Michael J. Chiarappa

A variety of cans were used by New Jersey oyster companies. Photo courtesy of Robert Seabrook.

Domesticated Waters
Delaware Bay Oystering's Science and Technology

The oyster industry has heavily shaped the Delaware Bay's ecology. Oystering, or oyster planting, involved the process of planting seed oysters from the bay's natural spawning grounds to privately-leased bottom that more vigorously encouraged growth. By drawing on natural beds for seed oysters and harvesting them from planted grounds, Delaware Bay oystermen sought both resource conservation and commercial success.

Since the late 1980s, I have thought about how an ecomuseum can illustrate the technological and scientific issues related to Delaware Bay oystering. An ecomuseological perspective—an interpretive and curatorial view that seeks an understanding "of how places are a construction of human interaction with environments across time and space"—can present the science and technology that shaped the industry's ecology.[1]

Since its establishment in 1988, the Delaware Bay Schooner Project has consistently shaped its vision in the form of an ecomuseum. The project has focused on restoring a 1928 oyster schooner, named *A.J. Meerwald*. The project aims to make the restoration process and the vessel a showcase for Delaware Bay history and ecology. During the course of the restoration, the Schooner Project's executive director, Meghan Wren, recognized that its process and mission could have wider curatorial and interpretive effect on the industry. Because it embraces a historical and ecologically-based approach, the Delaware Bay Schooner Project can serve as the lead organization for an ecomuseum partnership between the New Jersey Coastal Heritage Trail, the Delaware Estuary Program, the Nature Conservancy, Citizens United for the Maurice River, and the Rutgers University Shell fisheries Laboratory.

Aerial view of oyster shipping and processing facilities at the locales known as Bivalve (left) and Maurice River (right) in 1920s. Photo courtesy Temple University Libraries Photojournalism Collection.

The Schooner Project uses oyster technology to link ecology-related cultural resource management and interpretation. By obtaining a series of oyster shipping sheds, and proposing an interpretive center, the Schooner Project is attempting to use another ecologically-oriented building technology to historically evaluate the environmental effect of this regional shell fishery. My involvement in the Schooner Project over the past 10 years has prompted many thoughts on how the history of technology and science, cultural resource management, and environmental studies can be integrated to interpret this regional shell fishery.

The prospect of a Delaware Bay ecomuseum hinges on the conservation and interpretation of specific sites and artifacts. Among Delaware Bay's oystering historic sites, the shipping sheds at the waterfront area known as Bivalve, are among the most important. This built environment enables the ecomuseum to interpret many significant technological and scientific themes. Built by the Central Railroad of New Jersey in the early-20th century, this structure brought greater market efficiency to a shell fishery already noted for its regional cultivation methods.

The shipping shed not only has the potential to present the market changes this technology made possible, it shows that the use of this technology relied on an increasingly subdivided and specialized labor force. This interpretive view needs to be combined with oyster shucking—a process that took place in the area next to Bivalve and known locally as Shellpile. Shucking house technology was a labor-intensive process that emphasized volume production. Since pure food and water-born diseases became concerns during the early-20th century, the shipping sheds and shucking houses can interpret the increasing role of state regulation of the oyster industry.

We can gain several insights from an examination of the remains of Delaware Bay's historic

The Delaware Bay oyster sloop Excel *on the railways at the Flanagan Boatyard in Fairton, New Jersey. This vessel's mast was removed after 1945 when oyster vessels were permitted to operate totally under motor power. The photo shows the sloop in the early 1990s with a modern dredging and culling apparatus.*

oyster fleet. This fleet does not exist with its earlier schooner or sloop rigging arrangements, which they abandoned in 1945 when New Jersey permitted oystermen to discontinue the practice of sail dredging. Today, these demasted hulls can prompt discussion of how Delaware Bay shipbuilding technology adjusted to changing circumstances. An ecomuseum can interpret the hull design and sail rigging of Delaware Bay schooners and sloops in relation to the region's particular water conditions and the demands of operating oyster dredges. The shift from clipper bow design to spoon bow design can explain the demand for larger schooners to realize greater harvests.

As a regional initiative to cultivate shellfish, Delaware Bay oysterings incentives to plant oysters brought its participants into a much more focused relationship with the Bay. This is evident in town development. Delaware Bay oystering encouraged the development of small towns that were close to the water, near vessels, and within range of support services. The construction of housing stock reflects Delaware Bay oystering's efficiency-oriented measures and scientific management. An ecomuseum can show that oystering's technological and scientific development affected town growth along the Delaware Bay, and then use this theme for the preservation of housing stock and designation as federal and state historic districts.

A Delaware Bay oystering ecomuseum needs to illuminate the region's surviving shipyards as workplaces that served many of the regional shell fishery's most pressing needs. These sites are valuable for explaining local shipbuilding skills and technology. Also, since Delaware Bay oystering used vessels from other regions, the shipyard offers some context for explaining how Delaware Bay shipyard workers were forced to learn important vessel building ideas. When interpretive and conservation priorities concerning the historic oyster fleet are incorporated with these sites, the combination can help explain the shipbuilder's technological role in fostering a community's relationship with the oyster environment.

Today, the prominent position of dredging technology on oyster vessels can be used to effectively explain its evolution over the past one 150 years. Ecomuseum interpretation should emphasize how different oyster harvest technologies segmented or divided oystermen, and placed technological differences at the forefront of what was often a contested view of resource use. These technologies can be interpreted in relation to the state's efforts to promote oyster science, particularly the activities of the New Jersey Agricultural Experiment Station Oyster Laboratory that published bulletins encouraging both dredgers and tongers to more carefully cultivate and remove oysters from the Delaware Bay.

Oysters not only offer visitors insight into processing technologies, they introduce scientific concerns with sanitary standards. These artifacts show that state and federal regulations required oyster canners to meet safe food handling standards. Since oyster firms used label artwork to create a regional image, ecomuseological interpretation needs to correlate these resources to the interrelationship between an oysterman's regional occupational identity and the promotion of pure shellfish.

Ultimately, while ecomuseology may emphasize the place-specific nature of Delaware Bay oystering technology and science, it presents a serious challenge to cultural resource managers: which strategies will serve the interests of native inhabitants and visitors? These concerns can be addressed by linking ecomuseology with the "new museology's" desire to create museums without walls.[2] For Delaware Bay oystering, a territory heavily consumed by shell fisheries can literally become a museum setting. This environmentally responsive cultural resource management plan not only enables oystering technology and science to powerfully evoke the region's collective memory, but provides the format for "involving people in the process of both representation and interpretation"—a vital consideration in how these resources can promote heritage conservation.[3]

Notes

1 Kevin Walsh, *The Representation of the Past: Museums and Heritage in the Post-Modern World*, London: Routledge, 1992, 164.

2 Patrick Boylan, "Museums and Cultural Identity," *Museums Journal* 90 (1990):32.

3 Walsh, *The Representation of the Past*, 162.

Michael J. Chiarappa is an assistant professor of history at Western Michigan University, Kalamazoo, Michigan.

To read more about CRM and the history of science and technology, see *CRM*, Vol. 20, No. 14, 1997.