



# CUTTYHUNK HISTORICAL SOCIETY

## The Legacy of Louis Agassiz: The Natural Allure of the Elizabeth Islands

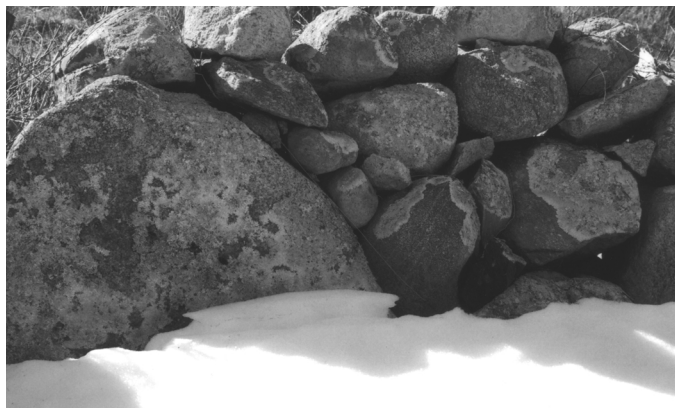
LOUISE GARFIELD BACHLER

*Allison (Allie) Thurston supplied much of the information for this monograph. A collector and observer of natural history on Cuttyhunk for more than 50 years, she served as guest curator of the 2005 exhibit, The Nature that Connects Us: The Natural History of the Elizabeth Islands. Allie calls herself an Interpretive Naturalist; her laboratory is the Elizabeth Islands – Cuttyhunk, Penikese, Nashawena, Pasque, and Naushon.*

Everything from barnacles to quahogs, and cedars to terns had populated the Elizabeth Islands long before human beings arrived with awe, curiosity and beach blankets. These islands in Massachusetts' Buzzards Bay, a glacial gift of rough landscapes, surrounded by salt water and open skies, have attracted a remarkable array of naturalists, scientists and artists since their recorded discovery in 1602.

The islands began as debris left by glaciers in the fourth and last gasp of the Ice Age, 10,000 years ago (technically the Buzzards Bay Moraine). The predominant rocks are granite and quartz, gathered from terrain to the north and west before the ice receded and left its final deposits. The underlying seabed amassed eons before, when New England was still attached to northern Africa.

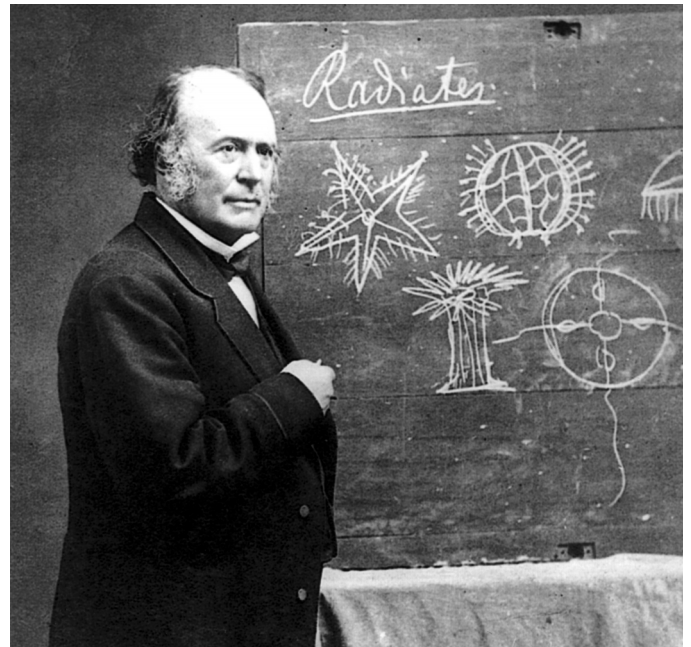
Trees gradually replaced tundra as the climate warmed. Bartholomew Gosnold's crew in 1602 described



Cuttyhunk stone wall made of granite boulders, with late winter snow.

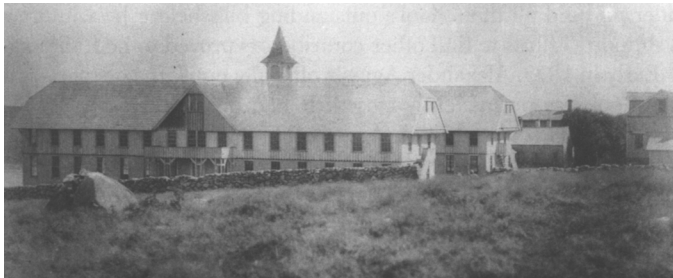
a lush forest of oak, cedar, beech, holly, elm, walnut, saffras, hazelnut and cherry trees; as well as many kinds of berries and vines. This earliest description of what grew was altered drastically by lumbering and livestock farming, which ended as the islands took on new uses. Once the islands became summer retreats in the late 1800's, a different mix of vegetation grew.

The most important natural historian to study here happens to have been the first. Louis Agassiz (1807-1873), one of Europe's foremost scientists, came to study and lecture on America's geology in 1846. He had already proposed the first Glacial Theory in 1837 (after living in a hut next to a Swiss glacier) and researched both living and fossil fish. As Zoology professor at Harvard, Agassiz founded the Museum of Comparative Zoology in 1859, the year of Darwin's *Origin of Species*. Agassiz, however, found the theory of evolution "conjectural" and arranged specimens according to his "special Creation" theory.



Louis Agassiz, "The Master", 1872. Marine Biological Laboratories.

Boston intellectuals welcomed Agassiz and led him to Buzzards Bay, where he loved to fish and observe the glaciers' work. Agassiz, whose belief that observation-based education was central to the study of natural history, declared: "Read nature, not books. If you study nature in books, when you go out of doors, you cannot



*The Anderson School of Natural History, Penikese Island, 1874. Marine Biological Laboratories.*

find her." His appeal in 1873 for a patron to establish a school of natural history intrigued philanthropist John Anderson, a New York tobacco merchant who owned Penikese. Anderson made the dream a reality. Forty-four students, both male and female, arrived in July, 1873 on the hastily built campus of the Anderson School of Natural History on Penikese. The country's leading naturalists taught such courses as mollusks, algae, and physical geography. Microscopes and sketchbooks were the tools for observation and study of live marine specimens.

After Agassiz's death in December 1873 his family carried on. His son Alexander, a marine biologist, ran the school for one more summer. He also expanded and directed the Harvard museum for 40 years. The Master's energetic wife and research assistant, Elizabeth Cabot Cary Agassiz, later founded Radcliff College.

The late 1800's were a time of tremendous curiosity

### From *The Prayer of Agassiz*

By John Greenleaf Whittier,  
on the opening of the Anderson School, July 1873

*On the isle of Penikese  
Ringed about by sapphire seas,  
Fanned by breezes salt and cool,  
Stood the Master with his school...  
Said the Master to the youth,  
"We have come in search of truth."*

about the natural world. Impressively, students from the Anderson School went on to teach and research in the natural sciences, and to shape both the fledgling American Museum of Natural History in New York and the Smithsonian Institution. The Woods Hole, Massachusetts-based Marine Biological Lab (MBL), founded in 1888 by two Anderson School students, picked up

where Agassiz left off. The Woods Hole Oceanographic Institute (WHOI), now the world's largest independent oceanic lab, followed in 1930. Agassiz's little school on Penikese, like a stone thrown into calm water, left quite a legacy.

Agassiz was truly a cultural icon. Affiliation with the Saturday Club of Boston put him in contact with such literati as Longfellow, Emerson, and Thoreau. Fellow club member J.R. Lowell described Agassiz as "a towering personality." O. W. Holmes was inspired to write the famed poem, "Chambered Nautilus," after listening to the Master lecture on mollusks. Thoreau, who often sailed in Buzzards Bay, gathered specimens for Agassiz on Naushon. One can only imagine the research Agassiz left undone, given his intellect and spheres of influence.

The small size of Penikese made it a fine site for botanical studies. In 1873 David Starr Jordan, a student at the Anderson School (and later the first president of Stanford University), described a barren, overgrazed island that somehow supported 108 species. Subsequent studies were also done in 1923, 1947, and 1973. Dick Backus, retired from WHOI, counted 218 species in a 1999 plant survey. Among them were ten cedars and 12 cherry trees – both re-established species – as well as a rare European blackberry, and prolific poison ivy, *Rosa rugosa*, and other invasive species. Backus also noted that ponds on Penikese have been drying up and once common ferns have disappeared.

John Forbes planted thousands of pine, larch and locust trees during his early years on Naushon, and his descendants continued to preserve the pristine quality of the islands. Hoima Forbes Cherau collected and catalogued both the flowers and grasses of Naushon in two exquisitely illustrated volumes published in 1998. Current research by the Harvard Forest indicates that Naushon may provide an ideal case study of New England coastal forests. Of more than 700 beech and oak trees cored for tree ring samples, some are 400 years or older.

Finally, MBL in Woods Hole has compiled an online herbarium, cataloguing the 9,000 species of plants observed on the Elizabeth Island and Cape Cod since 1850. Eelgrass, algae, and seaweeds – including Jordan's 1873 specimens – are included along with dozens of individual sightings of marine and land plants.

As for birds, Gosnold's crew reported "cranes, stearns (terns), hernes (herons), geese and diverse other beards (birds)" in nearby Vineyard Sound. Penikese has a history involving birds. The Homer brothers raised

turkeys there in the late 1800's, and the state Department of Conservation introduced quail and pheasant from the 1920's-1940's (as well as cottontail rabbits, to replenish the population in other parts of the state). Penikese was the site of bird banding from 1928-38, sporadically since then, and regularly now, by Mass Wildlife. One herring gull banded on the Weepecket Islands (off Naushon) in 1937 was found later that year in Cuba!

Three types of terns – the Common, the rare Arctic, and the federally endangered Roseate – glide over Buzzards Bay. Terns thrive today, after overcoming the challenges of being shot for plumage for ladies' hats in the 1800's and then battling gulls that proliferated as mainland dumps grew from the 1930's to the 1960's. Protective steps taken since the 1970's allowed gulls and terns to coexist on Penikese, now managed by Mass Wildlife. Carolyn Mostello, of Mass Wildlife's National Heritage & Endangered Species Program, is part of a team that has set up a field camp on Penikese each spring since 1998. A human presence works to steer the early nesting gulls to the west side of Penikese while essentially saving nesting space on the east for the later arriving terns. According to Dick Backus, in 1999 there were 1,000 gull nests (87% herring gull; 13% black-backed gull) and 100 tern (mostly common) nests on the island.

Many islanders have kept bird lists. Dr. Henry S. Forbes's list spanned 69 years, from 1898-1967. With fellow ornithologists, he spotted 176 species. George Haskell offered a month-by-month bird count covering his sightings from 1944-1952 on Cuttyhunk. Since 1985 Mass Audubon has sponsored birding trips to the island, and, on average, 42 species have been seen on each outing. Common birds include various species of warblers, loons, geese, sandpipers, hawks, plovers, sea ducks, and gulls. Dave Twichell, longtime Cuttyhunk birdwatcher, participated in recent surveys of both Cuttyhunk and Nashawena birds with the Manomet Center.

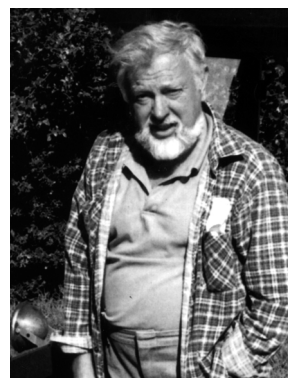
Weather can contribute to unusual bird sightings. Carried north by Hurricane David in 1979, sooty terns were spotted on Cuttyhunk, far from their homeland off Florida. And in 1994, a record tree swallow migration of 300,000 birds was observed. Back on Penikese, four short-eared owls, rare in the area, showed up in 1999.

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Thanks to an ongoing conservation ethic, countless individuals of all ages have been able to observe, collect, and create from the flora, fauna, and geology of the Elizabeth Islands. China tradesman John Forbes purchased Naushon in 1842 and, with relatives, added Nashawena in 1905 and Pasque in 1939. Like the Forbes-

owned islands, the smaller island of Cuttyhunk grew from a sparsely populated seasonal spot for Wampanoag Indians, to a remote farming and fishing community. Following the Cuttyhunk Fishing Club ownership (1864-1922), which brought wealthy summer folk, the island became the enclave of William Wood in 1923. Like his father William, Cornelius Wood and his daughter Oriel Wood Ponzecchi, worked to preserve the natural state of the island as they gradually sold off property. With the fragility of the islands' habitats always at risk, and with constant shoreline erosion a reality, residents see themselves as stewards. Some have donated land to Mass Audubon or made other conservation provisions.

Amongst the curious who lived on the islands was longtime Cuttyhunk schoolteacher and librarian Louise Haskell, who wrote the *Story of Cuttyhunk* in 1952. Her love for all the natural aspects of the island is apparent in her broad-based survey, dedicated to her pupils. Her book lists both her husband George's bird count and her friend Margaret Brewer's list of 59 wildflowers, as well as the history that all Cuttyhunkers know so well.



Wilfred Tilton, CHS Collection.

Another self-styled naturalist, Cuttyhunker Wilfred Tilton (1921-1996), was a man of earth, air, fire and water. Besides tending a gorgeous flower garden, raising tumbler pigeons, and feeding waterfowl, he discovered clay in Cuttyhunk's cliffs. His pottery has a rough beauty, like the heather that he and friends planted along the island's grass paths in the 1970's. A Cuttyhunk School project of planting maple trees around the town hall and library in the 1930's may have sparked Wilfred's likeness to Johnny Appleseed.

A kindred spirit of both the 19th-century Massachusetts poets and the Cuttyhunk cataloguers of flora and fauna was Eleanor Moore, who summered in the former Cuttyhunk Fishing Club from the 1940's until 1994. She noticed clumps of the yellow sea poppy in 1971 on the rocky south shore and lovingly drew its image. Hurricane Bob in 1991 spread the poppy to both the west end of the island and the Church's Beach area where it blooms alongside vibrant



Eleanor Moore, CHS Collection.

At Cuttyhunk Isle  
 on a storm washed reach  
 a wild Sea-Poppy  
 from the stony beach  
 raised a golden cup  
 to life! the blue sky!  
 brave triumph of faith  
 to signify.



Eleanor Mooe's Sea Poppy poem and drawing.

*Rosa rugosa* every June. Eleanor also amassed shells in a display case still held by the Cuttyhunk Club, collected butterflies, and contributed recipes such as elderberry blossom pancakes to the original Cuttyhunk Cookbook.

Others have created from the raw materials of the islands. Manuel Sarmento, longtime caretaker of Nashawena, cut squares of purple and pink from empty quahog shells, and fashioned mosaics depicting maps, lobsters, and religious figures. Today, sea glass polished by the tides turns into jewelry at the hands of Dorothy Garfield and Samantha Brown Goodrich. Bruce Borges, Cuttyhunk's sole lobsterman, carves the seabirds that he sees as he continues to trap a shrinking supply of a shrinking species. (Interestingly, early Cape Codders considered lobsters, some weighing upwards of 20 pounds, a nuisance. But by 1805, the lobstering industry was born, right in the Elizabeth Islands!)

Painters and photographers have captured the land, the sea, and the sky. Flora Fairchild, Nancy Baldwin, June Dean, Ray Barton, Polly Seip, and Molly Lombard are among the many Cuttyhunk artists, past and present, inspired by nature. Today, Holly Leon paints on Naushon, where the famed Robert S. Gifford painted oils of landscapes (two of which hang in the New Bedford Whaling Museum) in the late 1800's.

Agassiz's insistence on education and research continues to influence the array of sophisticated marine laboratories in Woods Hole and newer non-profits. The Coalition for Buzzards Bay, with its Baywatch program, monitors water quality (oxygen and nutrients) and raises issues about the impact of humans on all other forms of sea life, according to coordinator Tony Williams. Volunteers play a key role in data collection and stew-

ardship. Modern challenges include curbing pollution and lobbying for safeguards from oil spills that occur as tanker and barge traffic increases in the bay.

The Lloyd Center for Environmental Studies in South Dartmouth, another new non-profit, offers educational programs including seal watches out to Gull Island and Pease Ledge during the winter. Naturalist Mark Mello reports that after the bounty (\$5 per seal nose) was lifted in 1962, and the Marine Mammal Protection Act passed in 1972, the harbor seal population in Buzzards Bay increased from 70 in the winter of 1986-87 to approximately 400 in 2005.



Harbor seals on Gull Island in winter.

The Elizabeth Islands, perched atop a glacial moraine, will continue to be a laboratory for some and a sanctuary for others. They offer places for beachcombers to collect, artists to paint, and children to catch crabs. Several islanders have been inspired to study marine sciences; others have gone into aquaculture; and many volunteer for the Coalition for Buzzards Bay. John Anderson, one-time owner of Penikese and patron of Louis Agassiz, summed up the allure: "the charming climate... scenery made up of mainland and islands, and the ever-changing aspect of the sea, that filled my soul with rapture." His gift of the island to "the Master" sparked the ongoing study of natural history and the development of marine sciences in Buzzards Bay and the waters and shores beyond.

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