# Bowdoin Scientific Station on Kent Island

## Report of Activities

2016

*The Bowdoin Scientific Station (BSS) is a biological field station located on Kent Island, New Brunswick, Canada. Operated by Bowdoin College since 1935, the field station also includes the adjacent Sheep and Hay Islands. BSS is dedicated to:*

- *Supporting the liberal arts mission of Bowdoin College, the activities of the broader scientific community, and those who live around the Bay of Fundy*
- *Training students to become future leaders of their fields*
- *Protecting the flora, fauna and environmental quality of the Bay of Fundy*
- *Promoting world-class scientific research on the organisms and habitats of the Bay of Fundy*
- *Providing a rustic working and living environment that is free of distractions, allowing scientists and students to become fully immersed in their work and living community, and*
- *Providing a focal point to encourage collaboration and discourse among all members of the Bowdoin community as well as visitors and researchers at the field station.*

Moving *Harmonic*. Marko Murray, Emma Bothwell, Maddie Edmonds, Hillary Chavez, Sabine Berzins, Brad Woodworth, Sam Walkes, Andrew Blunt, Savannah Horton, Don Dearborn, Emma Catharine Gager Dearborn, Mike Walsh, Eric Link, Erin Voss, and Dre Gager. **July 2016**

# TAKING THE MEASURE OF A SUMMER

As in the past few years, the Kent Island open-for-business season was a long one this year, running from April to October. Undergraduate research projects during the nine-week summer session ranged from intertidal ecology to storm-petrel behavior to eider nest success; in the realm of the humanities, one student worked on fiction writing and another on painting an intertidal mural at the Grand Manan Museum. Other scientists working on KI collected data on Savannah Sparrow vocal communication, stress response, coloration, and population biology; demography and the evolutionary genetics of the immune system in Leach's Storm-petrels; and the movement ecology of Black Guillemots and Great Black-backed Gulls. We also hosted an array of tour groups, writers, and class visits from Bowdoin, Dalhousie, and Arizona. Key infrastructure improvements continue to be made by the skillful hands of Marko Murray and Russell Ingalls, and a remarkable gift from Patty ('76) and Andy Towle will provide strong financial backing for this work.

This was also a year of continuing leadership transitions. Our own presence on Kent Island was enabled by Don's sabbatical, which like all good things did eventually come to an end. As we write this, we are now consumed by the work of being a regular faculty member at Bates (Don) and a research manager at Maine Medical Partners (Dre). With Nat Wheelwright's retirement on the too-near horizon, Bowdoin is conducting a search for a faculty member who will direct Kent Island for the long haul. In the interim, the summer of 2017 will operate under the experienced guidance of Ed and Midge Minot – Bowdoin alums who have continued to make pilgrimages and contributions to Kent Island over many years.

Two more important 'transitions' have happened since we last touched base. We are saddened to relay the passing of Jed Burtt and Chuck Huntington. Keep reading for detailed tributes to these two revered ornithologists.

As always, stay in touch.

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## 2016 Student Projects

We had a great group of students this summer – 8 from Bowdoin and 1 from Kenyon – spanning the full range of class years, including two students who had just completed their first year at Bowdoin and three students who had just graduated and were using Kent Island as a launching pad to the wider world. We describe their projects here.

**Do Breeding Leach's Storm-petrels *Oceanodroma leucorhoa* Show Sex-matched Response to Conspecific Vocalizations?** Erin Voss, Bowdoin College '16

If you have ever awoken in the middle of the night on Kent Island for a trip to the outhouse, you can attest to the vocal enthusiasm of storm-petrels. Their chatter calls and purr calls are part of the island soundscape. With the wider goal of understanding sex ratio and mate choice in this species, Erin set out to test whether male and female calls were acoustically different, and whether birds in burrows responded to vocalizations in a sex-matched way – in other words, can you tell a male call from a female call, and do individuals respond differently to the calls of same-sex versus different-sex birds. Erin found that males have a higher-pitched call than do females (which is surprising, given the lack of difference in body size), and that birds in burrows typically give a chatter call in response to playback of same-sex chatter call but are silent in response to opposite-sex chatter call, suggesting that chatters in this context might be aggressive signals rather than mate-choice signals. In the future, we hope to use the acoustic differences between sexes to estimate the sex ratio of birds flying around the island early in the breeding season.

**Aggressive Response to Disturbance in Breeding Leach's Storm-petrels (*Oceanodroma leucorhoa*)** Hillary Chavez, Kenyon College '16

Hillary just graduated from Kenyon College, where she had been studying biology with Director Emeritus Bob Mauck (a.k.a. the Ninth Giant). She's a Los Angelina who has finally seen the appeal of the East Coast, at least for one summer. On Kent Island, she was part of a team of three students who were studying Leach's Storm-petrels. Unlike the rest of the group, though, Hillary's project involved deliberately being bitten by storm-petrels on a daily basis. Asking to be bitten. Hoping to be bitten, almost. Hillary was answering questions about animal temperament: whether males and females differ in aggression, and whether mates are paired up assortatively, disassortatively, or randomly with respect to aggression. To test this, she reached into each burrow in a standardized way and gave the bird the opportunity to attack, stay still, or retreat, scoring their response on a 5-point scale. After the encounter, she removed the bird to record its band number for identification, then returned another day to assess its mate. Results are pending, but it's clear already that you shouldn't try this experiment with muskrats.

**Are There Non-breeding Males and Females in Leach's Storm-petrel (*Oceanodroma leucorhoa*)?** Sabine Berzins, Bowdoin College '16

Sabine came to Kent Island as a budding (ha ha) plant ecologist, with an interest in how the island's plant communities were changing in response to the eradication of snowshoe hares. (As an aside, the short answer is "a lot.") But somehow she was drawn to the glitz and glamor of storm-petrels – lying facedown on the soggy ground and shoving your arm into the wet dirt of a burrow, or staying up half the

night to catch birds with mist nets. What's not to love? So she asked to join Erin and Hillary in collecting long-term demography data on storm-petrels breeding in the Shire. She also worked at shedding light on the mating system of storm-petrels. In one approach, she caught birds that were vocalizing and flying around the island, then outfitted them with small radio transmitters for subsequent tracking. We hoped that these birds were on the hunt for a mate and that we could track their behavior over several nights. Unfortunately, the tracking part of the project proved to be nearly impossible. The second, and more fruitful, approach to thinking about the mating system was to catch birds at night in mistnets and then try to assess their breeding status. In the spirit of insular polytechnology, we refurbished Chuck Huntington's 10-meter mistnet poles and set them up on the edge of a small clearing between the North Field and the Dorm. The system stacked three mistnets vertically, and over the course of several nights we captured and sampled 70 storm-petrels. With help from Erin and Hillary, we banded birds and took blood samples for later determining their sex, and then Sabine scored the extent of each bird's brood patch – a ventral area that becomes de-feathered and highly vascularized for incubating eggs and brooding young chicks. Sabine collected similar data on birds that were actively incubating eggs in burrows in the Shire. The labwork is still pending for the sex identification, but it's abundantly clear that birds caught in mistnets generally had either no brood patch or a less well-developed brood patch than birds incubating eggs in burrows, suggesting that these mistnetted birds were not currently breeding. The implications for mate choice will depend on whether these nonbreeding birds are mostly males, mostly females, or a balance of the two.

**Kelp Growth in Response to Physical Damage and Tidepool Temperature and pH** Mike Walsh, Bowdoin '19

Mike Walsh faced challenging summer, because he was doing double duty as a scientist and a cook. Not only that, he was new to cooking (much less cooking for 25 people!) and his research activities were constrained by the timing of the tides, which meant a lot of early mornings! Mike's project was testing for effects of stress on the growth of intertidal organisms. In particular, he measured growth of 80 horsetail kelp (*Laminaria digitata*) growing in 10 different tidepools, and he compared temperature and pH of those pools as potential types of abiotic stress. But the most interesting part was his experimental application of stress, in which he cut off part of the blades of individually marked kelps, simulating herbivory or wave damage. By establishing landmarks on the kelp, he was able to measure growth over the summer. Mike found that although pools varied over time in pH and temperature, these variables did not differ greatly between pools and were not predictive of kelp growth. However, Mike did find a pronounced effect of his experimental damage: kelp grew more in response to a high-damage treatment than in a low-damage treatment or control group. This effect parallels a pattern sometimes seen in terrestrial plants, where plants response to herbivory by investing *more* (rather than less) in leaf growth.

**Interactive Effects of Rockweed Harvest and Green Crab Abundance on Intertidal Communities** Sam Walkes, Bowdoin '18

Although Sam was not a cook, he did share Mike's constraint of being bound to the tides. With advice from Bowdoin professor Amy Johnson, Sam was exploring how the intertidal community responded to the potential interacting effects of green crab abundance and rockweed harvest. In the Bay of Fundy, rockweed (*Ascophyllum nodosum*) is harvested on both a small scale and commercial scale, for use in clambakes, as garden fertilizer, and as additives in foods and cosmetics. Nat Wheelwright has heroically and successfully fought to prevent rockweed harvesting on Kent, Sheep, and Hay Islands, but harvesting is pervasive elsewhere. Ecologically, the best way to harvest is by cutting rather than by removing the entire holdfast, as this ensures faster regrowth. But even cutting the rockweed changes the "canopy" of the intertidal community. Green crabs (*Carcinus maenus*), invasives from Europe but now firmly established in the Bay of Fundy, have been shown to have negative impacts on other crabs and on mollusks including the common periwinkle, *Littorina littorea* (which is, itself, commercially valuable). Sam set out to conduct a factorial experiment in which he varied the presence of rockweed harvest and green crab density. As often happens with field projects, he encountered some difficulties with the installation and maintenance of mesh cages designed to exclude green crabs from a subset of his experimental plots. This was a frustrating process, but Sam persisted with the dedication of a true scientist. In fact, this is worth mentioning in and of itself – Sam has fully embraced the role of an ecologist. He can dizzy you with references to the vast literature on intertidal organisms and community ecology, and he knows his intertidal creatures like the back of his hand. He gave a presentation on his project at the Grand Manan Museum, and he enthusiastically conveyed both the intellectual side and the applied side of the work that we do on Kent Island.

**Egg Recognition and Nest Sanitation in Herring Gulls *Larus argentatus*.** Andrew Blunt, Bowdoin College '19

For any animal with parental care, it can be critical to recognize your offspring. In a bird's nest, for example, it's highly beneficial to distinguish between your eggs and debris that has fallen into the nest, or between your eggs and the eggs of a brood parasite who is trying to trick you into doing the work of raising *her* kids. On Kent Island, Herring Gulls nest in dense colonies at the top of the intertidal zone, where a variety of natural and man-made objects are constantly being shifted around in the environment. And although brood parasitism has not been reported from this species, colonial breeding certainly provides plenty of opportunity for sneaking an egg into another bird's nest. To that end, Andrew tested whether incubating Herring Gulls would reject various objects that were experimentally added to their nests. His experiment used the eight possible combinations of two sizes, two colors, and two shapes of objects. The colors were chosen to mimic the main color of Herring Gull eggs (olive tan) or the Herring Gull bill spot (red), and shape was chosen to mimic Herring Gull eggs or a rectangular block. At the most realistic end of the spectrum, he used a 3D-printed egg that was the color, size, and shape of a real Herring Gull egg, based on measurements from Kent Island eggs in the Berkeley Museum of Vertebrate Zoology. At the least realistic end of the spectrum was a red block of wood. Across 120 experimental trials, Andrew was surprised to find that Herring Gulls accepted almost all of the objects he used! This stands in stark contrast to the refined discriminatory abilities that have evolved in many hosts of European Cuckoos (*Cuculus canorus*) or Brown-headed Cowbirds (*Molothrus ater*), and even falls shy of the level of nest sanitation seen in many species of birds.

**Short Story Writing** Savannah Horton, Bowdoin College '17

Kent Island can be an inspirational place to write, whether the subject of your writing is situated on Kent Island or you just benefit from the simplicity and focus possible in an isolated and rustic setting. For Savannah's summer project, it was mostly the latter. She came with a plan to write short stories, and boy did she deliver. Over the course of the summer, she wrote 11 stories. Some are about seaside communities, but not all. Regardless of the stories' settings, they feature tidbits that Kent Islanders will recognize. For example, one story is called the Muskrat King, inspired by a piece of artwork in the Dorm; the story's main character is an online sales rep for an outdoor equipment company, but her brother is a trapper who specializes in muskrats. In a different story, a character can't resist the urge to stare down into the pit of the outhouse. Another theme is how the passage of time reveals the battle between attrition and upkeep in a rustic place. Before writing any of these stories, though, Savannah worked through a syllabus of readings, devised with feedback from Bowdoin professor of English, Brock Clarke. Some of her inspirations included Lorri Moore, Laura Van Den Berg, and Richard Russo. Savannah also grappled with the challenges of being the only fiction writer in an outpost of scientists. One respite was a short visit by Alison Deming, Professor of Creative Writing at the University of Arizona, who brought a small group of creative writing MFA students plus several Grand Manan high school students, for a writing workshop on Kent Island.

**Common Eider Nest Density and Success: Are Gulls Predators or Protectors?** Eric Link, Bowdoin '17

The early history of Kent Island is intertwined with the success of the Common Eider (S*omateria mollissima dresseri*), as Afred Gross studied eider ecology in the 1930s and J. Sterling Rockefeller donated Kent Island to Bowdoin in 1936 with the idea that the island serve as an eider preserve. This summer, Eric followed in the footsteps of these and other pioneers, as he explored the question of whether gulls were good or bad for eider nest success. On the one hand, Herring Gulls and Great Black-backed Gulls are opportunistic foragers that will eat eggs, in which case eiders might fare better if they nest in areas of low gull density. On the other hand, gulls are raucous defenders of their nesting colonies, as evidenced by their conspicuous mobbing of Bald Eagles, in which case eiders might benefit from nesting in proximity to gulls. Eric located, mapped, and monitored eider nests on Kent, Sheep, and Hay, but ultimately he found no relationship one way or the other between eider nest success and gull density. There was also no relationship between eider nest success and nest concealment, though better concealed nests did have larger clutches. As eider season wound down, Eric shifted his attention to spittlebugs. This is a great system for detailed experimental work, and he used his final two weeks to build spittlebug enclosures and carefully test the host plant preferences of these interesting little creatures.

**Artist in Residence - Grand Manan Museum Intertidal Mural Project** Tracey Faber, Bowdoin College '16

We love the idea of forging closer ties with the people of Grand Manan, and this project is a great one in that regard. If you've never been to the Grand Manan museum, located in Grand Harbor, it is definitely worth a visit. Exhibits range from natural history (birds of Allan Moses) to cultural curiosity (mysterious, miniature dioramas carved inside gunstocks in the late 1800s by two brothers from Dark Harbor) to local art. The newest addition is an intertidal mural depicting the ecosystem and industries of the intertidal zone in the Bay of Fundy. The project is organized by curator MJ Edwards, with the painting itself led by Grand Manan artist Sara Griffin. In 2015, Sara teamed up with Bowdoin students Tracey Faber '16 and Isaac Jagerman '16, and they completed Phase I of the project. This summer, 2016, Tracey returned to work on Phase II, partnering with Sara Griffin and also with Shauna Gass, a fine arts student from Mount Allison University in Sackville, New Brunswick. The result is stunning, with a floor-to-ceiling panorama that sweeps down a staircase and around a corner, bursting with a diversity of algae, mollusks, crabs, barnacles, fishes, birds, whales, a seal, salmon aquaculture pens and even some humans – dulse harvesters Leroy and Roland Flagg and clammer Oliver "Smiles" Green. While working on the project, Tracey stayed rooted in the Grand Manan community, living in the keeper's cottage at Swallowtail Lighthouse, but she made regular forays to Kent Island, where she was always found in the thick of the action, baking in the kitchen, knitting in the Dingleberry, and providing extra hands to the ecology students.

## Other Scientists and Visitors

In addition to the students who form the core of the Kent Island experience, we had wonderful visits from an array of other scientists. A big group from Guelph University studied Savannah Sparrow population biology and physiology over much of the summer, with PIs Ryan Norris and Amy Newman,

plus graduate student Brad Woodworth and undergraduate Maddie Edmonds. And we had an animal behavior group from the University of Windsor, studying Savannah Sparrow song and color-based sexual selection with PIs Dan Mennill and Stephanie Doucet, plus graduate students and assistants Ines Moran, Kristina Hick, Rachel Hasson, and Sarah Mackay. Also in the world of Savannah Sparrow song, we had a short visit by Heather Williams (Bowdoin '77) and two of her Williams College students. There was also a Bob Mauck sighting, as he continues to spearhead his long-term work on the demography of Leach's Storm-petrels.

Rob Ronconi and Sarah Wong brought a marine ornithology course from Dalhousie University, which for two days swelled the human population of the island to an incredible 45. This is surely a record for the number of overnight visitors! Rob and a couple of collaborators also made a short visit or two to continue their work using telemetry to track the movements of Black Guillemots and Great Black-backed Gulls. Lastly, Marilee Lovit and Gart Bishop from the New Brunswick Museum returned for a 1-week visit to continue inventorying the herbaceous flora of the island, this time focusing on grasses, sedges and rushes.

Additional visitors included the Bowdoin Marine Science Semester group, Alison Deming's creative writing class (see description of Savannah Horton's project, above); Emma Bothwell (partnered with Guelph biologist Brad Woodworth); Jason Harding (The Pennington School); locals Barry and Cheryl Russell of White Head; KI/GM alums Kate McNally (Bates '17) and Liam Taylor (Bowdoin '17); Peter Cunningham; Nat and Genie Wheelwright and family; Bob, Susie, and Katie Mauck (Kenyon College); Mark Haussmann and family (Bucknell University); and Beth Capaldi (Bucknell University).

## Kids

This was a good year for kids on the island, harkening back to the era of Murrays, Maucks, and Wheelwrights. For the month of June, we had the Norris/Newman progeny Evie (3 yrs old) plus the Mennill/Doucet creations Max (2 yrs old) and Amelie (4 yrs old). From the Gager/Dearborn clan we had Emma (5 yrs old) for June and July, plus a short visit by friends Will (15) and Lucy (12). The students were extremely patient with the kids' unending desire to be involved in their games, conversations, and – especially – cooking and baking. But the kids also had the usual array of island fun on their own, with lots of beachcombing, nest searching, spider wrangling... and of course the mud. Lots and lots of mud.

Heather Williams, to Emma Catharine Gager Dearborn: *"How was your trip to Machias?"*

Emma (5): *"Great! I saw puffins and I threw up!"*

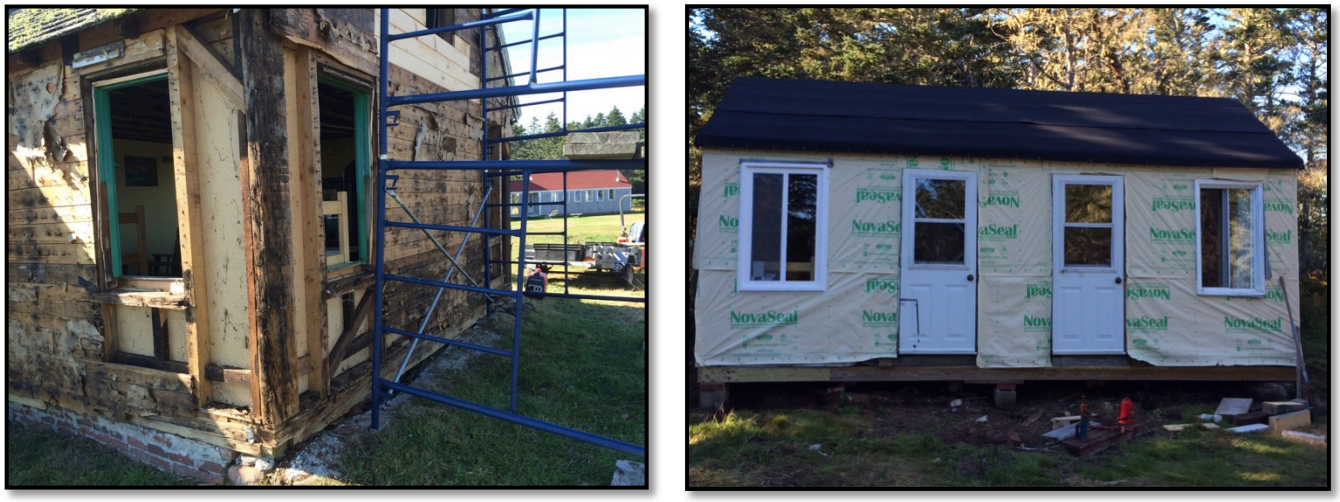
If that doesn't sum up the summer, I don't know what does.

## Insular Polytechnology

The success of the Kent Island program hinges on a fine balance between having facilities that are simple enough to stay true to the island's ethos but robust enough to let us do our work and have a modicum of comfort. Striking the right balance for the umpteenth year was Marko Murray.

Major upgrades this year included a new water purification system, in response to safety concerns from the Bowdoin facilities advisors. The new system includes pumping the water through a fine-mesh filter and a UV lamp, both of which substantially increased the demand for electricity. We were lucky to have an extremely sunny June this year! On a related note, the main inverter that converts DC solar power to AC outlets needed some repair work, and Seth Murray was the man for the job. Seth replaced two relays that had been arcing, and all is well for the time being. In concert, he wired up the new generator, which should increase the reliability of our foggy-weather electrical production. The solar system and inverter are still a bit outdated and underpowered for the growing electrical demand, but see below for great news about a generous gift from Patty and Andy Towle.

The other big infrastructure undertaking this year was the start of a major renovation to Hodgson House and the Warden's House. Because of the scale of the project, Marko waited until the end of the summer, when students would no longer need him, and he enlisted help from Russell Ingalls and Mark Wilcox for the demolition phase of the project. All was complicated by the presence of lead paint, but persistence from Marko and help from Bowdoin's Hazardous Materials Abatement budget (and Don Borkowski and Lisa Coombs) eventually won the day. Work will continue next summer and beyond, and thanks to the generosity of Patty and Andy Towle the new editions of these buildings will be snug, dry, and rot-free for years to come.




*Warden's House (L) and Hodgson House (R), in early stages of renovation.*

Minor but still important projects this summer included replacing the anemometer atop the Warden's House, gathering the brain trust to make another try at fixing the automated weather station which we hope will eventually live-stream KI weather data online, and christening a new composting toilet down by the Lower Lab. As a partner to this last activity, we deconstructed the two rotten outhouses in the

woods near the wharf, moved them over to the Basin beside the Gillette, and burned them at low tide in a midsummer bonfire. Don't eat the marshmallows from that fire.

We came close to ending the season on a note of infrastructure satisfaction, and then *Ernest Joy*'s motor blew a cylinder. Sigh. Please send spare change or spare oars to Mark Murray.... :-)

## An Amazing Gift from Patty and Andy Towle

We are delighted to say that Patty O'Brien Towle ('76) and her husband Andy Towle are making an incredible gift to Kent Island, to renovate the Warden's House, upgrade the solar photovoltaic power system, and support ongoing maintenance work. The Warden's House was built in the 1930s by Lester Tate and has served as temporary home for an historic progression of caretakers and directors of Kent Island (culminating, less famously, with yours truly). Despite regular attention and periodic repairs, the building is showing its age. With support from the Towles, we will be able to stabilize the foundation, gut and rebuild the interior, replace the roof, upgrade the doors and windows, and refurnish the rooms, all while preserving the historic character of the building. The second large change enabled the Towles' gift is the creation of an integrated, large-capacity solar power system. Solar panels first came to Kent Island in 1987, during Nat Wheelwright's years as director. As demands for electricity and water have increased, the power system has been expanded in a necessarily piecemeal manner. Moving forward, we are now positioned to install an integrated system with higher voltage and a 3 kW capacity to power the great science and learning that is a hallmark of the KI program. Lastly, the Towles recognize that the natural elements of Kent Island that we love so much – fog, driving rain, salt spray, temperature fluctuations, and the occasional blasts of solar radiation – are brutally hard

on the facilities. Thus, the third part of the Towles' gift provides the means for this perpetual maintenance, creating an endowed maintenance fund from which we can draw for years to come. Their devotion and loyalty to Kent Island will ensure that future students have access to the same unique and life-changing opportunities.

## Other Doings

Four other events of the 2016 summer are worth mention here. First, we fortified our Grand Manan connections by giving an evening presentation at the Grand Manan Museum. Don gave an overview of Kent Island's ecology and its research program, and two students (Erin Voss and Sam Walkes) gave dynamite presentations of their summer projects. We played to a packed house, thanks to a double billing with Peter Cunningham, who gave an illustrated history of his dad's long love affair with the study of fog on Kent Island.

Second, we moved a whale. Indeed, a whale. In the fall of 2013, a juvenile humpback whale, dubbed *Harmonic* by researchers with the Gulf of Maine Humpback Whale Catalog, died of unknown causes, was spotted by Chris Ingalls, and eventually washed ashore on Sheep Island. After 3 years of decomposition, most of the skeleton was clean enough for transport, and with a group effort we succeeded in moving it to the Grand Manan Whale and Seabird Research Station in North Head. Key players were Mark Murray, Russell Ingalls, Mark Wilcox, Laurie Murison, and the entire student population of Kent Island. The skull alone weighed roughly 400 pounds. An added bonus was watching Russell bring *Island Bound* sideways right up to the beach, where we could use the hoist to get the heaviest pieces aboard. Peter Cunningham took some great photos of the process, and we were lucky to be interviewed afterwards on CBC radio. True to Kent Island fashion, I lost cell service part way through the live on-air interview, which is what I deserve for straying into the realm of modern connectivity in a mindfully isolated place!

The third item of note is a documented case of avian cholera in a Common Eider carcass on Sheep Island. Rob Ronconi and Sarah Wong found the carcass and facilitated the diagnosis. Avian cholera is a scary disease – the risk of transmission to humans is extremely low, but it can cause massive mortality in birds, particularly in colonial waterfowl. A subsequent survey on Sheep Island turned up only a couple of eider and gull carcasses; the cause of death in those cases was unclear, but I followed protocols from the USGS National Wildlife Health Center and incinerated the carcasses on-site to reduce the risk of spread. We were happy to see no further signs of an outbreak.

And fourth, in the 'news of islanders' column, Nat Wheelwright reports that the 2016 North American Ornithological Conference saw a reunion of no less than 18 Kent Islanders, pictured below.

Seated from left: **Sami Nichols** ’09, Prof. **Nat Wheelwright**, **Liam Taylor** ’17, **Bryant Dossman** ’11, **David Zonana** ’09, **Mike Butler** ’02, **Clara Cooper-Mullin** (Kenyon College ’09), **Kristina Hick** (University of Windsor, Masters student), **Graham Sorenson** (Kenyon College ’12), **Sheela Turbek** ’13, **Brad Woodworth** (University of Guelph, PhD student), **Lisa Harn** (Kenyon College ’09). Standing from center: **Kevin Oh** ’01, **Nathan Elliott** ’09, **Andrea Kudrez Townsend** ’98, **Iris Levin** ’05, **Ines Moran** (University of Windsor, Masters student). Photo by **Todd Fosgren** ’03.

At that same NAOC conference, Nat was elected to the Council of the American Ornithological Society, Don won the Storrs Olson Award for the year's best book review published in *The Wilson Journal of Ornithology*, and Jed Burtt '70 posthumously won the Margaret Morse Nice Prize, the highest honor given by the Wilson Ornithological Society.

## Passages: Jed Burtt (22 April 1948 – 27 April 2016)

Jed Butt ('70) passed away on 26 April 2016 at the age of 68. Jed came to Kent Island as a student of Chuck's, where he studied storm-petrels for his honors thesis. As with many of us, Jed's experiences on Kent shaped the arc of his career and his life. After Bowdoin, he completed a MS and PhD in Zoology under Jack Hailman at the University of Wisconsin. Following a 1-year visiting position at the University of Tennessee, in 1977 he joined the faculty at Ohio Wesleyan, where he truly excelled at all three competing parts of a faculty job – teaching, research, and service. At a student-centered school, Jed was known as an outstanding teacher and mentor. In 2011, he was recognized as the Ohio Professor of the Year by the Carnegie Foundation for the Advancement of Teaching. In response to receiving that award, he said "*Awakening a passion in a young person and helping each student fulfill a newly formulated dream is the essence of teaching. There is no higher calling, no greater purpose in life*." His dedication to teaching and mentoring is further evidenced by the Wilson Ornithological Society's creation of the *Jed Burtt Mentoring Grants* program, to support faculty who are similarly dedicated.

But somehow at the same time, Jed was a productive and internationally recognized scientist. His work centered on the biology of avian coloration, fueled by more than $3 million in research grants. In the late 1990s, he ushered in a new field at the intersection of feather structure, coloration, and bacteria, sparking enormous interest in the unappreciated role that bacteria might have in degrading birds' feathers and impacting things as diverse as sexual signaling, flight performance, and the timing of annual cycles of migration, breeding, and molt. Despite having such an action-packed research program, Jed was extraordinarily generous with his time. When I was a postdoc in Patty Parker's lab at Ohio State University, I was studying sexual selection in frigatebirds. As a tangential part of my work, I wanted to know a bit more about the structure and morphology of frigatebirds' infamous inflatable red gular pouch, and Jed (who didn't know me from anybody) was extraordinarily kind in applying his electron microscopy skills to the problem. His generosity was more widely evident in his service to his profession, including a term as president of the American Ornithologists Union, the premiere North American organization of scientists who study the biology of birds.

Although Jed's research led him away from storm-petrels, he never lost sight of Kent Island and the impact it had on him – and on his sister, Martha, who served at the KI cook one summer in the late 1960s! After Jed passed away, Martha came to scatter his ashes on Kent Island, near the storm-petrels and ocean and fields that had meant so much to him.

## Passages: Chuck Huntington (8 December 1919 - 2 January 2017)

Writing a tribute to Chuck is a tall order. Perhaps the simplest approach is just to throw out a string of phrases that will trigger your own memories. The caribou sweater (okay, sweaters, plural, and iteratively). Trivial Pursuit. Choogle. The fuel depot. Well-loved baked beans from the Marjory Standish cookbook. Less well-loved peanut butter soup. Yellow. The X-axis. Chucking the pan of lasagna or brownies. Wearing a hard hat for grubbing. DymoTape labels. The white radio. The burrow cards. His encyclopedic knowledge of the breeding histories of so many individual storm-petrels.

A love of birds and of travel both came to Chuck early in life. Because his father, Ellsworth, was a Yale geographer who studied climate and human culture, the family spent time in far-flung places. As an adult, Chuck and Weez would take advantage of sabbaticals for research visits to New Zealand and England, and of course to travel recreationally to see birds.

Chuck received his BS and PhD from Yale, with an intervening stint in the Navy. He came to Bowdoin in 1953, replacing the just-retired Alfred Gross, and it was during Chuck's second year at Bowdoin that he met Wellesley College senior Louise Slater at a conference. He proposed during a date on Kent Island, and they married in 1956. (A personal crossing of paths: during the first year of their marriage, Weez taught at the Northfield School for Girls, where Dre's mom was then a junior in high school – at home we have a yearbook with Weez's picture!)

Chuck served as director of the Bowdoin Scientific Station on Kent Island for 34 years. Yes, 34 years. And long, long after he retired and passed that torch to Nat, he continued to come to Kent Island for research. In 2008, when Dre was serving as cook for the summer, she also had the fun of being Chuck's grubbing assistant on Petrel Path. He was 88 years old, hunched over, and moving slowly with a walking stick, but in a Yoda-like way he was still getting it done. At one point he tripped over a branch and toppled into the undergrowth, disappearing beneath a closed canopy of ferns and raspberries. Dre, who had been feeling very responsible for the well-being of an octogenarian on a remote island, immediately thought "Oh no, I just broke Chuck!" But after a pause, a faint voice floated up out of the greenery, unexpectedly reporting "Something down here smells *wonderful*!"

Chuck's study of storm-petrel demography was a Zen pursuit, motivated not by the reward of publication but by his own persistent curiosity. I'll remind you that these are birds that can live nearly

40 years, and Chuck was trying to chronicle their life stories. Fittingly, Chuck was in it for the long haul. Remember, this is the man who gradually read the entirety of *Moby Dick* in the outhouse.

Outside of Bowdoin, Chuck made important contributions by helping found the Natural Resources Council of Maine and by serving as president of the Association of Field Ornithologists, president of the Northeastern Bird-Banding Association, and vice-president of the Maine Audubon Society.

But his biggest passion was the detailed individual history of Kent Island's storm-petrels. Not surprisingly, his family has suggested that well-wishers make memorial contributions to ***The Kent Island Fund*** at Bowdoin College. And if you have a bandana or shirt that still smells like a storm-petrel, think of Chuck when you sniff it, and please don't wash it.

A historical composite of the Kent Island brain trust: Chuck Huntington (Director, 1953-1988), Nat Wheelwright (Director, 1987-2003), Bob Mauck (Director, 2004-2008), Damon Gannon (Director, 2008-2015), and Mark Murray (Chief of Insular Polytechnology, 1990-1995, 2000-2001, 2004-present).

***The Kent Island Fund***
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## 2016 Publications

(* = at least one undergraduate author)

* Dearborn DC, Gager AB, McArthur AG, Gilmour ME, Mandzhukova E, and Mauck RA. 2016. Gene duplication and divergence produce diverse MHC genotypes without disassortative mating. *Molecular Ecology* 25:4355-4367.

Pakkala JJ, Norris DR, Sedinger JS & Newman AEM. 2016. Experimental effects of early-life corticosterone on the HPA axis and pre-migratory behavior in a wild songbird. *Functional Ecology* 30:1149-1160.

Wheelwright NT. 2016. Eradication of an ecosystem engineer. *Frontiers in Ecology and the Environment* 14:53-54.

* Wheelwright NT, Begin E, Ellwanger C, Taylor SH, and Stone JL. 2016. Minimal loss of genetic diversity and no inbreeding depression in blueflag iris (*Iris versicolor*) on islands in the Bay of Fundy. *Botany* 94:643-554.

* Woodworth, BK, Newman AEM, Turbek SP, Dossman BC, Hobson KA, Wassenaar LI, Mitchell GW, Wheelwright NT, and Norris DR. 2016. Differential migration and the link between winter latitude, timing of migration, and breeding in a songbird. *Oecologia* 181:413-422.

Woodworth BK, Wheelwright NT, Newman AE, Schaub M, and Norris DR. 2017. Winter temperatures limit population growth rate of a migratory songbird. *Nature Communications* (in press).

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