

## INTO THE BLUE: UNDERWATER ARCHAEOLOGY IN CALIFORNIA STATE PARKS

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CALIFORNIA STATE PARKS

*The underwater parks of California are located primarily along the coastline, stretching from Mendocino County in the north to San Diego County in the south. Mono Lake, D. L. Bliss, Emerald Bay-Lake Tahoe, and Lake Perris represent inland underwater parks. The California Department of Parks and Recreation's underwater parks program was established in 1968 to preserve the best and most unique representative examples of the state's natural underwater ecosystems found in coastal and inland waters. Since that time, State Parks has established 19 underwater parks, with over 60 proposals for new parks under consideration. This article provides an overview of this important program, reviews our current knowledge of submerged cultural resources, and outlines our goals for future underwater archaeological projects.*

California is blessed with many natural splendors. Of the contiguous states, it has the highest peak, the lowest valley, the largest fault system, the oldest and largest trees, and the greatest number of plant and animal species in North America. Its historical superlatives are no less dramatic. Aboriginal California was home to more than 300,000 people, a greater number than any comparable area north of Mesoamerica. It also has a very rich and varied maritime history. What connects California to the World Ocean more than its history? California, a land of legend and mystery, was explored, colonized and described by sea. Thus it's only fitting that we take active steps to understand and manage these maritime heritage sites as part of our legacy from the past [Foster 2002].

California's cultural resources do not end at the water's edge. With California's vast coastline and rich maritime history, the potential for submerged cultural resources is high, and our focus on the underwater environment can greatly increase our understanding of California's past. Currently, there are over 300,000 recorded cultural resources in California, with over 12,000 in the State Parks system alone. However, there are only 10 recorded cultural resources in our underwater parks, although there is certainly potential for additional underwater cultural resources to be discovered if we are willing to search for them (California Historical Resources Information System 2013).

Invaluable information can be learned of California's prehistoric and historic past from the underwater resources. The rise in sea level at the end of the Pleistocene and the beginning of the Holocene caused vast amounts of coastal land to be inundated. Broad coastal terraces now submerged but exposed during the Terminal Pleistocene and Early Holocene would have provided ideal locations for human settlement and potentially even a corridor for migration. For example, in southern California, sea level was 400 ft. lower during the last glacial maximum 20,000 years ago, and the sea level was 180 ft. lower 12,000 years ago (Masters and Aiello 2007). With these prehistoric coastlines that stretched far out onto the continental shelf, the remains of some of California's earliest settlements were most likely inundated following the rise in sea level at the end of the last Ice Age. Archaeological study of these submerged coastal sites may provide new insight into California's earliest inhabitants.

With California's rich history along the coast and inland waters, we can learn a great deal about our past by examining the many shipwrecks in California's waters. The state's 1,100 mi. of coastline have challenged seafarers with treacherous rocks for centuries. Beginning in the sixteenth century, European exploration sparked a multiplicity of vessels to sail the Pacific Ocean, including along the California coast. Until the twentieth century, charts were incomplete and often misleading, and navigational aids such as lighthouses and buoys were nonexistent until the 1850s, which caused many vessels to wreck along the coast (Terrell 2007). California's first recorded shipwreck is the *San Augustin*, which wrecked



Figure 1. Underwater parks managed by California State Parks.

in 1595 at Drake's Bay (Collier 1984). Since that time, thousands of vessels have sunk in our waters. These ships and their cargos are the remaining evidence of California's rich maritime legacy. From European exploration and westward expansion to maritime trade to the fishing industry, California has a prominent maritime history that can connect us to our past and give us a better understanding of our heritage (Terrell 2007).

Point Lobos State Reserve on the central coast in Monterey County became the first marine protected area in the nation on July 1, 1960. In 1968, the California Department of Parks and Recreation established its underwater parks program to preserve the best and most unique representative examples of the state's natural underwater ecosystems found in coastal and inland waters (Collier 1979). Since then, State Parks has established 19 underwater parks and is considering over 60 proposals for new underwater parks (Smith and Breece 2002). Almost one-quarter of our coastline is managed by State Parks (California Department of Parks and Recreation 2002). Figure 1 shows the underwater parks throughout the state.

State Parks has accomplished much archaeological work in its underwater parks. The following three examples highlight some of State Park's accomplishments and the potential for underwater archaeology in the State Parks system.

### **FORT ROSS STATE HISTORIC PARK AND THE SS *POMONA***

Located along the northern coast of California, Fort Ross is rich in archaeology. The South Cove contains the remains of early shipping industries associated with Fort Ross. Following Fort Ross's

occupation, the Call family purchased the land and shipped lumber until the 1920s (Carlson et al. 1975). The top of the North Cove and its face contain the remnants of iron pins in the rocks where the lumber chute and wharf were secured for the lumber trade. The wreck of the steamship *Pomona* is located at the North Cove and is marked by a historic shipwreck buoy. The site has been determined eligible for listing in the National Register of Historic Places. In addition to the *Pomona*, there are 10 other wrecks recorded in the State Lands Commission's "Reported Vessel Losses in California" database for this area, but only the *Pomona* has been identified as of yet (Smith and Breece 2002).

In 1908, *SS Pomona* was traveling from San Francisco to Eureka when the vessel struck an uncharted rock 2 mi. from Fort Ross reef. The rock punched a hole in the steel hull, and Captain Swanson decided to beach the vessel in the cove. The ship rode up over the top of a large rock that impaled the ship's hull. As water began to rush into the steamship, the 147 passengers and crew safely escaped to shore with help from a nearby vessel (Beeker 2005).

An initial salvage effort was attempted the following year by the Coast Wrecking Company. The salvage team planned to refloat the vessel and tow it to San Francisco for repairs, but the effort was quickly abandoned when it was considered too dangerous. Eventually, they salvaged the propeller, triple expansion steam engine, and other equipment before the *Pomona* split in two and sank to the bottom in Fort Ross's waters. In 1959, skin divers discovered the wreck and soon stole many of the other elements as trophies. State Parks conducted its first systematic underwater survey in 1981 on the *Pomona* site. This project included a magnetometer survey followed by scuba reconnaissance of identified anomalies, resulting in the discovery and initial documentation of the *Pomona* wreck (Foster 2001). In 1988, James Delgado led a team that produced a preliminary site plan of the shipwreck. Under the direction of John Foster and Charles Beeker a decade later, students from Indiana University, University of Southern California, California State University Northridge, San Jose State University, and Sonoma State University further analyzed the wreck and drafted a more detailed site plan (Figure 2). Archaeological features identified on the wreck include the rudder and stern post, steering assembly, drive shaft, boilers, engine pistons, and steam-driven electric generator (Beeker and Foster 2007) (Figure 3).

### **CRYSTAL COVE STATE PARK AND THE F4U CORSAIR**

Located off the Pacific Coast Highway between Newport and Laguna Beach, Crystal Cove State Park remains one of Orange County's largest examples of open space and natural seashore. Archaeological evidence suggests that the earliest human presence within the area occurred 7,500 years ago. Sporadic European contact occurred as early as the mid-1500s, but extended contact did not begin until 1776 when the Spanish established the mission of San Juan Capistrano. After the migration of people with the California Gold Rush and statehood, the area was used as a ranch by the Irvine family and then later developed into a resort (Smith and Breece 2002). Today, the historic cottages are among the few remaining examples of early Californian beach life and are on the National Register of Historic Places (Byrnes 1978). State Parks acquired the property at Crystal Cove in 1980. In 1982, State Parks designated the offshore area out to the 120-ft. contour as a Marine Managed Area. Six historic vessels have been reported lost within the underwater park (Smith and Breece 2002).

Navy reserve pilot William Anderson was assigned to Los Alamitos Naval Air Station to serve training duty. On July 5, 1949, he left for San Diego in a Corsair on a routine training flight. On the return trip to the naval air station, his engine failed, and Anderson readied the plane for a water landing about a half mile off Crystal Cove. The plane began to sink after it hit the water, but Anderson was able to escape the Corsair and was quickly rescued and taken to shore. The plane was rediscovered in 1960, and Navy divers investigated the discovery and confirmed that the plane was a Corsair. The Navy's diving unit salvaged the engine with a cable and salvage tug, and they positively identified the plane using the plates attached to the salvaged engine. A 1977 issue of *Skin Diver* magazine described the Corsair as largely intact, with some damage to the tail section. A subsequent article in 1981 observed that the wreck

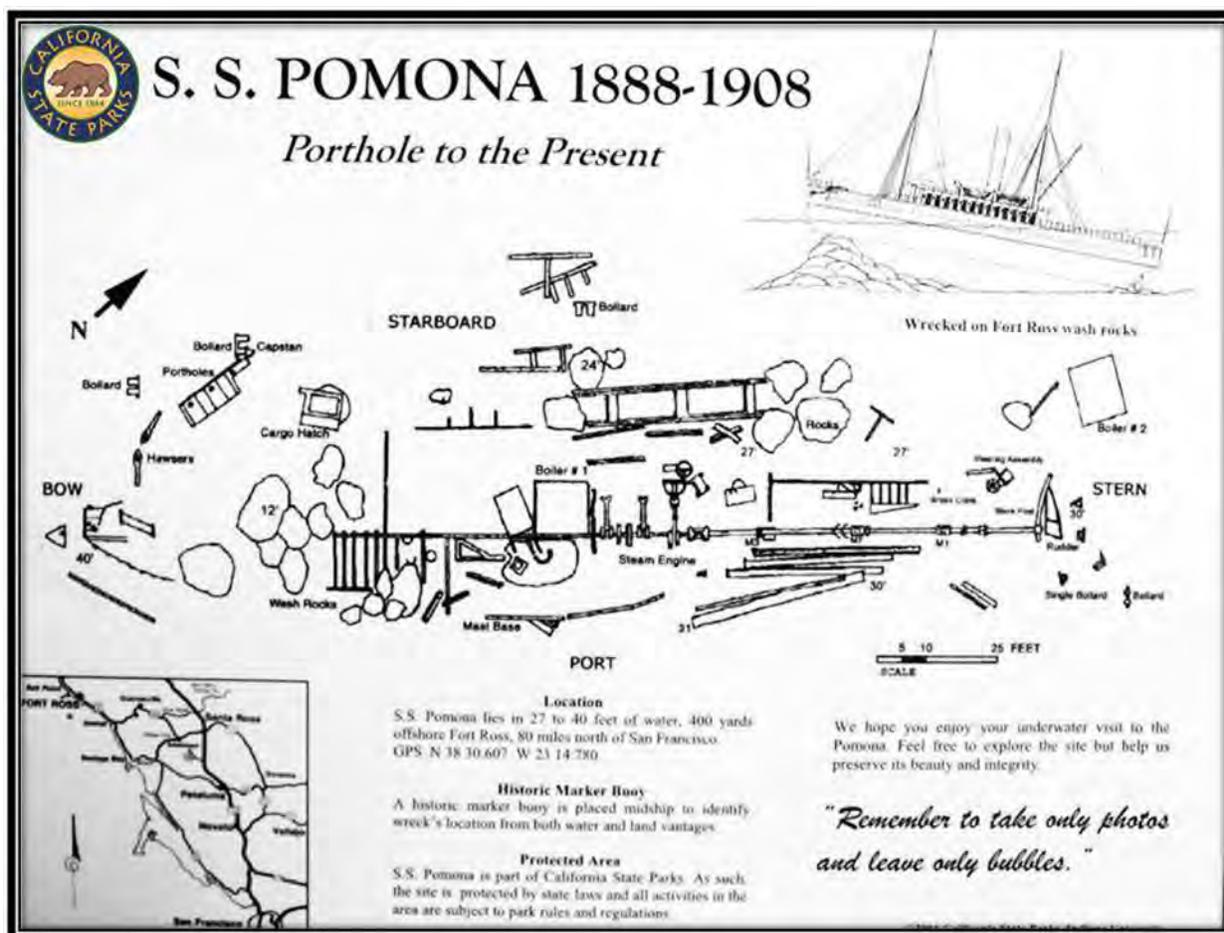


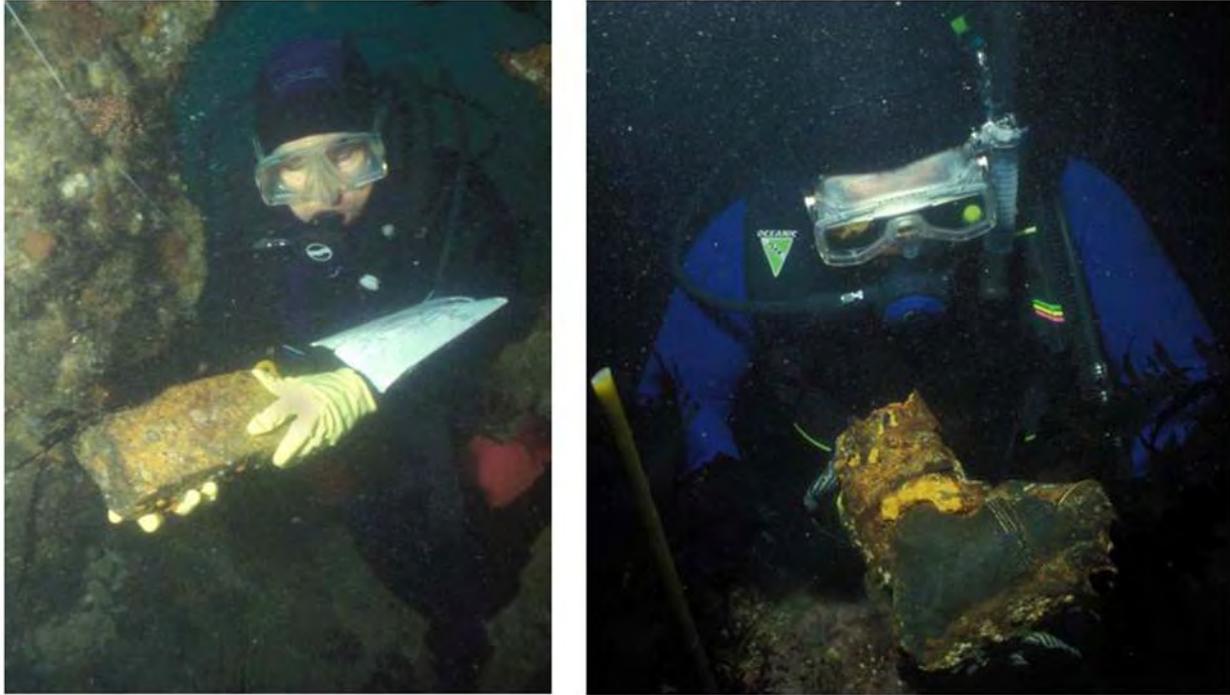
Figure 2. SS Pomona site plan (Becker and Foster 2007).

had greatly deteriorated. Unfortunately, the plane rests in popular fishing grounds today and is frequently hooked by anchors, causing further damage to the site (Becker and Smith 2005).

In 2005, Sheli Smith and Annalies Corbin of the Partnering Anthropology with Science and Technology (PAST) Foundation, along with Charles Becker of Indiana University, conducted a research mission to study and map the site of the crash (Figure 4). They observed that the wings were still largely intact, and the study identified the instrument panel outlets, rudder controls, and cockpit wiring of the Corsair (Becker and Smith 2005).

### LAKE TAHOE AND EMERALD BAY

Submerged stumps in Lake Tahoe indicate Mid-Holocene drying trends. These inundated stumps (Figure 5), caused from prolonged drought, suggest that Lake Tahoe's waters may have remained below its current rim for at least a period of 1,500 years, between about 6300 and 4800 B.P., with the water rising at a fairly constant rate after that. Radiocarbon dating of these submerged stumps to 5000 to 4500 B.P. also indicates a general antithermal condition during that same time (Lindstrom 1990). Emerald Bay is located on the western shore of Lake Tahoe. Prehistorically, the surrounding area was the territory of the Washoe people. Bedrock mortar evidence above and below the current water levels reveals that the lakeshore was inhabited as early as 7500 B.P. Soon after immigrants entered the Lake Tahoe region, they began to visit Emerald Bay. Surveyor John Fremont is said to have discovered Emerald Bay in 1844, and people began to develop the area by the late 1860s. By the 1880s, Emerald Bay was billed as one of the



*Figure 3. Scuba diver retrieving a “Carnegie” brick from the Pomona’s boiler’s firebox (left) and valve (right) (photograph courtesy of John Foster).*

natural wonders of the world, and weekly boat excursions attracted tourists to the bay for sightseeing (Scott 1957).

Beginning in the 1990s, extensive underwater archaeology has occurred at Emerald Bay, led by John Foster, Sheli Smith, and Charles Beeker. They have documented two barges scuttled on the south side of the bay. The barges were built locally on the lake and were most likely used for car ferrying and the transportation of construction material and general goods. The barges are marked with an underwater monument and now serve as a popular dive spot (Smith 1991).

Offshore of the boat camp, at the historic site of the Emerald Bay Resort, rests the remains of what is known as “the miniature fleet,” which includes nine small recreational boats that sank at their moorings. These boats were scuttled when the resort was demolished after the state park was created (Figure 6). Included among the miniature fleet are a hard-chine skiff, a metal hourglass-stern rowboat, a kayak, and a wooden rowboat (Smith 2005). The sunken vessels tell us a more complete story of early tourism at Emerald Bay and of Lake Tahoe in general.

California State Parks is making future plans for the State Parks Dive Team to return to the SS *Pomona*, F4U Corsair, and Emerald Bay to further investigate, conduct site assessments, and update site records for ongoing stewardship of these sites. In addition, they plan to continue to develop the underwater archaeology at State Parks to continue the legacy from John Foster and others. State Parks is discussing with other government agencies, universities, and non-profit organizations to collaborate on underwater projects. Specifically, there are talks with the National Oceanic and Atmospheric Administration (NOAA) to form a Memorandum of Understanding (MOU) to work together on a maritime landscape study of California.

In closing, California’s underwater parks preserve the offshore environment, its reef and cultural history. As Ken Kramer observed, “Our mission in California’s state parks is to preserve and interpret

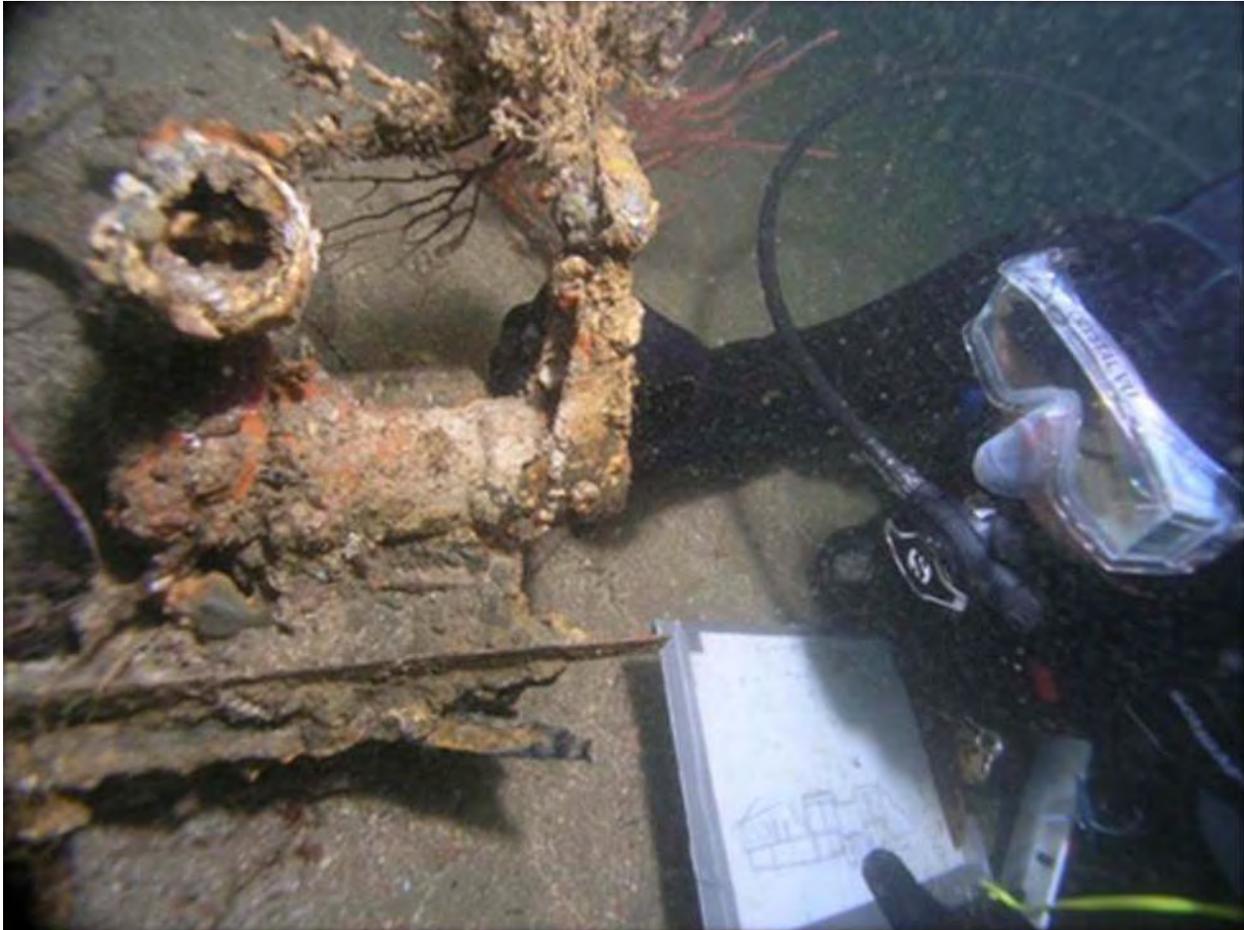


Figure 4. Diver recording part of Corsair wreck (photograph courtesy of John Foster).

history. That mission does not stop at the water's edge, it extends offshore as well" (California Department of Parks and Recreation 2005).

#### REFERENCES CITED

Beeker, Charles

2005 *S.S. Pomona Shipwreck Project, Fort Ross State Historic Park, California*. California State Parks, Sacramento.

Beeker, Charles, and John Foster

2007 *Site Plan, S.S. Pomona Shipwreck Project, Fort Ross State Historic Park, California*. Indiana University Underwater Science Program, Bloomington.

Beeker, Charles, and Sheli Smith

2005 *Crystal Cove F-4U Corsair Airplane Wreck, Scuba Maintenance and Survey Dive, Summer 2005, Close of Field Work Interim Report*. Indiana University Underwater Science Program, Bloomington.

Byrnes, Ilse M.

1978 National Register of Historic Places Inventory-Nomination Form for Crystal Cove Historic District.

- California Department of Parks and Recreation
- 2002 News Release, June 24, 2002. Electronic document, <http://ohp.parks.ca.gov/pages/712/files/062402.pdf>, accessed June 25, 2014.
  - 2005 Navy Corsair Fighter at Crystal Cove. Electronic document, [http://www.parks.ca.gov/?page\\_id=23871](http://www.parks.ca.gov/?page_id=23871), accessed June 29, 2014.
- California Historical Resources Information System
- 2013 *Maintenance and Operations Action Plan for Phases One and Two of the Modernization and Sustainability Plan*. California State Parks, Office of Historic Preservation, Sacramento.
- Carlson, Earl V., Fred Meyer, and Norman L. Wilson
- 1975 *Fort Ross State Historic Park Resource Management Plan and General Development Plan*. California Department of Parks and Recreation. Sacramento.
- Collier, Kenneth
- 1979 *Underwater Parks Master Plan*. California Department of Parks and Recreation. Sacramento.
  - 1984 *Underwater Parks Master Plan*. California Department of Parks and Recreation. Sacramento.
- Foster, John
- 2001 Watching Cows and Fighting Devil-Fish: An Overview of History and Archaeology at the Site of the S.S. Pomona, Fort Ross State Historic Park. Paper presented to California Council for the Promotion of History Conference, Long Beach, California.
  - 2002 *Archaeology and History beneath the Sea: The Preservation, Management, and Interpretation of California's Heritage Resources*. California Department of Parks and Recreation, Sacramento.
- Lindstrom, Susan
- 1990 Submerged Tree Stumps as Indicators of Mid-Holocene Aridity in the Lake Tahoe Basin. *Journal of California and Great Basin Anthropology* 12:146-157.
- Masters, Patricia M., and Ivano W. Aiello
- 2007 Postglacial Evolution of Coastal Environments. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones, and Kathryn A. Klar, pp. 35-51. AltaMira Press, Lanham, Maryland.
- Scott, Edward B.
- 1957 *The Saga of Lake Tahoe: A Complete Documentation of Lake Tahoe's Development over the Last One Hundred Years, Volume 1*. Sierra-Tahoe Publishing, Crystal Bay, Nevada.
- Smith, Sheli O.
- 1991 *Emerald Bay Barges*. Los Angeles Maritime Museum.
  - 2005 Emerald Bay Mini-Fleet DPR 523 Site Record. PAST Foundation, Columbus, Ohio.
- Smith, Sheli O., and Laurel H. Breece
- 2002 *California State Marine Managed Areas: Cultural Resource Survey 2001/2002*. Long Beach City College Maritime Archaeology Certificate Program, Long Beach, California.
- Terrell, Bruce, editor
- 2007 *Fathoming Our Past: Historical Contexts of the National Marine Sanctuaries*. NOAA/National Marine Sanctuary Program, Silver Spring, Maryland.



*Figure 5. Diver taking a sample from submerged stump along Lake Tahoe shoreline (photograph by John Foster).*



*Figure 6. Small fishing boat, a component of Emerald Bay Resort “Mini-fleet.”*