Bates-Morse Mountain Conservation Area
Annual Report 2012-2013

Laura Sewall, Director
Spring, 2013
Letter from the Director

This year marks my 5th and I have found myself reflecting on what has been accomplished, and on where I’d like to go from here. The accomplishments are easy to list, but the future direction is harder to identify.

In essence, management at BMMCA is considerably more streamlined and, with the Summer Residency going strong, Shortridge is beginning to function like a true field station. I have a good team to work with in Phippsburg and so—knock on wood—the college’s “coastal campus” is poised for opportunities and programming that can make a difference. That was made abundantly clear to me with Bill Wallace’s Short Term course in environmental education. The course paired Bates College students with 4th, 5th and 6th graders from the Phippsburg Elementary School to learn about forests, vernal pools and oceans. On one of three field trips, both young and older students were “alight” as they ventured off into the rain to gain an understanding of beach ecology and marine biology. I kept thinking that the Phippsburg students would never be the same after learning what lives, and thrives, in their own back yard.

Another opportunity to make a difference is in the domains of observational ecology and geology. The BMMCA—as “place”—and with the assistance of Geology professor Bev Johnson, is in a very good position to contribute to the nascent research on how New England salt marshes are responding to sea level rise. Bev and I intend to install three Sediment Elevation Tables (SETs) in the Sprague Marsh in August, initiating a decades-long project to measure the degree of accretion, or growth, of the marsh as high tides push more sand and sea landward. The effort will allow us to contribute to a growing data base and national discussion on rapidly changing coastal processes.

Looking more immediately forward, I will be teaching a First Year Seminar in the fall. One significant facet of that opportunity is that I will have meaningful contact with students who have selected a course that emphasizes humans within natural environments—and a course that will utilize Shortridge. With that foundation, I am hopeful that a new cohort of students will know and love our coastal campus, will value a community-based approach to the environment, and will infuse that approach with psychological savvy. In my mind, that could constitute a difference.

With these hopes, I continue on! Thank goodness I have help. It comes from Don Bruce, Jim Joseph, and more recently, from Darby Ray—and from all of my friends and comrades who believe in the importance of actively cherishing the land that serves us.

With hope and gratitude! Laura
Education, Research and Outdoor Experience

The Bates-Morse Mountain Conservation Area was preserved for the purposes of conservation and education, including research and opportunities for students of all ages to learn and play in a naturally rich environment. Bates College encourages the educational use of BMMCA and a significant number of schools visit the area every year. In 2012, between mid-April and Thanksgiving (the gate-keeping season), 11 elementary, middle and high schools visited BMMCA. However, this does not represent the full extent of use by grade schools. Student groups also visit during the “off-season”—when gatekeepers are not on duty but schools are in session. Also, with the addition of school trips that were recorded (mostly without the help of a gatekeeper on duty) in the spring, 2013, the number of schools and students who visited BMMCA jumped to 16 and 732, respectively.

Elementary, Middle and High Schools
Maine Central Institute, Pittsfield (5)
Lewiston High School, Biology course (33)
Freeport Middle School (14)
Real School, Freeport (3)
Westbrook Alternative Learning School (19)
Merriconeag Waldorf School, Freeport (55, 2 visits)
Edward Little High School (12)
Mt. Ararat High School, Cross-country team (38)
Hebron Academy, freshman orientation (35)
Freeport High School Cheerleading team (9)
Kimberton Waldorf School, Kimberton, PA (20)
New York City High schoolers, brought by Chewonki (24)
Oxford Middle School (23)
Lewiston Middle School (330, 3 visits)
Lewiston Middle School, Alternative School (11)
Phippsburg Middle School (49, 3 visits)
Lewiston High School, Biology class (52)

**Total Schools: 16, Total Students: 732**

Colleges:
Visits by both Bates College and several other college groups represent a variety of uses—from athletic training to student orientation and art instruction. The greatest number of visitors came from Bowdoin College, but again, the recorded visits under-represent actual visitation. Bates students also did research and simply “got outdoors” by walking over Morse Mountain while staying at the Shortridge Coastal Center. As gate keepers are not on duty for much of the academic year, these visits are generally not recorded. Still, college-affiliated events brought 385 recorded visitors to BMMCA.

Bowdoin Alumni (10)
Bates Reunion (9)
Bates Staff (4)
Bates Geology research (16; 8 visits)
Bates Geology Department (4)
Bowdoin College Squash Camp (24)
Bowdoin Student Orientation (24)
Bowdoin Freshman (60, 3 visits)
Colby Residential Assistants (15)
Colby Student Orientation (18)
Bowdoin Natural History, with Chewonki (50, 3 visits)
Colby Botany (13)
Bowdoin Outing Club (20, 2 visits)
Bates Geology course (8)
Philadelphia University, Marine Biology (22)
University of Maine, Farmington, Outing Club (6)
Bowdoin Swim Team (38)
Husson College Fraternity Reunion (12)
Maine College of Art (16)
Bates College Asia Club (8)

**Total Colleges: 7; Total college visitors: 385**

![Image of students hiking]

**Bates College Courses:**
Six courses, serving 65 students, utilized BMMCA as part of their instruction:

EDUC s20, Creating Educational Experiences at Morse Mountain, Bill Wallace (13)
GEO 103, Earth Surface Environments and Environmental Change, Mike Retelle (8)
ENVR s22, Environmental Leadership, Julie Rosenbach (6)
GEOs31, Limnology and Paleolimnology of Lakes in Northern New England (15)
BIO 313, Marine Ecology, Will Ambrose (12)
BIO s31, Avian Biology, Donald Dearborn (11)
Bates Senior Theses:
Three seniors conducted research at (or related to) BMMCA during the 2012-2013 academic year. Students were supervised by professors Bev Johnson, Mike Retelle and Will Ambrose.

Margaret Pickoff, *Maine’s Blue Carbon: Estimating Carbon Stocks in Maine Saltmarshes*
Louisa Lee, *Inter-annual Growth Variations of Atlantic surfclam, Spisula solidissima, Serve as Large Scale Environmental Variable Proxies: Dependence on Population’s Local Site*
Amanda Wescott, *Tracking seasonal and storm induced recession of the Popham-Seawall barrier beach complex, Phippsburg, Maine*

Camps and Clubs:
This category ranges from young children attending summer camps to fitness clubs.

Maine Outdoor Adventure Club (5)
Kingsley Pines Camp (24, 2 visits)
Raymond Summer Camp (7)
Yarmouth Recreational Department Youth Camp (24)
Small Point Summer School (69, 2 visits)
Chewonki Foundation (32)
Bath YMCA Fitness Club (4)

Total Organizations: 7; Total Visitors: 165

Conservation and Environmental Organizations:
In general, these organizations monitor wildlife and geological conditions. The Nature Conservancy conducts an annual easement assessment.

Maine Audubon, plover monitoring (20, 10 visits)
The Nature Conservancy (2)
Maine Geological Survey (4, 2 visits)
Maine Audubon study group (15, 2 visits)
Maine Audubon Naturalists (12)

Total Groups: 5; Total visitors: 53

Other groups:
Riverview Foundation (22)
Maine Maritime Museum (14)
Sebasco Harbor Resort (42, 5 visits)
Hermit Island Group (20)

Total Organizations: 4; Total group visitors: 98
Wildlife Conservation

**Piping Plovers:** Three pairs of piping plovers nested on Seawall Beach in 2012, with one pair nesting twice after the first nest was destroyed by a high tide in June. Of the 3 nests, two were predated before hatching, and one shortly after hatching. No chicks survived.

Plovers fared much better on Popham Beach. The change in the course of the Morse River over the previous year created a sand spit/island which provided very good nesting habitat for plovers. Six pairs nested and successfully produced 13 fledglings. The numbers represent a doubling of the Popham Beach 2011 population (3 pairs fledged 6 chicks) and 14% of the state’s nesting pairs and 20% of the fledglings. Statewide, the population of nesting Piping plovers increased by 27% from 2011 to 2012 (from 33 pairs to 42 pairs) suggesting that intensive management has been effective. Piping Plovers are federally listed as Threatened.

On April 28th, in conjunction with the Bates Day of Service on Seawall Beach, volunteers helped to construct a stake and twine fence to protect areas of Piping Plover nesting habitat.

**Least terns:** Least terns have not nested on Seawall Beach since 2005. They are state endangered migratory shorebirds that winter in Brazil and migrate to the North Atlantic coast for breeding. Historically Seawall Beach provided good nesting habitat, but the peak of nesting occurred in 1984, when 40 pairs produced 52 fledglings. However, two pairs nested and fledged three chicks on Popham Beach. Statewide, at least 191 pairs nested and produced 155 fledglings. This is the highest recorded number of fledglings since recording began in 1977. Again, intensive management appears to greatly influence reproductive success for threatened and endangered shorebirds.
Public Use at Bates-Morse Mountain Conservation Area

In 2012, gatekeepers recorded 17,286 visitors to BMMCA. (See attached Visitor Data Table.) Of the total recorded visitors, 3,080 were newcomers, or nearly one in six. As in previous years, this number does not reflect the weekdays in April, May, October or November—or the winter months of December, January, February and March—when gatekeepers are not on duty. Another measure of public use is the average number of visitors per day, as recorded by the gate keepers. In the last two years, the average has been 94 and 91 visitors per day for 2011 and 2012, respectively. Those numbers represent a considerable jump in the daily average of previous years, which ranged from 67 in 2000 to 66 in 2009. The increase in public use requires gatekeepers to turn away visitors when the parking lot is full. In the 2012 season, the lot was full on 30 separate occasions.

Other Bates-Morse Mountain News and Events

BMMCA Environmental Awards: Each year the Harward Center for Community Partnerships honors two individuals for their environmental work. This year, Nick Bennett, of the Natural Resources Council of Maine, received the BMMCA Environmental Stewardship award for his commitment to ensuring that Maine’s environmental policy is well informed with science and careful analysis. The BMMCA Environmental Lifetime Achievement Award was awarded to Dave Courtemanch for his dedicated service—for nearly 40 years—at Maine’s Department of Environmental Protection. During that time, Dave was responsible for defining and implementing water quality standards, and for monitoring all of the state’s surface and ground waters. Although both Dave and Nick have largely worked behind the scenes, they have been critically instrumental in protecting Maine’s fresh waters.
Bates’ Day of Service: Forty volunteers removed nearly a hundred lobster traps and garbage from Seawall Beach on April 28th. The day’s success is indicated by both the high number of volunteers (many of whom are Bates alumni) and the number of traps that were dug out of the sand, untangled and loaded on to a truck. The Nature Conservancy assisted in the effort and, on the same day, Maine Audubon—with help from some of the volunteers—staked portions of the beach to mark nesting habitat for Piping Plovers.

Publication of Between Two Rivers: A Year at Bates-Morse Mountain: Will Ash, photographer and Assistant Instructor at the Imaging and Computing Center, photographed BMMCA over many visits, and all seasons, during the 2011-2012 year. His photo documentation was collected into a book that captures the unique beauty of Morse Mountain, and the book has been offered as a gift to friends of BMMCA, the St John family, members of the Small Point Association and others. Ten recipients of the book have responded with unsolicited gifts to BMMCA.

Payment in Lieu of Taxes: Bates College made an annual payment in lieu of taxes, in the amount of $11,883.21, for the 2013 tax year. This is consistent with the Letter of Agreement, dated March, 2006, between the town of Phippsburg and Bates College. The agreement assures a 3.5% payment increase each year.

Vandalism: For the first time in at least five years, vandalism (consisting of graffiti painted on a rock wall) occurred at BMMCA in early May. A police report was filed and sandblasting will be done to remove the paint.

Salt Marsh Migration: The Phippsburg Conservation Commission, park officials from Popham Beach State Park, and the Director of BMMCA collaborated to gain technical assistance for developing the community-wide understanding of projected changes in coastal lands due to sea level rise. Assistance has been offered by Liz Hertz (Department of Agriculture, Conservation and Forestry) and Pete Slovinsky (Maine’s Geological Services). To date, several meetings have provided opportunities to discuss climate science, technical resources available, and a plan for engendering a
community-wide discussion, beginning with a video project that will record the observations of coastal changes by local “old timers.”

**Sprague Marsh Data Update and Archiving:** A great deal of environmental data was collected on the Sprague Marsh by Curtis Bohlen, a faculty member in the Environmental Studies Department between 1998 and 2003. Data sets covered numerous water quality parameters such as pH, dissolved oxygen and salinity, as well as vegetation data, and geomorphological data regarding changes in ditch and channel sizes. The data sets offer baseline information for future student-faculty research at the site, however, until this year, those data were relatively inaccessible due to formatting within an outdated Arc GIS software program. All of the data were reformatted and organized by Zachary Abbott, an Environmental Studies major, during Short Term. Zach also located all senior theses conducted at BMMCA and Seawall Beach and wrote annotations (if possible) for those completed since 1977. His work is a tremendous gift to future researchers, and to BMMCA as a site for further research.

**Professional Work:** During the summer of 2012, the BMMCA Director, Laura Sewall, attended a week-long field course in salt marsh monitoring and restoration, and published a chapter entitled “Beauty and the Brain” in *Ecopsychology: Science, Totems and the Technological Species* (MIT Press, 2012). In October, Laura presented a keynote address at the Chicago Botanical Gardens for the Center for Human and Nature’s Annual Conference.

**The Shortridge Coastal Center**

While BMMCA is a natural treasure, Shortridge is becoming the heart of our “coastal campus.” Students occasionally send thank you notes describing their experience while there, illustrated by a message sent by the most recent group of students visiting Shortridge, the Bates’ Author’s Guild:

“We had a wonderful time at Shortridge! We did make it to the beach, albeit after a few wrong turns. It’s such a beautiful place. I know we all had a restful and rejuvenating weekend. Thank you so much for letting us stay at the house for the weekend! We're definitely planning on making this an annual retreat if possible.” –Katie Ailes
Between June, 2012 and June, 2013, Shortridge hosted a wide range of students, faculty, staff, researchers and artists. Student groups, classes and retreats included:

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<tr>
<th>Date</th>
<th>Event Description</th>
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<tr>
<td>June 14, 2012</td>
<td>French Department Retreat</td>
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<td>July 29</td>
<td>Maine Campus Compact/Vista retreat</td>
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<td>September 8</td>
<td>Environmental Retreat</td>
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<td>September 29</td>
<td>Christian Fellowship</td>
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<td>October 20</td>
<td>Swim Team</td>
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<td>October 26-27</td>
<td>Environmental Coalition Retreat</td>
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<td>October 25-27</td>
<td>Geology thesis research</td>
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<td>November 2-3</td>
<td>Shanghai Asia Student Group</td>
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<td>November 11</td>
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<td>December 15-16</td>
<td>Geology thesis research</td>
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<td>Jan 25-27, 2013</td>
<td>Christian Fellowship retreat</td>
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<td>February 1-3</td>
<td>Yoga Kula</td>
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<td>March 30-31</td>
<td>Dharma Society</td>
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<td>April 10-11</td>
<td>Gail Chumura, estuarine researcher (NEERS)</td>
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<td>April 12-13</td>
<td>Helicase Retreat</td>
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<td>April 23</td>
<td>Creating Educational Experiences @ BMMCA</td>
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<td>April 26-27</td>
<td>Bates Catholic Students</td>
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<td>April 28-29</td>
<td>Geology 103</td>
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<td>May 1-3</td>
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<td>May 10</td>
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<td>May 10-12</td>
<td>Latinos Unidos</td>
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<td>May 15</td>
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<td>May 16-17</td>
<td>May's Men's Group and Dynasty</td>
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<td>May 17-18</td>
<td>Bates Authors Guild, writing retreat</td>
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<td>May 20</td>
<td>Creating Educational Experiences @ BMMCA</td>
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**Total visitors to Shortridge:** 415 students, faculty, staff, artists and researchers
The Shortridge Summer Residency

The Shortridge Summer Residency continues to develop into a lively and rich time of student-faculty research, conservation work, and environmentally-focused art work. In 2012, the Shortridge Summer Residency began with Samuel Grandgeorge documenting the early spring migration of birds at Morse Mountain, under the guidance of Biology professor, Don Dearborn. Sam’s report offers baseline data regarding early migrant species arriving between April and May.

Three art students—Kit Sheridan, Charlotte Simpson and Jee Hye Kim—were charged with “bringing the arts to Shortridge.” They developed a dedicated studio space in the field house (upstairs), made art for several weeks and endowed Shortridge with imagination and inspiration.

Maureen Correll, University of Maine graduate student in Ecology and Environmental Science, supervised research on salt marsh bird populations and habitat. Under her supervision, Jenni Wharf conducted surveys on a number of mid-coast salt marshes, including the Sprague and Morse river marshes, while living at Shortridge for the summer field season. Several additional technicians from the research team worked together while based at Shortridge for the week of July 14th. These researchers included Brian Olson, a University of Maine researcher conducting genetic profiles of Sharp-tailed sparrows, Nelsons and Salt marsh sparrows, and Adrienne Kovach, University of New Hampshire. Other principal researchers on this project include Tom Hodgman, senior wildlife biologist at the Maine Department of Inland Fish and Wildlife, and Dave Curson, Director of Bird Conservation at National Audubon. The study covers the coastal region extending from Delaware to Maine.

Margaret Pickoff utilized Shortridge for storing field equipment and occasional overnight stays while collecting data on the degree of carbon sequestration occurring in the Sprague River marsh. Her estimates show that the Sprague’s “blue carbon” may represent a carbon offset from the carbon equivalent emitted by some 33,000 automobiles per year. Her senior thesis is entitled, Maine’s Blue
Carbon: Estimating Carbon Stocks in Maine Saltmarshes. Margaret will be offering the Small Point community a presentation of her thesis on August 1st, 2013.

Chester Chiao, also working with Bev Johnson, used Shortridge similarly while assisting the Kennebec Estuary Land Trust in counting alewife passage to Lake Nequassett in Woolwich. The land trust received much acknowledgment for the effort and has continued the counts this year (2013), largely for the purpose of documenting the importance of fully restoring fish passage for alewives.

Amanda Wescott, a geology student working under the supervision of Mike Retelle, conducted beach profiles on Popham and Seawall Beaches for the second half of the summer. Her work became a senior thesis entitled, Tracking seasonal and storm induced recession of the Popham-Seawall barrier beach complex, Phippsburg, Maine.

Capital Improvements: More changes were implemented at Shortridge this year. In general, they include better sleeping arrangements (four new bunk beds), more improvements in energy efficiency, landscaping that will keep gutters clean and minimize previous mold problems, and new flooring. Current repairs are for damages due to student misconduct and ant infestation on the southeast corner of the building.

Specific renovations since 2008 include:
- Significant rot on south wall repaired (2009)
- New front porch and stairs; a portion of the deck was replaced with Trex (2009)
- New boiler, with a one-year fuel savings of over $3,000 (2011)
- New paint on south and east walls, and south and west walls of out-building (2010-2012)
- New siding (cement) on east wall; rotten trim replaced (2012)
- Art studio established in upstairs of out-building (2012)
- Major tree taken down, minimizing moisture problems in bunk room (2012)
- Two new doors on east wing, replaced due to rot, mold and energy loss (2013)
- New flooring and paint in bunk room (2013)
Looking Forward

This summer, eight or nine students, field assistants and artists will be living at Shortridge while working on a host of projects, including a migratory shorebird inventory, beach profiles, regional stewardship, salt marsh bird assessment in the context of sea level rise, calculations of carbon sequestration in salt marshes, and “bringing the arts to Shortridge.” They are supported by The Nature Conservancy; Maine’s Department of Inland Fish and Wildlife; the University of Maine and grants from seven federal and state agencies and nonprofits, including the U.S. Fish and Wildlife Services and National Audubon; and Bates College. All of the summer residents are actively engaged in doing environmental research or conservation, and in raising environmental awareness.

Returning to a personal note, I am particularly enthused by three facets of the work at BMMCA and Shortridge. One is the development of on-going support for more coastal research. We—my team in Phippsburg, the college and collaborators—are developing both the infrastructure and lineage to make coastal research at this particular site useful and informative in the context of regional and national discussions regarding rapidly changing coastal processes. As a fundamental part of this, I am pleased to know that the Shortridge Summer Residency is continuing to grow, to be inclusive and to be successful. I hope for opportunities to further develop the program.

A second facet is the degree to which the communities most invested in BMMCA are gaining environmental knowledge and a sense of stewardship as BMMCA becomes more visible and on-site research deepens. My annual reports to the Small Point Association, The Town of Phippsburg, and the Friends of BMMCA have become opportunities for increasingly sophisticated discussions regarding coastal conditions and stewardship. I would like to broaden this thread by working more closely with other local and regional communities, including the Phippsburg Sportsmen’s Club, The Phippsburg Shellfish Commission, The Phippsburg Conservation Commission, The Friends of Casco Bay, The Nature Conservancy and the Gulf of Maine Research Institute. I hope to further develop these collaborative relationships, and to offer college resources that strengthen work that facilitates environmental education and leadership, meets community needs, and further builds a regional and collective sense of stewardship.

Third, I will be teaching a First Year Seminar, for the first time, in the fall, 2013. In part, I hope to facilitate the development of a cohort of students that is familiar with the gifts of BMMCA and Shortridge, and that further enlivens our coastal connection. Our topic will be ecopsychology, or the endlessly interesting and complex relationships between ourselves and the rest of non-human nature. In that context, we will debate the questions that inevitably arise while staying at Shortridge, standing in the marshes at BMMCA, and observing coastal erosion. My ideal is the students’ deepened appreciation of Shortridge and BMMCA over the course of their education at Bates—and of place, including the profound importance of the relationship between ecological systems and the human communities they serve.