.sdsu.edu/Volume1/WPAmurals/WPAmurals.html> (Accessed September 9, 2025).
- Morris, T. N. (1934). The canning industry. *J. R. Soc. Arts* 82:555–574.
- Myles, A. (2022). *American river fish cannery: examining the nineteenth-century commercial fishing industry in South Australia*. (Master's Thesis). Flinders University, Bedford Park, SA.
- Newell, D. (1987). Surveying historical industrial tidewater sites: the case of the B.C. salmon canning industry. *IA J. Soc. Industr. Archaeol.* 13, 1–16.
- Newell, D. (1991). The industrial archaeology of the organization of work: a half century of women and racial minorities in British Columbia fish plants. *Material Hist. Rev.* 33, 25–36.
- Newell, D. (1996). *Archaeological Survey of the Coastal Salmon-Canning Industry. The Midden* 28:12.
- Nicolay, E. T. (2017). *Consumption patterns of the Pre-World War II Japanese American community on Terminal Island*. (Master's Thesis). Department of Anthropology, California State University, Northridge.
- Pitcher, T. J., and Lam, M. E. (2015). Fish commoditization and the historical origins of catching fish for profit. *Maritime Stud.* 14:2. doi: 10.1186/s40152-014-0014-5
- Quinney, K. M., Cesarini, T. J. (2009). *Italian Historical Society of San Diego*. San Diego's Fishing Industry. Arcadia Publishing, South Carolina.
- Rick, T. C., Radde, H., Braje, T., Bentz, L., McKechnie, I., and Elliott Smith, E. (2025). Into the deep: origins and evolution of Northeastern Pacific Tuna (*Thunnus* spp.) Fisheries. *Fish Fish.* 26, 1164–1179. doi: 10.1111/faf.70024
- Ross, D. E. (2010). Comparing material lives of Asian transmigrants through the lens of alcohol consumption. *J. Soc. Archaeol.* 10, 230–254. doi: 10.1177/1469605310365110
- Ross, D. E. (2011). Factors influencing the dining habits of Japanese and Chinese migrants at a British Columbia salmon cannery. *Hist. Archaeol.* 45, 68–96. doi: 10.1007/BF03376832
- Ross, D. E. (2013). *An Archaeology of Asian Transnationalism*. Gainesville, FL: University Press of Florida. doi: 10.5744/florida/9780813044583.001.0001
- Ross, D. E. (2015). Bakerville in context: archaeology of the Chinese in British Columbia. *B. C. Stud.* 185, 161–192. doi: 10.14288/bcs.v0i185.186083
- Ross, D. E. (2021). A history of Japanese Diaspora archaeology. *Int. J. Hist. Archaeol.* 25, 592–624. doi: 10.1007/s10761-020-00566-4
- Royle, T. C. A., Kennedy, J. R., Guiry, E. J., Jackman, L. S., Shichiza, Y., and Yang, D. (2024). Sharkaeology: expanding understandings of historical chinese diaspora shark fisheries in Monterey Bay, California through the genetic species identification of archaeological chondrichthyes remains. *Hum. Ecol.* 52, 479–495. doi: 10.1007/s10745-024-00521-5
- Smith, A. F. (2012). *American Tuna: The Rise and Fall of an Improbable Food*. Berkeley, CA: University of California Press.
- Smith, B. F., Lytle, M. D., Pierson, L. J., Clowery-Moreno, S. and Stropes, T. (2011). *Barrio Logan Historical Resources Survey*. City of San Diego, City Planning and Community Investment
- Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O., and Ludwig, C. (2015). The trajectory of the Anthropocene: the great acceleration. *Anthropocene Rev.* 21, 81–98. doi: 10.1177/2053019614564785
- Thomas, T. (2006). *Monterey's Waterfront*. South Carolina, SC: Arcadia Publishing.
- Tourigny, E., and Gordon, R. (2022). Zooarchaeology of the modern era: an introduction. *Int. J. Hist. Archaeol.* 27, 267–273. doi: 10.1007/s10761-022-00670-7
- Van Wormer, S. R., and Walter, S. D. (2012). *Living in two worlds: Fish Camp Kushimoto No Kyampu. historical and archaeological investigations of early. 20th Century Japanese fishing families in San Diego, California*. Report Submitted to RECON, San Diego, CA.
- Vargas, B., Steven, T., Emily, W., and Debi Howell-Ardila. (2016). *Cultural resources evaluation for cannery's steam plant, electrical distribution station 121, and three starkist buildings, and extended phase i report for the vacant parcel at 138 East Terminal Way: Berths 226-236 everport container terminal project, Port Of Los Angeles, City and County of Los Angeles, California*. Report Prepared by SWCA Environmental Consultants. Pasadena, CA.
- Wilson, D. C. (2024). *The Historical Archaeology of the Pacific Northwest*. Gainesville, FL: University Press of Florida. doi: 10.2307/jj.14250118