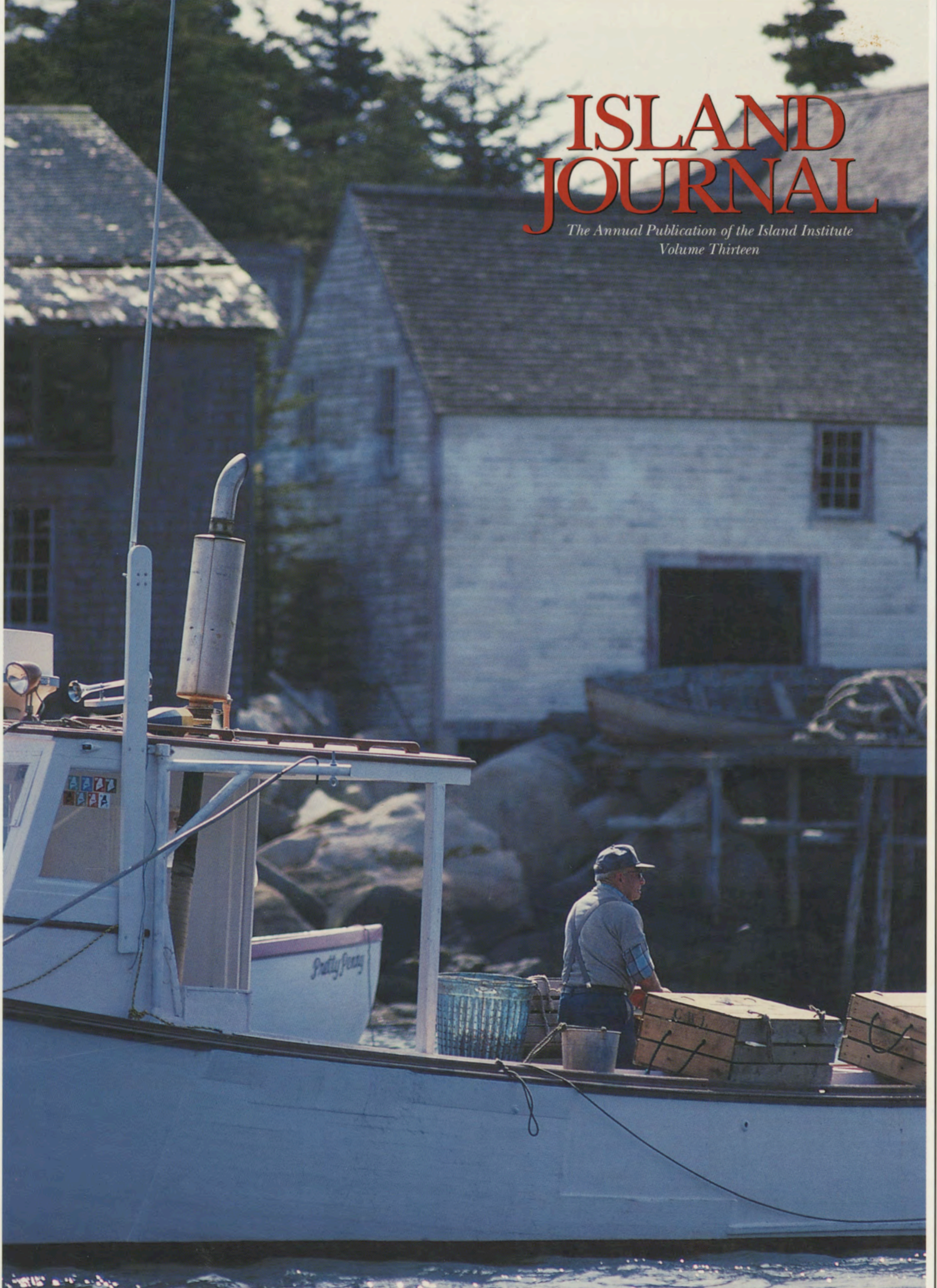


# ISLAND JOURNAL

*The Annual Publication of the Island Institute  
Volume Thirteen*





Peter Ralston

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Peter Ralston

## *To our readers*

**A** SUMMER SNAPSHOT long buried in a family album has the power to instruct us about ourselves by reminding us what we once were. Century-old photographs of fishermen tending herring weirs or hauling nets brimming with cod document the bounty that once sustained whole families and communities — and could again. Pictures remind us what it was like to dance in an island casino on a Saturday night, to celebrate boyhood freedom on a rocky beach, to attend an island school, to rusticate in a porch swing, to ride a steamboat to Boston or a mailboat to Criehaven.

This 13th *Island Journal* departs from its predecessors by including more than the usual number of “archival” images. The stories they tell are compelling and relevant, because they enrich the history we all share. Many of them are works of art in themselves.

The islands of Maine, and the Gulf of Maine region of which they are a part, have a long and fascinating human history. It’s a history of exploration, exploitation, technology and stewardship, a history of different human relationships with a rich and varied natural world. It is, finally, a history that has come down to us through the images, writings, crafts and works of art of those who lived it. By sorting through these messengers from the past and letting them tell their stories yet again, we enhance our understanding of ourselves, and we remind each other of the choices the future holds in the sea of changes ahead.

— the Editors

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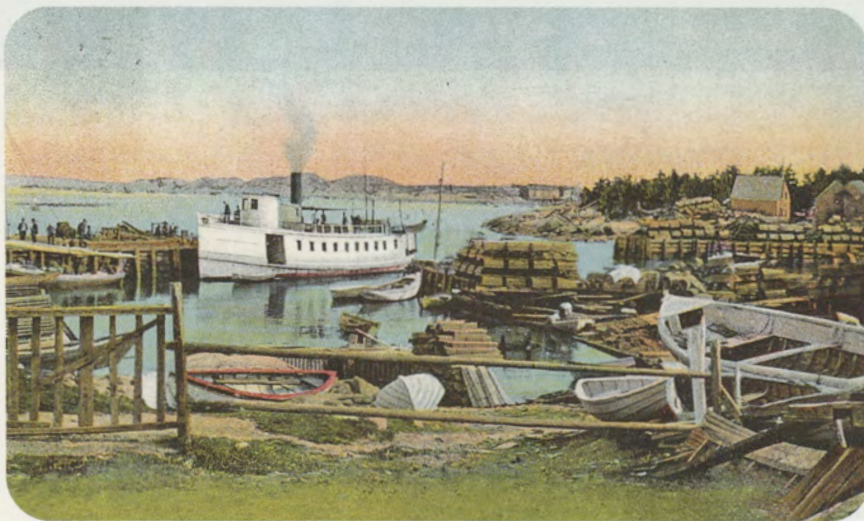
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*Sustaining Islands and Their Communities*

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Peter Ralston (2)

## **EYE OF THE RAVEN** *Journeys along the Archipelago*

PHILIP W. CONKLING AND LISA SHIELDS

**L**IVING ON THE MAINE coast draws you into the heart of its weather. The many soft moods of the high, blue-green days of July and August are a wonder to behold, and are unfailingly followed by the dry, brown tawny of Indian summer that lingers late into October. These are among the region's most special gifts and should not go unremarked, unthanked. But following Allhallows Eve, when gray November prunes the day length and the air grows more raw and unruly with each passing week, it's pure boneheaded not to think through the differing conditions any day can bring. Then at the end of the year, as December's aperture closes down around the fleeting edges of daylight, darkness defines the field of view. But December's days also have an eerie depth of focus when island horizons loom larger and rise up off the water to greet you, to invite you to the heart and hearth of island winter.

Talking through weather is a simple comfort; a familiar habit; a part of the covenant you make with your neighbors, who, like you, live at a continental oceanic

edge. Beyond mere talk, the way you relate to Maine coastal weather reveals character and depth; it speaks to how you live. "Must've blown 50 here, I could hear the clapboards rattling all night." Out on winter's waters, the conversational structure imparts ecological layers to its meaning: "You won't see this gale of wind let go till the tide turns," or, "D'you see the color of the moon? There's a bitter raw easterly making up out there."

It's not winter all the time here on the Maine coast, not even half the time, although it seems like it to friends and relations who live away. Between May and November you can be out almost anywhere offshore and not get into too much trouble; although, of course, you can, as they say, scare yourself some foolish. But help is generally nearer at hand than you might imagine, with lobstermen vigilantly watching everything every boat does, and noting the erratic, the ill-conceived, the visitor from away.

When the days draw down, the weather is carefully watched; the window of opportunity, like the eye of RAVEN's pilothouse, is more circumscribed, the view

less distinct. In preparation for a trip to Vinalhaven, I have come aboard to stow gear and stoke the fires (the prodigious heater) below, while RAVEN's peripatetic captain, Peter Ralston, attends to details ashore, not the least of which involves laying in galley stores, a task which this zealous and particular captain has learned he delegates at his peril. There is a short, steep chop rolling through the harbor; no sense lying on the float and jerking around next to the dubious group of urchin boats that are tugging at their lines. While waiting for the Espar furnace slowly to soak precious heat into RAVEN's interior, I leaf through the log maintained by Peter and Lisa Shields, the Institute's community service director.

The ports of call suggest it's been a good year along the archipelago, where RAVEN continues to serve as a bridge, a radio channel, a mainland link, an inter-island school bus, an independent berth, a galley, a temporary office, or simply a small pilothouse from which to extract brief records of an endlessly unfolding drama along this most magnificent coastline.

RAVEN's passages this year began either in Rockland or on North Haven, where often as not, Lisa Shields and her husband, Dick, both came aboard for voyages east and west. Readers of *Inter-Island News* will recognize Lisa's name as that of the primary logkeeper aboard RAVEN. But those who have not been privileged to regular passenger service on Penobscot Bay ferries during the past three decades may not have met Dick during his long career, most of it as captain of the NORTH HAVEN; he now graciously and regularly volunteers *inter alia* as RAVEN's back-up captain, first mate, A. B. and chief storyteller.

From among Lisa's many meticulous entries in RAVEN's log, the following entries conjure up a year's worth of voyages:

*March 22, 1995:* For the remainder of the day we were treated to many meteorological tricks, during the three-hour ride to Great Cranberry.

Leaving a little after noon, we straddled a front. The sun favored the islands; an eerie light bounced on and off the darkly brooding mainland mountains on our port side after we left Stonington. Smudged gray masses loomed over the mainland in sharply defined areas, indicating thick showers in some spots. The slanted sunshine coming from beyond our starboard side struck the backs of wheeling gulls and dovekeys sitting on the green-black ocean, lending them an unnatural brilliance. The white hulls of lobster boats in the distance took on a glittering cast, and RAVEN's wake glistened with silky summer phosphorescence.

In any case, we arrived at Great Cranberry in time to participate in an historic event — the first meeting of the board of directors of the Great Cranberry Futures Group.

Great Cranberry, like many of the coast's other 13 year-round island communities, has been struggling with the duality of its existence as it oscillates between



*ACE group from Cliff Island, Casco Bay, July, 1995.*

the intoxicating sweetness of summer, when there is too much to do and not enough people to get it done, and winter's bleak reality of scarcity and furiously narrowed options. The impending sale of one of the island's two wharves fronting on the harbor has catalyzed a broad discussion of the island's future and in the wake of this, a new non-profit corporation, the Great Cranberry Futures Group, on which the Institute serves as an *ex officio*, non-voting member, has come together to provide a forum for community economic planning and development.

*April 24, 1995:* "Riding the Island School Bus" We headed for Frenchboro to attend its annual town meeting. After an early (but sumptuous) supper at Gerd and Donna Hasal's with David Lunt, Dick returned to RAVEN while Peter and I waddled into the Fire Station for town meeting. Approximately 25 people — better than half the year-round population — were in attendance. The donation of a generator "with enough power to run the island during the winter" was announced. The generator was given to the town "by a friend." Articles passed included one to investigate financing to completely re-pave town roads and another to move the old telephone building to town-owned property opposite the community building. The structure will be used for town purposes.



Frenchboro continues to struggle to maintain a year-round community, the smallest and most fragile of Maine's island outposts. Frenchboro's famed "homesteading" program, designed to attract new settlers to the island and kids to its school, has met with some successes and many more failures as the survivors are fewer than the number of recruits attracted to the dream of an independent life and the island's many natural advantages. As I write during midwinter of 1996, four of the six homesteading houses the Frenchboro Future Development Corporation built for new settlers are rented; a seventh house is occupied by the island's new teacher, who has three kids in the one-room schoolhouse.

*May 17, 1995:* RAVEN was put to use again on May 17, when we headed out to Monhegan to spend the night. We were due to take Monhegan students and teacher and Matinicus students and teacher to Islesford the following morning, where they were to join Isle au Haut, Islesford, Great Cranberry and Frenchboro students and staff for the annual Inter-Island Event, a gathering of Penobscot Bay and Downeast small schools.

After lunch, the students were divided into groups, with the older students heading for the spectacular playing field near the dock to engage in various games, and the rest heading for an island and beach tour accompanied by Rick Alley of Islesford.

Reuniting with the other students and teachers, the whole group engaged in a rousing game of Capture the Flag, further whetting evening meal appetites. Community members brought in an enormous variety of food, with each dish making you wish you had just a little more room. Many Islesford residents stayed for the entertainment following the meal, and it's certain they're glad they did.

*May 24, 1995:* At 7:15 a.m., Peter picked up North Haven's 18 third- and fourth-graders and their teachers. We stowed gear, went over boat rules, took a few photos and were off for Matinicus. This trip was the culmination of months of planning on the part of all involved. The clouds were dissipating as we arrived at Matinicus, and a full day had been planned. North Haven students shared their morning circle and played the name game to become better acquainted.

A walk to one of Matinicus's sandy beaches helped sharpen appetites for packed lunches, but sand castles, sand pictures and searches for sand dollars took priority. Many of the North Haven students were so enchanted with an actual sand beach that portions of the beach made it back to North Haven. Bags that held sandwiches were re-used for sand.

Most good-byes were said at the school, but some students came to see us off at the dock.

Some of the North Haven students had been reading about Abbie Burgess, lighthouse keeper at Matinicus Rock. After calling parents and alerting them to our revised plan, we made our way to see this most distinc-

tive, outermost lighthouse. We were also able to see a few puffins in the distance, and some razor-billed auks. Seals and seal pups were abundant. New friends were made, new sights were seen, and all considered, the day a huge success — sunburns and all.

These entries underscore the significance of RAVEN's role of fostering inter-island school exchanges. Maine's 14 island schools are scattered among 10 island towns, two mainland towns and nine school districts, with most of their superintendents ashore, many of whom never get the opportunity to visit. It frequently comes as a surprise that so many island kids have never visited neighboring islands, which face similar educational challenges brought on by their isolation, small size and high per-pupil cost. But when you stop and think about it, the reasons are clear. Consider the example at hand: Matinicus has one ferry trip per month scheduled around high tide, so that although North Haven and Matinicus are both within Penobscot Bay, to get from one island school to the other is a logistical near-impossibility using the ferry. RAVEN, on the other hand, can make the round trip in less than a day, even during short days of the long off-season. And the examples could be multiplied for any pair of islands where residents might consider visiting each other.

*July 12-13, 1995:* With a multi-purpose agenda, RAVEN leaves the dock at the Rockland Public Landing at 7:20 a.m. to head east.

Our first stop is at Swan's Island, where Annette Naegel (the Institute's science and stewardship director) and I spend some time with an island entrepreneur who is searching for funding sources for a project which could involve other islanders with similar goals. Philip and Peter head toward Island Aquaculture Company (IAC), where they catch up with manager Sonny Sprague.

From Swan's we go to Frenchboro, where Annette speaks with a few landowners about various types of easements. Down the road, I am introduced to Lisa Higgins's parents, who are operating Frenchboro's new store in their daughter's absence.

Great Cranberry is our final visit for the day. We are there to listen to discussions by the townspeople of Cranberry Isles, of which Great Cranberry is a part, on affordable housing. The town of Cranberry Isles is in the process of forming an organization to facilitate year-round housing, recognizing that a pro-active stance is essential to maintain a healthy year-round population.

*July 21-23, 1995:* We are able to stop at Stonington long enough to catch the famed Lobster Boat Races; we watch the work boats — the sleek-hulled and heavy-hulled, the gear-laden and barely geared, the newly painted and heavily used — running hard in various competitions.

*(continued on page 89)*



LIKE THE STARRY FIRMAMENT they suggest as they spread across a nautical chart or satellite image, islands in the sea can be metaphors for many things. Being separated from one another they speak of individuality: their inhab-

itants must go about their lives in isolation from their counterparts at other outposts only a short distance away. On the other hand, islands are the very image of community: those who live there must turn to each other; they have no other choice.

Stories of rugged individualists and warm communities are familiar to all of us. For centuries, they have been ingrained in the culture of the Americans and Canadians who live on the islands and in the often remote mainland communities that ring the Gulf of Maine.

More difficult to describe, perhaps, is a larger image that these islands in the sea bring to mind as well: the web of connections, natural and human-forged, that binds the Gulf of Maine region together. At its center are natural resources: cod, herring, lobsters, timber, the sea, the wind. Enhancing these are the rivers, wetlands, tides, depths and upwelling nutrients along the eastern coast of the Gulf of Maine, among the islands, on the offshore banks and in the Bay of Fundy that create one of the world's richest marine environments.

People have lived in this place since the retreat of the last glacier more than 10,000 years ago. Making use of natural resources, they have spun interconnected webs of their own, creating island and mainland communities that have depended on resources and each other to survive, building ways of life built on shared technologies and common understandings.

Time has not always been kind to the Gulf of Maine. Some of its resources have dwindled, some of its communities have entirely disappeared. Yet from Campobello to Boston, from the Fundy coast to the Georges Bank, the signs are encouraging. An aquaculture entrepreneur builds a small empire in New Brunswick; young families return and build their lives on three Maine islands; a venerable scientific institution re-invents itself for the 1990s.

The interconnections that make up the Gulf of Maine community are as important today as ever. The image this region of people, land and sea brings to mind in the future — the interconnected web based on rich natural resources, or something poorer and more barren — will flow from the decisions all of us make, now and in the years to come.

— David D. Platt



**ISLANDS,**

**SEPARATE**

**AND**

**TOGETHER**

# THREE ISLAND FAMILIES

For the 4,500 souls who choose Maine island life, limited access to medical services, a shortage of full-time jobs or even a predictable income, and the necessity of sending teenagers ashore to complete their education can strengthen — or crush — a family's resolve to remain anchored to these water-bound outposts.

As most Americans migrate closer together and, ironically, grow farther apart, Maine island communities continue to harbor small-town life with a twist: anonymity is non-existent; time is measured not by a clock or a subway schedule but by seasons and local events; work shifts in kaleidoscopic waves that expand and contract with the summer population; the weather dictates the rhythms of everyday life.

Each community is as distinct as its degree of separation from the mainland. And each offers a unique set of challenges and opportunities that are rooted to the foundations of island life: work, family, and community survival.

*Stories and photographs by  
Deborah DuBrule*

## THE PHILBROOKS OF MATINICUS: *Navigating an intricate seascape of paying and non-paying jobs*



**T**he sea between the mainland and Matinicus, Maine's most remote community, is dotted with the emerald and gray skeletons of abandoned year-round islands. Some, like Ragged Island (Criehaven), harbor summer colonies. This is the scene that two-year-old Nicky Philbrook viewed hundreds of times from a six-seat Cessna, after he was diagnosed with leukemia.

The 100-mile journey from beyond No Man's Land in the Atlantic to the mainland required hospitable weather and a plane; clear roads and a borrowed car completed the stretch to Portland for radiation and chemotherapy treatments. Nicky's parents, Clayton and Wanda Philbrook, paid the hefty transportation costs by selling crabmeat to hospital employees.

As a sternman aboard a lobster boat, Clayton supplied the crabs; Wanda steamed and picked them, sending between 40 to 60 pounds ashore, sealed in one-pound plastic bags, on Nicky's tri-weekly trips. That routine, in addition to interim medical therapy on Vinalhaven Island, 12 miles by sea, continued for nearly three years.

Until recently, recalls 41-year-old Wanda, "the hardest part of living out here was getting Nicky back and forth for his treatments. Sometimes, because of the weather, he and Clayton had to leave a day early, but they never missed an appointment — even in winter."

Wanda usually remained at home, caring for her older son, Troy, and newborn Samantha. Nicky's diagnosis came only four days after Samantha's birth in the winter of 1983.

"Even the doctors thought that living so far out helped in Nicky's recovery," explains Wanda. "He had fewer complications than a lot of kids have because there aren't many people here, so he got less exposure to colds and flu and other childhood illnesses that could've interfered with his recovery."

Named by the Abenaki Indians "far out island," Matinicus can be sequestered by weather for days, even in summer, with fog banks, winds or maverick seas preventing air or boat travel. Transportation is costly and unreliable. No job base exists outside of lobster fishing, leaving poor economic prospects for newcomers or natives who choose not to fish.

"We're at the ass-end of nowhere," says 44-year-old Clayton. "You either love it out here or you don't."

To meet the salty demands of living 23 miles from the mainland, islanders navigate their survival, as the Philbrooks do, through an intricate seascape of paying and non-paying jobs that keep their families financially afloat and their community sailing.

Mostly flat and surrounded by uncompromising rock, the oval-shaped island spans a length of roughly two miles and a width of one mile. Thick expanses of spruce trees tower alongside the four miles of dirt road, interrupted by a few cleared fields, a sandy beach, homes and cottages dispersed over the island and dotting its shore. Behind the granite ferry landing, makeshift boardwalk paths crisscross between fish houses, a new grocery store that offers home-made dinners, an art gallery, the post office and a couple of homes, their wood shingles windblown and salted into varying hues of gray.

"It's beautiful and quiet here," says Wanda, appreciating the panoramic view of the sea and Matinicus Rock, a nesting spot for puffins and other seabirds, from her kitchen window.

Before she met Clayton, a six-month stint in Connecticut had soured any future possibilities of a mainland migration for Wanda, a Vinalhaven Island native. "There were too many people in the city. I didn't like all the traffic and the noise and the pace," she remembers.

"I had lived on Vinalhaven for 25 years and even that was growing too fast to suit me. It was becoming more of a tourist trap. From May to October, you couldn't go to town and see anybody you knew. It was so overrun with people that it became overwhelming." Vinalhaven's year-round inhabitants total 1,100.

Matinicus's residential population reached its zenith at 240 in the 19th century. There were still 188 inhabitants in 1950, according to federal census figures. For the last 25 years, the population has

**A fifth-generation  
native, Clayton believes  
that people from all  
islands share a strong,  
independent nature,  
a legacy from their  
ancestors.**

hovered at 60, seasonally dropping to as low as 30 in the harshest winter months. Its summer population rises to 130.

Matinicus is a virtually self-governing plantation, and many natives are related, however distantly, and trace their roots to those who settled the island more than three centuries ago. A fifth-generation native, Clayton believes that people from all islands share a strong, independent nature, a legacy from their ancestors.

"I think people who came here were square pegs in round holes," he observes. "They couldn't get along in England; they didn't want to be told what to do; they were rugged individualists who weren't going to put up with a rigid class society. They exemplified — and still do — the character of Mainers."

In crystallizing the differences between mainlanders and islanders, he adds, "When you grow up on an island, you learn to do a lot of things for yourself. And you help your neighbor — even if you don't get along with him. I don't see that happening on the mainland where people don't even trust their neighbors, let alone give them a hand. The biggest problem we have on this island is the lack of a source of income."

Only a handful of full- and part-time jobs connected with the post office and the school provide regular, predictable income. More than half of the island's 20 family households, like the Philbrooks, rely on lobster fishing as their primary source of income.

Unlike most island children who begin lobstering from small skiffs by the age of nine, Clayton started fishing as a sternman at 25. After graduating from high school on the mainland, he attended college in

Florida and southern Maine, and spent a couple of years traveling across the country and into South America, working odd jobs along the way, before returning to the island.

A recently dissolved fishing partnership with his brother-in-law left Clayton rebuilding his own boat engine last year while working as a sternman from April to January. This spring, he'll continue sterning in addition to fishing 200 of his own traps. Thirteen-year-old Samantha will work as his helper this summer to earn the "away money" she'll need when she leaves the island to attend high school next autumn.

From January to March, he works as a roofer, carpenter and plasterer, mostly for summer homeowners who own 25 percent of the island, according to Clayton, who also serves as the chairman and administrative assistant of the board of assessors. With his own household projects backlogged, the Philbrooks' 50-year-old, wood-shingled home is in a persistent state of renovation, a testament to the principle that the cobbler is always the last to be shod. Clayton and his brother grew up in this house.

Throughout the year, Clayton works as the business manager for the town-owned power company and sells and installs television satellite dishes on the cable-less island. Occasionally, he writes articles for *Inter-Island News*, accompanied by photographs shot by Wanda.

In addition to volunteering as a firefighter and one of a five-member rescue team, Clayton is certified as an emergency medical technician (EMT) and a CPR instructor, enabling him to renew certifications for other EMTs and islanders, saving them an annual trip ashore. He serves as secretary for the island's emergency rescue service and holds a Wilderness Endorsement Certificate, which increases the breadth of medical services he can render in emergencies.

If the wind is lashing and a plane cannot reach the island, patients must travel by boat. "We're three hours from a hospital," says Clayton. "If it's blowing 40 to 50 knots, it could take as long as four hours to deliver a patient to [Penobscot Bay Medical Center in Rockport]."

Although his training was paid by island tax funds, grants and fund-raisers, Clayton must pay travel to and from the mainland for training and re-certification, as well as lodging and meal expenses — sometimes losing more than a day's wages.

"This is the nature of volunteer work," says Clayton, "and the reward is two-fold. You have the knowledge that you're doing something for the community and, since there are five of us and we coordinate our schedules so that there's always an EMT on the island, I can leave the island knowing that Wanda and the kids will be cared for if there's an emergency."

*(continued on page 92)*



**THE  
BEVERAGES OF  
NORTH  
HAVEN:**  
*“On the  
island,  
you know  
everyone”*

**H**aving grown up on the island of North Haven, and now been married 23 years, Doris can't remember a time when she didn't know Paul Beverage. As newlyweds, they lived in an apartment at the center of Portland for a year after Paul graduated from auto mechanics school. Finding the mainland claustrophobic and feeling isolated from their families, Doris and Paul remember the pull of the island.

“We chose to come back here, where the pace is calmer, slower,” 42-year-old Doris explains. “Maybe that has something to do with whether or not you're really suited to island life: you have to want it bad and that affects your mental outlook. We could live anywhere, really. But we choose to be here and to raise our family here.”

Paul adds, “On the mainland, you have a circle of friends; on the island, you know everyone. It gives you a secure feeling — you can trust everyone. You don't have to worry about someone harming you, or breaking into your house or your car. Your kids can go out on their bikes and go anywhere they want.”

Family is clearly the number one priority in the Beverage household. They started their brood in 1977 when they adopted Kristy as an infant from Korea. Three years later, they finalized adoption of another

baby, Corey, from El Salvador. And, in 1987, they rounded out their family — or so they thought — with three-year-old Sam.

Fearing that Sam was becoming an only child because of the age difference between him and Kristy, Paul and Doris decided to adopt one daughter from Nicaragua last year. They came home from the tiny village of Puerta Cabezas with two girls, and expected to adopt a third this past winter.

“It never occurred to us not to have kids,” recalls Doris. “But we never — ever — thought of adopting six children,” she laughs, adding yet another reason why she prefers family life on North Haven: parents, grandparents, aunts, uncles and cousins represent the immediate family; the community extends it further, bringing into practice the ancient African credo that it takes a village to raise a child.

“I went to Puerta Cabezas with another woman from the island who adopted a child. When we came home, half the island was at the ferry with balloons and signs to welcome the children,” remembers Doris. “The whole community has supported us. They even had fund-raisers to help us out with the adoptions financially. Islanders have embraced all of our children: that's their extended family.”

When the Beverages started their family, Paul worked on marine engines at his

uncle's island boatyard, supplementing that income with lobster fishing. But two part-time caretaking jobs, one shared with his brother, pushed lobstering into the background. "I could make more money doing other things," Paul points out. "Caretaking offers more security. Lobstering is much more of a gamble."

His brother's move to Florida converted one part-time caretaking job into what's considered a rarity on Maine islands: a 40-hour-a-week job. He has worked at the same estate for over 10 years, remodeling and maintaining the 58-year-old summer home and grounds, rebuilding stone walls, cutting trees, and keeping several boats seaworthy for the Massachusetts family.

Although Doris's full-time job is raising children, she works part-time at the estate, painting, cleaning house, and mowing lawns. In the summer, she's joined by 19-year-old Kristy, now a sophomore at Bowdoin College studying languages, and 16-year-old Corey. Paul's mother worked for the family as a cook.

Paul, who serves as an island selectman, continues to lobster fish at night and on weekends from June through November. "Celina and Meri argue about which one goes fishing with him," chuckles Doris.

In addition to lobster fishing with their dad, nine-year-old Meri and her sister, eight-year-old Celina, have learned to ice skate on a local pond and seen snow for the first time in their lives. "We jump off the bridge, too," says Meri, referring to their swimming escapades near their new home in Pulpit Harbor. Celina adds, "We see the [blue] herons that come here for their fish." According to Doris, both girls spoke nearly fluent English within three months of their arrival.

As opposed to most Maine islanders, North Haven residents never fully relied on fishing as their primary source of income. For well over a century, farming stood as the cornerstone supporting the island's economic health, bolstered by fishing and shipbuilding. In the 1880s, however, wealthy summer rusticators began acquiring large tracts of farmland on which to build "cottages," taking advantage of the island's deep anchorage along the Fox Islands Thorofare and easy steamship access from Boston and beyond.

The summer rusticators revolutionized the island's economy, shifting farmers and fishermen into the trades that support islanders today, such as building, caretaking and tourism. Since boatbuilding retained much of its prominence, it continues to supply steady income for a few of those who inhabit this eight-mile-long, three-mile-wide island.

The impact of the economic transition can be seen in both Paul's and Doris's ancestry. Paul's family worked the land as farmers as far back as anyone can remember. Doris's grandmother arrived from England nearly 100 years ago to work for an influential summer family.

Modest housing on North Haven begins

**"The whole community  
has supported us,"  
says Doris. "Islands  
have embraced all of  
our children: that's  
their extended family."**

at \$95,000, according to a local real estate broker, which makes home buying difficult for natives. Prices for seasonal estates — mostly equipped with private docks and boathouses (one even boasts a private airstrip) — can soar into the millions.

Approaching the island, the ferry from Rockland cuts through neon-colored lobster buoys that thicken as the ferry nears the pier, some as close as ten feet apart even in the fall. "In the summer," says Paul, "the harbor's so thick with them you could probably walk straight across the harbor in snowshoes."

Just beyond the village, impatiens cascade from window boxes, nasturtiums flow over granite garden walls and onto green lawns, behind which stand well-kept shingled houses. A white picket fence winds partially along one side of the village road that leads past a gray-shingled Catholic church. A handwritten notice of services includes the postscript, "weather permitting," a reminder of the island's limitations: no Mass if the plane can't get the Camden priest to the island.

Although Penobscot Air offers daily mail flights from Knox County Airport in Owl's Head, most people rely on ferry service that runs three times daily for \$8 per passenger round-trip.

"It's a substantial improvement over what it was 25 years ago," says Doris. "But living your life around a ferry schedule is still the biggest inconvenience to island living."

Weather, mechanical problems with the boat, ramps, or lift system and even power outages can turn a several-hour shopping trip or a half-hour dental appointment ashore into an all-day excursion. "Especially in winter, you can get up early and get kids fed and dressed for a doctor's appointment ashore only to discover that the ferry won't be running that day," explains Doris. "It's frustrating, but you

learn to work around those things. And you never come home with an empty car. We always fill it up with groceries or hardware supplies."

Although two grocery stores operate year-round, most islanders shop on the mainland or have groceries delivered by plane from Shaw's, as is done on Matinicus. In addition, the island boasts an American Legion Hall, a library, a post office, gift shops, an ice cream and take-out shop, and a nine-hole golf course. Native artist Eric Hopkins runs a gallery, and nearby Calderwood Hall sells island crafts, clothing and jewelry and sponsors live performances in summer. A physician operates a year-round clinic. Three churches provide seasonal or year-round services, but natives abandon one church in the summer for the rusticators.

Intermarriages and changing times have blurred some of the social lines between natives and seasonal residents. Still, some division between the summer and year-round communities is noticeable. "It does get crowded here in the summer — it's like Camden — and that can stress you out," Doris acknowledges. "But I don't think we'd have the strong year-round population we do have without them — not only because they employ islanders and support a lot of jobs that are connected with caretaking and construction, but I don't think we'd have the two boatyards and the golf course, that are enjoyed by islanders, without them. They help support the year-round community, so there are a lot of variables."

In addition, says Paul, "We're close to the family we work for. Our kids play together — we're in and out of each other's houses all the time. I really like the people I'm working for."

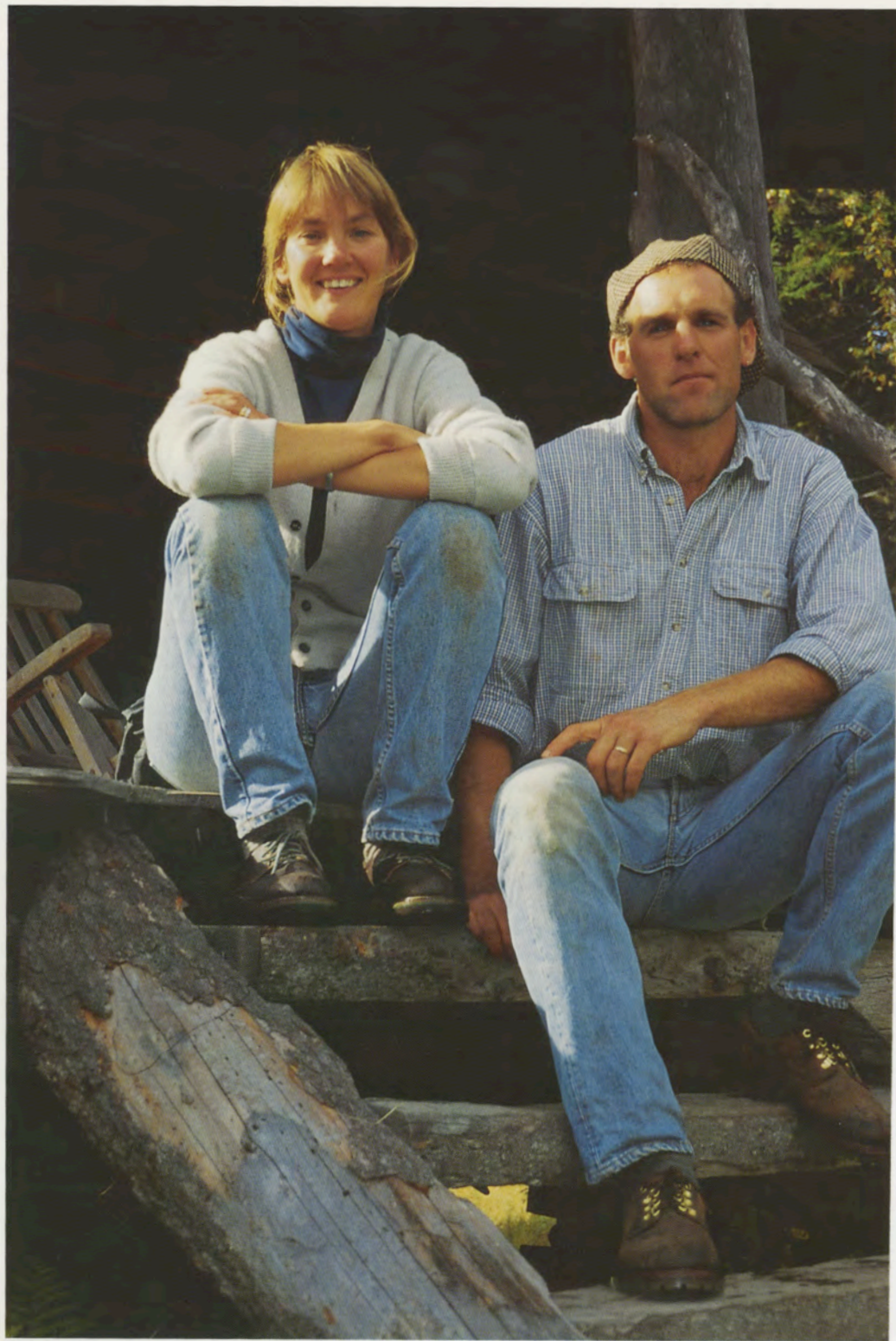
North Haven's population soars from 350 in the winter to 1,500 in the summer. The substantial winter figure allows the island to provide education from kindergarten through 12th grade for 78 students, in addition to employment for 15 full- or part-time teachers and aides.

Numerous classrooms, a greenhouse, music and art rooms, science and computer labs and a special-ed classroom occupy the two buildings. Because the island has enough children to organize team sports, Corey plays golf for the island team and Sam plays basketball. Adults take classes in the evenings through ITV.

"We're not isolated like many other islands," explains Doris, "and we enjoy services, like the school, and luxuries, like the golf course, that most islands don't have. We're really an extension of the mainland."

"It's not like we're a different breed of person just because we live on an island," says Paul. "We enjoy being part of a small town, we love nature, and it's a great place to raise a family. I mean, unless you lived inside Acadia National Park, where else could you get all of these views, the scenery, the water?"

THE ALLENS  
OF GREAT  
CRANBERRY  
ISLAND:  
*A place to  
put down  
roots*



**I**n August, 1993, a falling treetop brought Colleen and Gary Allen to the stark realization that if they wanted to support themselves year-round, and see their youngest child grow up, they'd have to find a less hazardous way to earn a living on Great Cranberry Island. They had supported themselves for more than ten winters by cutting trees.

"I was moving out of the way of the drop with a running chainsaw in my hand," remembers Colleen. "It was really scary. I saw the top snap off, fall in the opposite direction from the bulk of the tree, and

hit Gary in the back. I thought it was going to kill him."

Back home, confined to the sofa with five broken ribs and no income save what Colleen earned working part-time at the school library, the Allens spent a week brainstorming ideas that would enable them to create and sell a product. The answer came through their son, Patrick, then nine years old, who wanted some money to buy a model boat.

"I had always over-planted my backyard garden and gave everything away," recalls 35-year-old Colleen. "So, Patrick and I loaded up his little red wagon with about



40 heads of lettuce and we told him he could keep whatever he earned. He came back about a half an hour later with \$40! I started getting calls asking if I had any other organic vegetables to sell — and people were happily paying for them — so I set up a stand here at the house.”

In the past two years, evidence of Cabin Creek Farm’s influence and success shows in the profusion of colorful window boxes, hanging baskets and garden containers, designed by Colleen, that grace nearly every island home on Great Cranberry and nearby Little Cranberry Island (Islesford). In addition to selling annuals and perennials, the Allens landscape homes, and design and plant flower and vegetable gardens, checking them periodically to advise owners about pest control, fertilization and watering as the gardens progress.

Gary, a 39-year-old marathon runner, designs and crafts Adirondack-style garden gates from cedar and alder branches. Through custom orders, he has also sculpted a garden clothesline and a three-sided garden partition that measures about eight feet high and 20 feet wide.

The impressively stocked island store now sells the Allens’ produce to Great Cranberry residents. Last year, the Allens delivered salad fixings by boat to the posh Asticou Inn at Northeast Harbor, two miles from the island.

Three greenhouses, one completely solar powered, a white skiff overflowing with impatiens (until the deer ate them), and a cedar bridge above the creek that winds through the property, welcome visitors to the Allens’ seaside farm. A path beyond the bridge leads to their two-loft log home and a clear view of Acadia National Park. Maintaining the organic theme, the Allens use seaweed, gathered after storms, as fertilizer. Two chickens work full-time at pest control.

Nearly everything on the property sprouted from this densely forested, seven-acre tract which Gary inherited from his grandfather, Elijah Bunker. Although neither of the Allens are natives, both are related to the Bunkers, one of the island’s prominent founding families.

“We couldn’t have afforded to live here if I hadn’t inherited the land,” Gary explained, adding that housing prices start at about \$100,000.

“It hasn’t always been easy,” admits Colleen. “We lived in this 20- by 20-foot kitchen, with two children, for seven years.”

In what now serves as the family’s warm eat-in kitchen, bunches of statice hang from rows of rough-hewn ceiling beams, drying into varying shades of purple. Masters of recycling, the sink, stove and other necessities in the Allen kitchen were gratefully accepted hand-me-downs from residents.

Before expanding the cabin, the Allens slept in a loft upstairs, with Patrick sleeping at the foot of their bed. Their oldest

**On Great Cranberry,**

**the Allens can give**

**their children**

**something they**

**themselves lacked on**

**the mainland: a sense**

**of security.**

son, Paul, now 19, slept on the downstairs couch.

After seven years of sharing close quarters and, seemingly, limitless work on the house, the Allens took their frazzled nerves to the mainland for a break and some predictable income — a period Colleen says brought new-found lows to the quality of their lives.

“In Bangor, we both became mall rats,” laughs Gary. “We were working two jobs each, we were successful — working really crazy hours — and we still didn’t have enough money. Plus, we were living on the second floor of a cow barn and we weren’t used to dealing with a landlord.

“When Colleen was about to go to work for McDonald’s, we decided to come back to the island. She had gotten hired and trained, and the night she came home with a uniform in her hand she said, ‘That’s it, I’m going back to Cranberry.’”

The Allens added a spacious living room to their home, another loft, which they use as an office, and a bathroom, also equipped with donations. Resembling a work of art behind the wood stove, a one-inch-thick wall is constructed from end grain timber and concrete. Best of all, they discovered running water in the form of a natural spring next to the cabin.

Last year, the Allens cleared another two acres in one month’s time, burning brush nearly around the clock. “It looked like we’d been hit with napalm,” Gary chuckles.

Their desire to live on Great Cranberry not only prompted the creation of the only business of its kind on a Maine island, but has enabled the Allens to give their

children something they lacked while growing up on the mainland: a sense of security.

Gary and Colleen are the children of military families with one parent each originating from the island. Gary’s mother returned to Great Cranberry to raise the family during his father’s overseas duty tours when Gary was ten. Gary began lobster fishing almost immediately.

He had to decide whether to pursue lobstering as a career by the time he turned 20. “It’s a big investment and a long-term commitment for someone to make that early,” he said. “I was fishing with so many old traps, on a worn-out boat with a near-dead motor. So I put off the decision and never went back to it.”

After traveling the mainland and parts of Europe primarily by bike, Gary returned to the island and employed a variety of his skills in carpentry and boat-building, as well as captaining boats and caretaking cottages for summer residents.

“A common trait among all islanders is that they’re good at about a million different things,” explains Gary. “Everybody knows a little about plumbing, electrical work, carpentry, running a chainsaw. It’s typical of rural communities where you constantly have to make do. You can’t just run to the hardware store when you need something.”

A childhood fraught with constant moves, a teenage pregnancy, and an unhappy marriage drove Colleen to her parents’ home on the island, where the family had settled after her father, a Cranberry native, retired from the Air Force.

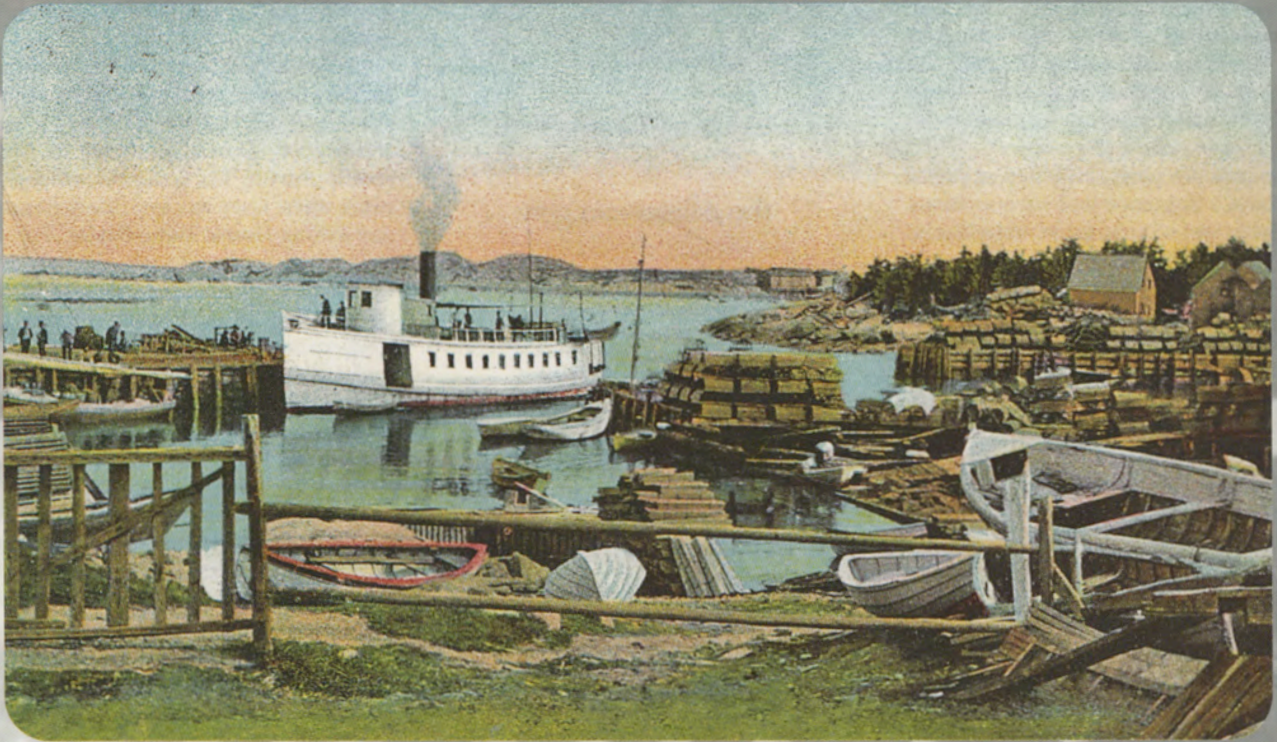
Five feet eight inches tall, Colleen weighed 105 pounds then. “I came here as an emotional wreck. This was such a healing place for me in the past,” she says of the family’s occasional island visits. “The longer I lived here, the more important it became for me to put down roots and figure out how to stay someplace. It was important for my son, too.”

Moving to the island as a single parent, Colleen painted houses and boats and worked at the store, the one-room school and the library. At 20, she also became the youngest postmaster in the U.S. “It was a great job that provided two real rarities on an island: a regular salary and benefits. But I couldn’t see myself selling stamps for the rest of my life,” she says.

She met Gary shortly after moving to the island, married him 12 years ago.

Two miles long by one mile wide, the island is part of an archipelago off Mt. Desert known as the Cranberry Isles. Although Baker, Bear and Sutton Islands once supported year-round communities, only Islesford, which completes the chain, also functions year-round. Great Cranberry’s annual population hovers around 75, but surges to about 325 in the summer months.

*(continued on page 93)*



*Criehaven, 1910 (Courtesy of Oram Simpson)*

# LAST WALTZ ON CRIEHAVEN

ELIZABETH OGILVIE



*The Criehaven Wharf, fish house and camps, about 1900. The waving boy in the foreground is Harry McClure. (Courtesy of Alice Crie Knight)*

*An island community  
lost its schools, its store,  
its mailboat — but the  
lively memories  
are there still*

ONE DAY IN 1900, a delegation from the island once known as the South Island or South Matinicus came to Matinicus and invited Carl Anderson, a Norwegian-born fisherman, to move his young family across to Criehaven, which was then the South Island's name. The Cries offered him a piece of land big enough for a house and garden, and a shore privilege; all would be deeded to him. For a man who had been living on rented premises ever since he gave up deep-sea fishing to stay at home and raise a family, this offer was not to be refused.

The reason for it was his family. The people of Criehaven wanted his children for their school. In the Anderson family history of the event, a school was necessary before there could be a post office. But the island seems to have been incorporated as Criehaven, with a post office, well before that date. And there must always have been a school on the island, because there had been children on it before Robert Crie acquired most of the island in 1850, and then began acquiring children of his own. We know the name of at least one person who taught there before 1900. He was Fred Rhodes, from Glen Cove, and he married the Cries' only daughter, Charlotte. They were given the eastern half of the island as a wedding gift. Later they sold the tip — the Eastern End — to one or more of the three Simpson brothers who had sailed down from Bucksport in a dory. These were not the first people to build and live at the Eastern End.

Fred Rhodes had become a farmer, and by 1900 Hillside Farm was doing a good business in produce for the Rhodes Brothers' markets in Boston, and summer boarders, including ministers and artists.

# HILLSIDE FARM

on the Island of  
CRIEHAVEN, MAINE

SEA FOOD - FRESH MILK - VEGETABLES  
EGGS - LOBSTER  
GOOD ROOMS - HOME COOKING

*An ideal place for a real Vacation*

\$12.00 Weekly  
Telephone Conn.

L. H. WILSON, Prop.  
Criehaven, Maine

*(Courtesy of N. Waterman Drinkwater)*

However the dates run, the fact remains that Carl Anderson was invited to bring his children to the island for the sake of the school; he was promised land and a deed for it, and this was a gift not easily come by. There may have been a shortage of school-age children at that time, and perhaps the law required more children to keep the school going. The family, its goods and livestock, including a cow, were moved across by a Criehaven crew, and Carl would live on Criehaven for the rest of his life. He would live to weep when the Germans invaded Norway in the second World War. Some time later he died in his sleep, which he would have wished; he hadn't had to be carried off his island to die on the mainland. Anna, his wife, had been taken ashore in her final illness, but she had made it clear she was to be buried on the island, and she was.

One of their daughters had grown up to marry the young man who had rowed her and her little brother from Matinicus. One of their grandsons, Carl's great-grandson, lobsters on Criehaven today, the last of a large clan. Though he has a house on the mainland, he spends only about two months in the winter there; the rest of the year he lives on Criehaven, though he is back and forth across the bay frequently, for reasons given below. His uncles have all retired, but they were Criehaven fishermen all

their working lives, from the first peapods until the last hauls, except for the time they were away in the war. The youngest of the brothers, who wasn't old enough for the service, was one of the last four students in the school when the state closed it.

## CONSTANTS

Like the seasonal fishermen who began lobstering at Criehaven when they could buy homes there after the war, Carl Anderson's descendants have had to live since that time without the things which were there in earlier times. Now it was a lobster buyer they lacked rather than a fish buyer for whatever they caught. There had always been a going store, a post office and a regular boat service, even in the far-off days when mail, freight and passengers came under sail.

For a long time now the post office and store have been gone, and the men have to sell their lobsters elsewhere, making weekly trips to the mainland in their boats to do business and get supplies, both for their work and their pantries.

The school was another of the constants which everyone believed would always be there, world without end, while the pattern of life was gradually changing from that of the Crie fish business to that of a lobstering community. Around 1925, the islanders were convinced by some shrewd arguments that if they gave up their plantation status and became "unorganized territory," the state would support the school, their taxes would be much smaller; there'd be no need of electing a school committee and going through the teacher selection process each year. The state would provide the teachers. This was a relief, because nobody liked being on the school committee and having to listen to all the complaints.

Under the new regime one citizen was appointed school agent to collect an annual three-dollar poll tax from every adult male. This money went to the state, toward school expenses. The state employed a superintendent of schools for its unorganized territory, and the school agent was the link between him and the actual school.

When Lois Prior went to Criehaven to teach in 1935, she received a salary of ten dollars a week, and the family with whom she boarded received six dollars a week. Lois began with 19 pupils, but on the second day of school whooping cough broke out and went right through the student body; it was spring before she had a full attendance.

Lois married one of Carl Anderson's grandsons, and there was a different teacher for the next year. Then Lois took the job again; she was a mother that time.

Still another teacher took the school for the following year, but the state couldn't find a teacher after that, and Lois had more of a family at home. Some of her pupils had reached the eighth grade and begun high school, and one large family had moved away. There were four children left; the state was not obliged to keep a school going with less than seven pupils, and so the Criehaven school was closed. However, children could be boarded with some Matinicus families, so the community didn't shut down in any other respect. The schoolhouse was empty, which nobody had thought would ever happen, and the bell didn't ring, but Criehaven went on.



*(Courtesy of Alice Crie Knight)*



(Courtesy of Alice Crie Knight)

Until that last year, there had never been a time on the island when the school couldn't open because it lacked a teacher. True, a year was enough for most teachers, but there was always one for next year. In one way the building was the heart of the island, because it was where all the children were gathered. And before the clubhouse was built, it was the place where the big Christmas tree stood, and Santa Claus came, sleigh bells and all. Church services were held, with everyone squeezing into the seats, or standing, to listen to the visiting clergy from Hillside Farm, and local revivalists touring the islands to give some thumping good sermons. There was always singing. "Blat again!" one old man used to urge when they stopped for breath.

Mrs. Rhodes (Lottie Crie) taught Sunday school there. All the children always went appropriately dressed.

Some teachers didn't leave much of a mark, unless it was for bad temper, or being courted, a matter for much suspense and vivid conversation around the shore. But with truly gifted teachers a lot of good things happened. There was the one who could play the cottage organ and taught so many new songs, even part-singing. One teacher dramatized poems like "Barbara Frietchie"; the entire student body, except for Barbara, was the Confederate Army, carrying wooden rifles cut out by the oldest pupils.

They learned "pieces" to speak, funny poems, and the classics, benignly gazed upon by the framed row of the great New England poets. One teacher decorated the blackboard with colored chalks to celebrate the seasons and their holidays. Even if the teachers went away for Christmas, they would have the preparations for the school's special performance well underway, so it could be carried on without them.

If a teacher was young and willing, there were always enough young men on the island to make courting her both an active and a spectator sport. There weren't that many eligible girls for the occasional male teacher, after Fred Rhodes won Lottie Crie.

*If a teacher was young  
and willing, there were  
always enough young men  
on the island to making  
courting her both an active  
and a spectator sport.*



*Ira and Alice Tupper (Courtesy of Oram Simpson)*

One teacher was pursued from the mainland by a suitor who came out on the mailboat one day and refused to leave without her. He won, she gave up her job that day and they got someone to take them to Matinicus that night, in an open boat and bad weather. The next day they were off to the mainland. Let's hope they had a happy life.

There were teachers who gave their free time to coaching children in subjects that didn't go too far in the island curriculum, like math, hoping to see them make it to high school. There were those who took in some retarded children, teaching them as much as they could learn and protecting them in the schoolyard. There are persons still alive who can tell you about every teacher they had for the full eight years at the Criehaven school, and it makes good telling.

Children going on to mainland schools were consistently on a par with the other students, and more often well ahead in basics like math and reading. In the island school they had learned at their own rate — slow or speedy — and received a great deal of individual tutoring in their weak subjects.

## THE ISLAND STORE

If a place can have two hearts, the store was the other one. On Criehaven it was combined with the post office and the wharf where fish and then lobsters were bought, and where the boat arrived with mail, passengers and freight. The store was also the location of the telephone, which the Coast Guard installed.

First the Cries ran the store. Then as they thinned out the Wilsons took it over; when Leslie Wilson had to give it up because of heavy family responsibilities, H. J. McLure stepped in. He was Herbert J., but was always known as "Mike." Like so many of the others, he had come to the island as a young man to fish for the Cries. When he bought out Leslie he was already buying lobsters, and then he became postmaster, and the quintessential

island storekeeper. He stocked everything the men needed — rubber boots, oilclothes, work gloves, paint, caulking cotton, and so the long list went on. If a man asked him to order a certain brand of heading twine, he didn't argue that another brand was better. There were gasoline and kerosene supplies, and a store full of groceries. His wife and children could stand in for him when he was busy on the wharf, or behind the post office window sorting the mail. He raised three batches of children on Criehaven, and they all became at some time in their lives active in helping to run the business.

Between Mike and Stuart Ames, the long-lasting successor to all those mailboat captains over the years, the store was like *Polaris*; it was always there, and no one seriously foresaw a day when Mike wouldn't be in it, and the *MARY A.* not blowing her whistle outside Eastern Harbor Point three times a week in summer, twice in winter. If Mike was as constant as the *Northern Star*, Stuart was also famous for his reliability. If it didn't look too good out in the bay but Stuart said he was leaving *Rockland* — imperturbable behind that cigar — you went, even if outside *Monroe's Island* you might wish you hadn't come. But he always made it. Sometimes it was too rough to get the boat up to the wharf in Criehaven's harbor, and he had to go around the island by way of the Eastern End and come into Seal Cove, where he would be met by a dory. Stuart and the mail went ashore first; his contract was to carry the mail. Everything else, including passengers, was extra.

After the school closed, not too much else changed, because Mike was still there, and Stuart still carried the mail. When Mike decided to retire, it was a shock, but understandable; it had been a long time since he was one of the Cries' young men. His contemporaries certainly could sympathize, but it was still a blow. However, he found an eager buyer from the mainland who had never run a store or a lobster business but saw a lot of charm in this island way of life. He seemed willing to learn, and stuck it out fairly well for a few years in this group of rugged individualists.

## WAR, RETIREMENT AND THE “NEW WAVE”

The war did not empty the island, though all the able young men enlisted, some before war was declared. Most of the remaining lobstermen had been in World War I. One of these got himself into the second war, and served on a mine sweeper.

Except for the restrictions and regulations imposed by the war, life went on much the same. There were Criehaven children going to school on Matinicus, and the store was still operating, though Mike was very much missed. Stuart still ran the mail. The lobstering became phenomenal; one theory was that the depth charges dropped not too far outside were driving the lobsters in. Whatever caused it, the great lobstering was still there for the returning soldiers and sailors.

When Stuart retired from running the boat, the new man decided he didn't like Criehaven harbor at all, so the Criehaven run stopped. The islanders had to go to Matinicus for their mail and freight. The store began to change hands rapidly. Nobody seemed to have the desire or the ability to make a go of it, as Mike had; but then, he'd been an insider who'd had a good island lifetime to do it in.

Now the groundkeepers, the men whose life had been the island for half a century or more (except when they were away in their war), began to retire. Their houses were bought by young mainlanders eager to get that good lobstering on uncrowded grounds (apart from occasional arguments with Matinicus about the lines). For such a radical population change, the “new wave” would be an appropriate name.

The closing of the school was not the reason for the demise of the year-round community. Neither was the war. It was the change from one era to another. The newcomers were of a completely different mindset from the lifetime islanders. These had either been born there, had come as small children or as young people with the intent of making it their home. And they did so. Not that the women didn't love an occasional visit to the mainland, and they preferred to have their babies there; but old letters and postcards dating from the years before the breakwater was built record a mostly contented, busy community, with relatives coming to visit in the summers, parties and picnics, and the July Fourth celebrations written up in the Rockland newspaper.

Nobody loved the winters, but the islanders had ways to get through them; holidays and birthdays, card parties from house to house, with home-made ice cream and cake; the knitting bees when everyone would gather at one man's house. The fish houses where the men kept the fires going while they worked were their clubhouses — you could always find company there. The main place of assembly for everybody was the store, especially on boat day. After the clubhouse was built, there was space for two big Christmas trees, a wing with a pool table off the big room with the beautiful hardwood floor for dancing. The schoolhouse had been a tight squeeze for church, but there was plenty of room in the clubhouse for the Seacoast Mission services.

Everyone liked to read, and books were given as presents and passed around. Some people resented radio as an intrusion into the social customs, but sociability couldn't be killed that easily. As the men talked in the fish houses, telling yarns and arguing politics, the women enjoyed company while they knitted and darned and sewed on children's clothes or their own.

Though there were sometimes disagreements and grievances, they never festered into something serious. The population was too small; they knew



*A dance at the club house, Criehaven, about 1940  
(Courtesy of Oram Simpson)*

*Though there were sometimes disagreements and differences, they never festered into something serious. The population was too small; they knew how much they depended upon each other, both on land and water.*



*Summer, 1939 (Courtesy of N. Waterman Drinkwater)*

how much they depended upon each other, both on land and water. They never had the long, wasteful feuds of some larger islands, where vendettas were passed on from one generation to the next, and sometimes even today break out in vicious behavior.

Some “new wave” couples seemed to enjoy the winters they tried; they were all congenial. But they didn’t want to make a life of it. Of the native sons, only three had school-age children, who were sent to school at Matinicus and brought home for the weekends. As adults they speak fondly of those winters but, after all, this had always been their “home” as it had been for their grandparents.

The new people weren’t looking for “home.” All of them already owned or rented places on the mainland. There were working wives among them — not a factor in the era that was passing. Those who came out in the summer with the children (who of course adored it) had worked before, and would work again when the children were old enough. They had talent and ambition, the desire to work, and the need. With the new technology, fitting out a lobster boat with everything a man thought he needed in order to compete became an exorbitant expense. Lobster traps and rope went along with it; everything to do with the business was costly, and everything depended upon how the lobsters behaved — and don’t forget the insurance. Children’s shoes cost the earth and so did everything else they wore (or wanted).

## WHAT IF?

Supposing the island still had its constants: a good store and a post office, a regular boat schedule saving the men all the lugging they must now do for themselves. Supposing the school were open, with a good teacher. I think there’d be very few takers, even with the great television reception out there. A few might be willing to take a chance, but even with comforts undreamed of in the first half of this century they would soon be leaving. Twenty-five miles out, a speck of island surrounded by ocean, in winter? It couldn’t possibly be home. Most people today aren’t bred to it and they don’t want to be. They’d be like the newcomers who flee from some larger islands closer to the mainland, and say they loved those places but they couldn’t live there. The winters will do it, every time.

The Anderson-Simpson descendants have always hung on until they felt it was their time to quit. Jerry, one who still fishes there, loves it in the winter as much as in summer, but when he and his wife wintered there alone the one flaw was the sense of imminent danger; what would they do if the boat was in trouble out there in the harbor when one of those monstrous winter storms sent seas crashing over the breakwater? In the old days the big dories would be overboard and all the men taking care of the boats if it was humanly possible. But alone is alone, even with modern communications; Matinicus would be ready to help, but what if no boat could make it across? Now Jerry spends the worst winter months ashore, but in February he is wondering how soon he can begin getting ready to “set out” for spring fishing.

The loss of the clubhouse was the death of something which had once been as necessary to the islanders as their store and post office. It meant nothing to the “new wavers,” except for a few who tried to help the most persistent islanders to save it. Their efforts weren’t enough. The pool room and the dance floor are buried in rubble as if they had been bombed out of existence, destroyed through ignorance and indifference. The building could not possibly have meant anything to those who had not grown up with the excitement of the suppers and the dances, the boatloads coming from Matinicus, the summer people from the occasional yachts in the harbor. With or without them the dances went on to the music of the fiddle, guitars and



Summer island minister and family, the Gwynns, about to depart from Criehaven, Aug. 6, 1939, aboard the CALISTA D. MORRILL (Courtesy of Alice Crie Knight)

accordion playing for “The Lady of the Lake,” “March and Circle,” “The Boston Fancy”, with the little ones jiggling on the sides and babies sleeping in their baskets or carriages, and always a pool game going on in the next room. None of the new people had ever appeared in a children’s performance here, and clapped wildly for the good sports among the adults who did the comedy sketches in the “shows.”

The Criehaven survivors all have their favorite memories of life on their island, but everyone of them says, “the dances . . .” in exactly the same tone. “Oh, for one of those hours of gladness,” an old song goes about dancing in another place and time. “Gone, alas, like our youth too soon . . . oh, to think of it, oh, to dream of it fills my heart with tears.”

There is now a stable, if seasonal, population of lobstermen who work well together for the good of their community. It may not be completely Home, but it’s part of it; no one can stay there spring after spring, summer after summer, autumn after autumn, and not love it. There are a few summer people of whose affection there’s no doubt. There are no development schemes for the woods and bold shores; the Crie lands belong to a family who have preserved the homestead Robert Crie built and the buildings where his family kept the store and the post office.

Mike’s business premises have long since burned down, though his house still stands on its height and has always been cherished. The fires that happened quite often during the first years of radical change were symbolic of that change in all the previous years of island occupation, the fear of fire was built into every islander from early childhood, and it worked for a century and more.

The schoolhouse survives. The state sold it to a young woman whose father came as one of the new young fishermen. She has had a childhood and youth of Criehaven summers.

But on winter nights one likes to think that the island hasn’t been simply left to the everlasting wind and the never-ceasing rote; it’s not alone, but richly crowded with ghosts, and everything is happening again on three planes. The MARY A. is coming into the harbor and Mike is striding down the wharf to meet Stuart and the mail. In school a first-grader is learning how to read, and someone else is working out fractions on the blackboard; or outside there’s a game of Steal Eggs, swings squeaking, the older children practicing “The Lady of the Lake” so they’ll be ready for the next dance, where nobody who knows the steps ever has to sit for long on the bench.

At the clubhouse the eternal pool game goes on, and the dancers are sedately circling in a waltz, or romping down the hall while the fiddle bow dances “The Devil’s Dream” and the guitars and accordion keep up with it. The musicians never get tired, and there’s never a last waltz.

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Maine novelist *Elizabeth Ogilvie* has long associations with Criehaven.





# WHAT GOOD IS A WILD ISLAND?

*From snatches of island history, we make up stories*

SUSAN HAND SHETTERLY

**R**OBERT CARTER LIVED on Long Island, in Blue Hill Bay, all his life. But he never saw it, for he was blind. I like to imagine him as a boy, trailing after his father, sometime in the early spring of 1810. They have finished the farm chores and are going across the island to count new lambs. Robert knows the way from Carter Point to the Mill Stream, through the cleared fields still crusted with snow, and the alder patches, and the big stands of fir and spruce. I like to think that his father, out of sight of the kitchen window where Abigail keeps close watch on her son, lets Robert lead the way, a thin boy with a fast, canting run, and lets him make the first count, standing at the island's crest, listening down the gentle slopes to the bleating carried in the ice-cold air.

*Illustrations by Siri Beckman*

“Ten!” the boy yells. “I hear ten lambs!” And he’s right.

I like to picture Robert when Belinda Candage, the girl who would become his wife, arriving by boat from the mainland. I see her seated primly at the table in Abigail’s kitchen, a neighbor’s visiting niece invited over for a cup of tea. It is 1840, and the father is already an old man. Robert has finished mending his weir at the point, and steps inside. He stops. He senses someone new.

What did Belinda see? A bearded, heavy-shouldered

tants of Long Island were farmers and woodcutters, fishermen and sheep herders. Most “made do.” A few families were wrenchingly poor. A number of unwed girls bore children in upstairs rooms in their family homes. Sometimes sons and fathers drowned crossing to the mainland, or fishing out beyond the bay.

This island, more than four miles long and two miles wide, the largest undeveloped privately owned island along the Maine coast, lifts out of the bay, low-backed and darkly, softly curved. A graveyard, stone walls, crumbling cellar foundations and the ghostly old roads



man, years past his youth. A man who, when he tilted, attending her uncertain voice, let his milky eyes drift across her face.

Islands can do this to you; they give you snatches of history and from those pieces you make up stories. Snatch: In 1776 Ebenezer Hinckley was found frozen to death at his saw mill on the east side of Long Island, the side that faces away from the town of Blue Hill into the broad passage before Bartlett Island. Ebenezer died alongside his saw. Maybe the last sounds he heard above the churring of the blade were two ravens playing in the wind, and the spill of the open stream. An inquest was attempted. It was that suspicious. But it was not a time to reflect on a single island death when the British were being forced out of Boston, and there was talk about a Declaration of Independence.

Despite the closing of a small quarry in 1890, a vigorous community persevered on the island for 35 more years with two schools, a general store and a dance hall. Ferries stopped at the granite pier in Closson Cove to take on passengers and deliver supplies. Like people on the mainland, to whom many were related, the inhabi-

are all that is left of the settlement Robert Carter once knew. The island has reverted to softwood and high bush blueberry, sweet fern and rhodora, sphagnum and hayscented fern. It now looks more as Pierre du Guast, Sieur de Monts, might have seen it in 1604 as he sailed from Mount Desert to Penobscot Bay.

From the island’s height, where granite bedrock breaks to the surface, you can see land in either direction: east to Mount Desert Island, or west into the village of Blue Hill. But the wild beauty of the island allows you to imagine a time before de Monts, when the only people to approach it did so by canoe.

On a whim in 1949, Stuart Florian, a Connecticut entrepreneur, decided to trade his vacation home in Florida for 4,415 acres of this 4,560-acre island. He liked the idea of owning something big — something wild. In 1994, his three surviving children sold development rights on 4,165 of those acres to the National Park Service for \$6.7 million. They saved themselves from crushing taxes; they saved two blocks of land on the island’s west side for future homes; but they gave up everything else, thus saving the island for all of us.

Thanks to an out of state entrepreneur's whim, it is ours now, not by ownership, but by easement. Four hard years of tough negotiations by the Maine Coast Heritage Trust and the National Park Service have given a stunning number of protective rights to the Acadia Park system.

But, you might ask, what good is a wild island? Why do we need it?

From the villages of Brooklin, Surry and Blue Hill, and from every peak of Acadia, a person can turn toward Blue Hill Bay and see this land stretching down

David Warren of Surry, setting up a tree management plan. At 20 he was killed in an accident, and his parents brought him to this burying place, gone wild, which he had loved.

Not even the small herd of bison introduced by David's father, Roy, a decade ago met us along the paths. Above us, a herring gull cried. But everything else was quiet.

We found five bison, eventually, grazing on a spit of land, their huge shapes gorgeous and slow, and oddly peaceful against the muted gray of the bay water.



the length of the bay. With a strong pair of binoculars, you can spot two seasonal homes. But from the east side, the Park side, there is no break in the shoreline; it looks as if no one has discovered Long Island yet.

Mary Ellen Chase, in her book, *A Goodly Heritage*, remembers record winters when the bay froze clear out to the island shore, and oxen were hitched to sledges to haul back island wood. She tells of summer picnics on the island beaches, and berrying in the fall. Reading her account, one learns how important it is for a child to have memories of place, of community, of adventure.

The day my neighbors and I took a small boat out and circled the island — 13 miles of beach and cobble — we came ashore at Closson Cove. We climbed the banks and explored the paths, past feral apple trees and cellar holes sprouting raspberry bushes. Up on a western slope, in a small copse of poplars, we found the old graveyard.

Zeruiah Fogg's headstone, dated 1872, reads: "Sadly, Oh sadly we miss thee."

Not far from hers, we found David Kingsley Florian's grave: 1979. He had tramped the island with the forester,

The wind was picking up when we left the island. A bald eagle flew out of the trees, and dipped low, and coasted up again. The two young girls with us in the boat were watching the bison disappearing. They saw the eagle tilt and vanish over the island. I imagine they'll remember the headstones under the poplar trees, and the bison paths through the press of alders.

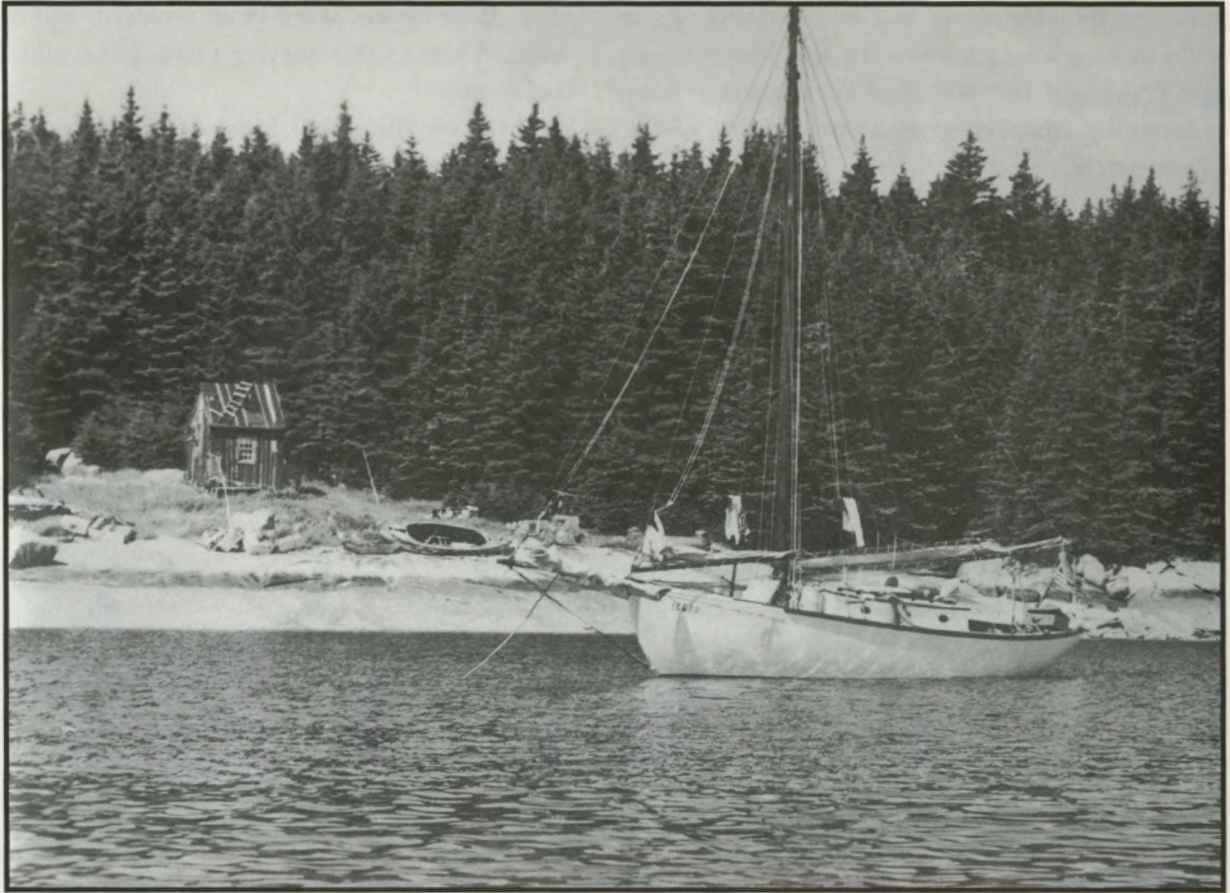
What good is a wild island?

Maybe it's as much what we bring to it as what we take away. We bring moments — no more than snatches — of history, and on the island paths our minds turn them into stories as we walk. We take away the smell of sweet fern and the tang of spruces and the enormous quiet of the place. What happens here belongs to us.

My guess is Robert Carter knew Long Island by heart. Maybe he could smell and taste next week's weather in the wind. I like to think he could mend a weir alone and count the lambs.

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*Susan Hand Shetterly is author of The New Year's Owl and other books.*



*Sloop DOROTHY anchored off the mayor's camp, Round Island*

# *The King, the Mayor and the rest of us*

*When everyone's got a boat,  
what happens to the islands?*

ROGER F. DUNCAN

**I**F YOU OWN A BOAT, you own all the islands. We believed that 50 years ago and it was more or less true. We were welcome on the inhabited islands and alone on the others. But half a century has changed the proverb radically. Consider what unrestricted recreational use has done to the outer White Island off Boothbay.

Raymond Fosdick lived here 60-odd years ago in a log cabin on the very top of the island, whence he contemplated the view from the Camden Hills and Monhegan westward to Seguin and down to Cape Small. He welcomed us and other very occasional visitors. We pushed our way through the thick woods, climbed the cliffs, picked garnets out of the big white ledge on the south end. There were lots of garnets, and no one else wanted them as far as we knew. We could build a fire below high water mark on the lee side, cook a bucket of lobsters, and chuck the shells overboard so as not to leave a mess.

*All photos courtesy of  
Roger F. Duncan*

Mr. Fosdick sold the island to one who saw it as his kingdom to be defended from all the world. Anyone who approached the island, he warned off. The log cabin was no palace. He towed out on a scow the material for a small house, lugged it all through the woods to the top of the island, tore down the cabin and built a neat little house.

The following June he came to spend the summer and found the gulls nesting. They squawked and screeched all day — and the days are long in June. They were interlopers in his kingdom, aliens hostile to his peace. He kicked their nests to pieces, broke their eggs, hung up jingly things in the trees, made them most unwelcome. They took the hint and departed, leaving him the peace he sought.

Shortly after, he noticed that some of his trees were dying. He took some branches, roots and soil to the forestry people in Augusta to find out what blight was attacking his trees. The forester studied the exhibits, sniffed at them, and said.

“Shags nest on the island?”

“Might be — some of them.”

“That’s it. Their droppings are so strong, they poison the soil.”

“What can I do about it?”

“If you could get gulls to nest on the island, they might perhaps drive off the shags.”

So the king of the island started welcoming the gulls and being hostile to the shags. The gulls got the word and returned. The shags couldn’t or wouldn’t or anyway didn’t get the word and stayed, and most of the trees died. He sold the island.

Others owned the island in succession and lived in the house from time to time. They cleared away the dead trees, the ones that didn’t blow away, and the few surviving trees grew larger.

Another person came seeking recreation on the islands, one who rowed out in a plywood pram and landed on any island or ledge he chose, believing, perhaps, as we had, that anyone who owned a boat owned all the islands. But times had changed and he was not welcome. Possibly, it is said, as an expression of his resentment, he burned the house.

The Boothbay Region Land Trust, the Damariscotta River Association and the Maine Coast Heritage Trust combined to buy the island. It has since been taken over by the U.S. Fish and Wildlife Service and is now a bird sanctuary. The stark chimney stands on the summit and the island is left to the gulls and shags and a growing population of eiders.

## DAMARISCOVE

Damariscove nearby has undergone a different change. There was once a lifesaving station here. A Coast Guardsman would show us the sturdy surfboat on skids in the boat house, every oar in place, steering oar over the stern, lifelines around the gunwales, ready to slide overboard on short notice. There was a beach cart with a Lyle gun to shoot a line over a wreck and all the breeches buoy gear for rescuing a crew. Outside stood a mast with a crosstree where the crew practiced rescues. Exploring the island, we sometimes met a Coast Guardsman on patrol. He carried a time clock, the key to which hung on a pole on the north end of the island. We splashed around the pond, followed the stone walls built in an earlier century, threw rocks off the cliffs, caught fish and cooked them over a fire built where the quarry had been. A few houses still stood on the island, most of them abandoned but a few occupied by busy fishermen. On the hill east of the harbor stood a

*We could build a  
fire below high  
water mark on the  
lee side, cook a  
bucket of lobsters,  
and chuck the shells  
overboard so as not  
to leave a mess.*



“Uncle Arch” Hutchinson

*Namon Hutchinson (right) and his nephew, Arch Hutchinson Jr.*



small, rough shack built during the war to shelter Coast Guardsmen listening at night for the diesel motors of enemy submarines charging their batteries. The shack was occupied when we were there principally by a pile of moldy comic books.

Now the island is owned by The Nature Conservancy except for the old lifesaving station. On a pleasant summer day the harbor is crowded with yachts. One pushes his way into a float through a crush of prams, skiffs and bubble boats and is confronted by a notice board, a package of leaflets and a sign-in sheet. One is urged to "explore" the island but to stay on the paths lest one damage delicate exotic plants. The north end is off limits as a bird sanctuary. The lookout shack has fallen down and has been replaced by a neater, stronger replica locked up tight. The lifesaving station is off limits, privately owned, and lacking surfboat and lifesaving gear. What was wild is now tame, but The Nature Conservancy has faced the difficult problem of preventing the friends of Damariscove from loving it to death.

In the spring of 1938 a fellow student and I hatched up a plan to take boys cruising in Maine. We studied the charts and found with delight an anchorage between Round and McGlathery islands south of Stonington.

One murky afternoon that summer our crew was exploring the wreck of a yacht that had recently burned and gone ashore on a rough beach near Stonington. Two fishermen watched us. One was a small, quick man who talked in explosive bursts: "them fire distinguishers ain't worth a pee-hole in the snow." We asked about McGlathery. It was a paradise. Good anchorage, a spring of fresh water he had cleared out, clams, a fish weir, woods and fields and beaches. He lived aboard his boat there, set traps around the island and came to Stonington only for supplies. We knew we would never know peace again until we had dropped anchor at McGlathery.

When we did, we found his boat at anchor with no one aboard. We went ashore, crossed a meadow, followed a path through the woods. It was a sheep path with bits of wool caught in the bushes and easy to follow if one was no taller than a sheep.

We came out on a clean little beach between granite ledges. There sat our friend, whose name we found was Namon Hutchinson, his cousin Pearl, and two women. Pearl's lobster boat lay with her bow grounded on the beach. The embers of a fire smoked nearby. Lobster shells were scattered about and a jug of red rum, about empty, lay close at hand. We declined the jug. Some of the boys wandered off down the shore and the rest of us soon got into the spirit of the party. Pearl asked one of the boys if he could put his foot behind his head. He tried, strained a bit, and did it. Pearl said he, too, could do it. Doubts were cast. He tried and tried and tried again and by God he did it, rolling over in the sand in triumph. But then he couldn't get his foot down again. At last we stopped laughing enough

to help him. Just then someone noticed that Pearl's boat was adrift. My partner volunteered at once to swim for it, cast off pants and shirt, splashed off and got aboard. He found an oar and started to paddle in. From some cache Pearl found a can of beer and threw it to him in case he needed refreshment. Others joined in. He had to drop the oar to catch the hail of cans but at last made port.

We constituted ourselves a body politic and elected Namon Mayor of McGlathery Island and christened his boat the CITY HALL. Thus were we introduced to the island. We found the wreck of a schooner, "the old 'Waveknocker,' " said the Mayor. Her name had been WAWENOCK. We dug clams and ate more than you would believe. We caught mackerel, pollock, flounder and numerous dogfish. We sat on weir stakes at dawn and watched the owners seine the weir. We found the stone marking the grave of Peter Eaton, who died in 1887.

Again and again we came back to the island. The Mayor and Hattie McGaddis built a camp on Round Island and welcomed us as always. She invited us ashore for lobster chowder with raspberries and cream for dessert. We celebrated Independence Day on Round Island one year with a party of lobstermen including Archie Hutchinson, who could chin himself on a spruce branch with one hand behind him.

Times changed, of course. The fields grew up to brush and woods. The Friends of Nature now own McGlathery and restrict camping. The WAWENOCK is gone. Peter Eaton's gravestone is gone. The clams are few, small and hunted. The weir and all the fish except dogfish are gone. The Mayor and Hattie have died and their camp has sunk into the ground. Windjammer schooners anchor off the cove where Pearl put his heel behind his head, and as many as a dozen yachts may lie where the CITY HALL used to anchor. It is foolish to growl about the changes. They had to come as more and more people bought boats.

On July 3, 1931, in the 28-foot sloop DOROTHY, we sailed into Duck Harbor, a narrow secluded cove on the southwest corner of Isle au Haut. No other vessel was there. We anchored just inside the big knoll on the south side with room to swing under the calm shadow of the spruce trees. There were two small camps on the shore. A Mr. Prescott came aboard from one, told us that he had been born on Isle au Haut and had married a granddaughter of Solomon Hamilton, who was born in 1830 and with his wife had raised a family of 16 children in a small house on the shore. Mr. Prescott had traveled all over the world, worked in many countries, served in World War I and had concluded that Duck Harbor was the best place he had ever seen. He was running a string of lobster traps and making out to stay alive.

In the morning we met Charles Hamilton in the other camp. My logbook says he was one of the 16, but I may have been confused.

We followed a vague path eastward to Head Harbor where we found a lobsterman in his shop repairing lobster traps and, says the log, "had a slight hooker in honor of American Independence." "Hooker" was a circumlocution for whiskey and the date was July 4. On our return to Duck Harbor, one of our crew, an ornithologist, "presented a formidable list of birds heard, seen or suspected in the woods."

The year 1995 sees startling changes. The current edition of *The Cruising Guide to the New England Coast* reports:

"National prosperity, the Deer Isle bridge, the Maine Turnpike, the Maine Publicity Bureau, and a great deal of hotel-motel advertising attracted crowds of visitors to Isle au Haut. At the same time, the mail boat, the principal access to the island, was run by a motel owner in Stonington, who advertised his services. The park administration encouraged people to visit. [Most of the island was given to Acadia National Park in 1946.] The 350 islanders were overrun by 3,000 visitors a year."

*Pearl asked one of the boys if he could put his foot behind his head. He tried, strained a bit, and did it. Pearl said he, too, could do it. Doubts were cast. He tried and tried and tried again and by God he did it, rolling over in the sand in triumph. But then he couldn't get his foot down again. At last we stopped laughing enough to help him.*



*Home Harbor, 1938*



*The author at the helm of EASTWARD, 1970*

Disregarding the effect on the rest of the island, the invasion has changed Duck Harbor radically. The mail boat now daily lands a regiment of campers and day-trippers on a long float. The park has established camp sites and lean-to's and, to limit the number of campers, issues permits beginning January 1. All permits for the season are taken before lunch the same day. Several yachts now lie on park moorings. A jeep-bicycle road runs north to the Thorofare and east to Head Harbor. The dim path up Duck Harbor Mountain, up which we once bushwhacked for a view worth the scratches, is now well marked and deeply worn. Duck Harbor is part of Vacationland.

This was inevitable and is not all to be deplored. The park is

doing all it can to keep the island in its natural state while allowing as many people as possible to enjoy it. Much of the island is indeed still wild. Take a trail to the right on the Head Harbor road toward the Western Ear. It soon fades and you are on your own. You may start a deer. There are many different birds to be "heard, seen or suspected in the woods." After fighting your way through a blowdown, you come out on Deep Cove, a wild scene of cliffs, black, weed-hung rocks and smashing Atlantic surf.

One thing the park cannot control is the number of people who now come in their own boats. In 1984 it was estimated that 1,800 yachtsmen visited the island and the number does not appear to have declined.

Sixty years ago my Scottish grandfather, my father and I in our little sloop were passed to windward by the 100-foot schooner yacht CONSTELLATION carrying both gaff topsails and flying jib. She glittered in black topsides, varnish and polished brass. Her owner, in white flannels and yacht club blazer, stood aft, the skipper at the wheel, the uniformed crew under the lee of the foresail. She forged by us, leaving us momentarily becalmed, then tossing in her wake. As we gathered way again, my grandfather said, "It's the same air, Robbie."

It is still the same air and a great many people have discovered that you don't need a 100-foot schooner to breathe it. Yachts are smaller now, cheaper, popped out of a mold, aggressively marketed. Their engines are reliable and much used. Electronic navigation gear gives inexperienced skippers confidence — sometimes over-confidence. Many who don't have yachts row small boats or paddle kayaks, the latter in increasing numbers. Finally, the small outboard, whether alone or as an auxiliary, is everywhere.

The inhabited islands have changed radically. The advent of fast, reliable lobster boats has removed the advantage of being near the fishing and lobstering grounds and has sharply reduced or eliminated the populations on Damariscove, Monhegan, Matinicus, Criehaven, Isle au Haut, Swan's Island and Frenchboro. The people who remain can get quickly to the mainland to sell lobsters and to buy provisions and fuel, so the stores on the islands have disappeared or are much reduced. Radio and television have relieved the former isolation of these people. Much of the land on these islands is now owned by non-residents. The residents cannot be blamed for feeling crowded by the many visitors in small boats and for no longer welcoming them with the enthusiasm with which we were once invited to a dance on Monhegan, or accepted for a rainy afternoon of yarnning in a Cutler fish house. Matinicus has guest moorings but no store. No one will come aboard to visit, except to collect the mooring fee.

The increased pressure on uninhabited islands leads to people buying islands for themselves. When the owner of an island steps out on his porch in the magical morning calm, having spent so much and come so far for solitude,





*EASTWARD at Monhegan,  
about 1960*

and sees three yachts anchored in "his" cove, one pouring dirty dishwater over the side, he may well think he has not come far enough and he restricts landings on the shore of his kingdom. Roque Island, Traftons Island, Teal Island, Little Babson, Devils, Fishermans, Harbor Island in Muscongus Bay, and the one in Burnt Coat Harbor will serve as examples, and there are many more.

Conservation groups, seeing what the increased pressure is doing to pristine islands, buy as many as they can and issue strident calls through the mail for more money to buy more islands. The Nature Conservancy, Friends of Nature, Audubon Society, Maine Coast Heritage Trust and other smaller local groups are preserving and controlling islands. The State of Maine, Acadia National Park and the U.S. Fish and Wildlife Service control others. In protecting these islands for everyone, they must necessarily restrict the freedom of those who visit. No fires. Stay on the paths. No camping. No smoking. Sanctuary for nesting birds. These are necessary restrictions to which few of us would object, yet they are indeed restrictions. Damariscove, Eastern Egg Rock, Matinicus Rock, Seal Island, McGlathery Island, Great Wass Island, Butter Island and many others are restricted in one way or another to protect them.

To try to control some of this change David Getchell, formerly editor of *Maine Coast Fisherman*, co-founded the Maine Island Trail Association (MITA). Getchell sought to organize small-boat people — kayakers, canoeists, oarsmen, sailors — to use the islands responsibly. Owners of islands were asked to permit responsible campers and other visitors to use their islands. By including many publicly owned islands, he established a trail running from Portland to Machias. The island owners were pleased because responsible visitors left no trash and often left the islands cleaner than when they found them. No members of the association are being kept off the islands by MITA stewards.

However, there is considerable resentment stirred by responsible local people who have visited the islands for years, picked up after themselves and others, cooked lobsters, picked berries, even fought fires — and who object to being told to leave because they do not carry a \$40 MITA card.

There is no point in wailing nostalgically about the "good old days" when if you owned a boat, you owned all the islands. That time and its treasures have necessarily gone, but much remains. We have the warm breath of the sweet fern and wild roses in the sun. The fog still sifts through the spruce trees, the sun still sets behind the Camden Hills. The good southwest wind fills the sails. The Maine islands are still the cleanest, least trampled, most alluring places we know. Let's all of us — fishermen, sailors, kayakers, conservationists — keep them that way.

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*Roger F. Duncan is co-author of A Cruising Guide to the New England Coast and a columnist for Working Waterfront.*



Historians regard this image of winter mail service as “fanciful,” but traveling to Canada’s smallest province has never been a simple matter. (Courtesy of the Prince Edward Island Historical Society)

# “FIXED LINK”

*Prince Edward Island’s new bridge could bring prosperity — or destroy a way of life*

ANN THURLOW

**F**ROM BETTY HOWATT’S front yard, the calm waters of the Northumberland Strait are clearly visible. The Strait forms the water barrier between Prince Edward Island (PEI) and the rest of the world. New Brunswick is directly across from Betty’s shore, and farther down the coast, the mountains of Nova Scotia loom close on a clear day.

It is tempting to compare Betty Howatt, with her strong face and sturdy posture, to the rock cliffs that face you as you arrive on the island by ferry. But those cliffs are sandstone and are constantly crumbling. Perhaps, in her strength, she is more like the sea.

Just a few miles from Betty’s home, a bridge linking PEI to the mainland is being built. It has been under construction for two years, under discussion for just over one hundred.



Above: Icebreaking ferry ABEGWEIT, Northumberland Strait (John Sylvester). Below: Even in the 19th century, proposals to connect Prince Edward Island to the mainland were controversial (courtesy of the Prince Edward Island Historical Society).

As part of the deal that made PEI a part of Canada — brought it into Confederation, as we say here — the tiny province was promised a continuous steamship link to the rest of the country. Betty’s ancestor, Cornelius Howatt, fought bitterly against Confederation.

Betty fought bitterly against the bridge.

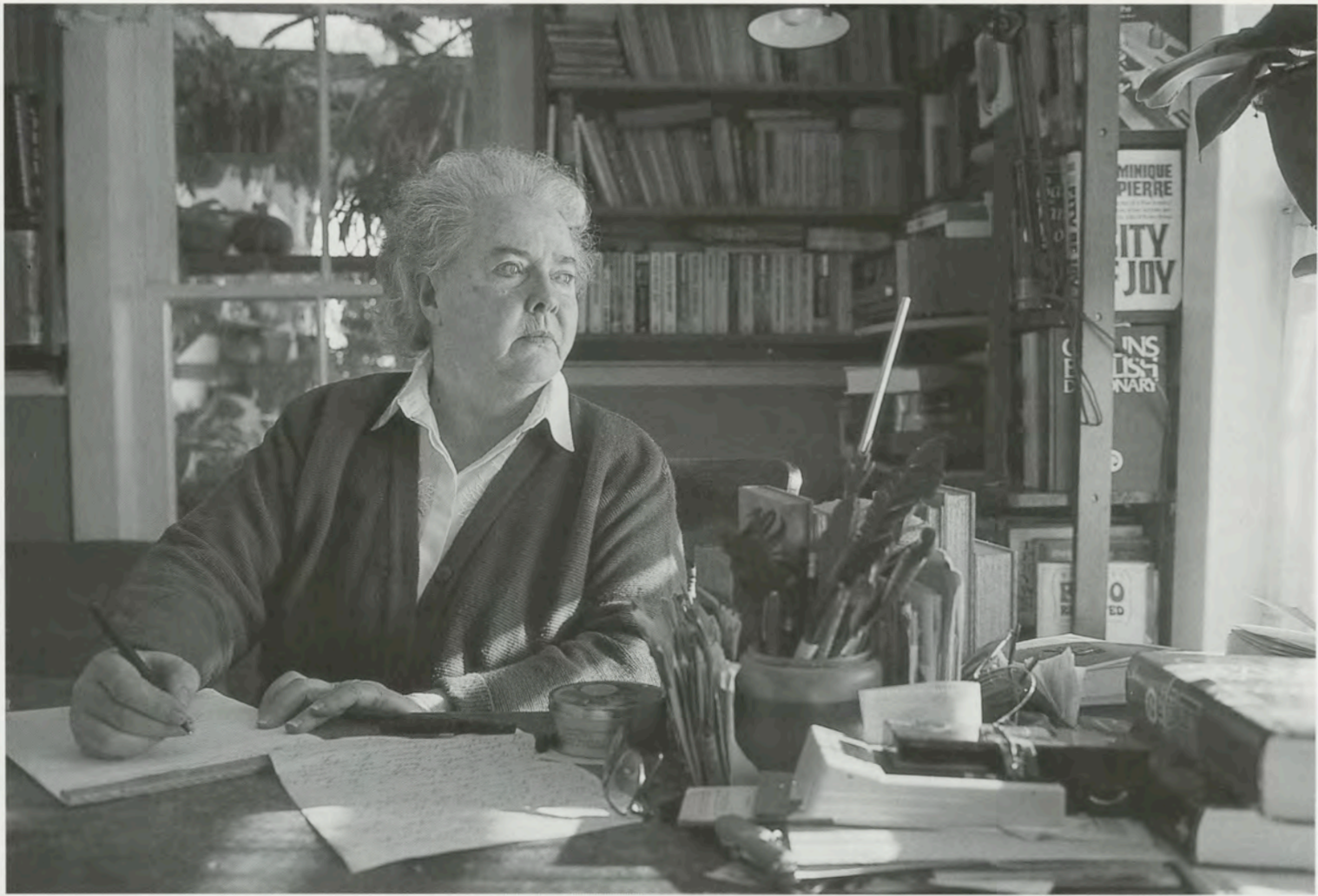
The fight is over now, but the fight hasn’t gone out of Betty. Journalists still beat a path to her fruit and vegetable farm to talk about opposition to the project. Though just over 40 percent of Prince Edward Islanders voted against the bridge in a referendum, most of the opponents have now gone on to other things.

Betty Howatt hasn’t given up. In the kitchen of the old home that once belonged to Cornelius, the shelves are lined with souvenirs of a life spent defending. She turns down the fan on the old oil stove and begins to sound what has become, for her, a familiar theme.



“An island the size of our island is small enough so that one could know the limits — and I think a great many people in this day and age don’t know what the limits are and feel totally lost,” she says. She argues that a small place with a boundary as rigid as the sea allows people to set up systems of survival — systems that aren’t constantly affected by the unknown. She fears the influences that will travel across the eight-mile span.

Many of the people who opposed the bridge — it is now known as the “fixed link” or just the “link” — did so on scientific grounds. Study after study showed potential damage from increased island development, predicted serious and possibly devastating consequences for the lucrative lobster fishery, or forecast doom when the sturdy concrete pillars met the relentless winds that blow down the strait.



But the federal government wanted this project to happen. They were tired, they claimed, of subsidizing the ferry. So for every study, they produced another. Hubert Jacquin was the public relations person for the federal government during the whole debate. On the night before the deal to build the link was signed, he admitted that all the studies in the world couldn't have changed the government's mind.

"The only person we couldn't argue with was Betty Howatt," he said. "She said, 'We don't want it because we don't want it.' There was nothing we could say to that."

This isn't the first time PEI has come close to having a fixed link. As far back as 1885, the prime minister of the day proposed a rail tunnel. His proposal met with some success with islanders, who enjoyed a comfortable steamship ride to the mainland in the summer but had to cross in winter by open ice boats, large dories that were dragged across the strait on the often treacherous ice. Passengers were often called upon to pull. But the \$5-million price tag for the rail tunnel was rejected as far too expensive, and money was spent instead to upgrade the steamships.

It is still possible to see the faint traces of the next attempt. In the 1960s, a causeway was approved. The

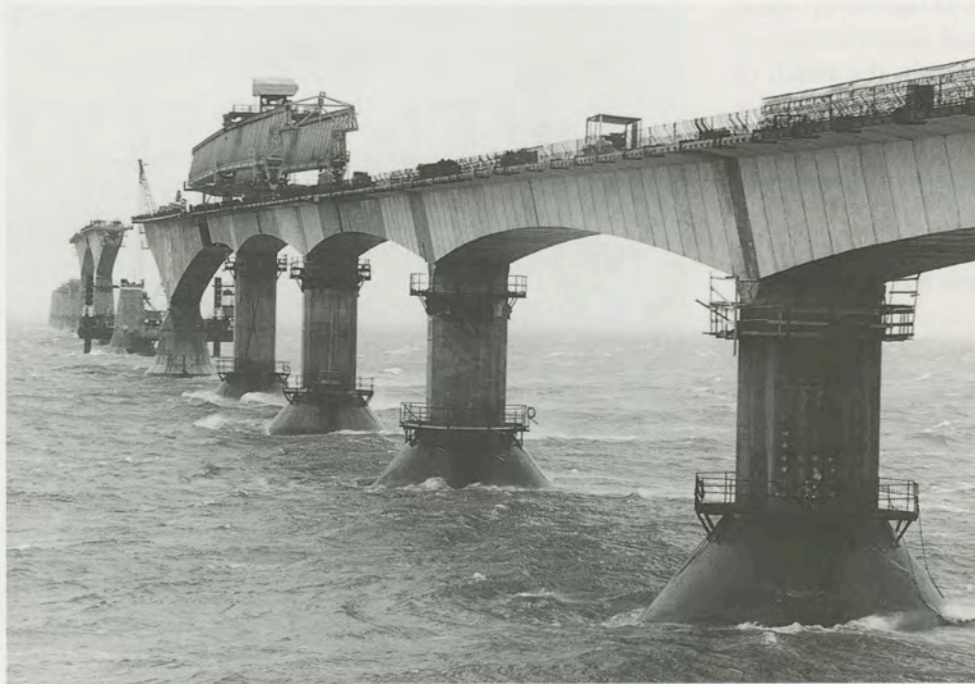
approach roads were built; in the tall grass, you can still see their faint outline. But that project was also scrapped.

When the idea surfaced again in the 1980s, opposition was swift and vocal. And though arguments on both sides were economic and environmental, underlying it all was the vague sense that the little island province would never be the same.

Harry Baglolle has made a life of studying islands. He is now the director of the Institute of Island Studies, an organization that studies every aspect of small islands. His office at the University of PEI is crammed with mementos of trips to Iceland, to Newfoundland, to the Isle of Man. Though the Institute took no official position during the link debate, Harry himself is firmly opposed.

To explain that opposition, he talks about another organization of islands, this one off the coast of Ireland. "They were trying to come up with a definition of what an island is," he explains. "What they came up with was that an island is something you can't drive to. By that criteria, we couldn't be eligible anymore."

Prince Edward Island is not immune to the onslaught of the late 20th century. Most homes have cable TV, many have computers. There is nothing that makes



*Facing page: Betty Howatt  
(John Sylvester)*

*Left: The “fixed link”  
marches across  
Northumberland Strait to  
Prince Edward Island,  
many of whose residents  
fear its effects on their com-  
munity. (Courtesy of The  
Guardian, Charlottetown,  
Prince Edward Island)*

*Below: French River,  
Prince Edward Island  
(John Sylvester)*

islanders immune to the rest of the world, but there is something that makes us apart. There was much talk during the debate about something called “the island way of life.” Yet, despite the talk, the elusive quality of islandness remained hard to define.

Those against the link talked about neighborliness and familiarity. The favorite question here has always been “Who’s your father?” The answer spoke legions. Despite a population of 136,000, most islanders know each other — or know of each other’s family.

Being an islander with a capital “I” means being born here — it isn’t uncommon to see a headline in the local paper saying “Islander Dies in Boston” — an obituary for someone who left PEI when they were 10. But they were born here, and we know their people — and that’s what counts. As much as anything else, the fear about the bridge is fear that it will make it easier for strangers, people “from away,” to populate the place and to influence it. Surely, people believe, a concept as hard to describe as “the island way of life” is just as vulnerable.

For those in favor of the link, “the island way of life” presented a much less rosy picture. Tucked in among the card parties and the variety concerts, the hockey rinks and the perpetual fund-raisers, are pictures of terrible poverty. The unemployment rate hovers around 13 percent. Many jobs are seasonal, based in farming, fishing and tourism. Another, less picturesque side of the Island way of life is a summer of work and a winter of unemployment insurance. The pro-link Islanders for a Better Tomorrow argued that the bridge would bring prosperity, would make it easier to move island potatoes and seafood, and help encourage manufacturing.

A little prosperity might be a good thing, of course, but many still cling stubbornly to their own bottom line: that we must do as we always have done. In fact,



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when they were 10.*

the promise of increased tourism sends shivers up some spines. Access to miles of sandy island beach is easy — and free. Land on the shore is still within the reach of many. As much as anything, a trip to the beach is a part of who we are. Some look to other coastal tourist spots, where beach access is limited by private owners, and shudder.

Harry Baglole dismisses both the threat and the promise of tourism. What worries him more, he says, is our loss of sovereignty.

When it was first turned over to the British in 1758, PEI was part of Nova Scotia. But by virtue of being an island, the province was able to establish its own government and take responsibility for its own affairs.

But over the past few years, there has been talk of something called Maritime Union — the joining, at least economically, of the four Atlantic provinces. And there has been quiet talk that, once the bridge is built, it will be easier and cheaper for islanders to get their services in larger centers like Halifax and Moncton. Everything from health care to shopping to university education is being offered to islanders “across.” By need or by choice, islanders will leave PEI to get them.

Harry Baglole believes this is the real challenge of the link.

“It has become more apparent to me,” he says, “that our real strength lies in the fact that we have our own government. That has been used to amazing advantage over the years.” By virtue of being a province, equal under the Constitution to larger provinces, Baglole argues, Prince Edward Island and its people have accrued many benefits not usually given to such a small population. He worries that as those benefits slip away — victims of the economy of scale — the protection that has kept the island unique will be lost.

Those who are in favor of the bridge argue that any changes that take place on PEI will be more a function of the dawn of the 21st century than any construction project. But Betty Howatt disagrees. She says the island has withstood the challenges of modernism and has still been able to maintain its close-knit communities. As soon as the first car drives across the bridge, she fears, things will begin to change.

“I think the link will take away people’s sense that they were rooted somewhere — a sense of belonging also gives one an ability to focus. There is a sense of stability in life — that you know where you are and you know what you’re up against. I think that will be gone.”

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*A resident of Prince Edward Island, Ann Thurlow is a freelance journalist and a producer for the Canadian Broadcasting Corporation (CBC).*

# PENOBSCOT

GEORGE OPPEN

Children of the early  
Countryside

Talk on the back stoops  
Of that locked room  
Of their birth

Which they cannot remember

In these small stony worlds  
In the ocean

Like a core  
Of an antiquity

Non classic, anti-classic, not the ocean  
But the flat  
Water of the harbor  
Touching the stone

They stood on—

I think we will not breach the world  
These small worlds least  
Of all with secret names

Or unexpected phrases—

Penobscot

Half deserted, has an air  
Of northern age, the rocks and pines

And the inlets of the sea  
Shining among the islands

And these innocent  
People  
In their carpentered



Peter Ralston

Homes, nailed  
Against the weather— It is more primitive

Than I know  
To live like this, to tinker  
And to sleep

Near the birches  
That shine in the moonlight

Distant  
From the classic world—the north

Looks out from its rock  
Bulging into the fields, wet flowers  
Growing at its edges! It is a place its women

Love, which is the country's  
Distinction—

The canoes in the forest  
And the small prows of the fish boats  
Off the coast in the dead of winter

That burns like a Tyger  
In the night sky. One sees their homes and lawns  
The pale wood houses

And the pale green  
Terraced lawns.  
'It brightens up into the branches

And against the buildings'  
Early. That was earlier.

*From Maine Lines, compiled by Richard Aldridge. Copyright  
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# *Our Harbors, Ourselves*

JOE UPTON

*Plentiful cod and herring once sustained a whole way of life  
on New England's coast, defining the people who lived and worked there.*

*That seemingly limitless fishery is gone now.*

*What lessons have we learned?*





*Fish packing house,  
Southwest Harbor  
(Maine Historic  
Preservation Commission)*

**E**ARLY EVENING, a Maine harbor, around 1912 — as the dusk creeps over the sky from the east, many eyes are still on the horizon — looking seaward, hoping for the glimpse of a topsail, of a mast, of a schooner moving inshore on the breeze, bringing the men home. Another fall gale has just swept the coast and many men are still at sea, in the dory schooners for cod, mackerel twiners (schooners that carried two big seine boats and a purse seine net for mackerel) and little swordfish sloops and schooners, spread out across the vast watery plain from Cape Cod to Cape Sable.

There is no radio, but word has begun to reach the little isolated peninsula and island harbors that a vessel has been lost. And those ashore remember the great summer gale of July 28, 1911, when the wind out on Georges Bank blew 80 for four hours from the southeast, then switched around and blew 100 from the northwest, and caught the swordfish fleet in shoal water. And the winter of 1894, when in a single night, a third of the fleet on Georges, 14 schooners and 140 men, were lost.

So coastal families were in the habit of lying awake as the wind worked around the houses, rattling the shutters, testing the shingles. They'd worry about their men, perhaps on a loaded schooner, caught off a lee shore in the snow, with the sails and rigging iced, clawing her way to windward with three hands at the wheel, but the tide and the sea pushing her shoreward. Or out on Georges or Grand Banks, where the tide and the shallows can make for hundreds of miles of breakers when the wind makes up. A schooner might be bravely holding onto her anchor, the men all on deck looking at the frothing white to leeward and hoping the straining chain would hold.

No one speaks of these worries or losses, and yet it is in their minds, and then the looker with the sharpest eyes or the highest perch spies it first — a scrap of topsail, and then the tiny pin of a mainmast, poking over the horizon — schooner, ho! If there are binoculars, they are passed from hand to hand, and each looker ventures a guess as to the craft's identity.

"'Tis the MARSHALL [the J.M. MARSHALL, a 16-dory handliner schooner out of Gloucester], see, she has the funny cut to the topsail," says one.

"No, sure she's the ELMER GRAY, with the mackerel king himself, Sol Jacobs, at the wheel. Look to the main gaff, you can just see it with the glasses now," says another.



*The crew of the fishing schooner LOCHINVAR, 1909 (Frank E. Claes Collection)*

...last reported a Maine codfish ... 1912 ... on the ...  
...the ... the ... the ... the ... the ...  
...the ... the ... the ... the ... the ...  
...the ... the ... the ... the ... the ...

Packing good fish



*Packing codfish in butts (Maine Historic Preservation Commission)*



Loading fish for the Vinalhaven glue factory, Rockland, 1921 (Frank E. Claes Collection)

“Lads, look sharp now, there’s another behind with no topsail, the SALADIN, probably, she put the motor in, don’t you know,” says a third.

While the arguing goes on, two fast sloops put out from the harbor, to get the news from the stranger. The evening breeze is strong from the west and the crews slack sheets and the boats bruise the water down the bay as the schooners’ mainsails and finally hulls come over the horizon.

The sloops tack over and range to windward of the big schooners rushing up the bay, Stonington-bound with salt mackerel, it turns out. For a moment a schooner rounds up into the wind to slow and her skipper shouts across, “GRACIE L lost on Georges Shoal, but all saved . . .” and the rest is drowned out by the flapping of the huge mainsail, and the big crew hauls in the sheets and they’re gone.

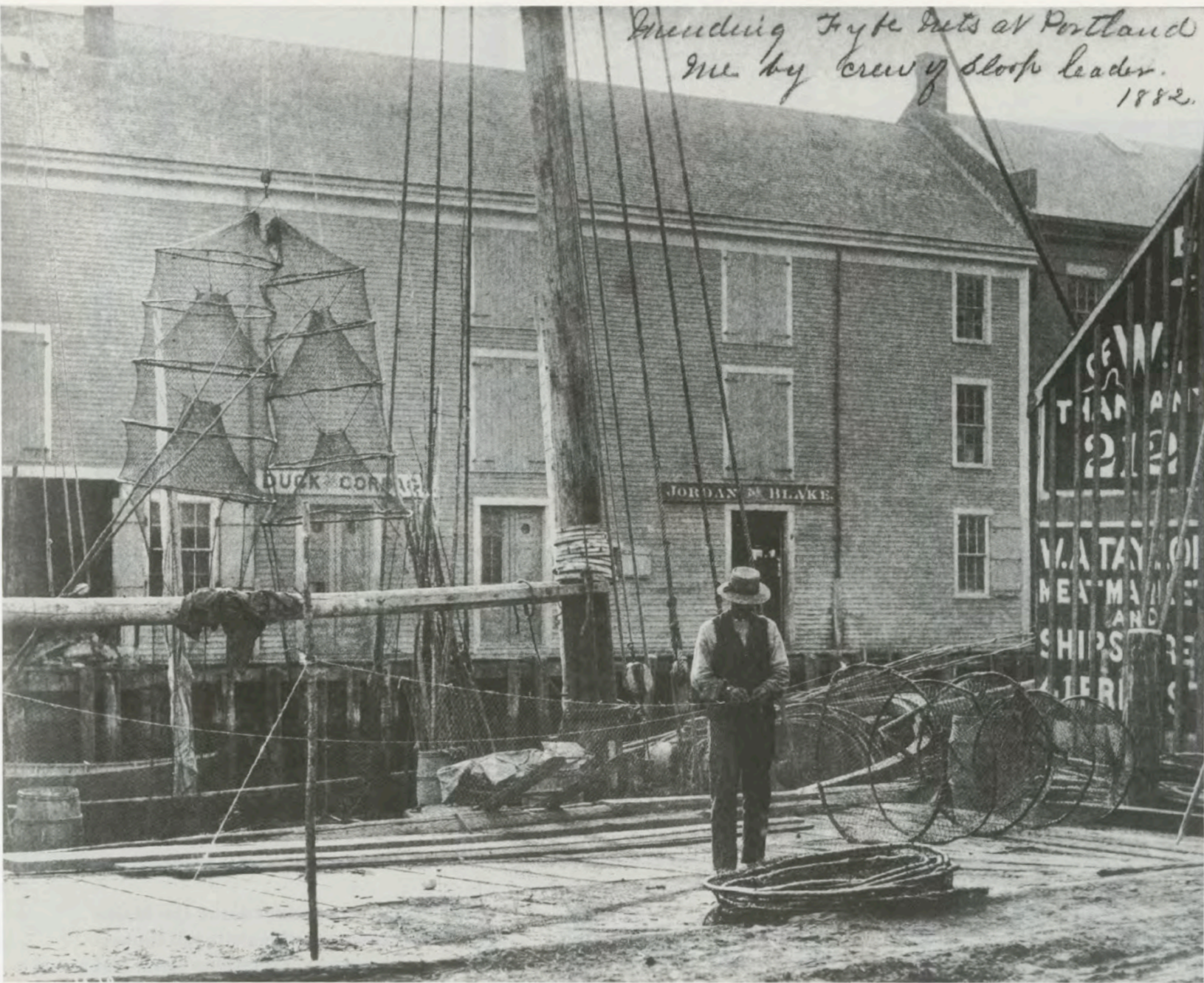
So it’s good news that the sloops bring back to the harbor, and the families can sleep easy that night.

In a very real sense almost all the waterfront communities along the Maine coast (except for the largest, like Portland, Rockland and others with rail connections to Boston) were islands at the turn of the century. Everything came and went on the steamers whose wakes crisscrossed the bays and channels in a manner few of today’s coastal dwellers remember. Not until the paved roads wound their way down those long peninsulas and the automobile and the truck replaced the coastal steamer in the 1930s and 1940s did mainland waterfront communities begin to lose their total seaward orientation.

As for work, if you didn’t live in a granite town like Stonington or Vinalhaven, your fortune was most likely intimately connected to the sea, either through a processing plant or fishing.

*“My father and my older brothers went out each morning in the dory, rowing and handling for cod, but the hardest work fell to my younger brothers and I. We’d split them and spit ’em [spread out the butterfly fillet with sticks], salt ’em, and spread them out on the rocks of the beach to dry in the sun. Come midday we’d turn them all over, and in the evening we’d take them all in. If it threatened rain, we’d have to bring them all in as well, and when they was all dried just right, we’d salt them down in barrels and them fellows in St John’s would pay \$24 the barrel.”*

— A Newfoundland fisherman



Mending nets, Portland, 1882 (Maine Historic Preservation Commission)



Digging clams, Little Deer Isle (Maine Historic Preservation Commission)



*Loading and salting herring aboard a fishing schooner at Castine, 1906 (Frank E. Claes Collection)*

For generations, the codfish was the bread and butter of the coast. Eaten fresh locally, but mostly split, salted, dried and shipped as the Newfoundland fisherman describes above, salt cod was a staple year-round. (It is still produced in a few places, primarily for Scandinavian and African markets.)

In the summer the fish were inshore, and sloops, dories and little fat sailing smacks worked up and down the coast, bringing the fish into the fish plants in the harbors. This was good fishing, handlining or gillnetting in small craft, home the men often, or anchoring in coastal harbors at night.

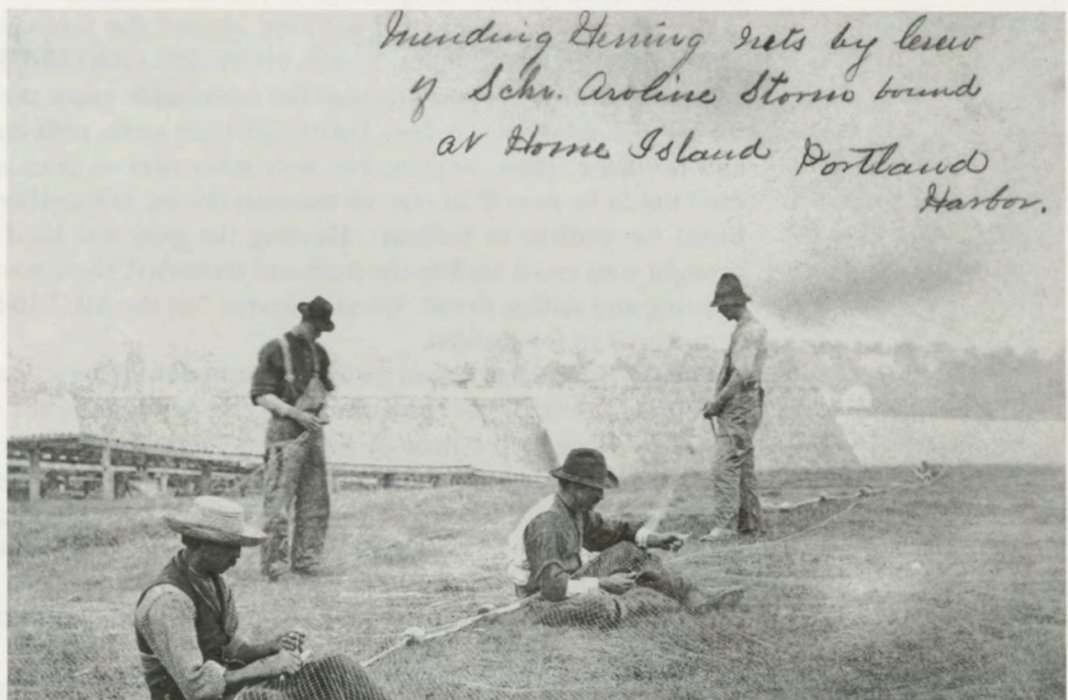
Harder was life on the salt bankers, aboard the famous schooners like the HENRY FORD, COLUMBIA, ELSIE, HOWARD, GERTRUDE L. THEBAUD and others. Many hail the romance and the undeniable grace of those big vessels, but for the fishermen it was long hours and hard work, with emphasis on the long and the hard. These were mostly dory schooners — once on the grounds, the crew would be put off in one- or two-man dories, to handline or set trawls (long-lines) for codfish or halibut. Hauling the gear was hard. Then when you'd brought your catch back to the boat and unloaded, there were hours of cleaning, splitting and salting ahead. When you were "on the fish," 16-hour days were pretty much taken for granted.

The doryman's fear was of getting separated from his schooner, in the fog or in the snow. It wasn't bad with the mackerel schooners, for the big boat would always be close to the men in the seine boats. But the dory crews fishing cod would work at times several miles from their schooners. If fog or snow hid them, the schooner would cruise to leeward, those aboard blowing horns or shooting guns until the little dories were all safely hauled up and stacked, the men safe, the fish laid out for gutting and salting.

But fog and snow play tricks with sound sometimes, and a dory and crew might be caught in a little cocoon of silence, neither their horn nor the schooner's heard by the other. If the weather gods were kind, the fog might lift, and the lost



*The herring fleet at Biddeford Pool, 1885 (Frank E. Claes Collection)*



*Mending herring nets at  
Home Island, Portland  
Harbor, 1880 (Maine  
Historic Preservation  
Commission)*

## THE TAVERN-KEEPER'S FINGERS

*For decades, Banks fishermen retold the story of Howard Blackburn, handling with a dorymate from the GRACE L. FEARING for halibut on Grand Banks one February. The snow hid the dory from skipper Alec Griffin, and on the third night Blackburn's companion died from the cold.*

*Blackburn knew his only chance was to keep rowing towards the land, somewhere far to leeward. Feeling his fingers begin to go stiff, he curled them around the oars and let them freeze. Five days and nights later, he made the Nova Scotian shore. He lost all his fingers and a part of each thumb, but he survived, to run a popular tavern!*

*Washing, draining and flaking herring at the R. C. Green & Co. sardine cannery, Eastport, 1891 (Maine Historic Preservation Commission)*



dorymen would spy the tall-rigged ship and breathe easy. Other times, visibility would be zero for days, and a lost crew, if they didn't anchor in time, or chance across another schooner, would find themselves with a bottle of water and a scrap or two of food and many miles between them and safety.

Then there were the steamers, cutting right through the fishing grounds in the days before radar. Pushing hard, even through the fog, trying to make their schedule. The lookout on the bow huddled behind the bulwark, numbed by the cold. Listening, but maybe too numbed to hear the shrill of a horn or the shout of a schoonerman.

## THE INSHORE FISHERMEN

For generations, there was herring. Moving up the coast and in from the deeps, they'd come inshore in the spring and summer, to the bays, coves and passages where the men waited with the weirs and the "stop seines." The weirmen would cut brush in the spring, drive the long, fencelike leads into the mud, rebuild the boxlike weir, mend the twine (nets) and wait and hope that the herring would return to their particular cove. Down through the generations, the seasonal work of these fisheries was a coastal ritual.

When the weir was in, its owner would row out and check the weir each morning. If the herring had come in the night, then the entrance of the weir could be closed — the fish would be trapped, alive and swimming, and the fisherman would notify the sardine plant. In the days before radio or phone on the coast, weir fishermen would sometimes put up a flag on their weir, so that the sardine carriers cruising and looking for fish would see it.

The "stop seiner" was the weir fisherman's cousin, using nets to shut off the entrances of coves where herring had entered. As in many Maine coast fisheries, there were important traditions to be honored, most important of which were rights to a particular cove. There was no sign-up sheet at the post office in the spring — a cove "belonged" to the herring gang that moored a dory in it. Frequently these rights were passed down from father to son. As long as the gang (typically a crew of four to six fishermen who worked other inshore fisheries during the day and herring at night) moored a dory in the cove each season, they retained the rights to try and catch whatever herring entered that cove. In high-producing coves, this dory would be loaded with a net — the stop seine — and

ready for use. In others, which might only have a "shut-off" once every year or two, the dory might be empty, perhaps even a derelict, kept afloat with kegs (styrofoam in modern times) to spare the crews the chore of bailing.

A man would usually have more than one cove — maybe six or eight if the island was particularly big. But they had to be tended — checked each night, and a man with a lot of coves would have maybe two herring gangs, each with small craft, motor driven in later years, but rowed or sailed before.

There was mystery here, as there is in much of fishing. Sometimes the fish would move inshore in the afternoon,

Putting Sardines  
on flakes for drying  
Eastport.



*Sardine operations at Eastport, 1887 (Maine Historic Preservation Commission)*





*Dipping for alewives, Warren, 1870  
(Frank E. Claes Collection)*

light, and hails a group of fishermen at the wharf: "Lads, get yer gear . . . 'tis Deep Cove . . . full o' herrin."

The men on shore scramble and in a few minutes the MURIEL is headed out, and around the rocky corner, a 15-minute steam to a rocky cove. She lays for a bit while two men in a beamy peapod row around, stopping at intervals to plunge their sounding sticks straight down into the water. A sounding stick has a short handle and a ten-foot, oar-shaped blade. As the fisherman holds it, he can feel tiny, almost imperceptible bumps as the herring nudge it in the dark water.

The he stands up, carefully, and hails the waiting men: "Fives, boys, fives and sixes. Plenty, by the feel of 'em. Run yer twine, run yer twine now!" ("Fives" and "sixes" refer to the number of small herring or sardines required to fill a standard flat sardine tin.)

And as the men in the peapod go back to their rowing and silent plunging, the MURIEL drops other men off onto the moored dory, and tows it gingerly to the shore at the mouth of the cove. Oars are shipped for the last 30 yards, and a man wades ashore with a long line, scrambles over the slippery popweed and granite, makes it fast to a gnarly spruce. The MURIEL takes the dory in tow and a dark thick rope of net, corks and leads pays out behind it.

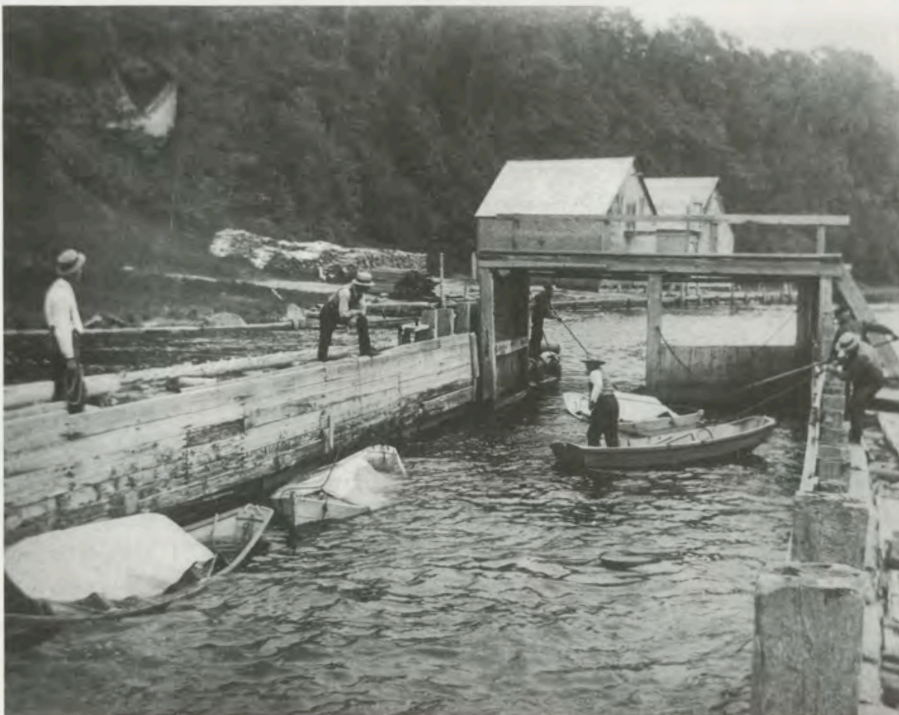
The sunset's light is almost gone when the other end of the net is made fast to

a spruce on the other side, and the shut off is accomplished. Then, working in the dim light of a crescent moon, the men work from another dory, setting out the "pocket" — a box of net, with a floor, perhaps 60 by 90 feet, buoyed on top, set on the outside of the "running twine," the straight wall of net that shuts off the cove.

The evening's last task is "weighing the corks" — hefting pairs of granite blocks connected by short pieces of line over that section of corkline that separates the cove from the pocket on the outside of the running twine.

The MURIEL and the herring gang leave the cove, slide around the corner to the harbor. When they make the wharf, most go

*Salmon boats in the locks at the lower falls fish hatchery, Orland (Frank E. Claes Collection)*



home, but a few remain, to go below for a nip of rum with the MURIEL' s skipper. There's a fire in the wood-burning cookstove, and the oil lamp lends a cozy glow. The skipper pours a round for all who wish it, and the talk is of the coast and of the herring.

"D'ye hear now, Ronnie Philbrook, down t'Swan's . . . them boys had t'ree hundred twenty-seven hogsheads from Cabin Cove?" (A hogshead, seventeen and a half bushels, is the traditional unit of measure in the sardine business.)

The men murmur and another lights a pipe and speaks from a pungent cloud, "S good we got them herrin' before the moon come up. Remember that one to Quarry Cove . . . 400 hogsheads if it was one . . . had the twine almost run and the moon just come over the hill . . . first slash 'o light on the water and them fish went wild, rushed the twine . . . 50, 60 hogsheads drove right onto the beach! Didn't save a one!"

The skipper, by the cookstove, moves the ash shaker a bit, and puts in a small stick of oak before speaking. "'Tis power boats now, lads. Johnny Warren t'Friendship, and Sim Oaks t'Stonington just had engines put in . . . in t'irty-footers! In t'irty footers, lads! Why ye'll be leaving them oars and sails on the beach purty soon!"

Towards the dawn, just as the palest first light yellows the sky over the cove, the body of fish in Deep Cove stirs, begins to move out toward the deeper water, as is their habit when the night is done. But their way is blocked by the twine, shore to shore, surface to bottom, till finally the fish find the gap — where the corks are sunk — and pour as one over and into the pocket, just where the men want them.

## THE COAST TODAY

All across the country, commercial fishermen, especially those inshore, are under siege. Pressures from overfishing, pollution, sportsfishing groups and economics make it hard to continue their way of life.

The dream of so many — to be able to make a living on the water with small craft, and get home most evenings — has faded, as change has forced them either offshore for longer trips in bigger craft, or off the water completely.

Just 20 years ago, such a scenario seemed to be facing Maine fishermen. The glue that held the rural coastal economy together was fishing. But the mainstay fisheries — groundfish, herring and especially lobsters — were seriously threatened by overfishing. Lobstermen were gearing up with more efficient wire traps just at a time when the lobster population seemed least able to stand it.

But the unexpected happened. Cod indeed collapsed, but slightly warmer water temperatures, reduced numbers of predators (codfish) and a larger minimum legal size allowed the lobster fishery to flourish, just at a time when it was most needed.

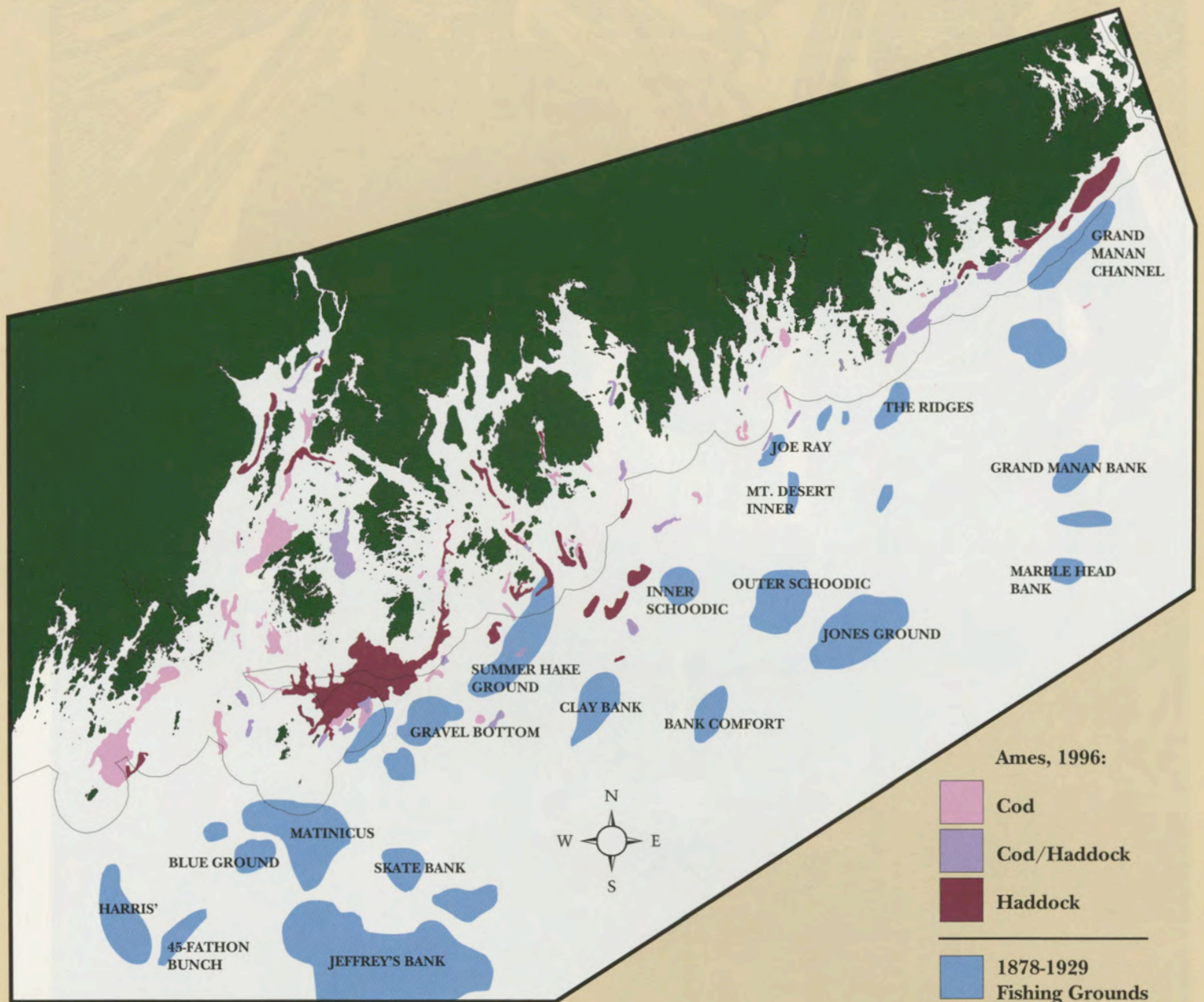
The fishery is not without problems — without trap limits, many fishermen feel on a treadmill, having to fish more and more traps just to stay even. Herring, the primary bait, once caught easily inshore, has moved offshore and become more elusive. But if a fisherman from the century's turn could have jumped ahead, to a summer evening in one of today's island harbors, he would marvel at the fleet.

He'd see men in fine-looking small craft unloading lobsters, crate after crate of them, picking up their moorings and rowing ashore, apparently done for the day. He'd wonder where the fish plants are, the acres of racks for drying cod. He'd marvel at the odd-looking pots made of something green and shiny. He'd see that the work is still hard, but that the abundance and popularity of the lobster allow those men in their graceful craft what many fishermen through history have yearned for — days at sea, nights ashore with their families. And he'd wonder: how could it be that the lowly lobster, so unimportant in his day, had come to provide so much?

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*Joe Upton fishes and writes from Bainbridge Island, Washington*

# ABUNDANCE



*Map Credits:*

Walter H. Rich, *Fishing Grounds of the Gulf of Maine*, 1929

Ted Ames, *map of historical inshore spawning grounds for cod and haddock*, 1996

*Note: 1878-1929 fishing grounds shown here include the larger areas only. Rich and Goode mapped many smaller inshore areas as well.*

The maps that Ted Ames and the fishermen put together are being converted to digital data that will be one layer of information contained in GIS. The power of GIS is that it can draw together many layers of information in the effort to answer complex questions. In this project, the layers added to the traditional fishing grounds maps will include bathymetry, bottom type, circulation of near shore waters, eelgrass beds, nutrient data, estuarine areas, and other features of the marine environment important to successful spawning and rearing of young cod and haddock. Analysis of the GIS layers will help determine which places have the greatest potential as stocking areas for these fish.

Whether or when we can restore our marine fisheries to populations resembling the run of cod intercepted in Machias Bay in 1942 — the story of which is recounted on the following pages — is one of many matters pertaining to marine fisheries that are of interest to thousands of fishermen.

— Scott Dickerson  
Natural Resource Analyst



Now the giant cod were safely trapped. Now the fishermen were ready to start hoisting fish aboard.

Excitedly, Roger unhooked the jilson from the rollers, untied the bull rope from the net and slipped the jilson hook into its loop. His father hoisted again; hauling the manila bull rope in until it drew tight around the submerged net at the top of the cod end. Slowly, as the splitting strap began to draw tight, the cod end was pinched off from the rest of the net. Excess fish slid forward into the belly.

As the cod end was lifted higher, a bulging bag of fish slowly emerged from under the loose twine and squished heavily against the side of the ROYAL. Finally it swung aboard. Roger reached underneath the massive, swinging bag and grabbed the tail of the pucker string. He yanked hard to untie the knot and jumped aside as several thousand pounds of cod spilled out into the deck checkers.

Quickly retying the cod end knot, Roger pushed the empty bag toward the side and guided it back overboard as it was lowered. Once the net was back in the water, his father steamed the ROYAL in a circle to wash more fish back into the cod end. When it was filled, he kicked the engine into neutral and hauled the next bag of fish aboard.

"We got two heists aboard before the bull rope parted," Roger recalled, "Then, it let go. When it did, the cod end just hung straight down over the side, underwater. The splitting strap was on the cod end, so it was underwater, too. So we couldn't reach the splitting strap to rig a new one. By then it'd started to breeze up from the sou'west. And you know sou'west is out there . . . Well, he couldn't do nothing so we strapped the net to the side and towed it all the way from Libby Island into the crick down below the house, here.

"When the tide dropped enough so's we could get at the splitting strap, we hooked in the jilson.

"They were some heavy, too," Roger went on. "I was winchman and when I took a strain on the bag, you could see it was gonna be too big to heist. We had a 60-horse Kermath on board for a donkey engine and that thing was turned right up. When he said, 'Put an extra turn on the winch head and come back on her,' I did.

"Well, that hook on the end of the jilson straightened out and shot up into the rigging like a cannon! It's a wonder it didn't kill somebody. After that, we took them aboard in smaller heists."

"We had to split them three more times before we finally got them aboard. We'd towed them in so hard they were packed solid. Best as I can figure, there was about 30,000 pounds in that tow."

The very next day on the first tow, they hauled back yet another huge net of fish. Once again they broke the bull rope; again they had to tow the net back to the harbor; this time towing it to Layton's Wharf.

Total time fished: about three hours. Total pounds landed: between 80 and 90 thousand. This was no stray school of fish.

When they returned to Libby Island Sound, two draggers from Portland had arrived. It hadn't taken long for the word to get out. Soon a formidable fleet gathered to fish on the giant cod.

The spawn fish, the draggers soon discovered, were not only filling Machias Bay, but were also abundant all the way from below Moose Peak Light in the west, to the south of Cross Island.



The end was predictable. The fish lasted through the spring of 1942. The following spring, even more vessels arrived, but caught fewer fish. By the third year, the spring run of giant Machias Bay codfish was broken. The bonanza was over.

My survey has been concerned only with the actual locations of former and current spawning grounds. But in the process of talking about these locations, many similar tales about cod and haddock abundance were told. In fact, every major bay studied (to date) has suffered a fate similar to the Machias Bay cod.

In one sense, it's sad to come across such stories. Sad because these stocks of fish are gone and we are clearly much the poorer.

But there's an exciting opportunity here, too. Such reports of abundance suggest that with an appropriate recovery plan, these stocks could be restored.

Spawning areas around places like Machias Bay and Penobscot Bay could be revived and protected, to regain a vast marine treasure that would give us all a truly sustainable fishery.

For those who would take care of it.

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*A commercial fisherman and marine scientist, Ted Ames has taken part in the Gulf of Maine region's marine policy debates for nearly 20 years. In January, 1996, he became Marine Resources Director at the Island Institute.*



JAMES M. ACHESON  
AND JAMES A. WILSON

**L**AST WINTER, hundreds of Maine lobster fishermen turned out for meetings in nine coastal and island towns, from Cape Porpoise to Jonesport. The occasion was unprecedented: for the first time in the history of their fishery, the independent-minded Maine citizens who earn their livings catching lobsters assembled, at the call of the Legislature, the Department of Marine Resources and their own industry associations, to take part in an experiment in self-governance.

Legislation passed last year stipulated that the coast would be divided into zones, and that each zone would be managed by an elected council of lobster-fishing license holders. The commissioner of marine resources was to establish the zones, the councils and the procedures for their operation by July 1, 1996.

This approach to fisheries management is variously called "bottom-up," "co-management" or "self-governance." It means allowing fishermen to manage aspects of their own industry in coordination with the state. If it works well in the case of lobster zones, it is quite likely that the Legislature will extend the responsibilities of the councils to include broader authority in the lobster fishery, and possibly authority over other fisheries.

Fishermen, more than any other group in society, have a strong interest in the long-term conservation of the resource, because their livelihoods depend on its health. In the past, fishermen have not often been in a position to reach and enforce agreements about the kind of restraint necessary for long-term conservation; the institutions, the places to meet



# FROM THE

*A Maine fishery embarks on co-management,  
and everyone is watching*



Peter Ralston (4)

# BOTTOM UP

and discuss and decide have not been there. More than anything else, the formal, legal authority to make and enforce such agreements has not been present.

Co-management is an attempt to create the formal institutions that will allow fishermen legally to make and enforce agreements about mutual restraint.

Maine's zone management law came about because of longstanding interest in a coast-wide trap limit. For 20 years, many individuals have believed that too many fishermen were using too many traps, and that the solution is to set a maximum allowable number of traps per license holder. But fishing practices in different parts of the coast are very different, and there has been no agreement on the number of traps that should be allowed. In Washington County, for example, many fishermen assert that 600 traps is more than ample; in Casco Bay large numbers of people claim they can't make a living with fewer than 2,000 traps.

The new zone management law sidesteps these differences of opinion, allowing fishermen in various parts of the coast to establish different trap limits, taking into account traditional fishing practices and local conditions.

Traditions in the lobster fishing industry should make it relatively easy to undertake co-management. Each harbor's group of lobster fishermen tends to form themselves into a group or "gang" and face-to-face communication allows them to reach consensus. Many activities are coordinated. Fishermen from each harbor have established traditional territory where they fish. They are able to coordinate the "defense" of these territories by sanctioning those from other harbors who violate their fishing territory.

The territorial system and the illegal practices involved in maintaining it have given the entire fishery a good deal of notoriety. But what is frequently overlooked is that the system has beneficial effects on the lobster stocks, and that the territorial rules are well understood and obeyed by everyone in the industry. There is surprisingly little trouble.

More important, within these harbor groups there is consensus on proper fishing practices, a set of rules to be obeyed. If someone wishes to continue fishing in an area it is important that his behavior conform with that found acceptable by the other fishermen. Taking and selling short lobsters, "scrubbing" the eggs off gravid females and molesting other people's traps are universally condemned. Any number of subtle to not-so-subtle sanctions can and will be applied to the individual who violates the rules.

Harbor gangs have the capacity to generate new rules for themselves. When a problem arises, fishermen in a harbor will typically talk it over — sometimes for a period of years — before deciding on a course of action. They may approach the Legislature for a special law they believe



will be in their interest. If there is little opposition, the Legislature will usually pass the law requested. (Over the past 120 years, a very high percentage of all conservation regulations in the lobster industry have been the result of lobbying activity by various groups of fishermen. The Zone Management Bill and the idea of bottom-up management were strongly supported by the leaders of the Maine Lobstermen's Association and the Downeast Lobstermen's Association.)

In other instances, harbor gangs decide to develop a rule informally and rely on voluntary compliance or enforcement at the local level. There are harbors in which fishermen have agreed on ways to place traps to avoid congestion and entanglements, harbors where they have agreed on voluntary trap limits.

In short, lobster fishermen are already involved in a good deal of self-governance. In the Maine lobster industry, co-management is not new, but merely an extension or continuation of a well-established tradition.

In Japan, co-management is a tradition that stretches back to the 18th century, when ocean areas near shore were considered part of fiefs owned by local lords who controlled fishing technology and seasons, and established sanctuaries where fishing was not allowed. In the 1880s, the Japanese government established cooperatives; after World War II the U.S. Occupation authorities changed the rules for cooperatives to make them the primary fishery management unit and equalize access to the resource. Each fisheries cooperative association was made the owner of a section of coast, and the right to fish in these territories is held jointly by cooperative members.

Over time, a strong sense of stewardship has evolved. Association members establish fishing practices, and disputes about gear conflict and rule violations are handled at general meetings that can get fairly raucous. The associations are divided into smaller units of fishermen who cooperate on a local level. The associations are also part of a larger bureaucratic structure. Legal authority for resource management in inshore waters belongs to the prefecture governor, who allocates power to prefecture fisheries agencies. The fisheries cooperative associations operate under the policies of these agencies, which in turn are run by regulatory commissions made up of elected members of the fishing community and people appointed by the governor. Fishermen thus not only control their own co-ops, but have influence on the powerful prefecture regulatory commissions.

In the Lofoten Islands of Norway, local control by fishermen dates to the 19th century. Today the system operates under the authority of the Norwegian Salt Water Act of June 3, 1983, and is administered by the Norwegian ministry of fishery. The ocean area surrounding the Lofoten Islands has been divided into 15 districts, each of which is administered by a superintendent and eight "control assistants" who enforce the rules. The fishermen of each district are divided into groups according to gear type and are allowed to elect their own inspectors. These inspectors ensure that the regulations are obeyed, serving as intermediaries between fishermen and the control assistants should problems arise.

Fishing rules for each district are determined by a regulatory committee. The chairman of the committee is appointed



by the Norwegian government; the rest of the members are fishermen selected by the inspectors. These committees specify the locations where various types of gear can be fished, generate rules concerning how fishing will take place and specify the times of day that fishing is allowed.

Both the Japanese coastal fisheries and the Lofoten fishery are doing well today, as they have for decades.

The primary advantage of bottom-up or co-management is that the regulations are apt to be relatively easy to enforce. Rules promulgated by groups of fishermen are not likely to conflict with local practices or norms, and they are apt to be crafted to minimize the problems of making a living. They tend to be relatively flexible and to permit people to craft agreements to take into account local conditions. Most important, fishermen will generate rules that they believe are in their own, long-run, best interest.

A number of observers have pointed out that fishermen's views of the ocean and the factors that determine fish populations are often different from those of biologists. Fishermen may see biologists' prescriptions as simplistic, ineffective, unrealistic and not likely to conserve the stocks of fish. If management is going to be effective, conservation rules must be obeyed — a state of affairs that's not likely to exist as long as fishermen see the rules as silly and ineffective.

Fishermen are likely to generate the sort of rules that we see in the Maine lobster fishery, and they are very different from the rules fisheries biologists and administrators generally favor, such as quotas derived from stock/recruitment models. Concerned with the size of populations of fish, these models are based on the presupposition that marine ecological systems tend toward equilibrium, that fish populations tend toward equilibrium, and that the long-term abundance of a species is strongly linked to the amount of exploitive "effort" on that stock. Little or no attention is paid to the interactions among species or the effects of habitat.

The relationships between stock size and fishing effort can be described mathematically. The theory assumes that when stocks are overfished, the larger the parent stock, the larger the number of future additions to the population (i.e., recruitment). Such a model leads unerringly to policies designed to regulate the quantity of fish that can be taken, usually through quotas of some kind.

Fishermen have a very different conception: to them, the ocean is constantly in flux. Fish populations vary drastically in ways that are very hard to predict. For fishermen, the idea that oceans are in equilibrium and that populations can be controlled by curtailing effort are laughable. This is not to say that fishermen do not believe there are ways that fisheries can be managed. Their ideas about proper managerial techniques almost always empha-



**In Japan,  
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size what we would call the preservation of basic biological processes. For example, in fishermen's eyes, "fishing on a spawning aggregation is not exactly wise," and "using gear that destroys essential habitat is like cutting off your own future."

Recent efforts to model fisheries do suggest that fisheries are very complex and possibly chaotic. If this is true, management by controlling fishing effort may be impossible, since that requires a huge amount of fine-grained information that must be constantly updated. If fisheries are chaotic, or simply very complex and very difficult to measure, we need to focus on maintaining those regular biological processes on which the long-term well-being of the stock depends. We need to protect the breeding grounds, nursery grounds, migration routes, fish in critical parts of their life cycle. This can be done by rules that affect how, when and where fishing is done. We must control technology, time, seasons and place; we must avoid taking fish in certain age ranges. Such rules may not allow us to control population size (especially if those populations

are chaotic), but they will prevent the disastrous stock crashes we have seen.

These are exactly the kinds of rules that already exist in the lobster fishery, where the most important regulations are the double gauge (which protects both the large breeding stock and the juvenile lobsters), the V-notch law (which protects the proven brood females), the escape vent law (which requires traps to be constructed to allow small lobsters to escape), and the requirement that traps, which do little damage to the bottom, are the only technology that may be used in the fishery.

There has never been a quota, a law in the fishery limiting the number of lobsters that could be caught. The consistent performance of this fishery since World War II suggests that the rules in place have worked.

Rules on how, when and where to fish are known as "parametric management." Lobster fishermen in Maine, when they have generated rules for their fishery, have chosen parametric rules consistently.

The new zone management law gives fishermen the right to administer some of these parametric rules (a trap limit, the numbers of traps on a warp, time of day). If the past is any indicator, the rules that zone councils and members are apt to adopt will also be parametric in nature.

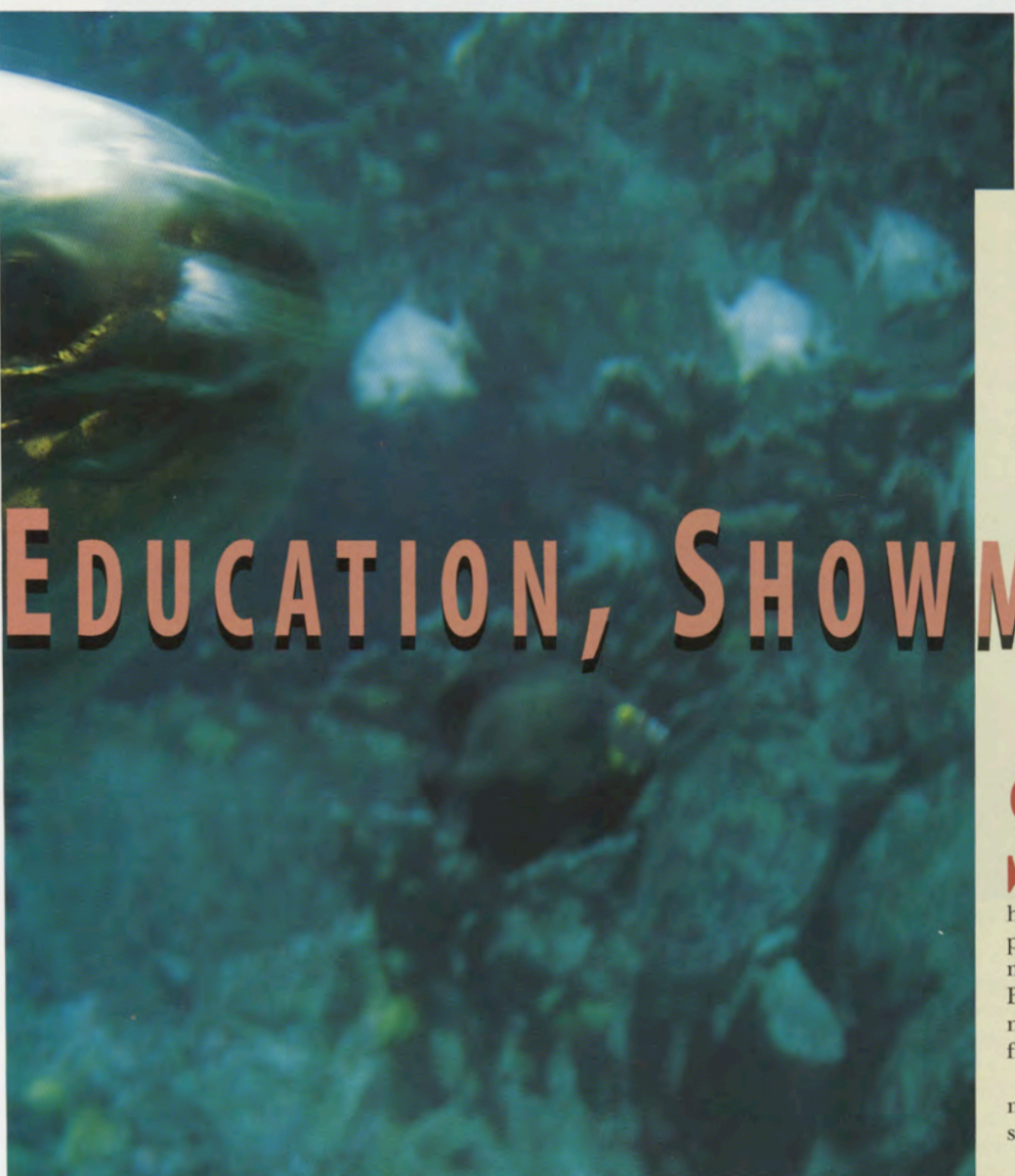
During last winter's round of meetings on the zone management law, most fishermen expressed support for the concept of co-management. Those who opposed it seemed to be saying that fishermen couldn't govern themselves. But 200 years of town meetings, we believe, have given Maine people a lot of practice with direct democracy. Given a chance, co-management will work in the Maine lobster fishery, and it could prove to be the salvation of other fisheries as well.

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*James M. Acheson and James A. Wilson teach in the Departments of Anthropology and Resource Economics, respectively, at the University of Maine.*



Frank Siteman



*As the  
New England  
Aquarium  
expands, it returns  
to conservation*

# EDUCATION, SHOWMANSHIP

SCOTT ALLEN

**S**IX WHISKERED gray faces pop up from the pool in the basement of the New England Aquarium as curator John Dayton enters the aquarium's hospital. The baby harbor seals, cute as puppies, were abandoned by their mothers in Maine, so here they are in Boston, learning the ways of the world not from a fellow marine mammal, but from the New England Aquarium staff.

Every year the aquarium rescues more than 100 abandoned or injured seals on the New England coast. A few, like the late Hoover, who served as unofficial greeter because his call sounded like "Hello there," become too domesticated for release, but the biologists have a knack for rearing ocean-ready seals.

"Ideally, you'd like to minimize human contact so it won't affect them in the wild, but what can you do?" explains Dayton as one seal, an orange identification sticker on its forehead, sticks its snout through the gate for a pat from my two children. "We have to teach them to fish."



Mark Wilson, Boston Globe



Rendering of the planned open ocean tank at the New England Aquarium (Frank Costantino, Schwartz/Silver Architects)

For 26 years, the New England Aquarium has been in the thick of the issues confronting the Gulf of Maine, from helping to defeat an oil refinery planned for Eastport, Maine, to planting eelgrass in damaged Boston Harbor to saving stranded seals, dolphins, whales and turtles wherever they wash up. As one of the country's most visited water attractions, the New England Aquarium is like the rich uncle of marine conservation, helping out all manner of relatives when they get in a jam.

Now, though, the aquarium is the one that needs help. The boxy, concrete building on Central Wharf is not the state-of-the-art exhibit hall it once was, having been overtaken by newer, bigger aquariums in Baltimore, Chicago, Monterey, and elsewhere. Today, the New England Aquarium hosts more than twice the 600,000 visitors a year it was designed for, making for wall to wall people on many a summer afternoon. As Yogi Berra once said: "Nobody goes there any more. It's too crowded."

During the 1980s boom, New England Aquarium officials thought they had found the solution by leaving downtown Boston. They announced plans for a new \$150-million aquarium at the old Charlestown Navy Yard, where they would convert an empty drydock into one of the world's largest exhibits. But a real estate crash made it impossible to sell their existing facility, while neighborhood concerns in Charlestown complicated plans for the

new location. In 1991, aquarium officials scratched the relocation plan in one of the biggest setbacks in their history.

Chastened by the experience, the New England Aquarium has come back with a less grand — but still impressive — \$70-million expansion right on its current site at Central Wharf that will triple the exhibit space by the end of the century. The planned Open Ocean Tank is five times bigger than any exhibit in the existing aquarium, while other exhibits will include difficult to manage animals, including puffins and sea otters, for an unprecedented re-creation of natural scenes such as shorebirds playing in surf.

The expanded aquarium, which will look from the outside like asymmetrical blocks rising toward the harbor, places visitors before great walls of water, an invisible acrylic panel separating them from the marine life inside. Adding realism, the aquarium will pump in sounds of the underwater world, such as the bray of a humpback whale.

Aquarium planning director Bill Whitney is positively poetic about the possibilities of a tank big enough to capture the darkness and mystery of the sea. "Imagine, out of the gloom comes a school of 50 300-pound bluefin tuna that race across the front of the glass like a freight train and then disappear," he says, "You are immersed in the ocean."

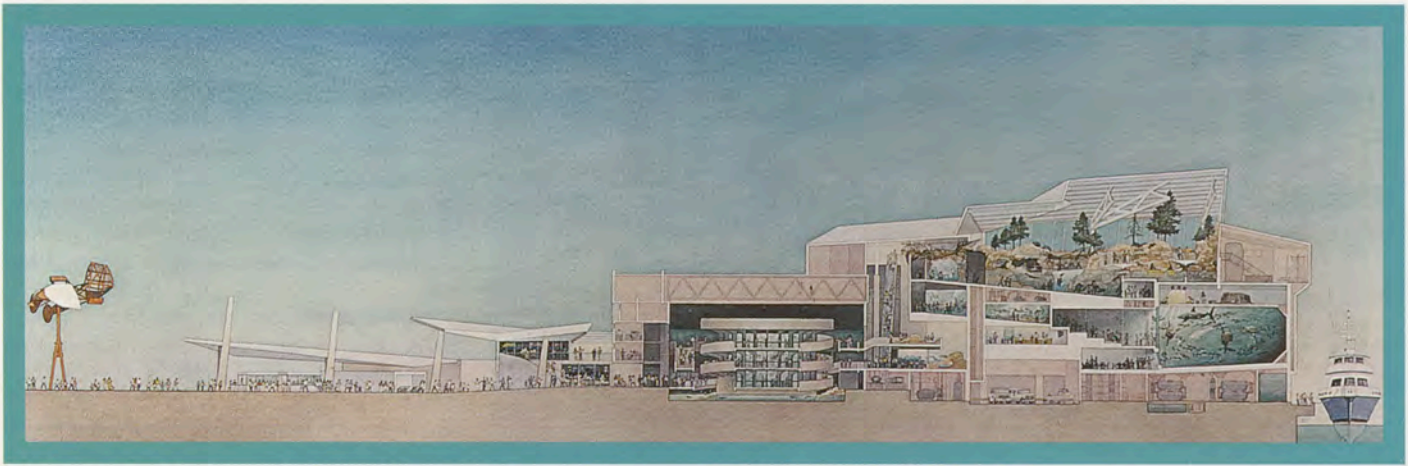
But the aquarium's top brass are bracing for a few years of "Please Pardon Our

Appearance" as two new wings take shape on the tiny 3.2-acre lot. Though the aquarium will remain open throughout the five-year project, visitors will have to put up with the sights and sounds of heavy construction. Aquarium officials hope that the gradual addition of more elbow room, more exhibits and a new restaurant will keep visitors coming despite the inconvenience.

"We hope we have such an attractive cluster of programs that we don't have any impact" from all the construction, says Jerry Schubel, who took over as aquarium president a week before the expansion was announced in November, 1994.

Aquarium 2000, as the plan behind the expansion is called, is finally a return to the New England Aquarium's conservation roots. When the aquarium opened in 1969, Boston Harbor was a filthy pariah, and the famed Faneuil Hall Marketplace a couple of blocks away was still a ramshackle collection of butcher stalls. Many of the 12,000 visitors who came on opening day were venturing to the water's edge for the first time, marking the first environmental stirring that would lead to the \$3.5-billion Boston Harbor cleanup years later.

Today, Central Wharf is surrounded by signs of promise from the booming boutiques at Faneuil Hall to the nearly completed cleanup of the harbor to the blue-and yellow-topped fences that enclose Boston's "Big Dig." That colossal public works project will replace the elevated



*The New England Aquarium's proposed addition and redesign (Paul Stevenson Oles, Schwartz/Silver Architects)*

highway in front of the aquarium with a park, physically reuniting the once-shunned waterfront with the rest of downtown.

Boston Mayor Thomas Menino brags that the new aquarium "will set a standard for waterfront activities around the world for the 21st century," and Schubel happily agrees. Though it didn't seem like good luck in 1991, the failure of the Charlestown plan was probably for the best, Schubel now believes. "I think the opportunities on the harbor now are at least as great as 1969," he says.

The hubbub of downtown Boston seems a lifetime away as Scott Kraus pilots the aquarium's 30-foot research boat, the NEREID, past the towering cliffs and prim white houses of Grand Manan Island toward the open waters of the Bay of Fundy. "This is the kind of commute that makes you think twice about the Southeast Expressway," jokes Kraus, director of the aquarium's Edgerton Research Laboratory.

The Edgerton Lab, the research wing of the New England Aquarium, has long been up to its elbows in marine conservation throughout the Gulf of Maine. Kraus works with Portsmouth, New Hampshire, fishermen on an experimental device that warns away harbor porpoises from their nets. Thousands of harbor porpoises die in New Englanders' nets each year, a violation of a federal law that, if strictly enforced, could devastate small fishing operations.

Greg Stone, the aquarium's director of conservation, is trying to find middle ground in the conflict between Maine salmon farmers and the burgeoning population of harbor seals living on ledges near the fish pens. Though the seals are federally protected, frustrated fish farmers have begun shooting seals that they blame for attacking their fish and sometimes leaving holes in the pens, allowing thousands of salmon to escape.

Salmon farmers have tried predator nets, underwater noises and other non-lethal ways to scare off the seals, but "even when you do all of that stuff there are still seals that get into the pens," says Stone,

### **For 26 years, the New England Aquarium has been in the thick of the issues confronting the Gulf of Maine.**

who hosted a two-day conference at the aquarium on human/seal conflicts last year.

In the Bay of Fundy, the Edgerton Lab team studies a colony of Northern right whales who congregate there in late summer, gorging on rich plankton in preparation for the leaner months that follow. Less than 350 Northern right whales remain, making them the most endangered of the whales, and more than half of them come to the Bay of Fundy, allowing the aquarium to compile a photo catalogue that identifies most remaining members of the species by individual markings.

Studies of DNA samples taken from the right whales by Kraus's team prove that the legacy of whaling was even more devastating than we knew. The right whales appear to be descended from only three female families, suggesting they were pushed to the very brink of extinction at some point. This also suggests that genetic inbreeding among the whales could explain why so few baby right whales are born each year.

"The number of reproduction age females is growing, but the number of calves is not," says Kraus, possibly reflecting the increased sterility and miscarriages that often accompany genetic inbreeding.

But there is a bright side to the story: Kraus's discovery of the late-summer colony in 1980 dealt a near-fatal blow to the Pittston Company's plan to build an oil refinery in Eastport. "They wanted to discharge into the bay," explains Kraus, but the discovery of an endangered species nearby scotched the plan.

Kraus, a 15-year aquarium veteran, admits that the New England Aquarium went into a period of drift after plans for the new aquarium collapsed in 1991. But, out of that experience, the aquarium has strengthened its commitment to Kraus and the other scientists. More than ever, under new president Schubel, an oceanographer who previously ran the Stony Brook marine research center for the State University of New York, the New England Aquarium will stress substance over style.

Unlike the aborted Charlestown move, which centered on the availability of an extraordinary site, the expansion at Central Wharf is based on a 15-month review of the aquarium's mission. Eschewing circus-like attractions such as ball-balancing seals, the New England Aquarium trustees called for an aquarium dedicated to providing "leadership for the preservation and sustainable use of aquatic resources."

The result is an aquarium in which science plays a central role. The Edgerton Lab used to have time to do contract work unrelated to the aquarium, once even running a lab for working with radioactive materials; now its work will directly fuel the Boston exhibits.

The New England Ponds exhibit that went up this winter, for instance, grew out of four years of aquarium research into freshwater fish that are threatened by pollution, development and disregard. The star attraction, the bridle shiner, is a two-inch-long, opaque fish whose decline has been painstakingly documented by aquarium staffers going from pond to pond, dip nets in hand.

The aquarium is also reaching out to other research centers for help. The Woods Hole Oceanographic Institution in Massachusetts, one of the world's leading ocean research operations, has announced a partnership with the aquarium to publish a magazine aimed at students, "Ocean Explorer." Under the agreement, Woods Hole researchers will come to the aquarium to lecture about work showcased in the magazine. "We hope that we can be a labo-



*Aquarium scientists have studied Northern right whales in the Bay of Fundy for years. (Mark Wilson, Boston Globe)*

ratory for the schools, so we can be an integral part of the system," says Schubel.

When the expansion is complete, the role of research will continue to grow, providing a stream of information for the computers at various exhibits called "smart stations" that allow visitors to dig into their subjects as deeply as they choose.

And the exhibits themselves will be more scientifically demanding, directly comparing New England settings to other places — a salmon stream alongside a stretch of the Amazon, for instance. "You occasionally have to go to the balcony and see what's on the world stage," says president Schubel. All that balcony-gazing will put aquarium scientists to work.

The aquarium's educational approach to conservation issues comes under attack from those who think it should take a more activist position. Max Strahan of the radical environmental group Greenworld believes that the New England Aquarium is more interested in making money on whale watch tours than helping the whales recover. He accuses the aquarium of helping with "whale genocide" against the right whales in part by doing genetic research that distracts from the right whales' leading cause of unnatural death — collisions with boats.

But that's the way it is when you're as big a target as the New England Aquarium. When the movie *Free Willy* was released in 1993, animal rights activists picketed the aquarium even though it doesn't have any whales in captivity. And the aquarium set off a storm of protest in the late 1980s when officials transferred two dolphins for non-lethal Navy research in Hawaii.

"If you always are seen as the good guys, you probably aren't doing enough," replies Schubel.

Yet, for every controversy, there are several instances where the aquarium was the unequivocal "good guy".

### **The boxy, concrete building on Central Wharf is not the state-of-the-art exhibit hall it once was**

- The aquarium documented the pollution from raw sewage flowing into Boston Harbor, devoting a room to the grim conditions on the harbor floor. Now that the water is improving, biologists have started replanting the eelgrass that was once abundant throughout the harbor.

- When the Cape Cod Aquarium in Brewster, Massachusetts, suddenly went bankrupt in 1992, leaving no one to look after 100 sea lions, seals, fish and other creatures, the federal government called in the aquarium's rescue and rehabilitation team to find homes for them.

- Aquarium staff responded to 147 reports of seal strandings in 1994 alone, sometimes discovering once they arrived that the mother had not abandoned her pup at all, but had simply been out of sight for a bit. The rescues are no longer necessary to preserve the harbor seal population, but Stone says his staff needs to carry on because the public expects it.

"Do we want them? No," says Stone. But, if no qualified agency cares for the pups, "the alternative is you end up with a lot of baby seals in people's bathtubs."

If activists sometimes criticize, the New England Aquarium has never had a problem winning the hearts and minds of its most important audience, children. From the moment they spy the outdoor harbor seal enclosure, where Hoover the talking

seal once hollered his greetings, the kids become adrenaline-charged bundles of energy.

Just inside the door they are greeted by the penguin rookery, where two-foot-tall blackfoot and jackass penguins stand at attention on their fiberglass rock piles. With wild yellow eyebrow tufts that give them the look of Jerry Lewis's "Nutty Professor," the jackasses are a particular hit.

The heart of the aquarium is a two-story glass cylinder that recreates a Caribbean coral reef. A spiraling ramp around the 180,000-gallon tank allows the visitor to ascend from the needle-toothed moray eels and other creatures who prefer the bottom to the sea turtles catching a breath of air at the surface. In between, dead-eyed sharks, stingrays and other marine life circle ceaselessly or hide in the coral reef's nooks and crannies.

When the aquarium first opened in 1969, exhibits such as these represented a sharp break from the sideshow quality that dominated aquariums of the day. Rather than simply amusing guests, the New England Aquarium put the animals in natural surroundings and invited visitors to learn as they toured.

In some ways, the aquarium remains on the cutting edge. Earlier this year, New England Aquarium officials shipped their entire "Sea Jellies" exhibit — thousands of jellyfish ranging from the poisonous Portuguese man-of-war to thumb-nail-sized umbrella jellies — to the National Aquarium in Baltimore. It was a huge logistical feat that included not only the transportation of fragile life forms, but a change in the salinity of their water in Baltimore.

"Traveling exhibits are something that everybody's been talking about for years, but never doing it," says Dayton, the aquarium's curator.

Likewise, under the guidance of veterinarian Howard Krum, the aquarium has developed an innovative operating room for fish that has helped to keep animal mortality low.

"I came in here one day and Howard had a grouper [a tropical sea bass] on the table with a wet towel over its body, and saltwater being pumped through a tube into its mouth and through its gills," recalled Dayton. "The fish had some kind of intestinal blockage, so Howard cut him open, then sewed it up and sutured him. He's still swimming around two years later." On a recent visit, Krum's staff was preparing a necropsy on a trout that had just died in the freshwater pond exhibit, to be sure the animal had no infectious condition.

On the other hand, success has hastened the obsolescence of the Central Wharf aquarium. As the collection has grown to more than 60,000 mammals, birds, reptiles, amphibians, fish and invertebrates, the aquarium has overflowed with life. The back halls are packed with

auxiliary tanks where lobsters and other creatures are raised, where freshly gathered sea anemones and fish from Eastport, Maine, are temporarily quartered, where endangered Plymouth red belly turtles are living in an incubator tank. The staff and volunteers are good-natured about it, but they would like more room to maneuver.

If the staff is cramped, so are the customers. By early afternoon on most weekends, it's tough to get window time on the most popular exhibits and customers have to line up early for a seat aboard the aquarium's permanently moored boat, DISCOVERY, where the sea lion shows are held. For small children, the experience can be slightly overwhelming. Not surprisingly, the aquarium's attendance has been static at around 1.3 million visitors annually since 1990.

President Schubel has no illusions about his charge. The Shedd Aquarium in Chicago is the world's largest indoor aquarium, including an oceanarium where dolphins and whales live. Monterey Bay Aquarium in California may be even more spectacular, including a unique, 28-foot-tall kelp forest. These and other newer aquariums are simply better than his, Schubel admits: "Our facility is badly outdated."

The expanded aquarium will not only add 95,000 square feet of much needed room, but it will give visitors almost a scuba divers' view of many exhibits. Even the outdoor harbor seal enclosure will be transformed by raising the tank so people can watch them swim underwater, and adding rocks for the seals to swim around and through.

In addition, curator Dayton wants to add sea otters to the seal exhibit, presenting a major challenge simply because they are so clever. "Otters are the most mischievous creatures known to man," he explains, "They'll hide a shell under the armpits and smash it against the glass when you're not looking."

Constructing the interior of the aquarium will present even more demands, such as how to replicate an 80-foot wave to providing a home for piping plovers — a globally endangered bird — and keeping predators in the 1.1-million-gallon open ocean tank sufficiently well fed that they don't start eating the exhibit.

But Schubel is sure that when the first visitor completes the expanded aquarium tour with the climactic Rocky Coast exhibit at the top of the new east wing, the hassles will have been worth it. There, against a commanding view of the Boston Harbor islands, visitors will confront a coastal scene complete with seals, sea lions and even fir trees atop the rocky outcroppings.

The new aquarium, Schubel predicts, will "re-establish the New England Aquarium as the leading aquarium in the world."

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*Scott Allen covers environmental issues for the Boston Globe.*

## Tuna, Aquaculture and the New England Aquarium: a Work in Progress

Sebastian Belle spent his career fattening up fish for market, traveling to Norway, Japan and other exotic locales to learn the fish farmer's trade. The big salmon pens that he oversaw at Connors Aquaculture in Eastport, Maine, Belle believed, represented the best chance for survival for many coastal communities devastated by overfishing.

Three years ago, Belle astonished his colleagues by jumping ship to join the New England Aquarium in Boston, taking over a program the primary goal of which was not to grow food, but to learn how to care for mammoth, 1,500-pound bluefin tunas in a future exhibit.

But Belle is using the tuna project to help the fishing communities he left behind, developing a new, potentially lucrative, form of aquaculture. If an experiment in raising tuna off the Virginia coast works out this summer, bluefin tuna could one day be another term for "cash cow."

"We probably are the only people outside of a small group of Japanese researchers and a small group of Australian researchers who have developed firsthand husbandry techniques for captive culture of bluefin tuna," said Belle. "The aquarium may seem like a strange place for that kind of work to emerge. But when you look at it in comparison to the aquarium's mission, it makes sense."

The tuna project, the first U.S. attempt to raise these enormous fish in captivity, began in 1992, when the International Commission for the Conservation of Atlantic Tunas concluded that tuna numbers had dwindled as much as 90 percent in only 23 years. Aquarium officials hoped that by rearing juvenile tuna, they could better understand the biological issues contributing to their decline, while also learning how to care for tuna in an aquarium setting.

At the time, aquarium curator John Dayton said the project will help "preservation of a species that is in the same league as dolphins and whales in terms of being an indicator for health of the open ocean."

Belle, the former production manager at Connors Aquaculture's Eastport farm, also had tuna on his mind, but for slightly different reasons. Helping to build a halibut hatchery in Japan in 1989, Belle learned that the Japanese were raising the fast-growing, fast-swimming tuna in pens. He was intrigued, but the Japanese were reluctant to share their secrets.

"It was something that was very hush-hush. They wouldn't even let me on the farm," Belle recalls.

At the aquarium, Belle is getting his chance to bring tuna aquaculture to America while also helping to conserve this sought-after sport fish, now believed to be in better shape ecologically than a few years ago. In the first three years, the researchers have raised juvenile tuna in controlled waters at the New England Aquarium. Now, they want to raise 200 to 300 tuna in the open ocean off the Virginia coast.

Belle makes no promises that tuna will challenge salmon as the East Coast's top fish farm product, calling the tuna experiment "a work in progress." But, he points out, even if the tuna doesn't pan out, he and his fellow researchers are systematically reviewing other finfish species to see which ones could best be raised in the North Atlantic — and sold at a profit.

"I believe very strongly that aquaculture is a tool that the traditional fishing communities can use to strengthen and diversify their economic base," said Belle, "I have seen it again and again in other countries and we are, I believe, completely missing the boat in this country."

# “A LITTLE BIT OF AQUACULTURE”







Tom Moffatt (3)

## *John Malloch's success on Campobello depends on ingenuity and the ability to react quickly*

TOM MOFFATT

**I**N THE PAST few years John Malloch has come to be something of a symbol for Campobello Island.

He has those attitudes we associate with island people. He is 68 and works as hard now as he did when he was 20. He has a streak of quiet stubbornness that allows him to weather bad fishing years and look forward to better ones with enthusiasm. He will make do with the livelihood his island and its seas offer him.

John Malloch is quietly observant, willing to try something new, and always ready to invent a piece of equipment when it doesn't already exist. He doesn't mind bringing common sense to bear on a problem.

The one thing he has never been willing to give up is his island life. Malloch hasn't needed to — instead, he has become one of the true success stories of aquaculture. This has come not because of a single-minded devotion to the financial bottom line, but through the fisherman's sense of quiet watching and thinking that he has brought to every aspect of his business, Harbour de Loure Products, making it a multi-million-dollar success story. He never forgets his ties to the sea. Malloch's success is very much his own.

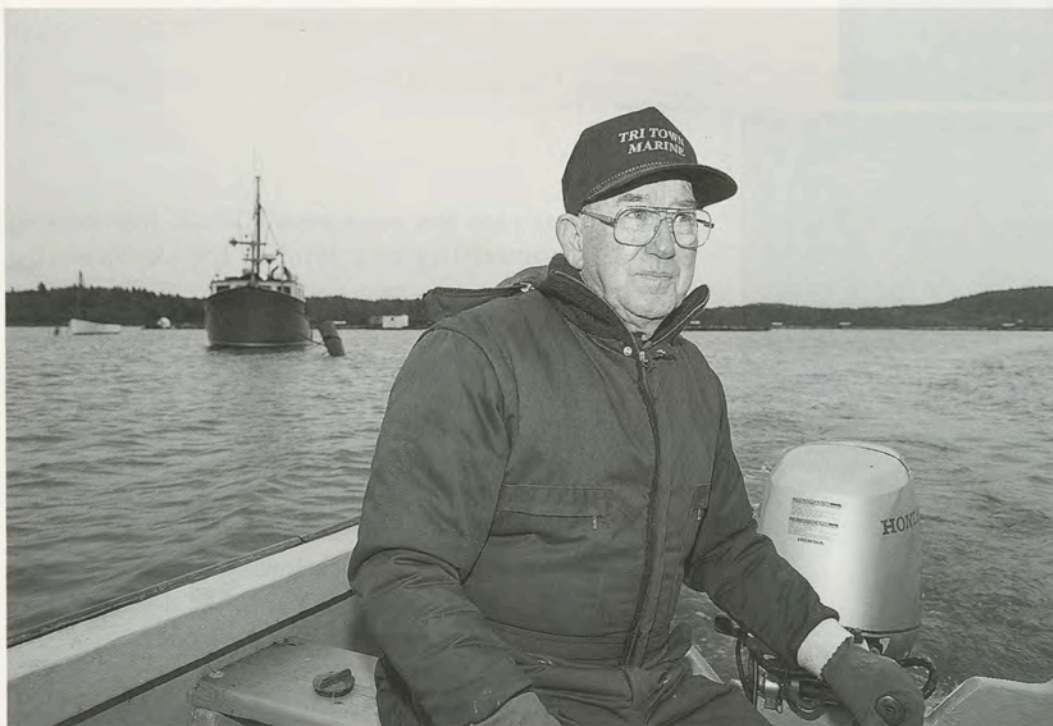
"I began a little bit of aquaculture back in 1980," he says. "I fished herring weirs, and naturally lobster, among other fisheries. But the fish always go in cycles. Every once in a while there would be a bad year or two. I thought aquaculture might help even things, and I decided to give it a shot."

As he looks out across 60 cages holding 500 tons of Atlantic salmon, as well as halibut, pollock, cod and winter flounder, there is a definite sense of pride in what has been accomplished, not just in size, but in the care he takes over this fish farm, for the long term.

"After I started, it kept going. I had to decide whether I would still fish commercially. Now there are 35 people, full- and part-time, working for this business, most from Campobello Island," Malloch says. "We're basically self-sufficient now."

*Facing page: The growth of the industry in southwest New Brunswick has been explosive, and has created some problems. "There should have been more spacing in general," Malloch says. "The more distance you have, the fewer problems."*

*Above: Harbour de Loure Products builds all of its own cages. "We started with an eight-sided cage," Malloch says. "Later I realized we would do better with a 12-sided cage, and we went with that."*



*"Fish always go in cycles," says John Malloch. "I thought aquaculture might help even things, and I decided to give it a shot."*

**The one thing he has never been willing to give up is his island life. Malloch hasn't needed to — instead, he has become one of the true success stories of aquaculture.**

That sense of self-sufficiency becomes very evident when we get into a boat and visit the cages. Malloch in his orange survival suit drives the outboard as we speed out towards the long rafts of cages in which salmon can be seen jumping occasionally. "We build all our own cages," he says as he ties the boat alongside a set of two dozen cages constructed of wood, Styrofoam blocks and metal railings.

"We started with an eight-sided cage. Some people even called it a Malloch cage. Later I realized we would do better

with a 12-sided cage, and we went with that." Malloch himself designed them, and every winter oversees the construction of new cages to replace older ones.

As he steps on the wooden edge of one of the cages he takes some feed from a bin in the boat and throws it across the water. Sleek, silvery Atlantic salmon, perhaps 10 pounds and soon ready for harvest, streak by near the surface and grab it. In a few seconds they are gone again.

On the edge of each cage is a wooden box. Malloch smiles as he describes its function.

"We thought it might be worth having automatic feeders, so I designed them right here, and we built them here. They are mechanical, not computerized, and generally work well in most weather."

These automatic feeders go to the very heart of Malloch's attitude toward his business. He describes how he puzzled over the problem of building one, drew plans and did the necessary machining in his own shop, with a lathe he ordered for the job.

"The need gets your mind moving," Malloch says. "It's sort of fun. You [take] a step, see where you need to go, and then you can see the next step. We've had to come up with our own equipment, and we have. Fishermen here have always had a good handle on being able to do things well, and that's how we've approached our problems here."

As a feeding crew leaves a set of cages they motor their 20-foot open boat over to a large barge on which sits a silo. They fill dozens of blue buckets with more feed pellets for the growing fish.

"That's our silo system," Malloch says, pointing to the barge. "Five years ago people said it wouldn't work. When I set it up we made our own feed. I thought we could take a two-inch pipe from shore, and blow the food through it out to the silo. I played around with

prototypes for two years. When I thought I had the idea straight, I ordered books and bought tools to make the system.”

It worked, increasing the efficiency of the fish feeding and making life easier for the workers feeding the fish. The feed pellets speed at 60 m.p.h. through the pipe out to the barge — far easier than loading from wharves or the beach in a place where 24-foot tides are normal.

Wherever he goes, he looks for solutions. Not all of his ideas are complex. He wondered if flapping garbage bags tied onto stanchions of the salmon cages, for example, would scare away seals. “It worked for a while, but seals are smart. You have to keep finding different ways to keep them away from the salmon cages,” he says.

To Malloch, survival of a business, indeed the island way of life, depends on this kind of ingenuity, geared to both efficiency and maintaining quality, and it comes from personal experience. “‘Hands on’ is important. It gives you a better insight into what is happening. You can jump on problems early,” he says.

He points down at the fish swimming within the cage just a few feet away. “Some people look into a cage of fish and they see the cage. Others see a story and see lots of things happening.” Seeing things this way is very important to John Malloch.

Faced with an infestation of sea lice in early 1995, he monitored the fish to keep the problem to a minimum. His careful observation reduced the need for drastic treatment.

His ability to react quickly to problems is vital to his business’s survival. “The company — I own it,” he remarks, adding with a smile, “When I need to make a decision the board of directors is in my head. I don’t need to get hold of an office in Toronto or Boston when something happens on the weekend. I can react when it happens.”

Recently the price of Atlantic salmon was down to nearly \$2 (U.S.) per pound. For John Malloch, this meant cutting back on output, being able to wait until prices rise again, as they will.

Malloch has done one other thing about the low price of Atlantic salmon: in the years ahead he doesn’t plan to be dependent on the price of one fish. He moves over to a different cage, and gives a kick to the end of it. Out of the depths swims a 100-pound halibut, about four feet long. It stares at him, wanting a food handout, and Malloch gives it to him. The first is joined by others of this huge flatfish. They are one of Malloch’s bets on the future.

“Halibut will grow, and we feel they have great potential,” he says. “These are 100 pounds after four years. The marketing is already done for the groundfish. The United States is a great white-fish-flesh user.”

Malloch is growing haddock, pollock, cod and winter flounder as well. He has a gift for good fish husbandry, a gift he is likely to call common sense.

“The winter flounder are really showing promise. They are worth a lot of money at \$7.50 per pound. Then there is the haddock. If you go to buy haddock fillets, you say ‘My goodness’ over the price. Who would ever have thought haddock fillets would be worth double what salmon is?”

He shows off his pollock, remarking that in two years they have grown from six inches to 24 inches in length. He makes a noise on yet another cage, and coming up to the surface are cod, of similar size to the larger pollock.

One of Malloch’s 35 workers, Terry Tinker, says of the cod, “We feed them and talk to them. They’re our pets.”

Malloch is very clear about where things are headed for fish farming, and for Campobello Island. “I think in the years ahead it will be very important to have more than one species.”

He sees the need for fish farmers to make the best use of the resources they have. This means taking care of their particular sites. The growth of the industry in southwest New Brunswick has been explosive. It did not exist two decades ago. Around Campobello alone, there are five sites. To Malloch the rapid development has created some problems. “There should have been more spacing in general. The more distance you have, the fewer problems. When compared to places like Norway we’re jammed into small spaces here.” But he is only echoing the sentiments of most Campobello Islanders when he adds, “The majority of people ask what would have happened here without the fish farming.”

Walter Kozak, department head for Fisheries and Marine Training at the New Brunswick Community College in St. Andrews, has long been involved with the fisheries and aquaculture industries in southwest New Brunswick. “He is the type of person who will try anything,” Kozak says of Malloch. “He is so respected in the industry that if he began backing his boats towards the cages, in six months everyone else would be doing it, perhaps not quite knowing why.”

Kozak regards islanders like Malloch as connections between past and future. Malloch’s approach to the business is rooted in his understanding as a fisherman and lifelong islander, but his success has come from his ability to move those skills related to fish and the sea into a new area — aquaculture.

Campobello Island, like many other tight coastal communities, has seen its sardine plant close, a groundfish plant close, and the herring weir industry shrink. For the nearly 1,200 people on the island, the salmon farms dotting the waters near shore have taken up much of the slack. Without aquaculture, many more local people would be forced to leave this special island.

Malloch just keeps on working, thinking, inventing and being a Campobello Islander. He plans to keep it that way.

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*Tom Moffatt is a New Brunswick-based freelance writer.*



# *A Stirring of Ravens*

RAVENS  
ARE CLOSELY  
CONNECTED  
WITH ISLANDS.  
WHY DO WE  
KNOW SO LITTLE  
ABOUT THEM?



SUSAN HAND SHETTERLY  
 PAINTINGS BY JAMIE WYETH

**I**n the shifting fog at sunrise, one can stand on Monhegan's cliffs and watch the long, dark perpendiculars appear and vanish and appear again. The water below them drums. Out of the fog a silent raven flies, dips before a cliff edge and is gone.

"I am not able to speak any good words for [ravens] as I cannot discover any beneficial habit save that of scavenger while they certainly are a menace to other birds and sheep," Ora Willis Knight fusses in *The Birds of Maine*, his 1908 volume. The science of the 19th and early 20th centuries is laden with moral judgment — as if a wild animal should wish to cultivate "beneficial habits" and the blessing of a man's "good words."

In medieval Western Europe, the raven owned a reputation, along with the wolf, as denizen of the battlefields. The birds feasted on corpses; they plucked the eyes of the dead. No matter that men did the killing, the second act, the clean-up, horrified human witnesses.

Perhaps, as Barry Lopez suggests in *Lives of Wolves and Men*, the fabled rapacity of animals such as wolves and ravens held up a mirror men didn't prefer. And, Lopez continues, there is something more, something rooted in Western man's distrust of wildness. Wolves are not dogs. Ravens are not doves. Send a raven on a task, as Noah did the dove, and it takes off on its own. It doesn't report back.

When Europeans settled New England, they brought — along with their enormous energy and hope — their worn antagonisms.

Edward Howe Forbush published his famous *Birds of Massachusetts and Other New England States* in 1927, and discovered there were no breeding ravens left to report in his state. They had been extir-

pated, like the wolf. The birds' last New England strongholds, he wrote, were the Maine islands.

Today the raven is a popular bird. We recognize its honored place in the lives of native peoples of the Northwest, and we invest it with almost supernatural sagacity. Out on the Maine islands, where one can often see a raven lifting in the sea wind, and hear its voice — the calls sometimes soft, sometimes harsh, sometimes almost the same deep timbre as a buoy marker — it is still essentially unknown.

Studies of terns and puffins, peregrine migration and cormorant diets have taught us something about the value and richness of our island ecology. But we have overlooked a bird that probably affects life on a number of islands as much as any of these more celebrated species. How do ravens use these various juts of land off the Maine coast? Where do they feed and sleep and nest?

On a hillside in western Maine, not far from Mount Blue, Bernd Heinrich sits quietly on the mid-branches of a white pine, watching a band of ravens rend the open carcass of a moose. He has been watching ravens, and writing about them, for years, and he has little use for the historical reports of the birds. In his 1989 book, *Ravens in Winter*, he remarks, "More has probably been written about the raven than about any other bird . . . but definite scientific studies are very few . . . most of the literature consists of notes and anecdotes, and many of the conclusions are false or misleading. Furthermore, much of





our 'knowledge' is clouded (or illuminated?) by centuries-old myths . . . even now the raven is truly a bird of mystery." Heinrich may, at this point, know more about the mystery that is the raven than anyone else alive. He calls them the brains of the bird world, and has raised young ravens himself for his studies.

Born in Poland, Heinrich became a refugee, along with his parents and sisters, after World War II. His 1984 book, *In a Patch of Fireweed*, recounts the family's pilgrimage from a hut in a German forest to a farm in the hills of western Maine. It is the story of a keen, sensitive boy not bound in by war or by the strictures of a rural American town — but, rather, released to woodlands, to the secrets and revelations of the natural world. Now a professor of zoology at the University of Vermont, Heinrich returns to the hills where he grew up to make his own painstaking science. He studies the birds of the foothills and mountains of the interior.

The distances between islands, their inaccessibility, their often inhospitable isolation kept them, in the years of white settlement, free from the relentless shooting and poisoning of wolves and ravens that took place on the mainland. Farmers did pasture sheep on some islands, and attempted to destroy ravens when they found them near. But they didn't eradicate them. The islands in the Gulf of Maine became safe havens for the species. This is why, Heinrich insists, it is so important to protect large buffers of wilderness. They often become refuges where remnant populations of wildlife are protected, and from whence they can radiate outward again when conditions are favorable.

"Despite relatively recent persecution," he writes, "the raven has been making a dramatic comeback in New England . . . ravens came to central and western Maine thirty years ago, apparently close on the heels of the invading coyote."

Ravens, despite their heavy, chisel-shaped beaks, require some other animal,

such as a coyote, to open a carcass. Their beaks cannot penetrate the hide of a deer or a moose.

*Ravens in Winter* is about the journey of a question: Why do ravens flock and recruit each other to carcasses? If food is scarce, what purpose does it serve an individual, Heinrich asked, to share it? Ravens are generalists — their palate is broad. But, Heinrich writes, "they are nevertheless highly specialized carrion feeders."

He has found that a breeding pair of ravens defends a large territory at point sources: at their nest, at carcasses. But numbers of juveniles and other adult birds will invade a territory guarded by a mated pair to pillage the carcasses within it.

After five years of work, Heinrich concluded that raven recruiting behavior summons a group because trespassing is safer in numbers; he has also found that ravens at food sources play out the serious games of dominance and pair-bonding. They eat, they joust, they select their mates.

How might these behaviors differ on islands with long stretches of water in between? Sitting in his cabin near Hills Pond, Heinrich turns over the question in his mind. As he imagines transposing the behaviors he has learned in the foothills to the islands in the Gulf of Maine, he formulates other questions: Might ravens on islands find abundant winter food along the shorelines? Exactly how do ravens use the summer nesting islands and the seal-pupping ledges? Do ravens drift between islands and the mainland? How far will they fly out over water? Where do the young go after they fledge from island nests? Do island ravens without mates eventually wander inland? And what opens the carcasses of dead animals for the birds on islands without coyotes?





People who live on islands would be aware of the nesting and the roosting because ravens are noisy birds. Islanders know their places well, and have been helpful resources aiding in other wildlife research. They are aware of populations of birds, the times of year certain species arrive and depart, and how they behave when there.

Each island, with its distinct and separate set of variables, is an excellent place for controlled observations. Heinrich would begin his study with the distance from the mainland; he would investigate possible food sources such as deer, seals, mollusks, berries, eggs and chicks; nesting locations on cliffs or in stands of spruce; roosting locations and the presence or absence of the birds at different seasons. There are the questions of territory and recruitment. Might a raven pair claim islands as territory? Would it be possible, over long stretches of water, for other ravens to assemble and invade as they do inland?

Ravens make a variety of sounds that amount to language. Heinrich has interpreted the screams, quorks, and dry rattles — testing what he thinks they communicate against the particular occasions in

which they are uttered. Might ravens along the coast and islands make sounds that stand for occurrences that are exclusively maritime? If so, we might learn that the ravens of Maine have evolved — like Maine's own people — various dialects.

Heinrich can imagine what the cliffs of Monhegan might reveal about the birds he has had the privilege of studying elsewhere for so many years. Those cliffs are far away. Yet he believes it is time to begin to know the ravens of the island places that have been, for so long, their best safe havens.

The islands of Maine are like petri dishes into which one arranges specific trees and cliffs and outcrops, rocky shore or beach, a seal-pupping ledge, a deer herd, herring gulls, eagles, an osprey nest. Drop in the raven. Watch what it stirs up.

*Bernd Heinrich would greatly appreciate information on raven behavior from island residents. Field observations or other reports should be addressed to him in care of the Department of Biology, University of Vermont, Burlington, Vermont 05405.*

*Susan Hand Shetterly is author of The New Year's Owl and other books.*

### *Patterns of Passage*

Artist Jamie Wyeth spent much of the winter of 1995-96 observing flocks of crows and ravens at Southern Island, off Tenants Harbor, Maine. Through Mr. Wyeth's generosity, the resulting studies and paintings are published here for the first time. (The behavioral studies on these pages have been converted to black and white.)

All work copyright Jamie Wyeth, 1996

# REMARKABLE ROCKWEED





# A LESSON IN ECOSYSTEM INTERDEPENDENCE

INKA MILEWSKI

**W**ALKING THE ROCKY shores of Penobscot, Cobscook and Passamaquoddy Bays at low tide, you are likely to see large stretches of olive-colored seaweed. Underfoot, it will feel like wet, rubbery noodles. Sometimes called “knotted wrack,” this seaweed is more commonly known as rockweed and, scientifically,

it is referred to as *Ascophyllum nodosum*. Rockweed remains attached to the rocks by a disc-like holdfast and, unlike terrestrial plants which have roots, rockweed can absorb nutrients directly through its multi-branching blades or fronds. Rockweed can reach over three meters (10 feet) in height, live to be 20 years old, and range from Long Island to Murmansk. Small, air-filled bladders along the branches suspend the plant at high tide to create a dense underwater forest.

Whether lying limp on the shore or suspended in the water, rockweed provides a habitat to numerous visiting and permanent plants and animals. Permanent residents include species of diatoms (microalgae), periwinkles, barnacles, dogwhelks, and amphipods. Other animals such as eiders, scoters, guillemots, terns, juvenile pollock, flounder and herring use the rockweed forest at high tide to forage for food or to seek shelter from predators. Over 15 species of birds and at least 30 species of fishes utilize the rockweed during some part of their seasonal and life cycles.

Rockweed is also at the center of public debate in New Brunswick, where the provincial government has granted a multi-year exclusive lease to Acadian Seaplants Ltd. (Nova Scotia) to harvest rockweed from the intertidal zone along the entire New Brunswick Bay of Fundy coast, including the islands of Campobello, Deer Island and Grand Manan.

Rockweed is one of a number of seaweeds commercially harvested worldwide. It is processed into silage, fertilizer or alginates; the latter are used as emulsifying and thickening agents in food and chemical industries. In Nova Scotia, there has been a commercial harvest of rockweed for 33 years. Between 1962 and 1986, the harvest averaged 6,000 tons and, until 1970, when mechanical harvesters were introduced, it was harvested exclusively by hand tools.



*No other species, plant or animal, seems to play such a multi-faceted role in the coastal marine environment.*

*Left: Hardwood Island, Passamaquoddy Bay. In this false color infrared photo, rockweed shows as a red fringe around the island. (Maritime Resource Management Series)*



*Bob Rangeley (right) has spent years exploring the nature of rockweed and its contributions to the rest of the Gulf of Maine/Bay of Fundy ecosystem. (Greig Cranna)*

In 1985, three things happened to the Nova Scotia industry that led to a dramatic jump in harvest levels from 9,448 tons in 1985 to 29,598 tons in 1989. First, the Norwegian suction harvester was introduced. This new mechanical harvesting technology brought a fourfold increase in landings. Second, processing companies began to operate year-round. Third, there was an increased market demand for seaweed meal products. But by 1991, the amount of rockweed harvested had dropped to 21,385 tons despite increased harvest effort and the opening of new areas. Federal government scientists warned that this decline would continue unless more effective management strategies were implemented. The industry's solution to the downturn in the resource was to look to new areas to exploit and in 1991 it turned to New Brunswick's virgin rockweed forests.

### **BEACH HOPPERS AND MISSING ENERGY**

For most people, their first encounter with rockweed is probably uninspiring. It's slippery to walk on and slimy to the touch. There doesn't seem to be anything eating it or living on it and it's difficult to imagine it has any economic value, much less ecological or aesthetic value. It certainly doesn't look like or have the allure of a rainforest. But when Dr. Mike Dadswell came to St. Andrews, New Brunswick, in 1973 to take up a position as research scientist with the Huntsman Marine Science Centre, he saw and

experienced something quite different. Between 1973 and 1978 he would make three unrelated observations that would become connected in one inspired moment that, in turn, launched a decade's worth of research and helped change our perception of this remarkable species.

Having recently completed his doctoral studies on a group of small organisms called amphipods, his first observation was naturally related to this organism. He noticed that one species of amphipod, the beach hopper, was particularly abundant in the strandline — the rows of dead seaweed at the top of the beach. Disturbing the strandline caused hundreds of beach hoppers to burst out. He also noticed that the strandline contained incredible numbers of insect larvae and pupae which he couldn't identify, as well as beetles, worms and amphipods he could identify.

He made his second observation while traveling the waters of Passamaquoddy Bay and the outer Bay of Fundy. He noticed extensive floating seaweed mats, consisting mostly of rockweed, during June, July and August of each year.

His third observation reflected his training as an ecologist, and prompted him to ask a simple question: where does all the energy that is locked up in rockweed go? The energy he was referring to was carbon, the fuel of food chains. Since Nature doesn't permit energy to remain locked up and unused, it was not clear to him how the energy in rockweed was being transformed. The first law of thermodynamics states that energy can be transformed from one type to another but is never created or destroyed. Typically in a field or meadow, grasses are eaten by some kind of herbivore like rabbits or deer. The energy (carbon) in the grass is transferred to the grazer. But on the rockweed-covered shores of the Bay of Fundy, there were no rabbits or marine cows. Energy flow seemed to be stalled.

One summer day in 1978, while rinsing his hands at the water's edge after collecting amphipods in the strandline, he noticed that the brown sludge on his hands readily washed off. He had expected it to be sticky and difficult to dissolve. At that moment, watching the sludge disappear into the sea, he understood the significance of his previous observations. The rockweed released to form mats at sea returns to shore where it is broken down into essential nutrients that are washed back into the sea. Like the leaves on a forest floor, rockweed undergoes a process of decomposition that releases vital food and nutrients back into the ecosystem. The energy stored in rockweed thus moves through the ecosystem through the detrital food chain and not through the grazing food chain. The laws of Nature were upheld.

Over the next decade, through the work of graduate students, the details of the role of rockweed in the marine ecosystem would emerge. Steve Marshall identified the insects in the strandline and worked out their life cycles. He found, not surprisingly, that their life cycles were linked to the lunar cycle. The seaweed flies invaded the strandline on the highest or spring tides to lay their eggs. These tides occur on the full or new moons. Over the next 28 days, seaweed at the strandline is left undisturbed by the tides and the flies complete their life cycle. Each organism in the strandline performs a key function in breaking down the rockweed. The flies are the chewers, the amphipods are the scrapers, and the mites pierce the plant cell walls. The beetles are predators that feed on everyone else.

Jay Parsons tracked the release of rockweed from shore. He found that after their reproduction phase in April and May, rockweed fronds break off and drift out to sea where they form extensive, free-floating mats. These mats can be up to a kilometer (0.6 mile) in length and several meters wide and, for two to three months, form a temporary habitat. Beneath and within these mats, large numbers of zooplankton (tiny floating animals) aggregate. These animals in turn become food for larval lobsters and larval and juvenile fishes such as lumpfish, sticklebacks, four-bearded rockling and red

*Plastic bags containing organic carbon for rockweed were part of one research project. (Brenda Bradford)*



*Rockweed is a familiar sight along much of the coast of the Gulf of Maine. (Peter Ralston)*

hake. The mats also attract seabirds such as phalaropes and terns, which feed on the fishes and zooplankton.

Brenda Bradford's research put numbers on the amount of dissolved and particulate carbon that was being released from the breakdown of rockweed. These pulses of organic material or "SLS" (sewage-like substance) provide food for a wide range of filter feeders such as scallops, clams, and sea cucumbers. A 1994 study by Merryl Alber of the University of Georgia and Ivan Valiela of Boston University confirmed that scallops feed principally on organic material released from seaweeds and seagrasses. According to Mike Dadswell, the scientific community has hypothesized since the 1930s that seagrasses and seaweeds such as eelgrass, rockweed and kelp are principal food sources for scallops and other organisms. Until recently, no one had the technology to prove it.

Dissolved organic carbon, the basic element of this decomposition process, helps to prime the nutrient pump that is so vital to phytoplankton production. Phytoplankton are the tiny plants that form the base of the food chain. It is the

high levels of phytoplankton production in the Bay of Fundy that support the very existence of every fish, invertebrate, bird and whale in the Gulf of Maine and establish this area as one of the most productive ecosystems in the world.

Since the research efforts of Mike and his graduate students, other scientists have made significant contributions to our understanding of this

remarkable species. In particular, Dr. Bob Rangeley demonstrated the importance of rockweed habitat to nearshore fish species. With research sites in Passamaquoddy Bay, Bob found that at high tide at least 30 species of fish move into the forest-like habitat formed by rockweed to feed and seek refuge from predators. In addition, the canopy formed by the suspended rockweed provides shelter from extreme environmental conditions. The diet of juvenile pollock is dominated by the amphipods and other crustaceans found in the rockweed. Juvenile herring and winter flounder also migrate into rockweed habitat to feed. According to Dadswell, there is convincing evidence that rockweed provides an important nursery for juvenile fishes, many of which are commercially important.

No other species, plant or animal, seems to play such a multi-faceted role in the coastal marine environment — protection of other species including young, commercially important fishes, food for birds, nutrients for the entire marine ecosystem — over four distinct phases of its life cycle — growing on rocks in the intertidal zone, breaking off and floating in mats offshore, breaking down at the head of beaches, and washing once again to sea as nutrients. Just another underutilized species?

A scientific advisory committee was asked to advise the federal and provincial government on the impact of a proposed harvest on fishes, shellfish and other species. The document identified six major gaps in scientific knowledge. Despite 33 years of harvesting in Nova Scotia, neither government nor industry had bothered to look at how cutting and subsequent regeneration of rockweed would affect the size and shape of the plants and the life cycles of the animals that depend on it as a habitat. Rockweed harvesting destroys the canopy that shelters and protects fish from predators and extreme environmental conditions. It can also reduce the amount of food available to fish by removing their habitat. Repeated cutting can result in the growth of short bushy plants rather than tall plants. And unlike rockweed that is released naturally or through storms and eventually enters the detritus cycle, harvested rockweed takes with it forever nutrients vital to the system.

With so many potential adverse impacts, commercial fishermen, communities and environmental groups in New Brunswick are asking why the government would proceed with a rockweed harvest with so little biological and ecological information. At a time when many fisheries are hanging by a thread, destroying the habitat and food supply of other commercially important species doesn't seem like such a good idea. But there is a larger ecosystem consideration: perhaps certain species, because they perform such critical functions and link so many other species in an ecosystem, should never come under commercial exploitation.

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*Inka Milewski is a marine biologist and president of the Conservation Council of New Brunswick. In 1987, she was awarded the James Centorino Award by the National Marine Educators Association for her contribution to marine education in North America. She lives and works in St. Andrews, New Brunswick.*

**Rockweed is one of a number of seaweeds commercially harvested worldwide. It is processed into silage, fertilizer or alginates; the latter are used as emulsifying and thickening agents in food and chemical industries.**

# IN HIS PROBLEM-SOLVING BOOTS

*Politely but firmly, the Casco BayKeeper wades into dirty waters*

HANNAH HOLMES

**J**OE PAYNE REMEMBERS getting the phone call one summer day. The caller, a sailor who summers on Chebeague Island in Casco Bay, was dismayed.

"There's a little island — just a sand spit — off Chebeague," Payne says. "And someone had actually gone to the trouble of leaving a five-gallon bucket of oil on the island. This guy was sailing by and he saw it."

Dismaying, indeed. But not completely amazing: We all foul the water from time to time, thinking we are the only one doing it, thinking just a few drops won't hurt.

But the leaving of the bucket is not the point, which is that when Joe, BayKeeper of Casco Bay, said that he'd be right out to fetch the offending container, the caller paused for thought. And then told Joe he guessed he could go get the bucket himself.

One down, 299,999 residents of the Casco Bay watershed to go.

"Some would say our goal is to put ourselves out of business," Payne says. "If we could get to the point that everyone is a steward of the bay, that would be really great. I frankly doubt that's going to happen."

Which is nice, because it's quite pleasant to have Joe around. His desk is the sort of charming little landfill that puts you at ease, his eyes are the same soft blue as his jeans, and despite his towering size, his hands are careful. His beard is vast. In ten years, he'll make a convincing Santa Claus.

For now, he knits his fingers over his plaid-covered bowl full of jelly, and contemplates a bag full of such goodies as closed clam flats, open sewage pipes, odoriferous Russian factory ships and a plague of floating pumpkins.

The BayKeeper program was started by the Friends of Casco Bay, a grassroots group that cut its teeth in 1989 on two

proposals that threatened the bay. One was a large, new marina to be built in Portland; the other involved the future of sewage on Peaks Island.

"In that process," says founder Don Perkins, "it dawned on us that grassroots groups are terrific at opposing a single threat. But in terms of being involved over time, in a broad range of issues, they have neither the time nor the depth of expertise to give the issues their due. We needed a professional."

When someone proposed a Casco Bay version of the Hudson RiverKeeper, a tough character who drags unrepentant corporate polluters to court, the consensus was that tensions were already plenty high.

"The last thing we need right now," Perkins remembers one businessman telling him, "is another loaded gun."

But everyone agreed that the "keeper" part sounded good. So the Friends of Casco Bay went looking for a kinder, gentler BayKeeper. They wanted someone who could identify a problem, and then work with the interested parties to find a solution everyone could endorse. They didn't want lawsuits. The resumes for what sounded like every sailor's dream job piled up. And on the last day of the search period, Joe Payne's resume was brought in by hand.

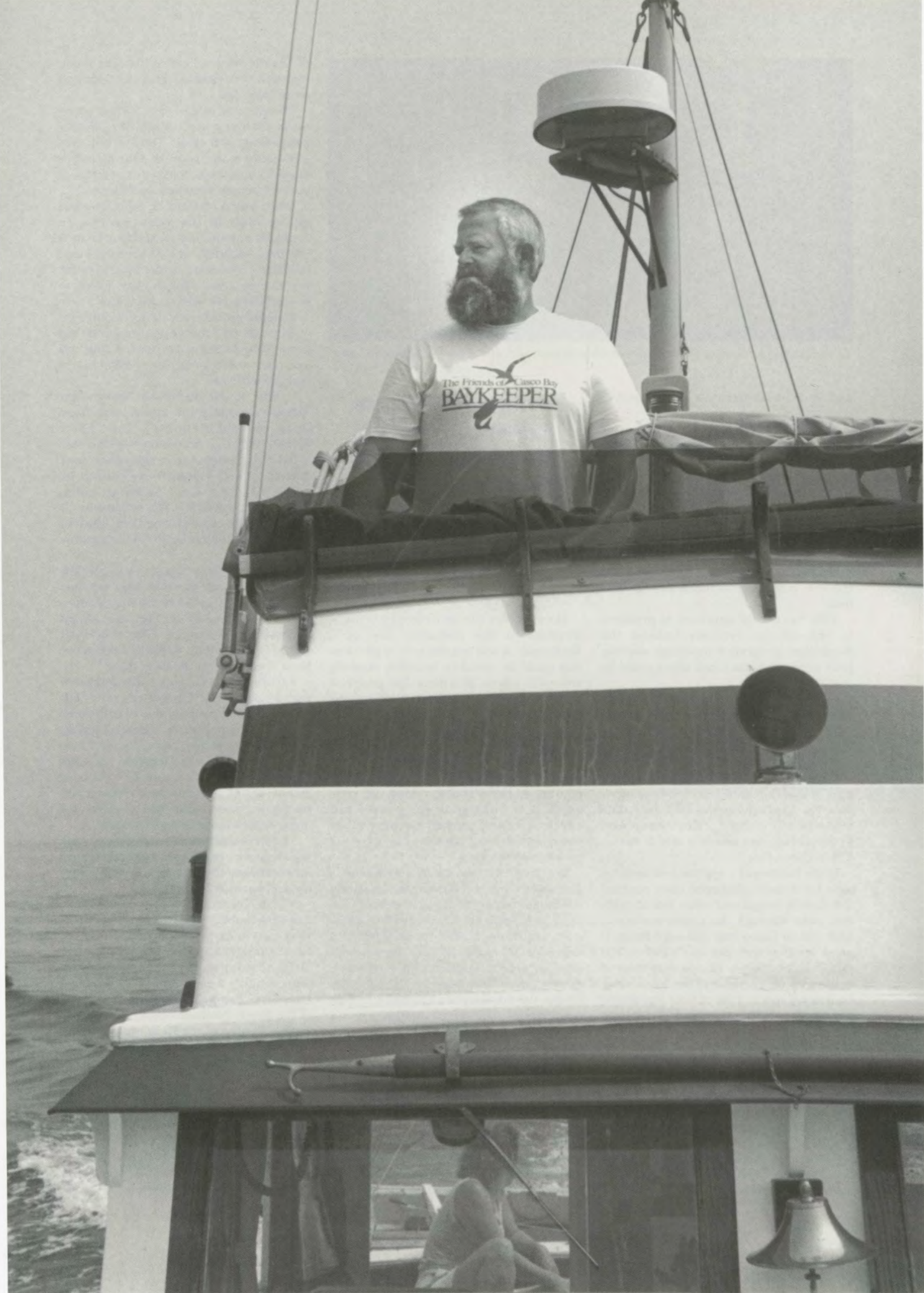
"It was forwarded by someone who had Joe as a student at the Southern Maine Technical College 20 years ago," says Perkins. "He said, 'Check this guy out.'"

A marine biologist who grew up in Portland and summered on Peaks, Payne had been working as an environmental consultant for 20 years on the Great Lakes



Tonnie Harbert (4)

*Friends of Casco Bay and its BayKeeper have developed a water-testing protocol that has been accepted by the U. S. Environmental Protection Agency.*



The Friends of Casco Bay  
**BAYKEEPER**



Casco BayKeeper Joe Payne spends as much time ashore in places such as classrooms as he does on a boat.

and in New Hampshire. He wanted to come home.

"We started out looking for a pragmatic activist," says Perkins. "What we stumbled onto was an active pragmatist. Joe had deep technical background, a lot of business experience, seamanship — and a lot of common sense.

"He doesn't raise hell about an issue just because it looks important on the surface. Because at the end of the day, it may prove to be not worth the hell. And that's unusual for an environmental organization."

This "work with" approach to problems is one of the reasons behind the BayKeeper program's thorough success. Joe's personal Santa Claus effect could be another.

"It doesn't hurt, looking like I look," he admits with a grin. "I don't think people with gray hair and a beard are necessarily more compassionate — but a lot of BayKeepers do have gray hair and a beard.

"One of the reasons Keeper programs work is that they aren't faceless bureaucracies. No slam against the DEP [the state Department of Environmental Protection], but there's not a name. There's not a face."

If the BayKeeper's approach is unusual, so is his domain. Someone once counted 785 islands, ledges and other bits of earth that poke through the ocean surface at high tide in Casco Bay. Although Payne is more familiar with the bay's 200 to 300 picnic-size-and-bigger islands than most of us are with the contents of our spice racks, he doesn't spend a lot of time wandering among them. The mainland is home to the bulk of the bay's population, and hence contributes the bulk of its troubling pollutants. But he knows the islands, and is known on them.

"The first call I got as BayKeeper," recalls Joe, "was from a woman on Long Island who said someone had taken apart a summer residence and dragged it to the low water line and left it. I was the seventh person she'd called. Everybody else said it wasn't their problem."

**In characteristic form, the BayKeeper is not raising hell. He's rounding up the interested parties, including state and federal officials, environmentalists, even wharf owners**

He smiles at the memory of his introduction to the romantic life of a BayKeeper. It was not the sort of problem that could be solved by bombing blissfully around in a boat. This was a desk problem. A phone problem. A question of numerous bureaucracies, each offering the same dim shade of enlightenment: It wasn't their concern.

"The reality is that problem-solving happens on shore," he says. "What it takes is coming back to shore, taking off your boots, and putting on [he pauses and checks his feet] putting on your other boots, and finding out who can solve the problem on the land."

But there are days when a BayKeeper's presence is required on various islands. He sometimes takes a boatload of school children to Bustin's Island to spend an afternoon communing with the residents of a tide pool. He (and staff) do litter patrols around popular Jewell Island, and water-quality sampling outside the islands. Under the BayKeeper's guidance, volunteers run regular water-quality tests on most of the major islands. Bacterial sampling done by the staff for the Department of Marine Resources has helped to demonstrate that a closed Sturdivant Island clam flat was safe to open. Then there was the summer day he put in at Cliff for ice-cream refueling, and was recruited to aid in the flattening of the tennis court.

But mainly, he relies on the tried-and-true friends of Casco Bay to bring him up to date on island issues when he pops into

his South Portland office between meetings and presentations and meetings and more meetings.

"People call in and say, 'This is going on at such and such place,' or 'What's happening with this?' They're our eyes and ears on the islands. Our strength doesn't come from being on the water. It comes from our members and friends."

When asked whether he feels islanders get enough of his attention, Payne responds without hesitation. "Our focus is the bay. Islanders are oftentimes more intimately connected to the water, but my job is to be a voice for the bay. I hate to sound hokey, but what would it say?"

It would probably say, "Go, Joe, go!"

The list of BayKeeper projects has grown long in five short years. A full- and part-time staff of eight now administers such programs as:

- The vessel pump-out boat. Last August, various grant monies and donations assumed the form of the 21-foot BAYKEEPER II, a head-hunter armed with a powerful pump and a 300-gallon tank belowdecks. The pump-out boat can be summoned by cellular phone or radio. The fee is a mere \$5. The transaction is fast and more convenient than hunting down one of the bay's rare marina pump-outs.

"Even when there is a pump-out facility in the area, it gets very little use," says Joe. "Surveys show that boaters dump it wherever they happen to be. The most ardent environmentalist does it. What they don't realize is that in July, 4,000 to 5,000 other boats may be doing the same thing."

- Clam flat reclamation. It is estimated that 44 percent of Casco Bay's clam flats are closed to harvesting, due to confirmed or suspected pollution. These closures, according to a recent report by the Casco Bay Estuary Project, are shutting clam diggers out of as much as \$2 million of income a year. In some cases, closures persist for no reason other than a lack of testing to demonstrate that they're safe.

The BayKeeper clam flat project is rallying clammers, regulators, researchers and others around the long-term goal of cleaning and opening the flats.

- Water monitoring. The organization has developed a water-testing protocol that has been accepted by the U. S. Environmental Protection Agency. An army of volunteers takes and analyzes water samples from their islands or shorelines every two weeks. Data are collected at the South Portland office, and used to analyze long-term trends in water oxygen, clarity, temperature, salinity and pH. Tests for bacterial contamination are taken at 17 additional sites. BayKeeper data has been used by various federal agencies and laboratories, and the Maine DEP — none of whom could afford to collect it themselves.

- The Marine Debris Council. While walking one of Portland's piers, Joe noticed another five-gallon bucket of oil,





*"We push and nudge and cajole, always with the firm idea that everyone is an environmentalist."*

poised, coverless, on a float. He convinced wharf owners to adopt "oil igloos" into which fishermen could pour used engine oil. He's now lobbying for legislation in Augusta that would limit the igloo-host's liability, should someone accidentally stick a forklift through an igloo, or contaminate the oil with a toxic substance — two rather costly possibilities.

The debris council also pushes for the use of trash barrels on the wharves, and, when that fails, pulls litter out of the water by hand.

• The lecture circuit. Joe travels the Casco Bay watershed talking about BayKeeper programs and how daily life on land can effect the health of the bay. His first day as BayKeeper was the day Hurricane Bob visited Maine, which caused, among other havoc, a flotilla of pumpkins to journey down the Presumpscot River.

"Pumpkins on the Presumpscot," he recalls, chuckling. "I still use that when I talk to groups: If pumpkins can come down the Presumpscot, imagine what else can."

These and other programs are supplemented by the completely unpredictable missions. Take, for example, the Russian factory ship that anchors in the bay in the summer. The boat, which sucks pogies out of local fishing boats, tended to spew forth a river of bloody, foul-smelling water.

"It was completely legal," says Payne, "but we had concerns, which we voiced [in 1994] to the ship's agent. And so this year [1995], I went out to the boat and had a nice, uh . . . interlude. The first thing the captain said to me was, 'Do you want 50 cc's?' I was clueless. It was 9 a.m.! So we had coffee, instead."

Although they were under no legal pressure to do so, the Russians agreed to do water sampling around the ship and to conduct a diving survey of the bottom to be sure the waste was not harming marine life.

"I'm saying all this in my normal monotone," Joe says, "but it's remarkable. What they were doing was a legal, permitted activity."

Also remarkable is what Joe calls "the Big, Blue Boat," berthed within reach of South Portland's oil-tank farms. Four years ago, an oil-spill response company was deciding where to site its 16 response boats, hearing pleas from oil-rich, prevention-poor cities around the country.

"When they came up here, we took them for a helicopter ride over the bay," says Joe. "It was fabulous. When you get over the bay, you see we have perhaps 500 miles of coastline in a bay that's only 20 miles across. They went, 'Oh my Lord, this would be a nightmare.' And the Big, Blue Boat is here."

And now, the hot issue is dredging. The

new Portland-South Portland bridge will allow much bigger ships to pass under it, meaning the channel will have to be dredged wider. Digging up old sediments will inevitably release some stored-up toxic pollution into the water, although some dredging methods are safer than others. As for disposing of the stuff that comes up, options are more diverse, and even more controversial.

In characteristic form, the BayKeeper is not raising hell. He's rounding up the interested parties, including state and federal officials, environmentalists, even wharf owners who might want to have their wharves done at the same time, and hoping they can find a solution everyone will accept.

"That's what we do. We push and nudge and cajole," Joe says. "Always with the firm idea that everyone in the room is an environmentalist, and that no one wants to leave the bay in worse shape than it is now."

Murphy, the yellow office dog, wanders into Payne's office, coyly proffering a plastic clown. Joe stands and buries his hands in his pockets. He has clams on his mind. He has meetings to attend, pumpkin speeches to deliver. The BayKeeper has on his problem-solving boots.

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*Hannah Holmes writes for Casco Bay Weekly, Maine Times and other publications.*



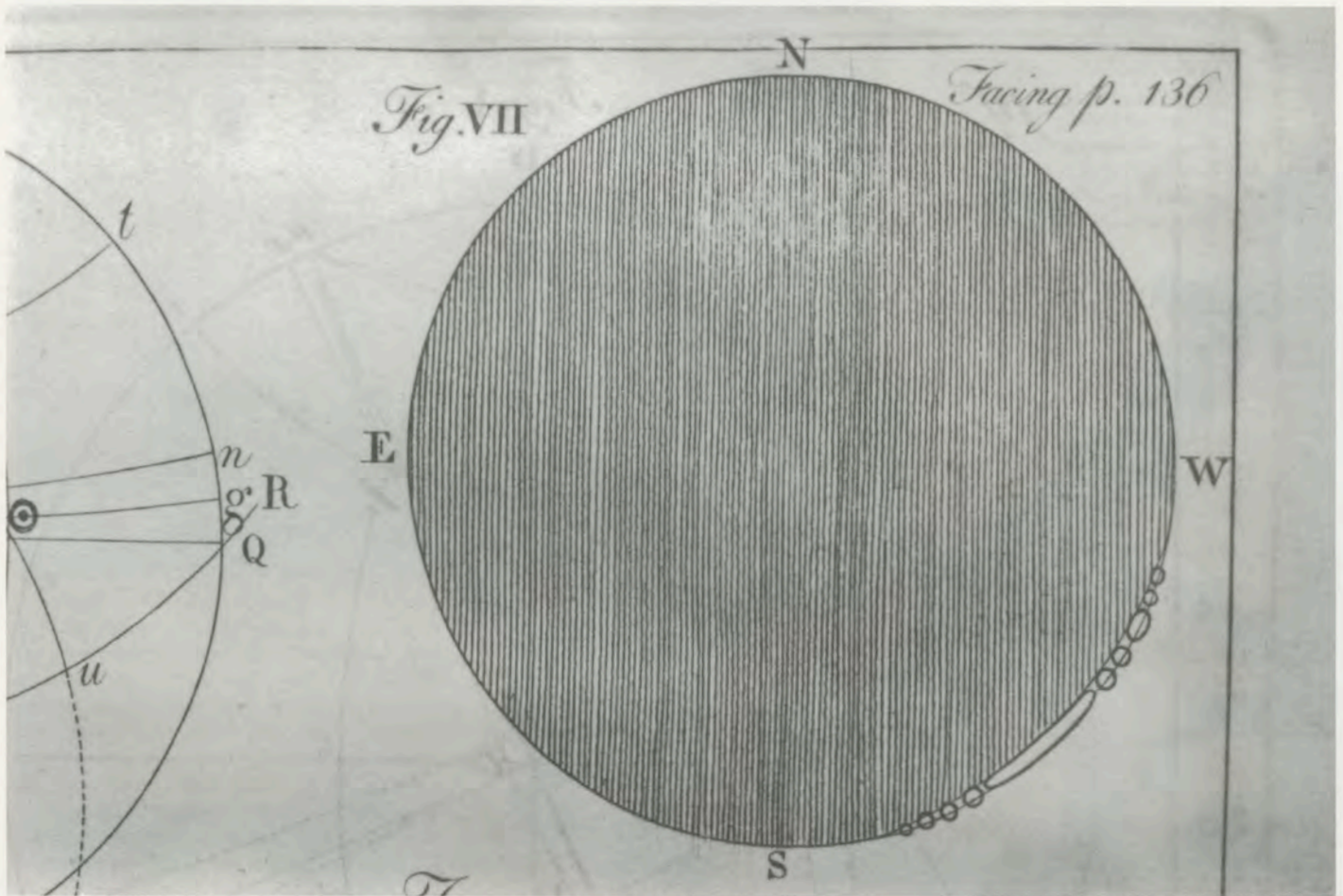
*Williams may have mislocated himself because of errors in his charts, the best of which in 1780 were included in the British Admiralty's DesBarres Atlas. (Christopher Ayres, courtesy of the Osher Map Collection, University of Southern Maine)*

# *Time Out for Science*

*How an astronomer stopped the American  
Revolution so he could observe an eclipse*

*Before the invention of the marine chronometer, accurate timing of a celestial event such as an eclipse was critical to establishing one's longitude. For the 1780 eclipse expedition to Islesboro, Harvard provided this precision clock made in London by John Ellicott, who became clockmaker to George III in 1760. (Courtesy of the Harvard University Collection of Historic Scientific Instruments)*

DAVID D. PLATT



The earliest known rendering of what would become known as “Baily’s Beads” appeared in Williams’s account of the 1780 expedition, published by the American Academy of Arts and Sciences. (Christopher Ayres, courtesy of the Portland Public Library)

**D**URING THE THIRD week of October, 1780, an unlikely group of visitors from the Boston area rowed ashore from a small vessel anchored off the eastern shore of Islesboro. Penobscot Bay was enemy territory at the time, the American colonists’ Penobscot Expedition having met ignominious defeat at nearby Castine only 13 months before. Still, the visitors felt relatively safe, having obtained permission from both British and colonial authorities to land at Islesboro, stay for several days, and conduct a unique set of scientific observations.

It’s unlikely that anyone then living in the American colonies had seen a total eclipse of the sun, the 18th century’s only earlier opportunity (in Virginia in 1778) having been obscured by bad weather. Making accurate measurements of a total eclipse was the best method at the time to determine the longitude of fixed points on Earth, and would — among other things — make it possible for the first time to measure accurately the width of the Atlantic Ocean.

Longitude was critical to navigation and commerce, both British and American. Educated (and commercially minded) people in both countries knew the chance to study an eclipse was not to be missed.

Lugging ashore boxes of supplies and delicate equipment on October 19, the vis-

*Williams and his assistants  
would become the first Americans  
to observe an eclipse  
with up-to-date  
scientific instruments*

itors encamped at the farmstead of Shubael Williams, who had settled near Bounty Cove, Islesboro, ten years earlier, built a house and barn, and cleared a swath of land across a narrow part of the island.

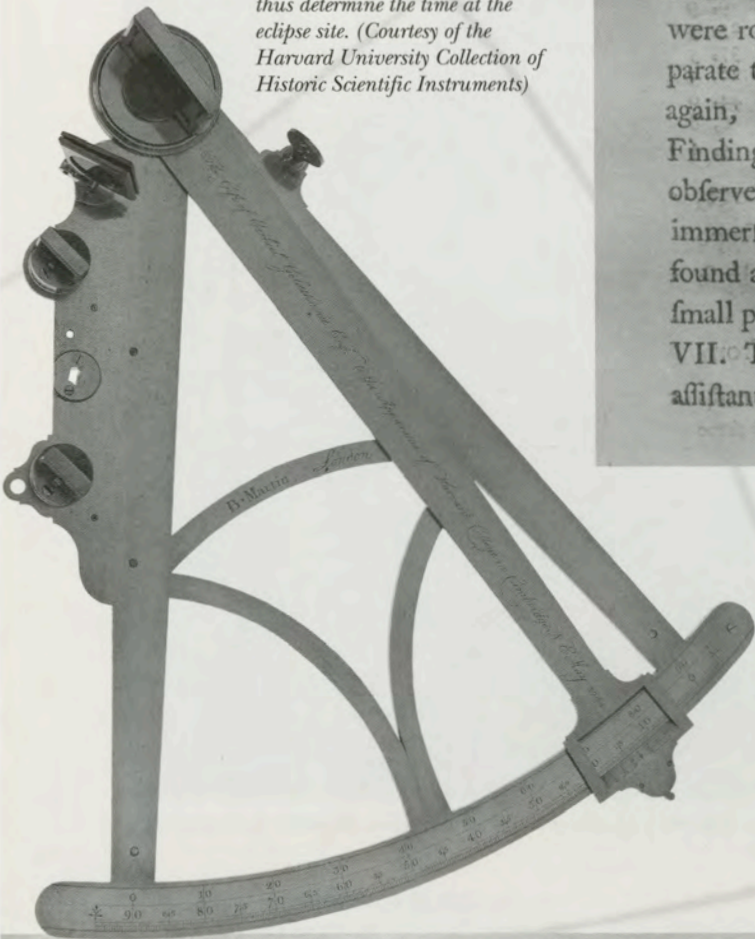
The British commander at Castine had granted permission to land but with “a positive order to have no communication with any of the inhabitants” of the island. Farmer Williams, who (according to Islesboro tradition) had been flogged a year earlier for sheltering a runaway British sailor, cheerfully ignored the commander’s instruction, lent the group his barn to shelter their equipment, and entertained members of the expedition in his house. The captain of a British man-of-war in the neighborhood — notorious for having burned Falmouth (Portland) in 1775 but apparently more kindly disposed to the cause of science than his counterpart at Castine — extended his hospitality to the expedition as well.

In the fall of 1780 Penobscot Bay was a war zone, but war in those days was more genteel than it is today, and it left room for the advancement of science.

The island location and the timing of the visit had been carefully planned by the group’s leader, the Reverend Samuel Williams, Hollis Professor of Mathematics and Natural Philosophy at Harvard. Professor Williams (no relation to the hospitable Islesboro settler) was a pioneering astronomer and mathematician who believed, from calculations by himself and others, that Islesboro would be an excellent place to observe a total eclipse.

The trick was to locate oneself accurately, at or near the center of a 60-mile-wide path where the eclipse would be “total” and the sun would be completely obscured. Professor Williams got the date and time of his eclipse right, but not its path of “totality,” as he learned from his own observations on October 27. He and his crew were at least five miles (possibly more) south of the total eclipse’s path. Having persuaded the American authorities to fund their expedition and convinced the British to let them land in hostile territory, they would go home without achieving their original objective. Still, by the time they departed Islesboro on Oct. 28 (the British commander insisted that they leave immediately after the eclipse) Williams and his assistants would become the first Americans to observe an eclipse

This large sextant, also part of the set of instruments used by the eclipse expedition and preserved at Harvard, was used to measure "equal altitudes" of the sun and thus determine the time at the eclipse site. (Courtesy of the Harvard University Collection of Historic Scientific Instruments)



Immediately after the last observation, the sun's limb became so small as to appear like a circular thread, or rather like a very fine horn. Both the ends lost their acuteness, and seemed to break off in the form of small drops or stars; some of which were round, and others of an oblong figure. They would separate to a small distance: Some would appear to run together again, and others diminish until they wholly disappeared. Finding it very difficult to measure the lucid part any longer, I observed again in the larger telescope, looking out for the total immersion. After viewing the sun's limb about a minute, I found almost the whole of it thus broken or separated in drops, a small part only in the middle remaining connected. Plate I. Fig. VII. This appearance remained about a minute, when one of my assistants, who was looking at the sun with his naked eye, observed

Williams's description of Baily's Beads in his published account went unnoticed for half a century, until another astronomer wrote a similar description and got the credit. (Christopher Ayres, courtesy of the Portland Public Library)

with up-to-date scientific instruments, and they would write at least a footnote in scientific history, becoming the first to describe what would become known as "Baily's Beads," the bright flashes of light emanating from the sun's rim just after an eclipse. If life were fair, Baily's Beads should be named for Samuel Williams — but no one took notice of his description until Francis Baily, the British Astronomer Royal, described them (and named them for himself) in 1836.

The Williams expedition's contributions to science were well publicized at the time. The professor's description of what he observed during his week-long stay at the Islesboro farm appears in Volume I of the Memoirs of the American Academy of Arts and Sciences, published in 1785, and he wrote newspaper articles about the expedition as well.

When they became aware of "a favorable opportunity" for viewing an eclipse in the fall of 1780, Williams writes in his account, Harvard College and the recently formed American Academy of Arts and Sciences "were desirous to have it properly observed in the eastern parts of the state, where, by calculation, it was expected to be total." ("The eastern parts of the state" refers to Maine, which in 1780 was still a part of Massachusetts.)

Being a man of connections as well as science, Williams began laying plans. Through James Bowdoin, a member of both the American Academy and the Massachusetts General Court, he successfully petitioned the Commonwealth of Massachusetts to provide a vessel "to convey proper observers to Penobscot Bay." Six weeks before the eclipse no less a personage than John Hancock wrote a letter to the British commander at Castine, Lt. Col. John Campbell, explaining the purpose of the expedition and asking permission to land at "Long Island," as Islesboro was known at the time. Permission was granted (with stiff conditions that were subsequently modified), and under a flag

## MATHEMATICAL PAPERS, 89

OCTOBER 22.

Thick fog all day. No astronomical observations. At 8<sup>h</sup>. 15', A. M. I put the clock back 15', and lengthened the pendulum.

OCTOBER 23.

Thick fog all day. No astronomical observations.

OCTOBER 24.

Corresponding altitudes of the sun, taken with the quadrant.

Time by the clock.

	Eastern az.	Western az.	Meridian.
8 <sup>h</sup> .	1' 47"	3 <sup>h</sup> . 44' 58"	11 <sup>h</sup> . 53' 22",5
	4 55	41 52	23, 5
	7 58	38 54	26
	11 31	35 23	27
	14 57	31 51	24

of truce the expedition boarded an aging, state-owned vessel named the LINCOLN GALLEY on October 9 and sailed for Maine.

Three faculty members accompanied Williams: Stephen Sewall, professor of oriental languages; James Winthrop, librarian; and Fortescue Vernon; as well as six Harvard students. The teachers and students were to assist in making detailed observations, many of which had to be made simultaneously or within the two and half hours between the beginning and end of the eclipse.

"We took with us an excellent clock, an astronomical quadrant of 2 1/2 feet radius, made by Sissons, several telescopes, and such other apparatus as were necessary," wrote Williams. Primitive by today's standards, the instruments were state-of-the-art for their time, and they would allow the group to measure and record the sun's movements during the week leading up to the eclipse, and to time and measure the eclipse itself on October 27.

The clock, quadrant, telescopes and some of the other equipment used in the 1780 expedition are preserved in a fascinating collection of antique scientific instruments in Harvard's science center in Cambridge, Massachusetts. Two centuries after the Islesboro expedition, in 1980, many of Williams's instruments were still in working order, and several Harvard students and faculty members were able to bring them back to Islesboro for a reenactment of his expedition.

"On the 17th we arrived in Penobscot Bay," Williams wrote in his 1785 account. "The vessel was directed to come to anchor in a cove in the east side of Long Island. After several attempts to find a better situation for observations, we fixed on this place as the most convenient we had reason to expect."

He did not explain why it had taken eight days to sail the 250 miles from Boston to Islesboro (there may have been stops along the way, and the LINCOLN GALLEY, probably the best that cash-strapped Massachusetts could afford, was slow). But he did make reference to his problems with the British.

Because Lt. Col. Campbell "in his answer to the application of the government, had limited us to a time wholly inadequate to our purpose, from the 25th to the 30th of October, we were obliged to make a second application for leave to enter Penobscot Bay," Williams wrote. Campbell relented a bit, allowing the group to land a week earlier so it could make pre-eclipse observations, but he moved up the departure date. Instead of staying until the 30th, the group would have to leave the day after the eclipse.

Williams's frustration is evident in a footnote to his scientific account: "Being thus retarded and embarrassed by military orders, and allowed no time after the eclipse to make any observations, it became necessary to set up our apparatus

and begin our observations without any further loss of time."

The LINCOLN arrived and was greeted by Capt. Henry Mowatt of the ALBANY, a British man-of-war that was patrolling the bay. Like most other educated people of his time, Mowatt understood the scientific significance of eclipse observations. He instructed the LINCOLN to land at Bounty Cove on Islesboro's east side and provided "every kind of assistance which it was in his power to give," Williams wrote. And so the group went to work.

#### ENTRIES FROM WILLIAMS'S ACCOUNT:

On the 19th we put our instruments on shore, set up the clock and quadrant in a building facing towards the south, near the house of Mr. Shubael Williams, where the following observations were made.

October 20: Corresponding altitudes of the sun taken with a reflector fitted with vertical and horizontal wires.

[Taking "corresponding altitudes" was a method by which astronomers could accurately determine the time of noon, and thus adjust their clock. The clock was too

fast on this first day, gaining 5 minutes 30 seconds.]

October 21: Corresponding altitudes of the sun taken with a reflector. [Still too fast, the clock gained 1 minute 32 seconds in 24 hours.]

October 22: Thick fog all day. No astronomical observations. At 8h 15' A.M. I put the clock back 15' and lengthened the pendulum. [The reduction in gain from the first day suggests that Williams had lengthened it once previously.]

October 23: Thick fog all day. No astronomical observations.

October 24: Corresponding altitudes of the sun, taken with the quadrant.

October 25: Corresponding altitudes of the sun, taken with the quadrant.

Clock gain 50" in 24 hours.

October 26: Corresponding altitudes of the sun, taken with the quadrant. [Clock gained 49 seconds.]

## Measuring the width of the Atlantic

By the year 1780 there were probably a scant thousand settlers of the District of Maine within the path of totality. For all other enlightened New Englanders who were outside the path of totality, the event was at least an opportunity to experience the sight of an exceptionally dramatic partial eclipse, one that more nearly approached totality than any previous one — particularly the farther to the northeast was their viewing point. Wartime patriotic feeling enhanced the pride Americans felt knowing that this was an opportunity to make a great scientific observation and the most accurate determination of America's longitude.

For, exciting and beautiful though the eclipse would be to viewers, its greatest significance, of course, was the scientific value of the observations and the economic need for its by-product, longitude determination. The basic method of mapmaking in the 17th and 18th centuries and well into the 19th, required an astronomical determination of longitude by comparing the

time of a celestial event with the predicted (or observed) time of its occurrence at a station such as Greenwich where the longitude was known. Then, between points where longitude was known by such observations, map makers employed surveyors to use transit and chain to interpolate. Upon the accuracy of the longitudes measured for these fixed reference stations depended the accuracy of the map. Accuracy of these measurements in turn depended solely on the accuracy of timing of the celestial event. There had been lots of partial eclipses carefully observed and timed in America, and they had been useful to fix the longitude, but not with anything like the accuracy obtainable from accurate observation of a total solar eclipse. This, therefore, was uniquely the ideal means of determining the longitude of the western world.

*Reprinted with permission from Two Brides for Apollo, a yet-unpublished biography of Samuel Williams by Robert F. Rothschild.*



A stone monument marks the site of the 1780 eclipse observations on Islesboro. (David Lewis)

On October 27, the day of the eclipse, another full set of altitudes was taken and recorded; but even after a week of adjustments, the clock was still gaining 49 seconds in 24 hours.

The clock used in the 1780 expedition was built in London by John Ellicott, a prominent instrument maker. Harvard had ordered it in 1765, not long after Ellicott had been appointed Clockmaker to King George III, to replace an earlier precision clock made about 1685 and purchased by Harvard in 1730. Both clocks are still in Harvard's possession. For the Islesboro expedition and its subsequent reenactment 200 years later, the Ellicott clock was removed from its tall mahogany case and mounted in a pine field case "whose design was based on the case made for the clock taken to the Pacific by Captain Cook," according to field notes from 1980.

The eclipse began at 11:11 a.m. and ended at 1:49 p.m. October weather in Penobscot Bay tends to be clear, and except for the two days of fog recorded during the week leading up to the eclipse, the Harvard party had good views of the sky. On the day of the eclipse, Williams writes, "Whilst we were making the above observations, there was little wind, and no cloud to be seen. But the air was not perfectly clear, being a little thick, or hazy."

"From the beginning of the eclipse unto the time of the greatest obscuration, the color and appearance of the sky was gradually changing from an azure blue to a more dark or dusky color, until it bore the appearance and gloom of night."

"The degree of darkness was greater than was to be expected, considering the sun was not wholly obscured. — Venus appeared bright in the west; Jupiter was seen near the sun; Lucinda Lyrae near the zenith, and Arides in the north-east near the horizon, appeared very bright. Several others of the fixt stars were also seen

*"From the beginning of the eclipse unto the time of the greatest obscuration, the color and appearance of the sky was gradually changing from an azure blue to a more dark or dusky color, until it bore the appearance and gloom of night."*

whose situations were not particularly noted. Objects at a small distance appeared confused; and we were obliged to make use of candles to count our clock. But as soon as the greatest obscuration was past, it was universally remarked, that the increase of the light was much more rapid than that of the darkness had been."

The Harvard group measured air temperatures and the dew that accumulated as the sun faded and "the chill and dampness were very sensibly felt." Compared to similar measurements taken the night before, they found that "in 1 hour and 19 minutes, when the light and the heat of the sun were gradually decreasing, there fell two-thirds as much dew as fell the night before.

"To this we may add, so unusual a darkness, dampness and chill, in the midst of the day, seemed to spread a general amazement among all sorts of animals: Nor could we ourselves observe such phenomena without some disagreeable feelings."

At 12:29 p.m., as the eclipse neared its maximum, Williams penned his first-ever observation of what would become known as Baily's Beads:

"Immediately after the last observation, the Sun's limb became so small as to appear like a circular thread, or rather like a very fine horn. Both the ends lost their acuteness, and seemed to break off in the form of small drops or stars, some of which were round, and others of an oblong figure. They would separate to a small distance: some would appear to run together again, and others diminish until they are wholly disappeared."

In recent years Williams has become much better known through the efforts of Robert F. Rothschild, an amateur historian and Islesboro summer resident who helped spark the 1980 reenactment of the expedition, and who has made a detailed study of why Williams failed to locate himself within the path of totality.

It was Williams's description of Baily's Beads (which are actually flashes of sunlight passing through deep valleys on the moon) that enabled Rothschild, with assistance from NASA, to calculate how badly Williams had miscalculated.

"How do we know how close he really was?" Rothschild asks in an unpublished biography of Williams. "The best indication, and it is very accurate, is his observation of Baily's Beads . . . not all of the lunar circumference is marked by mountains sufficiently high to create the illusion on earth of the brilliant, mobile beads that were reported for the first time by Williams. It is only at the edge of eclipses which end or begin with portions of the lunar surface with such prominent features." At Rothschild's request NASA computed where Baily's Beads would have been visible during the 1780 eclipse, concluding that he was even further out of the path of totality than he thought he was. The discrepancy remains puzzling (Williams himself blamed maps), but is illustrative of the uncertain world in which scientists found themselves in 1780.

As Rothschild notes, Williams's real contribution may have been to set other research in motion: "It would be hard to name any sequence of astronomical studies more intensive and of more diverse interest than the chain of solar eclipse studies that began with Williams's first reporting of Baily's Beads."

Solar eclipses, Rothschild points out, provide opportunities to observe phenomena visible "at no other time and [under] no other circumstance." Over the next century, British astronomers would study beads and prominences associated with eclipses; later studies would focus on the sun's corona (its outer solar atmosphere); after Einstein the interest would turn to the light passing the edge of the sun.

On Islesboro in October, 1780, Samuel Williams took the first steps down a path that would lead not only to more accurate measurements on the earth's surface, but to our understanding of the universe itself.

*David D. Platt is the publications director at the Island Institute.*

# Eye of the RAVEN

(continued from page 7)

From the boisterous, pulsing, colorful Deer Isle Thorofare, RAVEN makes her way to Northeast Harbor, where sails of all sizes bedeck the harbor and beyond. We pick up a mooring and later attend a gathering to hear Senator Bill Cohen's kind remarks about the Maine Lights Program, our community services department, the Gulf of Maine Atlas and other Institute projects.

Plowing through yet another wall of fog and with a few more stops along the way, we made it back to North Haven and Rockland on Sunday.

The wonderfully idiosyncratic differences of the Maine coast could not have been more artfully circumscribed in a single day if we were writing a made-for-TV-script. Stonington's annual celebration of its fishing heritage, the Lobster Boat Races, captures the pure delight of the coast's sleek and ponderous boats, which are the pride of not just their owners, but of Maine's premier boatbuilding shops, as they surge through a thoroughfare of seawater and cleave a wild confluence of wakes created by the flaring hulls, the open throttles and the stupendous roar of diesel engulfing the throng of rafted boats that line the route. This year in near flat conditions, a new speed record is set during one of the races — CAPTAIN JACK crosses the line and is clocked at 46.7 m.p.h. on the radar gun, followed by LIL JAN. From there we head to Western Way, where a different, timeless beauty is captured in the race scene of elegant International One Designs that spread their fragile white sails under Mount Desert's towering grandeur. All of a piece.

July 24-29, 1995: RAVEN's crew has long looked forward to this trip to Casco Bay. It is RAVEN's first venture into these waters, although the crew is well familiar with them, thanks to FISH HAWK and Casco Bay Lines.

We arrive at Chebeague and snag a mooring and row ashore where Pommy Hatfield has graciously agreed to pick us up and lay on a splendid meal. After dinner, a large number of Chebeaguers congregate to view historical slides of Chebeague presented by scholar-chronicler Donna Damon, and to view the work of Shirley Burgess, master quilt-maker, which has been cautiously transported back to its island of creation from Rockland via RAVEN.

Tuesday morning our meetings start at 7:30 a.m. aboard RAVEN. Philip and I meet with Chebeague's representative to Cumberland (of which Chebeague Island is a part) and the Chebeague Transportation Company's new president about the problems being encountered by the privately owned ferry system.



Small Schools Conference at Islesford, spring, 1995 (Peter Ralston)

After lunch, RAVEN makes her way to Long Island, where David Platt, Island Institute publications director, comes on as a new crew member. Annette meets with Long Island officials about the use of easements, while David, Philip and I meet with Sharon Marr, who gamely agrees to be a Long Island correspondent for *Inter-Island News*. When we return to RAVEN, a host of kids are using her for a diving platform on this hot, muggy day.

A tour around Little Diamond with Ann Pringle leaves us struck by the beauty of the stately deciduous trees and the peacefulness resulting from walking being the favored means of transportation.

Once we get to Great Diamond, we navigate by touch and feel to Charlie and Nan Stockman's home where we are to meet many of the residents of Great Diamond. The offer of a ride in a World War II vintage vehicle is gratefully accepted, and we arrive at the gathering only a few minutes late.

Friday morning we turn toward Cliff Island. We had offered a RAVEN trip to Cliff Island's ACE (Athletics, Conservation, and Education) program. This annual summer program, run this year by Bates College student and year-round resident Hope MacVane, has successfully entertained and taught summer and year-round youth residents for a number of years. Aboard RAVEN, parents, grandparents and interested adults join the kids, aged infant to 18, in a trip around the foreign processing ships moored off Great Diamond, a tour of Portland's harbor, and an ice-cream stop at Long Island.

The week-long passage through Casco Bay will be remembered by this voyageur

for the glimpse of a pair of enormous striped bass that lazily finned by underneath Chandler's Wharf at Chebeague while eager teenaged boys cast furiously for mackerel out in the cove, ignorant of the monsters that passed underneath. Surely these fish are a hopeful sign that the loss of our inshore cod and haddock stocks is not beyond our ability to repair.

The Casco Bay trip was also memorable for what has come to be known as the Great Propeller Incident. RAVEN had left Long Island and was steaming across Hussey Channel when, in a heart-stopping instant, a terribly untoward noise was instantaneously followed by an immense shuddering of the hull. The captain calmly shut down the engine, checked the bilge, and finding we were not taking on water, called for a diver to check the propeller. I was volunteered. To suggest that the first few minutes of treading water off RAVEN's stern were breathtaking is not to comment on the view.

The first dive was inconclusive; on the second the tide swept me away before I could wriggle up under the hull, so a third dive was impatiently recommended by the skipper, warm and dry at the transom. By the third attempt I got hold of the rudder, and from there grabbed the shaft and pulled myself up underneath the hull. I remember this quite distinctly: while holding the shaft, I stared hard and dumb at the three blades of the propeller and turned them in slowww motion. Although a certain asymmetry escaped my attention, I did note that two of its three bronze blades had distinct dents at their edges, and with this knowledge I felt entitled to return to the surface and report to the captain. The captain was dissatisfied with



North Haven third- and fourth-graders and staff, trip to Matinicus, spring, 1995 (Peter Ralston)

the report, correctly pointing out that mere dings in the blades would not explain the extraordinary violent shuddering of the hull and suggested further exploration. However, by then I was experiencing a violent shuddering in my own hull, and I might have said something thoughtless if my lips could have formed words when I came gracefully over the transom. Without further delay, the captain got into action on Channel 16 and the cellular telephone, and arranged for RAVEN to be hauled out at 7 a.m. the following day over in Falmouth.

"There's your problem, Cap, there's only three blades to your propeller," declared the yard manager at Handy Boat as RAVEN's groaning hull ascended from the bay. Slowly everyone's gaze turned to the hapless diver, who stood in full view of the captain's withering gaze. Truth be told, I had accurately reported that two of the three propeller blades sustained damage, but had unaccountably failed to notice the stump of the fourth, which had been lost to advanced metal fatigue. Knowing this day would long live on in frequently recalled derogation, the diver merely mumbled something about better appreciating the numbness of hakes while the vindicated captain, who had been openly suspected of "hitting something", oversaw the relatively complex task of locating and installing a new propeller of smaller size and greater pitch, which, *mirabile dictu*, provided RAVEN with a welcome, additional three knots.

August 16-18, 1995: RAVEN arrived in North Haven in the late afternoon. The weather promising a blow, we ventured as far as Orono Island and tucked up inside in the pitch black.

Over to Frenchboro by 8:00 a.m. where Philip and I met with the rest of the Frenchboro Future Development Corporation board of directors. A sea scal-

lop aquaculture proposal was discussed and approved, and a committee was formed to investigate the possibility of providing more transportation through an independent carrier.

From Frenchboro we headed to Great Cranberry, where a gathering of Great Cranberry Futures Group members discussed the most recent dock options and identified the need for a forest management program.

A brief visit to Swan's allowed us to speak with Sonny Sprague, fresh from his visit to a Norwegian aquaculture conference. [At that point, Sonny was predicting a good salmon harvest. Since then the harvest has been exceedingly good. One state quality control official was heard to say that Island Aquaculture Company's salmon were the healthiest he had seen.]

The Swan's Island salmon farm continues to grow its way back to profitability after the bankruptcy auction in 1993, when the Institute was able to intervene and avert the complete liquidation of the jobs this project provides to the island. During the past three years, the salmon aquaculture industry in Maine has experienced significant changes. Global competition has forced prices down and many of the small independent companies have been acquired by a few vertically integrated international companies. But the Swan's Island farm, the westernmost one on the Maine coast, has thus far survived under Sprague's careful local management, demonstrating that a community-based operation, away from the concentrated activities of Cobscook Bay's farms, has a role to play in this global industry. And along the way, the addition of 30 full- and part-time jobs with an annual payroll of \$300,000 is an enormous plus to a community like Swan's.

On August 27 RAVEN rounded up into the anchorage of Butter Island where she

was met by 35 other boats and 117 people. All had gathered to climb to the top of Montserrat Hill to remember Tom Cabot, the legendary yachtsman, conservationist and philanthropist of the Maine coast who inspired at least four generations of residents and visitors with his vision and passion for the Maine islands. Bob Quinn from neighboring Eagle Island read a deeply moving poem written by his uncle, after which Louis Cabot, Tom's son, asked us all to help lay his soul to rest at the one place in the universe he loved above all others. Tom Cabot blazed a trail of greatness, and left a legacy here of his generosity in wind-strong spruce and indomitable stone.

One of the year's most memorable voyages, not reported in *Inter-Island News*, was a five-day passage Downeast, the central purpose of which was to "ground truth" satellite image data of island habitats as part of a project that the Institute is collaborating on with Maine Coast Heritage Trust. The idea is to organize complex layers of ecological data, development patterns and ownership information in a comprehensive and easily retrievable way in order to interpret and respond to the changes that are occurring along the archipelago.

Peter and I arrange to meet Annette Naegel and Scott Dickerson from our science and stewardship department at the Pigeon Hill Lobster Pound in Steuben while we bring RAVEN down the coast with two 11-year-old deckhands, Sam Conkling and Meredith Ralston. We have called ahead to ask permission to leave a vehicle for a few days in the lot next to this tiny wharf way down Petit Manan Point, miles from Route 1, miles and miles from anywhere else. Everyone arrives right on schedule, and we are careful not to tie up the wharf or get in the way of those making their living here. Still you instantly feel you are way Downeast; a vessel like RAVEN is not exactly a novelty, but it is doubtful many others have been here this season. We make the transfer of gear in under ten minutes, stepping carefully around the bait barrels and wharf gurry while a couple of hands stand off in studied detachment. Here the traditions of silence, watchfulness and live-and-let-live lifeways run deep, but one hand confesses that the local lobsters have recently shown "a right lively little spurt."

Scott has set up our first field work three miles further down Petit Manan Point. We cross Pigeon Hill Bay and pick our way carefully through the submerged boulder fields along this western edge of the boreal region of the Gulf of Maine. A rising tide and dying northerly add a margin of comfort as we ghost our way through the narrow channels of local knowledge. Off the enormous, storm-piled boulder beach of Outer Pond Cove we drop our hook and clamber up the steep, east-facing beach to grasp the immense loneliness of this point, exclaimed at its



offshore tip by the tower and first-order lens of Petit Manan Light. Sam and Meredith celebrate shore leave by setting to work on a Scuppers-like raft from found objects which are legion on this long storm-tossed expanse. It's been 20 years since I first walked these shores as a recent arrival to Steuben, and looked across the bay to wonder about its islands, abandoned and wind-worn.

From Petit Manan we head out to Jordan's Delight, underneath the towering bird cliffs of this Registered Critical Area, where the coast's largest population of black guillemots nest. As we steam by, we look up in disbelief at a towering new summer home that has been built atop these cliffs — the result of a loophole in the state's five-year-old Natural Resource Protection Act, which was designed to prohibit such obvious and tragic conflicts as this.

That evening we spend ashore at Cape Split, where we are treated to a dinner of steelhead filets thick as flank steaks broiled to absolute perfection for nine and a half minutes by true friends of this wave-washed eastern coast, Ed and Connie Greaves.

The next morning Scott has set up another ground-truthing field station on Flat Island and because we are on new moon tides, we want to be there close to dawn when the maximum amount of the intertidal area will be exposed. The difference in acreage between high and low tides of the appropriately named Flat Island gives a hint of the enormous ecological effect of Fundy's tides: the island nearly doubles in size, revealing massive kelp beds waving fingered fronds just beneath the surface and exposing a whole new island along its outer shores. In enormous tidepools at least three species of delicate red, white and pink encrusting algae sparkle in the early morning August light, while four-foot-long kelp fronds hide pockets of whelks, moon snails and unspeakably beautiful and delicate pink bryozoans. Dulse, good as Grand Manan's, is everywhere and we forage on it along with strands of another species similar to what is imported from Japan as orami.

While standing on the island's outer shores just off dead low, the tide begins to work its magic. Slowly, dimly we are aware of tiny floating eggs washed along on the building current, first one, then another, then more and more until, to our transfixed amazement, thousands must have passed. Floating eggs, thicker than frog spawn, are the deep stirrings of life reborn passing silently by. Herring, maybe, probably — as prolific as a biblical miracle — carried on a new moon tide in a timeless dream passed these rugged, silent shores: oh holy, oh floating tide, this salt water river will carry ten thousand thousands of parts of our past and future right beneath our seaboots, if we have the care and patience to watch and witness.

The rest of this voyage was like that:

dream-like, stirring, miraculous: a conversation with Jenny Cirone, the last island shepherdess, whose sheep we visited on Nash Island; the three eagles we saw there, one on the outer point sitting on powerful haunches, two others that then appeared from the lee side and flap ponderously, indifferently away — these shores belong now as ever to them. Jenny's immaculate camp, which she and her husband built 40 years ago, simple, childlike in its elegance, almost stops the mind in its tracks. Then an evening in the Cow Yard with a full mess of clams dug from these still bountiful and giving shores. Then dawn again at Man Island, a tiny biosphere of international significance where we watch the sea cascade into an exposed tide pool, just inboard of the south-facing notch where the sun's rays blind the eyes of morn. I lie on the leeward edge of these cliffs, boreal and pungent with crowberry, while a lone eagle banks twice over the tide pool disdaining company. A four-year-old bird, on the edge of its majority. The surge comes in sevens.

The days pass by; as surely as the flood urges us into the Fundy Channel, her ebb pulls us back and back to all our cares ashore. But we carry precious beach stones back, worn smooth with unhuman care.

Throughout the rest of the year, if you choose your days, you can do almost anything you want; sometimes you just have to want to pretty hard. Wanting to be aboard RAVEN pretty hard is not a problem, not even on a bad day at sea. But ice and sea smoke wear away at the decision to cast off the mooring, our mortal coil, and loose ourselves on the water. Winter is now woven everywhere in the heart of Maine. The harbors are fewer, more sparse and serious. Between trips the winter fleets hole up underneath Portland's Million Dollar Bridge and the loom of its multi-million-dollar replacement, in the upper reaches of Boothbay Harbor, along Rockland's long and lowery shoreline, in the quirky coves of Moosabec Reach, at Bass Harbor and also in Northeast Harbor, a waterfront that could not — if you had dreamed it — look more radically different than it does in its summer togs.

The winter of 1996 is more edgy than any in memory. Temperatures at finfish farms, such as at Swan's Island, hover near freezing. From Gloucester the new regional chief of National Marine Fisheries Service says that Gulf of Maine groundfish stocks are so low that another summer of fishing would risk an imminent spawning stock collapse. The new commissioner of Maine's Department of Marine Resources, Robin Alden, must cast a vote on an amended plan to limit further the dragging for cod, haddock and flounder. The noose is tightening and good fishermen will lose everything from which in other times and other places they would be retired and well rewarded. They simply have become too good at what they do and the hard heart of economic policy is that

they must now pay. But this is not, as it is often portrayed, just the story of the tragedy of the commons; it is truly the tragedy of uncommonly good fishermen up against the Gulf of Maine's implacably finite limits.

Meanwhile on Monhegan, the island's 12 fishermen, who live on an ultimate edge in the best of times, are under pressure from a different threat: Friendship fishermen — in a reenactment of the ancient law of the sea that only fishermen really understand — have laid claim to neutral territory beyond Monhegan's two-mile limit. Drawn knives glint in the drear light of dawn, while lean and hungry boats warily circle one another in acute watchfulness. The lobster fishery, on which the majority of Maine's island winter kingdoms depend, is under pressure from within and without. Migrating female broodstock is being targeted in the western Gulf of Maine by Massachusetts draggermen who can no longer find a trip of cod. Urchin boats drag cobble bottom where juvenile lobsters are known to seek shelter in significant densities. And territorial adjustments are being negotiated by steely edged men beyond the ken of law.

For the first time ever, however, a trap limit law, flawed by most accounts, has been passed by the Maine Legislature. It's a start. And although a court case has been mounted by a small group of disgruntled lobstermen who intend to challenge its constitutionality, the new law provides for the creation of local lobster councils to regulate this complex fishery, a task that no way, no how can be done from Augusta, Gloucester or Washington. If these local lobster management councils aren't the wave of the future, it's hard to see that we have a future; certainly the acute edge of survival is self-evident to the island communities which depend on our ability to better manage this most magnificent and precious shellfish.

That this last, most productive, inshore fishery on the coast of Maine is under siege is only the latest example of the dire need to rethink, to reinvent almost the entirety of our fisheries management system; it must be brought closer to home and harbor; new lines must be drawn in the Gulf of Maine — separate from the offshore banks, traditional fishing territories tied to specific communities must be given the recognition and protection of law; fishermen must be brought into a real-time, scientific data-gathering process; and hardest of all, because it requires an enormous leap of faith for all involved, we must somehow create an ecosystem-based framework of management that has never been implemented anywhere else before. But the alternatives to moving in these strategic directions are also abundantly clear: failure, failure and more failure. The future is not just upon us, it is slipping through our lives as we stand hopelessly by.

## THE PHILBROOKS OF MATINICUS

(continued from page 11)

Wanda worked as a professional cook before marrying Clayton nearly 17 years ago. She is a culinary wizard of substitution — a skill, she says, that springs from island living. Remembering her move to Matinicus, she laughs, “I had no idea what I’d do out here other than have children.”

As men preserve fishing traditions, most women rear families, according to Wanda. “Women also help with their husband’s businesses by knitting trap heads and painting buoys. They pick up things to do like caretaking summer cottages and cleaning up after carpentry work. Some of the women started painting, and they sell their work at The Fisherman’s Wife [art gallery].”

Wanda still picks crabmeat, a skill she learned while working after school on Vinalhaven when fish and shellfish factories peppered the island, selling the meat to a small number of islanders and selling sandwiches during the summer at the island’s farmers’ market, located in the old one-room schoolhouse. In addition to cleaning and caretaking jobs at four summer rental houses, Wanda mows lawns and tends the island cemetery, sells Avon products, and pinch-hits for the postmaster on Saturdays and during his vacation time. Throughout the fall and winter, she makes and sells homemade pizzas each week. Elected Town Clerk and Registrar of Voters, she has served on the island’s school board for nine years, six of them as its chairman.

Neither of the Philbrooks believe that Matinicus will fall to summer-only occupation like nearby Criehaven, but both believe that economic diversification will be essential to maintaining the existing population and to attracting natives back after the completion of their formal education on the mainland.

“A lot of the people our age don’t want to be fishermen,” explains Wanda. “What little there is out here in housing is so far over someone’s head that, with getting into a business, even if it’s fishing, people just can’t afford it at all. A fair number of people have tried to live here, but they only lasted between six months to two years.” A three-bedroom, year-round home on a half- to one-acre lot averaged between \$60,000 and \$95,000 in 1995, according to



Rockland-based real estate broker Russ Wolfertz, Jr.

Start-up costs for lobster fishing are prohibitive as well, Clayton explains, averaging between \$40,000 to \$50,000 for 400 traps (the minimum required to support a family), equipment, and a boat with an engine.

“Even aquaculture is impossible out here,” explains Clayton. “We can’t hold anything in the water year-round, like trout or salmon pens, or even nets for scallops. There’s no lee for a minimum of 14 miles in any direction. We have all we can do to keep boats on their moorings in the wintertime. When it blows out here, it’s impressive.”

Wanda says the biggest drawback of living on Matinicus is the expense of getting to and from the mainland. The most common and the most expensive form of travel is by air. Penobscot Air serves the island twice each day from Owl’s Head to the Matinicus “Jetport,” a small gray shack nestled alongside a field airstrip. The journey takes about 20 minutes aboard a 6-seat Cessna and costs anywhere from \$75 to \$140 round-trip. The airline carries mail, passengers, and light freight, which includes packed grocery boxes from Shaw’s Supermarket in Rockland, at \$5 per box for packing and shipping.

State ferry service is the cheapest mode

of transportation at \$50 per vehicle round-trip, but is sometimes even less predictable than flying. The two-and-a-half-hour journey must be navigated on a high tide because of the narrow, ledge-lined channel that leads to the dock. Last winter, weather and mechanical difficulties prevented the ferry from reaching Matinicus for nearly two months, despite its two times per month schedule.

In summer, postmaster Dick Moody operates a boat service that makes four trips each week from Rockland that cost \$35 per person round-trip.

Island expenses outstrip their mainland counterparts, with necessities like electricity running more than double the mainland price and gasoline roughly 35-cents-per-gallon higher. Every telephone call off the island is a toll call. Islanders maintain mainland vehicles, which adds another \$80 per month for airport parking to the list of outlays. The island store, which doesn’t charge freight, sells goods comparable to those in mainland

convenience stores.

The school educates children from kindergarten through the eighth grade. With only six children presently attending the island school, and receiving far more attention than they’d get on the mainland, one of the island’s greatest assets leads to one of its most heart-wrenching dilemmas: children must move to the mainland to finish their education.

“It’s really hard for families to make the decision of whether they’re going to pack up and go to town for the kids’ high school years or if they’re going to stick it out over here and try to get them back and forth for visits home,” explained Wanda. “Having a child leave home at 13 is painful. Your house gets emptier and quieter. It’s just really hard with them being away. And, we’ll have to go through this again next year with Samantha.”

Now 15 years old, Nicky attends vocational school on the mainland studying marine technology and boatbuilding. He plans to make his way home through lobster fishing after he graduates.

“Lobstering is all he wants to do,” laughs Wanda. “He started at nine and had his own boat when he was 12. He takes old pots from lobstermen and fixes them up — Nicky’s pretty ambitious,” she says, adding that he christened his boat SELF ESTEEM.

## THE ALLENS OF GREAT CRANBERRY ISLAND

(continued from page 15)

Despite its close proximity to the mainland, Gary insists, "This isn't a suburb of Northeast Harbor. It's a self-governing community."

Privately operated mail boat and passenger ferry service provide six daily excursions in summer, three in winter.

Like Matinicus children, Cranberry Isles students must attend grades nine through 12 on the mainland. Through an exchange program, the 13 students study art, music and physical education on Islesford in the fall; Islesford kids come to Cranberry in the spring.

In addition to the store, which offers take-out food, a gift shop and a post office complete the tiny village. A public tennis court hosts an annual match the islanders call "Wimbleberry."

With no banks on the island, the Allens sought and received start-up capital from a summer resident after submitting a business plan. "Our summer community wants to support year-round businesses," Colleen observes. "They want to invest in the island because they don't want it to turn into a summer colony like Sutton Island. It's a danger that many island communities confront."

The Allens have plowed their profits back into their farm over the last two years. In July, they began constructing a 30- by 40-foot log barn to house a pair of oxen they plan to buy to lighten the load from their own backs. This winter, however, they'll be back in the woods with their chainsaws.

"Until Cabin Creek Farm can produce an income for 12 months, it's inevitable," says Gary. Among other ideas that could support them in winter, and tie into the farm, Gary and Colleen are considering an herbal soap mail order business.

"The challenge of figuring out how to make it here has been a big draw for me," says Colleen. "My quality of life has improved so much since I've been here. And, the success of the business has given both of us more confidence."

The Allens believe that the island, likewise, has experienced a new wave of enthusiasm, as well as an economic shift. "I think islands move in cycles and Cranberry may have bottomed out three or four years ago," he says. "The island felt like it was slowing down. People lost their enthusiasm, they weren't socializing, they weren't dealing with the difficult decisions that affect the island's future. There was no social outlet unless you went off the island."

Although Islesford retains a substantial fishing fleet, young people on Great Cranberry haven't returned to replace the older fishermen who have retired. In addition, the staggering cost of housing has exacerbated the drain of young people



and contributed to the malaise that seemed to settle on the island only a few years ago, explains Gary.

"But over the last few years, the island's experienced a rebirth of sorts," he says. "The store changed hands and now you can get whatever you need there. Colleen got active in the Ladies Aid and that's become a real focal center for community activity." As president of the Ladies Aid, Colleen helps organize holiday functions, weekly potluck dinners, and quilt-making for fund-raisers.

The men have united to brew beer, and schoolteacher Scott Brown has brought music to the island by voluntarily teaching string and wind instruments to anyone interested. Children tote ukuleles with their schoolbooks. Young and old alike congregate to play music a few times each month. "The winters aren't something to survive anymore," observes Gary. "They're actually fun."

"We're a close community and you can't isolate yourself here," adds Colleen. "After a while, the community will push you out. It's not like living in the city. People get involved in everyone's problems. Sometimes that can drive you crazy but, on the other hand, you grow accustomed to having that kind of support."

"Our friends from Boston and New York thought our lives were very quaint," she explains. "Well, some of them thought we were nuts living out here. But now that they've married and have families, they've started to understand why we live here. They don't think we're so crazy anymore."

*Deborah DuBrule writes frequently for Island Institute publications.*

# REVIEWS

## *Telling time at sea*

**Longitude**, by Dava Sobel.  
New York: Walker and Company, 1995. 184 pages.

*Reviewed by David D. Platt*

**F**rom the time of Christopher Columbus to the end of the 18th century, mariners puzzled over the problem of longitude — the difficulty of fixing one's east-west position at sea. Latitude had been a relatively simple matter since the invention of sextants and other devices to measure the altitude of the noon sun and stars; longitude was more vexing because it is a function of the earth's rotation and therefore of time.

As the technology of precision timekeeping developed during the 17th and 18th centuries in Holland and England, a contest developed between astronomers — learned men who believed that the observation of celestial events was the key to fixing longitude — and clockmakers who put their faith in their ability to build a highly accurate timekeeper. An accurate means of keeping time on shipboard, the clockmakers reasoned, would enable mariners to compare their local time with the time at a place of known longitude (today, the Greenwich Meridian) and thus learn how far they had traveled east or west.

In 1714, prodded by the Navy and commercial interests, the British Parliament offered a huge reward for an acceptable solution to the problem. The prospect of 20,000 pounds sterling (about \$2 million today) stimulated wide interest, and numerous "solutions" were presented to the Board of Longitude, the official group charged with awarding the prize.

In *Longitude*, science writer Dava Sobel tells two stories: that of the Board of Longitude and its often misguided efforts to determine the winner of Parliament's prize, and that of John Harrison, the self-taught clockmaker who invented the marine chronometer and, after nearly a lifetime of effort, was awarded most of the prize money. Unfortunately for Harrison, the board's membership consisted mostly of astronomers who disdained him as an uneducated "mechanic"; it was only after Parliament and George III himself intervened, Sobel writes, that this master clockmaker got the hearing he deserved.

Harrison's remarkable achievement — the construction of four increasingly sophisticated timekeepers, culminating in "H4," a watch-like instrument capable of keeping time within a few seconds over a period of months — has been well known to students of timekeeping for many years. What hasn't been as well understood (until this book was published) is the personal struggle Harrison was obliged to wage in order to convince the authorities that he knew what he was doing.

*(A related story appears on page 84)*

## *The nature of an island*

**From Red Clay and Salt Water**, by John Sylvester.  
Charlottetown, Prince Edward Island: Ragweed Press, 1994.  
96 pages.

*Reviewed by David D. Platt*

**T**he physical and cultural character of Prince Edward Island is arresting: an essentially agricultural landscape bordered by the sea; waterfronts sustained by a still-intact fishing industry; modern daily life punctuated by tradition-filled events ranging from fiddle contests to horse races.

Photographer John Sylvester (some of whose work accompanies Ann Thurlow's story about the island's about-to-open "fixed link" bridge, page 32) moved to Prince Edward Island in the early 1980s. In 1993 he began interviewing people for this book, producing a series of profiles, accompanied by his photographs, in which islanders speak for themselves.

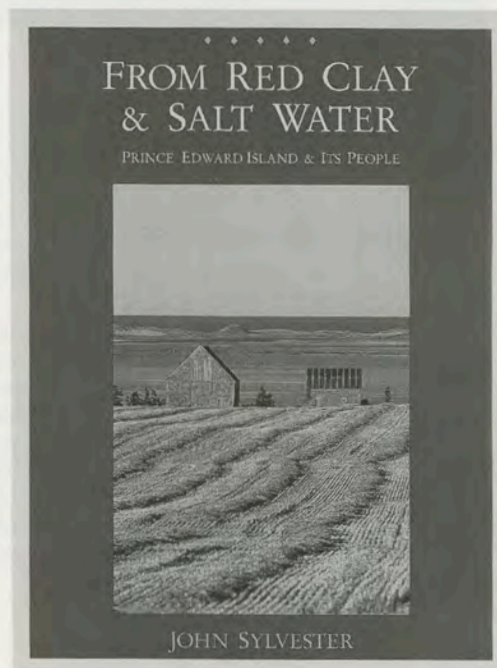
"They got better traps today than we had," declares retired lobsterman Clive Bruce. "The poor lobster would sooner crawl into it than go around it, that's what I figure. I'd say if fisheries don't clamp down on the size of the traps, they're going to clean 'er."

Joe Labobe, a Micmac Indian, discourses on his native culture: "I never forgot my language. We spoke it at home, Mom and Dad, and all my brothers and sisters. My wife is an Ojibway Indian and she has a different language than mine, so our children are caught in between, where they speak English. They don't understand my language and they don't understand her language. But someday, with our grandchildren, we're going to try and teach them."

"You can go down any road on the Island and you're going to run into horses," says Emmett Bernard, a harness-race driver from Charlottetown. Adds his brother Albert: "Prince Edward Island is a rural province, the people are a rural people, if you didn't own a horse, your neighbour did. You went to the races to see your neighbor's horse race."

The comments in this book come from people in all walks of life and reflect the surprising diversity of this small island province. They complement an impressive selection of Sylvester's images: landscapes and seascapes suffused with low northern light; women at work in canneries, boys learning to be fiddlers, fishermen tending their boats and nets, farmers plowing and harvesting, horsemen racing, craftspeople producing beautiful things.

The images in *From Red Clay and Salt Water* (the book's name suggests the building blocks of Prince Edward Island's landscape) don't include a picture of the "fixed link" now marching across Northumberland Strait toward the island. Once the bridge is built, this book and its pictures could prove to be one of the last depictions of a vanished way of life.



## Monhegan, through the eyes of its artists

**Monhegan, The Artists' Island**, by Jane and Will Curtis and Frank Lieberman. Camden, Maine: Down East Books, 1995. 192 pages.

Reviewed by Pamela J. Belanger

**M**onhegan Island's dramatic cliffs and unspoiled beauty have long attracted artists. A half mile wide and less than two miles long, Monhegan has inspired hundreds of artists for nearly 150 years.

The rugged scenery provided powerful subject matter for several generations of American artists from the Hudson River school and the impressionists to early 20th-century modernists and contemporary artists.

*Monhegan, The Artists' Island*, the first book devoted to telling the story of the art of Monhegan, presents an impressive number of works documenting this remote landscape by some of the most notable names in American art, such as Robert Henri, George Bellows and Edward Hopper, as well as many lesser-known artists. Authors Will and Jane Curtis have long summered on the island; Frank Lieberman, the third author, spent many summers there before his death in 1995. This book reveals their tender affection for Monhegan and the artists they discuss.

The authors review the island's natural history, early expeditions and exploration, and settlement through to the visits of the first artists. As early as 1858, Aaron Draper Shattuck made his way to Monhegan aboard the U.S. Schooner VIGILANT. Subsequently, Maine artist Harrison Bird Brown and visitors from away, such as Alfred Thompson Bricher, began recording Monhegan scenery. But it was the illustrations of Milton J. Burns and George W. Edwards, published in popular magazines, that presented the first glimpses of the island to a national audience. In 1880, Monhegan's scenery was publicized in an article in *Harper's New Monthly Magazine* entitled "Fish and Men in the Maine Islands." Describing just those qualities prized by artists searching for bold landscapes, the article maintained that Monhegan was "the most remote and primitive of all the Maine islands."

The authors have organized the volume by artists' subject matter, related to specific sites — The Dock, The Village, Woodlands, The Headlands, Rocks and Seas, Fishing and Boats, The Harbor. The surprising juxtaposition of diverse styles and periods and the inclusion of lesser-known artists adjacent to major figures do much to bolster a renewed appreciation of these artists, many who were highly esteemed in their day.

Included in this group is one of the earliest artists to paint the Monhegan landscape, Samuel P. R. Triscott. In 1892, the English-born Triscott brought to the island the conventions of the English watercolorists. Only with the arrival of William Burpee and Eric Hudson near the turn of the century did some of the modern influences from Europe, most notably impressionism, make themselves evident in Monhegan painting. During the first two decades of this century several leading impressionists from Old Lyme, Connecticut, visited the island, including Maine native Walter Griffin and Charles H. Ebert.

While many artists found their way to Monhegan Island in the 1890s, it was the arrival of the noted painter, teacher and leader of "The Eight," Robert Henri, in 1903 that transformed Monhegan Island into a leading summer art colony.

Accompanied by Pennsylvania landscapist Edward Willis Redfield on this first visit, Henri was overwhelmed by the scenery. In a letter to his family, he wrote, "This is the real thing. I have never seen anything so fine . . . a little harbor shielded by a small island — simply a huge mass of rock. It is a wonderful place to paint — so much in so small a place one can hardly believe it." Henri's enthusiasm for Monhegan influenced several of his students to visit the remote island, among them, Rockwell Kent, Randall Davey, Leon Kroll and George Bellows.

Although Henri and his circle are best known as urban realists, these artists produced some of their finest work on Monhegan. Their new approach and loose, expressive brushwork were ideally suited to capturing the island land and seascape. In their paintings, their late 19th-century picturesque, romantic view of an island paradise evolved into lively, bold depictions of the realities of life.

After 1920, Monhegan attracted a number of artists who began long associations with the island, including Andrew Winter and his artist wife, Mary Taylor, William Hekking, A. J. Bogdanove, Leo Meissner, Alice Kent Stoddard, James Fitzgerald and Jay Connaway. With a focus on local subject matter such as the island store and fishermen mending their nets, their works reflect the regionalist trend within realism popular at the time.

Since 1945, painting on Monhegan has been characterized by diversity, as it has elsewhere in the world. Both abstraction and realism are strongly alive, although no artist seems immune to the power of the landscape. Joseph DeMartini was one of the early abstract painters to arrive on the island; others include Reuben Tam, Frances Hynes, William Manning and Michael Loew.

The authors' wide-ranging survey of Monhegan images makes clear the attraction of this very special Maine island landscape. This first monograph to record the rich artistic tradition of Monhegan Island, *Monhegan, The Artists' Island*, is an invaluable resource for curators, art scholars and collectors as well as an indispensable addition to any library with an emphasis on Maine and New England.

*Pamela J. Belanger is associate curator at the William Farnsworth Art Museum, Rockland.*

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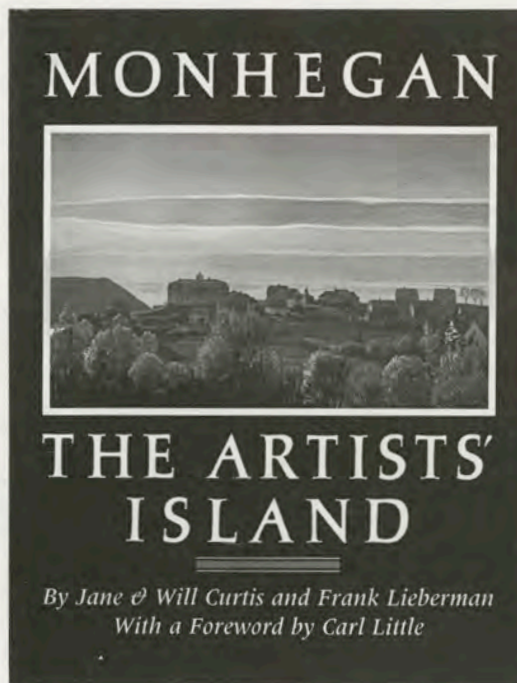
*"You have to go out, but you don't have to come back."*

**The U.S. Life-Saving Service. Heroes, Rescues and Architecture of the Early Coast Guard.** By Ralph Shanks and Wick York, edited by Lisa Woo Shanks. Petaluma, California: Costano Books, 1996. 262 pages.

Reviewed by Carl Little

**O**ne of my favorite buildings on the coast of Maine is the life-saving station on Little Cranberry Island. Its history and function are explained in a display in the Islesford Historical Museum: the station was built to respond to ships run aground on the bar that stretches between Little Cranberry and Baker's Island. The structure, I always thought, would have appealed to Edward Hopper, who was drawn to these kinds of coastal sentinels (he actually painted a life-saving station near Portland).

With this profusely illustrated volume in hand, I know a lot more about the history of one of the country's most dangerous



professions. Maritime historian Ralph Shanks provides a wealth of information on the life-saving service, from its origins in China in 1708, through the first American lifeboat station established in Cohasset, Massachusetts, in 1807, to the transformation of the U. S. Life-Saving Service, via the Organic Act, into the Coast Guard in 1915.

Shanks writes with great enthusiasm about the subject, heaping honor upon the brave surfmen who often gave their lives in the rescue of shipwrecked people. The life-savers' motto alone merits a special badge of courage: "You have to go out, but you don't have to come back." A grim imperative, that.

Many accounts of actual rescues, drawn from life-saving reports and newspapers of the day, make for riveting reading. One cheers all over again at the successful off-loading of the survivors; and one grimaces at the multitudes lost in the crashing waves, often within sight of shore.

Particularly fascinating to me was the chapter on life-saving equipment. Shanks describes in detail such items as the lifecar, a metal-sheathed, submarine-like boat that was pulled along a rope from the wreck to the shore, the line having been heaved or shot by cannon, rocket or gun out to the stricken vessel where it was secured to the mast. The illustration of this boat, showing three people lying down in it, might lead one to think of a floating coffin.

The breeches buoy, which also worked on a pulley system, consisted of a cork-filled life ring with short-legged canvas pants sewed onto it. One stepped into the breeches and then, after attaching the buoy to a block and tackle, glided on a line to the shore — one hell of a wild ride, one imagines. Such a rescue is the subject of one of Winslow Homer's most famous canvases, *The Life Line* (1884), said to be based on a rescue the artist witnessed on the coast of New Jersey.

One piece of equipment described by Shanks deserves reviving. Paul Boynton, who was a professional showman, invented floating rubber shoes. He and his performers, the author reports, "walked on water" — a neat trick, to say the least. Boynton also helped develop the modern-day survival suit.

Lebanon, Maine, native and Bowdoin College graduate Sumner Increase Kimball played a significant role in the establishment of the Life-Saving Service. Having served in the Treasury Department under Abraham Lincoln, Kimball went on to become head of the Revenue Marine Bureau. His political and public-relations savvy helped garner support for the service, which until his tenure had been rather neglected as an arm of the government. Other champions of the service included Ralph Waldo Emerson and the reformer and feminist Margaret Fuller.

Beginning with the life-saving stations in Maine and New Hampshire, Shanks follows the coast of America and the shores of the Great Lakes, describing the various outposts and their histories. New Hampshire boasted four stations along its 13-mile coast, because it was one of the most densely populated coastlines in America. As for Maine, its rugged coast demanded many stations: by 1914, there were 12, stretching from the Isles of Shoals to Quoddy Head. Photos of most of them, including excellent vintage shots of crews in action, are included in the book.

Shanks also devotes a chapter to honoring the women and minorities who played significant roles in the history of the service. Martha J. Coston, who perfected the Coston signal, is credited with preventing numerous shipwrecks with her flare device, which was used to signal ships that they were getting too close to shore, but also to alert them that there was a life-saving crew at the ready. And the contributions of Native-, African- and Asian-Americans are duly praised.

One also learns a great deal about the architecture of these stations, thanks to the chapter written by Wick York, former Architectural Restoration Specialist at the Mystic Seaport Museum, who has written extensively on the subject. The structures, some of them resembling railway stations, had distinctive features, including a tower and rooftop platform like the so-called "widow's walks" one still comes across in seaside towns.

According to York, many of the stations were constructed from standardized plans, but there were also one-of-a-kind structures, some of them designed to fit the particulars of the region or the needs of the rescuers. The floating station in Louisville, Kentucky, for example, was built for use on the Ohio River. It was the only inland life-saving station in the country.

This book is filled with fascinating bits of history. When the Wright brothers went to test their flying machine at Kitty Hawk, surfmen from a nearby station lent a hand. The Evanston, Illinois, life-saving crew largely consisted of students from Northwestern University — how about a few capsizing drills for extracurricular credit?

Prior to reading this book, the only reference to the life-saving service I'd come across was in Henry Beston's classic, *The Outermost House*, an account of a year spent on an isolated stretch of Cape Cod. Among Beston's few visitors were the surfmen, walking their lonely patrols day in and day out, their eyes trained on the often turbulent expanse of Atlantic.

Beston paid tribute to these individuals, and Shanks and company follow suit. This praiseworthy study might be looked upon as an act of life-saving in its own right, rescuing these courageous folk from the depths of oblivion.

*Carl Little is the author of a number of art books, including Edward Hopper's New England and Winslow Homer and the Sea. He is director of public affairs at College of the Atlantic in Bar Harbor.*

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### *Old guides need not fade away*

**A Cruising Guide to the Maine Coast** (Third Edition) by Hank and Jan Taft and Curtis Rindlaub. Peaks Island, Maine: Diamond Pass Publishing, Inc., 1996.

*Reviewed by David D. Platt*

**I** consider this book an old friend, having reviewed it for *Maine Times* (the publisher saw fit to include a kindly comment from that review on the jacket of the second edition), and having sailed with it for seven seasons.

Cruising guides get out of date very quickly, and when Hank Taft died several years ago (just after the second edition appeared), it looked as if the *Cruising Guide*, reflecting so much work by Hank and his wife, Jan, might just fade away.

Jan Taft is too resourceful to let that happen, however. She turned the project (and the extensive files that went with it) over to Curtis Rindlaub, a Peaks Island resident with years of sailing experience and a clear sense of the *Cruising Guide's* mission.

Now we have the third edition, updated and extended to include the New Brunswick Coast and the Saint John River, while taking the same care as its predecessors to protect this fragile coast from visitors who might love it to death. The Tafts' warnings and cautionary advice are still here — respect privacy, wildlife, fishermen and others who are earning their livings. Where appropriate, Rindlaub has bolstered their text with new information about trash, human waste, relevant state laws and the "live lightly on the earth" ethic everyone simply must observe if the coast is to be worth visiting in the years to come.

Hank and Jan Taft re-invented Maine cruising guides by producing theirs in a large format, generously illustrated. Rindlaub has made further improvements, including the addition of little charts that should ease a sailor's mind while entering or leaving some of the coast's cozier anchorages. The new material on New Brunswick, particularly the detailed sections on Passamaquoddy Bay and the Saint John River, add nearly 100 pages, so the new volume is likely to seem a bit bulky aboard a small boat. Still, too much detail — as long as it's well organized — is better than too little, so I expect to carry the third edition aboard this summer. I look forward to renewing my acquaintance with an old friend — brought up to date.



Peter Ralston

#### FROM THE WORKING WATERFRONT

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Coastal Tankers & Petroleum Corp., *Rockland, ME*

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The Great Eastern Mussel Farms, Inc., *Tenants Harbor, ME*

Hamilton Marine, Inc., *Searsport, ME*

Island Aquaculture Co., *Swan's Island, ME*

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Peter Ralston

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RUTH FOX

in fall the blows of sending a nail home  
breast stroke across The Reach  
echo  
resonate  
a door into trees

as, hammering, we once wavered into being  
backyard shacks from planks laid  
on stringers  
calling it floor  
to anchor risers bandaged by old boards  
our walls breathe — our roof leaks stars

now we, aging, watch the sea old raconteur  
shrug off horizon's doorstep  
Criehaven's long plainjane island  
crazes with light, raises columns, levitates chalk cliffs  
that throw off *fata morgana* — spinning domes spires  
minarets  
a kind of final landfall

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