

Bates-Morse Mountain Conservation Area



Photo credit: Johnathan Milne / LightHawk

Annual Report, 2018-2019

Prepared by Laura Sewall, Director

May 2019



Dance Instructor Julie Fox with students from *Creating Educational Experiences* at Morse Mountain.

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Letter from the Director



Photo credit: Peg Daly

On a recent walk in the BMM woods, just upland from the mouth of the Morse River, I discovered a great growth of *Usnea*. I knew the lichen was there, but not that it had become so abundant. The trees were so fully covered that I could not tell if they were spruces or firs. I feared a terrible imbalance and the loss of trees but a little research revealed that *Usnea* grows in moist conditions, but more notably, it

grows abundantly when the air quality is especially good. Also notable is that it is antimicrobial, antibacterial and antifungal and is known for a long list of medicinal uses. In part, *Usnea* is known to heal wounds and sore throats, relieve allergy symptoms and respiratory issues, and fight a wide range of infections. We hardly know the riches around us.

This, I think, is true when it comes to salt marshes. Few of us know that the current value attributed to the suite of salt marsh ecosystem services—or natural benefits to humans—is estimated to be \$194,000 per hectare per year. The Sprague Marsh is 74 acres, or 30 hectares, translating into an estimated value of \$5.8 million per year. This is worth contemplating in the midst of on-going salt marsh loss.

A September 2018 paper published in *Nature* emphasizes the uncertain response of coastal wetlands to sea level rise. Global projections estimate a 20% to 90% net loss of salt marshes, resulting in the loss of highly valued ecosystem services, including large amounts of carbon sequestration and storage. Other lost benefits include storm surge protection, fisheries support, and water quality improvement.

Geologist Bev Johnson has monitored the accretion of sediment on the Sprague Marsh since 2013 in order to determine its longevity in the face of sea level rise. Early results suggest a future with open water near the mouth of the Sprague River and a more persistent salt marsh toward the upland, at the farther reaches of high tides. Based on my observations of the Sprague marsh, this is not surprising—but it is critical to confirm. It also points to the educational value of BMMCA: It's a remarkably undisturbed sentinel site for observing rapid coastal change.

With retirement in July, I have taken the opportunity to reflect on 11 years of experience. While reviewing previous annual reports, I easily see how the focus of this position has shifted over time. It was initially a matter of addressing needs. In 2009, my concerns included getting a management plan in place, dealing with purple loosestrife—a formidable invasive plant—in the marsh, cleaning up a large pile of lobster traps left in the Seagontz parking area, and getting a new gatehouse built.

By the spring of 2010, the purple loosestrife had been treated and was dying back with a promising rebound of diverse native plants; the management plan was nearly completed; Jim Joseph had built a new gatehouse; and the Sarah H. Trafton Fund had been initiated to support faculty and student research at BMMCA. It felt like I was getting a house in order.

Next came a focus on issues that threatened the natural integrity of the ecological systems at Morse Mountain. In 2010, the state's Bureau of Parks and Lands hoped to bulldoze the Morse River spit in order to change the course of the river—which had swung towards the upland and threatened to erode the new bathroom facilities and parking lot. A number of stakeholders became partners in environmental protection and, with the help of Peter Vickery (an eloquent voice for wildlife) and Bates professor, Mike Retelle (a geologist familiar with the history of sediment transport along Seawall Beach), we successfully argued against mechanical interference, thus preserving the natural system—and a large-scale natural laboratory.

In 2011, the Army Corps of Engineers was determined to dredge the lower Kennebec River during the early summer season, when endangered and native fish migrate upriver and are most present in the estuary. A group of local environmental leaders lost the case, in Federal Circuit Court, but

gained insight and a valuable sense of camaraderie. I was blessed to participate in defense of a regional-scale natural system, of which BMMCA is a major part.

That growing sense of regionalism became more apparent as news of radical warming in the Gulf of Maine captured the attention of coastal scientists, managers, and fishermen. By that time collaboration, with the intent of tracking system-wide changes in the Gulf, seemed like the best way to uplift the visibility of BMMCA as a natural lab. That simple realization fostered the emergence of NeCSA, the Northeastern Coastal Stations Alliance, in 2015.

A National Science Foundation grant and the conception of regional tracking easily appealed to a dozen field stations and marine labs around the Gulf of Maine. Early meetings confirmed the importance of gaining a large-scale perspective on change and we set to work to coordinate monitoring, including water temperatures and biotic conditions in the intertidal zone. I counted BMMCA/Shortridge as one of the small field stations.

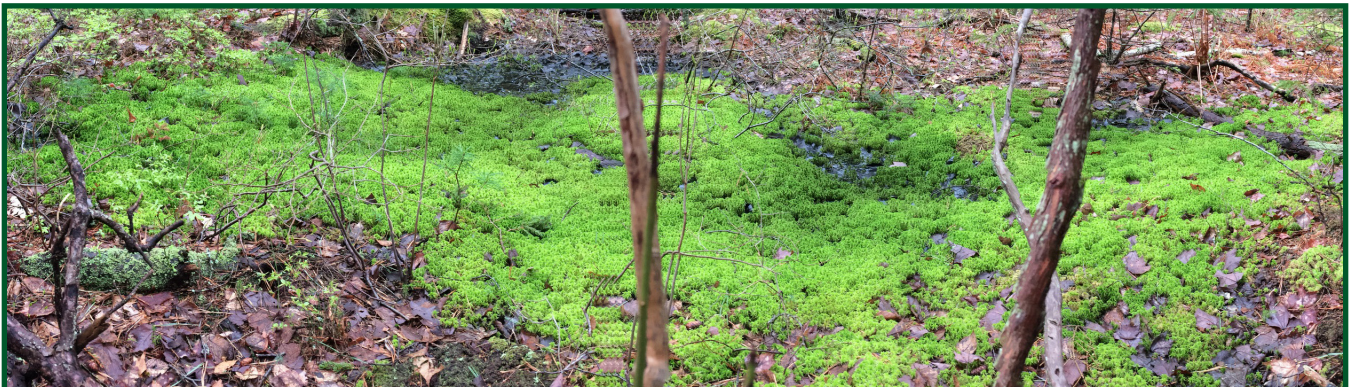
Over the last three years, relationships and data management plans have been made, shared protocols hammered out, and data collected. NeCSA's progress has been hampered, however, by the need for staff time to organize data and meetings, to maintain visibility, and to apply for

funds. Still, one hope for the future direction of BMMCA, is that Bates maintains a role in the Northeastern Coastal Stations Alliance. There is clear promise in the collaboration.

With my retirement, I have three fundamental hopes for the future of the relationship between Bates College and Morse Mountain: 1) that management limits people—in the sense that wildlife has every opportunity to emerge, adapt and thrive without interference; 2) that the natural systems at BMMCA serve to inform our collective understanding of a rapidly changing Gulf of Maine; and 3) that many students find themselves learning and thriving here.

If we—that is, those of us who care about the future of BMMCA—continue with those fundamental intentions, I am easily grateful all over again. During my tenure as director, I've been consistently grateful for my team: Jim Joseph and Don Bruce have been fabulous teammates, with Frank Wezner coming along more recently. I am also thankful for the many forms of support from the St John family, The Nature Conservancy, the BMMCA Corporation board, the Town of Phippsburg, the Small Point Association—and of course, Bates College. I sincerely thank all of you for our shared commitment to Bates-Morse Mountain.

Laura



Education and Research

Education

A chance encounter with ten 7th grade students and their instructor, in early April, revealed that Breakwater School, from Portland, visits BMMCA regularly. According to the instructor, they visit at least once or twice each year—or whenever it becomes apparent that a field trip would significantly add to the curriculum. On this particular day, they were visiting Morse Mountain and Seawall Beach to learn about natural systems.

Similarly, several of the schools reported below appeared at BMMCA in the off-season and are consequently recorded because of encounters in the parking lot or on the trail. Few schools notify the director in advance of a field trip and, as a result, the reported numbers greatly underestimate the full educational use of BMMCA.



Phippsburg Kindergarten students with Batesies. Photo credit: Bill Wallace

Primary, Middle and High Schools: 17

Visits: 23

Students: 623

Phippsburg Elementary School: 86 students visited in September.

In May, Bates students from *Creating Educational Experiences at Bates-Morse Mountain* led 3 field trips for Phippsburg Elementary School students, including kindergartners. The trips were structured around a variety of natural history and art activities.

Additional visiting schools: North Yarmouth Academy, Chewonki Semester, Great Salt Bay Middle School, Hyde School, Maine Central School, Morse and Lewiston High Schools, Maine Coast Waldorf School, Breakwater School, Oak Hills High School, Hebron Academy, Earth School, Kimberton Waldorf School, Friends of Portland School, Thornton Academy, and Woolwich Middle School.



Shadows of Bates students from GEOs20: Lost Beaches of Maine. Photo credit: Alice Doughty

Colleges: 4 Overall visits: 20

■ **Bates:** 10 courses, student and alumni groups recorded
Short-term course work: 3 courses; at least 7 visits

■ Bates College Courses:

BIO s30: Ecology and Natural History of the Maine Coast

BIGE 113: Marine Science

GEO s20: Lost Beaches of Maine

BIO s31: Avian Biology

BIES 246: Conservation Biology

BIO 128: Out of the Sea

EDUC s20: Creating Educational Experiences at BMMCA

■ **Shortridge retreats:** 31, from September 9th to May 30th
Number students, faculty and staff served: 545
Shortridge 2018 summer residents: 11 (7 from Bates)

- **Bowdoin:** 10 visits
- **Colby:** 1, 10 students for Orientation
- **Maine College of Art:** 1 visit, 9 students

- **Bates Community Engaged Learning:** Visiting assistant biology professor, Katie Dobkowski, and students from *Marine Science* created short videos to teach marine ecology to 3rd, 4th, 5th grade students at the Phippsburg Elementary School (PES) in March. Following these in-class introductions to marine animals and concepts, Dobkowski and students in *Ecology and Natural History of the Maine Coast* led a field trip for PES students to Popham Beach in May. (The trip was intended for BMMCA but plans were altered due to time constraints.)



Photo credit: Bill Wallace

Bill Wallace, education instructor for *Creating Educational Experiences at Morse Mountain*, and 16 students prepared field trips and lesson plans for students from Lewiston and Phippsburg Elementary schools, returning to BMMCA every Tuesday during the college's 5-week short-term. In part, the intent was to create young "field biologists for a day."

Research and Monitoring

- **Sediment Elevation Tables (SETs):** Annual monitoring completed in August by Geology professor, Bev Johnson and lab technician, Phil Dostie. Data held by Bev Johnson.

- **Seawall Beach profiles:** Completed in June, July and August by Vanessa Paoletta '21 and Nicole Kumbula '21, under the supervision of geology professor, Mike Retelle. Recent analysis by Retelle indicates that the frontal dune, approximately 100 meters east of the Morse Mountain trail, has receded 18 meters since 1990. On the western side of the beach, the dune front has receded toward the upland by approximately 8 meters since 1991.

Excerpt from syllabus *Creating Educational Experiences at Morse Mountain*:

"In this course, we will work together to build project based field trips. The planning will address curriculum, instruction, assessment, and logistics of running a field trip. We will then bring students from Lewiston area schools to natural areas at Bates College, and Phippsburg Elementary School students to Bates Morse Mountain Conservation Area on the coast of Maine to take part in a day of field studies.

Principles of field ecology will be the core of what we do. The forests, vernal pools, salt marsh, rivers, beach and dunes of the Morse Mountain Conservation Area as well as the natural areas of our Bates College campus offer memorable learning opportunities. During their time at Morse Mountain or on the Bates College campus, our visiting students will be field biologists for the day, and will conduct authentic studies of the natural world that we prepare for them."

- **Salt marsh intertidal surveys:** Annual plant community surveys were conducted on the Sprague Marsh by Laura Sewall and Vanessa Paoella '21 in late August. Surveys were begun in 2015. (Data are located in the BMMCA Research/Salt Marsh file.)



Vanessa Paoella '21 on Seawall Beach dune front. Photo credit: L.Sewall

- **Drone imagery of Sprague Marsh:** Several high-resolution drone images of the southern and western portions of the Sprague Marsh were made in late April, in order to record current geophysical patterns. For future reference, images can be viewed at PIX4D, or by contacting Michelle Holbrook-Pronovost, Bates College Technology Consultant, for access to Google drive files. Previous drone imagery, recorded in 2017, is also located in Google drive files, held by the BMMCA director.
- **NeCSA (*Northeastern Coastal Stations Alliance*) update:** Temperature data sets were collected from three sites at BMMCA in early November, in coordination with NeCSA stations. Data were archived by Hannah Webber (Schoodic Institute), along with other NeCSA data. Protocols for characterizing all intertidal survey sites were completed by Laura Sewall and Tom Trott, marine

biologist from Suffolk University and the Maine Department of Marine Resources. Protocols for conducting intertidal surveys were finalized by Hannah Webber, Bob Steneck (University of Maine) and Dave Carlon (Bowdoin). A data management plan (DMP) was developed by students Nicole Kumbula '21, Trisha Kibugi, 21, Catherine Crossen '20 and director, Laura Sewall. (To date, the DMP has not been agreed upon by NeCSA participants. Dave Carlon chairs the NeCSA Data Committee.)

- **Rocky Intertidal Monitoring:** Katie Dobkowski, visiting assistant professor of marine biology, established 4-5 rocky intertidal survey sites in close vicinity to BMMCA in May. The sites will be monitored for changes to the intertidal biotic community with the intention of contributing to the NeCSA database on coastal change. Students will conduct annual monitoring in conjunction with Dobkowski's field courses.
- **Southern Pine Beetle monitoring:** In partnership with The Nature Conservancy and the Maine Forest Service, BMMCA staff (Don Bruce and Laura Sewall) began monitoring for the southern pine beetle (SPB) in May. The beetle is highly destructive to pines in the southern US, and has been moving northward with warming temperatures. It has not yet been found in mid-coast Maine, but monitoring has begun at several coastal sites. Beetle traps, placed near pitch pines at BMMCA, will be monitored for 6 weeks.

- **BMMCA Research on-line:** The website listing of studies conducted at BMMCA now includes abstracts for all studies with author generated abstracts. The complete list represents 41 years of research at BMMCA and can be found at: <https://www.bates.edu/bates-morse-mountain-shortridge/list-of-research-publications/>

In 2018, Isobel Curtis '17 also created a mapped, interactive record of BMMCA research to date. Mapped locations include project titles, dates and discipline. Only studies with completed abstracts are included on the map, representing just over 50% of the total studies completed. The map can be found at: <https://arcris/1aWab0>



Conservation and Wildlife

Migratory Shorebirds on Seawall Beach

Seawall Beach supports one of the largest concentrations of migrating shorebirds in Maine. Historically, tens of thousands of birds have used the beach during each fall migration (mid-July through early September).

Shorebird populations are now in sharp decline worldwide. In North America, an aggregate of 19 species of long-distance shorebird migrants—including those landing on Seawall Beach—show a decline of 51% since 1975.

Nearly all of those feeding at Seawall Beach are listed as either “highly imperiled” or “of high concern.” Listed as federally threatened and state endangered, the Piping Plover is Seawall beach’s most high profile rare bird. Least Terns are also endangered, and have not nested on Seawall Beach since 2005. Habitat degradation and human disturbance are primary factors impacting shorebirds, but long migrations mean that birds encounter numerous anthropogenic threats. More recently climate change has been cited as the primary threat to the survival of shorebirds. Within this context, it is notable that the Piping Plovers, with protective efforts and intensive monitoring by Maine Audubon, are showing improvements in population numbers.

“The global collapse of migratory shorebird populations is much more than a calamity facing a group of exquisitely evolved birds. It also tells us that our global network of aquatic systems is fraying. If water is the world’s lifeblood and aquatic systems are it’s connective tissue, then the decline of the planet’s most spectacular global travelers signals a systemic illness that demands our attention and action.”

—John W. Fitzpatrick, director of the Cornell Laboratory of Ornithology and Nathan R. Senner, University of Montana

■ Piping Plovers:

Statewide: In 2018, 128 piping plover chicks fledged from Maine beaches. This was the largest number of fledglings since monitoring began in 1981. The number of nesting pairs increased 6% from the previous year, from 64 to 68 pairs. The average reproductive rate was 1.88 chicks per pair, with a chick survivorship of 66%. Of the 97 nesting attempts, 26 were lost to high tides, 15 to predation and 6 were abandoned prior to hatch. Also notable is that the population seems to be stabilizing: over the last four years, there have been at least 60 pairs of nesting plovers in Maine.

Seawall Beach: Seven pairs of plovers nested on Seawall Beach in 2018, producing 12 fledged chicks. The reproductive rate was less than the previous year: in 2017, seven pairs produced 16 fledglings. Predation by crows, great-backed gulls and foxes significantly impacted the 2018 number of fledglings.

Popham Beach: Six pairs made eleven nesting attempts. Five nests hatched, but no chicks survived to fledge. All nests were predated.

■ Hemlock Management:

In 2016, students working with Biology professor, Brett Huggett documented an infestation of Hemlock Woolly Adelgid (HWA) at BMMCA. In 2017, Conservation Biology students (BIES 246) developed a draft Hemlock Management Plan with the prospect of significant die-off due to the Hemlock Woolly Adelgid

infestation. In 2018, in response to their findings, and based on recommendations from the Maine Natural Areas Program, one hemlock was taken down. The tree was dying quickly and leaning over the road and electric wires. Most of the fallen tree was left on site but the large, straight base was milled for the construction of raised beds at Phippsburg's new Community Garden. A public education sign will soon document the site and claim the damage to be a climate change impact.

■ Saltmarsh Nesting Birds:

Since 2013, Bates has hosted researchers from SHARP (Saltmarsh Habitat and Avian Research Program) by providing summer housing at the Shortridge Coastal Center. In 2018, two field researchers spent a total of 4 weeks based in Phippsburg in order to conduct annual surveys at Popham and other regional study sites. Two interns will continue area surveys in summer, 2019. Monitored species show significant declines, including 10.6% annual reductions in the population size of Salt marsh sparrows since 1998.

■ Coyotes and Foxes:

A new study, to be conducted by Henry Masters from the University of Southern Maine, will attempt to document interactions between coyotes, red foxes and gray foxes. BMMCA will serve as one study site during the 2019 summer season, with nearly a dozen wildlife cameras deployed in high wildlife use areas.



Professor Bev Johnson demonstrating sediment core sampling for visitors. Photo credit: L.Sewall

News, Events and Noteworthy

- **Olin Art Exhibit:** The Bates College Museum show, entitled *Anthropocenic: Art about the Natural World in the Human Era*, featured BMMCA. Seventeen artists were represented, including Julie Poitras Santos. “Chronicle of Mud,” created by Poitras Santos, included video footage largely taken at BMMCA. The piece emphasized parallels between sedimentary processes, human memory, and Bev Johnson’s research on the Sprague Marsh.
- **Outreach:** Mike Retelle presented beach-profiling results from Seawall Beach to the Small Point community in July, 2018. His lecture noted significant upland retreat of the frontal dunes and included reference to larger changes observed in Svallbard, Norway.
- **Signage:** New welcome sign at BMMCA, with a map of the area. The map is intended to reduce the need for thousands of paper brochures each year. New public education sign on Hemlock Woolly Adelgid to be posted.
- **Trail counters:** Hayden Bavis, from Lewiston, earned his Eagle Scout badge by researching and installing a trail counter in February. His Scout Master, fellow scouts, and fellow swim team members assisted. The crew also removed close to 30 lobster traps from Seawall Beach.
- **Management Plan updated:** Updates include a revised Publicity Policy and previously agreed-upon changes to rules impacting the St John family and their guests and renters.
- **Annual Reunion Walk:** Participation in the 2018 Alumni Reunion reached an all time high, with 60 participants. The walk was co-led by Judy Marden and Laura Sewall.
- **Annual Beach Cleanup:** The day (April 13th) began with rain but cleared by noon. Twenty plus volunteers persisted throughout. Jeff Sturgis doubled our ability to move traps with his truck. The resulting pile of traps suggests that close to 100 traps were collected in 2019.
- **Research online:** Abstracts added to the on-line list of BMMCA research projects. The college’s record of research now covers 41 years.
- **Summer Fellowship:** Funding for Bev Johnson’s geology research with students during summer 2019, at BMMCA and other regional salt marshes, will be partially provided by “Voluntary Use fees” collected at BMMCA parking lot.
- **Pulitzer prize finalist:** *Rising: Dispatches from the new American shoreline*, by Elizabeth Rush. The book was nominated in the General Nonfiction category and features Bev Johnson, Laura Sewall, and the Sprague Marsh.

The Gatekeeper's Log

February 1st – November 5th, 2018



Hayden Bavis and scout troop installing trail counter. Photo credit: L.Sewall

“Last week my family and I spent a spectacular day at Seawall Beach. Not sure how it took me so long to discover it, as a life-long Maine resident, but this was our first visit and I was stunned by the beauty and solitude there, and with your organization’s kindness in sharing the conservation area with us. Thank you so much for all that you folks do, and for your gracious hospitality.”

–Sarah Timm, from Norway, Maine

■ Visitors: 20,657 (22,507 in 2017)

Gate-keeping days: 166

One day in February: 109 visitors

Average per day of gatekeeping: 124 (130 in 2017)

Number of first-timers: 3,055 (85% are repeat visitors)

Lot full: 48 (compared to 67 times in 2016).

Worth noting: Lot full on March 31st

■ Camps: 11; Total visits: 15; Recorded Campers: 206

Including Bath Boy Scouts, Bath Recreation Department Summer Camp, Kennebec Estuary Land Trust Day Camp, Chewonki, and Camps Kohut, Wavus, Fernwood, Kiev, Nashoba.

■ Clubs and Groups: 10; Visitors: 166

Including the Bath and Kennebunkport recreation departments, Harvard Business School reunion, Apogee Adventures, the Falmouth Outdoor Adventure Club, Small Point runners, America Foreign Service Group, the Highlands Outdoor Club, the Merrymeeting Bird Club, and the Northern Hemisphere Birding Club.

■ Conservation organizations:

At least 28 visits, including Maine Audubon, The Nature Conservancy, and the Maine Department of Inland Fisheries and Wildlife.



Don Bruce and Nancy Sferra setting Southern Pine Beetle Trap.
Photo credit: L.Sewall

Director's Professional Activities

Publications:

- Sewall, L. and Fleischner, T. (2019, in press). "Why Ecopsychology needs Natural History?" *Ecopsychology Journal*. Retrieved from: <https://home.liebertpub.com/publications/ecopsychology/300>
- Manuscript submission: *Vanishing Point: Facing Climate Change on the Coast of Maine* (working title). Submitted as co-editor, with Don Dearborn, to Cornell University Press. Authored the Introduction and first chapter. Worked with acquisitions editor to edit manuscript.

Presentations:

- "How outdoor and longitudinal ways of seeing change our view—and everything else." Organization of Biological Field Stations annual meeting, October 2018.

- "Salt marshes, blue carbon and climate regulation." Sierra Club Conference on Climate, May 2019.

Additional Activities at Bates College:

- Taught *Environmental Protection: A Crash Course*, a first year seminar.
- Organized and sponsored a facilitated session for the development of the Institute for Climate Adaptation and Resilience (ICAR).
- Moderated panel for art exhibit at the Bates Museum: "Anthropogenic: Art about the Natural World in the Human Era."

Community Service:

- Currently serving on the Steering Committee for a national conference on natural history and human health; sponsored by the Natural History Institute
- Membership on NeCSA's steering committee
- Editorial review of manuscripts submitted to *Ecopsychology Journal*
- Editorial review for the *Journal of Natural History Education and Experience*
- Editorial review of book manuscript for Springer Publications



Catherine Crossin '20 conducting intertidal surveys at Schoodic Institute with students from inner city Los Angeles. Photo credit: L.Sewall

Looking Forward

Bates-Morse Mountain Conservation Area



Catherine Crossin '20, Laura Sewall, Trisha Kibugi '21 and Nicole Kumbula '21 at the Shortridge Coastal Center.

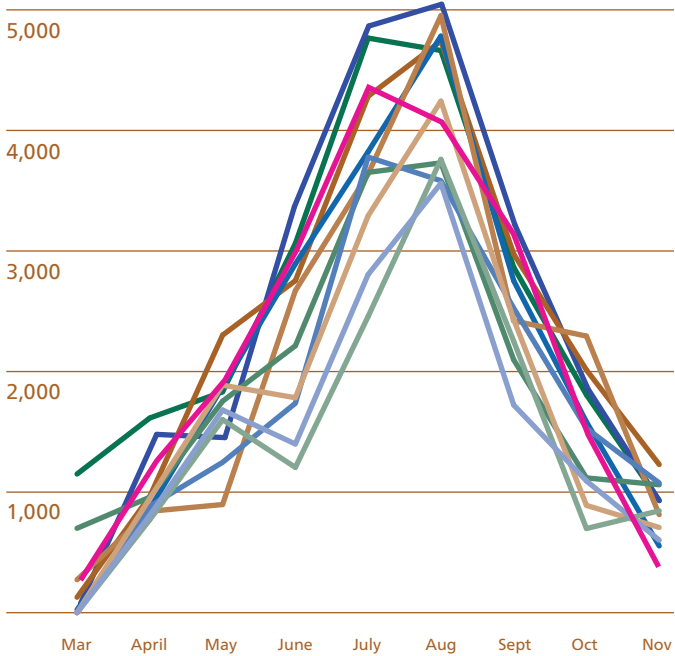
BMMCA is poised for realizing an integrated program of coastal monitoring—and for contributing to a wider body of growing knowledge focused on coastal change. In addition to measures of sediment accretion; intertidal surveys of salt marsh vegetation and rocky shoreline biota; water temperature records; and documentation of sediment transport and forest alterations, basic studies in phenology and migrant shorebird and song bird counts could substantially serve our understanding of climate

change in natural and coastal systems. With the high visibility afforded by large numbers of returning visitors, longitudinal observations at Morse Mountain could also further the broader public's recognition of climate change impacts and, by extension, encourage mitigation and human adaptation. There are many avenues for adaptation and many motivated, capable and creative students to assist.

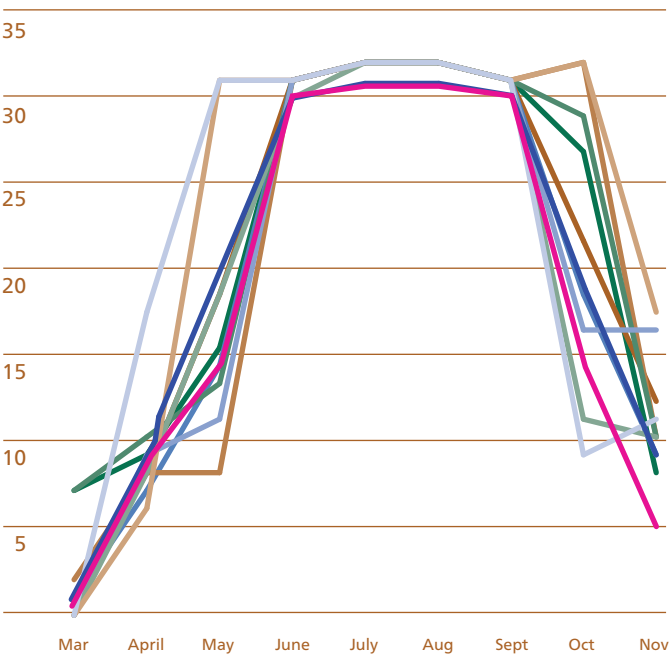
Appendices

Public visitation

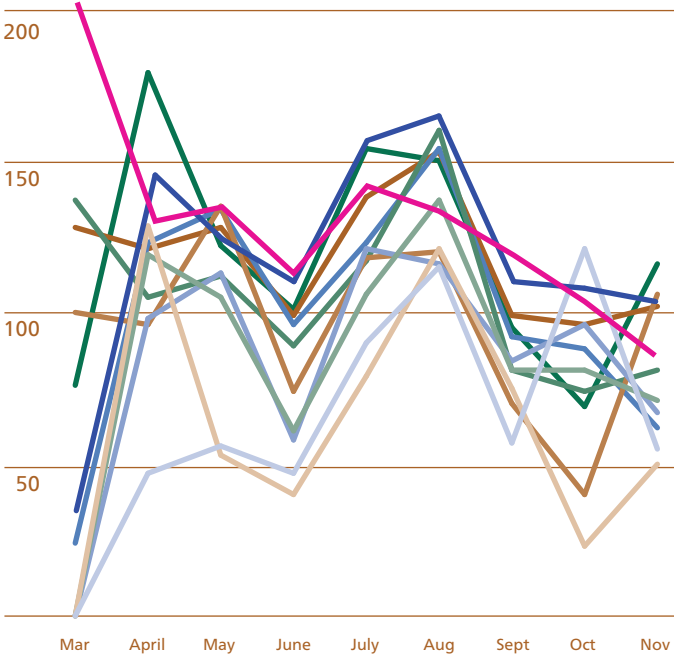
Visits 2008–2018



Gatekeeping Days, 2008–2018



Per Day Average 2008–2018



Annual Totals

| Year | Visits | Days | Per Day Average |
|------|--------|------|-----------------|
| 2008 | 13,671 | 189 | 72 |
| 2009 | 13,589 | 206 | 66 |
| 2010 | 16,182 | 168 | 96 |
| 2011 | 16,361 | 174 | 94 |
| 2012 | 17,286 | 190 | 91 |
| 2013 | 18,802 | 181 | 104 |
| 2014 | 19,147 | 171 | 112 |
| 2015 | 21,390 | 182 | 118 |
| 2016 | 22,691 | 187 | 122 |
| 2017 | 22,507 | 173 | 130 |
| 2018 | 20,657 | 166 | 124 |

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Town of Phippsburg Annual Report

Bates-Morse Mountain Conservation Area, 2018-19



The number of visitors to the Bates-Morse Mountain Conservation Area (BMMCA) declined slightly from 2017 to 2018. During the 2018 gate-keeping season, 20,691 people walked the nearly two miles to Seawall Beach. In 2017, that number was 22,507, an average of 130 a day. In 2018, the average number of visitors per day was 124.

Those of us who work at BMMCA have

various theories about why that is, including the relentless mosquito season; the rainy, uninviting weather early in the season; the heat and humidity late in the season; the new turn-around facilitating less packed conditions in the parking lot; and/or the new bold-faced type on the BMMCA website, advising potential visitors that the parking lot may fill by 10 AM on a clear summer day.

Despite these obstacles and possibilities, people return again and again to Morse Mountain. In 2018, 85% of all visitors had been there before—and this is especially apparent with school groups. Year after year, the same primary, middle and high schools bring students from the mid-coast region—an area that stretches between Damariscotta, Lewiston, and Portland. In 2018, 20 visits from 14 area schools brought 577 students to BMMCA during the gate-keeping season. Similarly, 4 colleges reliably bring students to Morse Mountain for field studies, freshman orientation and sports practice. These are Maine College of Art, Colby, Bowdoin and Bates colleges.

The conservation area and Seawall Beach become known to students over years and remain a popular destination for many. It is a place where students have picnics and learn about salamanders and migratory birds, quahogs and green crabs. They learn about ecological systems and rapidly emerging environmental change. Recreational visitors see a remarkably diverse and untrammelled expanse of land and sea, and perhaps notice how environmental conditions are changing.

Two apparent changes are worth noting. The first is that the causeway across the Sprague Marsh floods more frequently with higher tides, leaving a wrack line of salt marsh hay strewn across the road. Second, an infestation of Hemlock Woolly Adelgid (HWA) has impacted a stand of Eastern hemlocks just uphill from the eastern side of the Sprague Marsh, especially on the south side of the road.

By 2017, the insect pest had been identified and mapped at Morse Mountain, and was relatively understood in terms of biology and

likely outcomes under warming conditions. The HWA had been moving north for over a decade and it had clearly reached the Phippsburg peninsula. Trees infested with HWA are likely to die over the course of 5-10 years. Treatment is expensive and hazardous to waterways.

The dying hemlocks will be left to fall as they will, presenting “a mess” in the forest—and also an indicator, and reminder, of a warming climate. However, because one large and quickly dying hemlock presented a safety hazard, it was taken down this year. Lumber from the removed hemlock will be used to make raised beds for Phippsburg’s new community garden.

In 2018, the annual beach clean-up occurred on April 4th. Twenty-plus volunteers worked most of the day to remove close to a hundred lobster traps from the beach. Thanks to Curtis Doughty, the unusable traps were compressed and put directly into a dumpster, along with two years of piled up traps that had been waiting for proper disposal.

When I asked Don Bruce, the lead gatekeeper, if he had any comments for this report, he immediately expressed appreciation for the Town’s police force—and especially for their timely assistance when any sort of emergency or enforcement issues occur. The support provided by Chief Skroski and his crew is much appreciated by all of us at Morse Mountain—and it’s a welcome reminder that there are many of us working to protect the special experiences offered by Bates-Morse Mountain—and Phippsburg. Thank you, all!

Respectfully submitted,
Laura Sewall

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