

Kent Island Annual Report - 2005

By Land

For those of you who knew Kent Island's forest twenty or more years ago, a visit to the island now may surprise and alarm you. Old trees continue to fall every winter. That never changes. However, today there are no young trees to replace them. The forest is dying. Petrel Path looks nothing like it did when I first saw it in 1990. The big, old spruce have fallen, their roots ripped from the ground, replaced only by ferns and raspberries. Why? Snowshoe hares. Introduced to Hay Island in 1959, the hares long ago made the jump to Kent Island, presumably at low tide, and they thrive on new growth. In recent summers, student research has quantified the damage they have done to our island (e.g., Peterson et al. in the list of publications at the end of this report). The situation is dire.

This year we take back the island from the hares. Nat Wheelwright, Director Emeritus Bowdoin Scientific Station at Kent Island (DEBBSKI II), spent his sabbatical last year in New Zealand where they have a long and successful history of removing invasive species. Nat is now convinced we can eradicate the hare population on Kent Island through intensive trapping and hunting. To that end, Nat has obtained funding from the Davis Conservation Foundation to get the job done this winter. He has enlisted Russell Ingalls to oversee much of the onsite work and has begun the systematic eradication of this pest. The real push comes this winter when a series of hunters with dogs will visit Kent Island. One New Brunswick hunter reported "sign everywhere" when he arrived in November, then removed 34 hares in three days. The inclusion of dogs in the effort gives us real hope of solving the problem. As of this writing, there are almost 200 fewer hares than there were a

year ago. With the continued support of such "research" teams, this summer we hope to begin a study of our island's recovery from the devastation caused by this invasive species. If all else fails, we plan to call in Dick Cheney.

By Sea

Every year, one highlight of the summer is the two days students spend hauling traps with Russell Ingalls. By late June, lobster season is at a close. Traps must be hauled out one last time, stacked on deck, and taken ashore for the summer. I am not always sure how well the cost-benefit ratio sorts out, but Russell always invites the students to help. They pack two days worth of clothes and supplies, wake up early and stagger out to Plank Beach before dawn. They return the next evening tired, yet exhilarated, smelling of bait, with lobster and crab for everyone. This year, all eight students joined the effort. Joan Ingalls provided plenty of home-cooked food and laundry services at the end of the day. "I'm used to it," she said. "We have three teenagers here." Such experiences on the water illustrate the many intangible benefits we get from Russell's reliable caretaking of Kent Island. An economist would call it value-added.

The tide and the fog and the weather also prevented us from setting foot on Machias Seal Island this year. Undaunted, Russell suggested we see the island in a new way. When the weather broke, we steamed west in *Island Bound*, anchored in the lee of Machias, then made a delightful circumnavigation in the skiffs (the *Susannah Kent* and Russell's SeaHoss, both hand-built by Mark Murray). Under blue skies and on calm water, we drifted silently offshore as the puffins, razorbills and murrelets flew low overhead. A definite improvement over the cramped and dark blinds ashore, I have to say.

In October, when Mark and Seth Murray spent a few days closing the station for the winter, three generations of Ingalls (Junior, Russell, Theron, Christopher, along with cousin Scott and friend Caleb) arrived in pursuit of hares and ducks. No one went hungry and the table fairly groaned under the provisions sent along by Joan. It is nice to be treated like family.

Research in 2005

• Leach's Storm Petrels

How many of us will spend our 85th summer banding petrels? You won't be surprised to hear that Chuck Huntington did just that. With the enthusiastic and able assistance of Flavia Chen ('08), Chuck (DEBSSKI I) continued his long-term demographic study of Leach's storm petrels, concentrating his efforts in Petrel Path where he started all of this in 1955. With the hare-induced changes in the forest, many of the burrows Chuck once checked are inaccessible or gone altogether. Still, between them, Chuck and Flavia found 125 nesting pairs and eventually banded 86 new chicks. After a summer of grubbing, Flavia wondered how the weather might affect petrel nest attendance. Comparing her daily grubbing logs to the summer's weather records, she found support for the hypothesis that petrels arrive under cover of darkness to avoid predators, an idea first proposed by Bill Gross ('37) in 1935. Specifically, she was far more likely to find a new bird in a burrow after an overcast night of low visibility than after a clear night. She also found that winds blowing up and down the Bay of Fundy increased that probability far more than did land breezes off Nova Scotia or New Brunswick.

In fact, it was an active year all around in Petrel World. Mark Haussman (currently a visiting professor at Swarthmore College) and I were awarded a three-year grant by the National Science Foundation to investigate the nature of telomere dynamics and individual quality in Leach's storm-petrels. The grant will provide funds to support student research at Kent Island and Kenyon College over the next three years and

will bring Mark to Kenyon as a post-doctoral research/teaching fellow. It also means he will be an integral part of Kent Island for the foreseeable future, which is good for everyone concerned. This year, Mark joined us for two weeks in July and we began the first phase of the work in which we sampled blood from newly hatched chicks with the help of Annie Valuska (Kenyon '06) and Ben Chan ('05).

Annie and I started the year scouring the Shire (the aptly named peninsular study site across the basin from the wharf) in search of new burrows and breeding birds. One of Annie's many redeeming qualities is the fact that her hand is narrow enough to explore a previously unreachable crevice between roots in the heart of the Shire. Thanks to Annie, we can now say we have 100% coverage of this idyllic study site under the birch and mountain ash, bounded on three sides by water or wetland. As is now standard operating procedure, she located all new burrows to within a meter using differential GPS. Annie also wrote definitive storm-petrel grubbing protocol, thereby insuring her immortality among future grubbers.

Ben Chan arrived the first week of June and served as a petrel utility infielder for all aspects of Petrel World. Besides updating and reorganizing our GIS map of Kent Island, Ben collected blood samples from some of the same adult petrels Jenny Glazer (Kenyon '03) had studied two years earlier. Jenny's results suggested that incubating parents pay a cost in terms of compromised immune function. Ben's work will allow us to both increase sample size for that study and investigate the repeatability of our measure of immune function. His light touch with both adult and hatchling petrels bodes well for his next endeavor -- dental school at Tufts.

Flavia, Annie and Ben helped various visitors to Petrel World. Dr. Gabrielle Nevitt (UC Davis) also visited the island in July with her graduate student Marcel Losekoot to continue her investigation of procellariiform navigation, as well as her collaboration with Emanuelle Milot (Laval University) on within colony genetic

differentiation. Alan Cohen (Ph.D. student with Kent Island alumnus Bob Ricklefs at the University of Missouri-St. Louis) has developed techniques to measure anti-oxidant levels in the blood of free-ranging birds. He came to Kent Island in mid-June to measure anti-oxidant levels in the blood from known-history birds. Since Kent Island is unusual in having three known-age populations (petrels, sparrows, and swallows), it was a logical choice to look for age-related trends. Although he is still investigating trends in his data, Alan reports that the storm petrels have among the lowest anti-oxidant levels of any species he has sampled to date. Petrels caught at night (presumed pre-breeders, according to Chuck) apparently have much higher anti-oxidant levels than do breeding birds caught in their burrows.

• Savannah Sparrows

For the first time since 1987, Kent Island's Savannah sparrows were not the subject of intense scrutiny. Nat Wheelwright did return, however, for two weeks in June to work with Alan Cohen. Nat, Alan and I spent much of the two weeks mist-netting known-age sparrows and taking blood samples from 43 individuals. Nat hasn't lost his touch. He looked right at home as he wandered the South Field looking for old friends like YN.B and never failed to find at least one nest before breakfast. Though he couldn't get every nest in just two weeks, he did identify or band every breeding adult in his study areas.

Heather Williams ('76) of the Williams College Biology Department spent a week on Kent Island in mid-April to record songs of male sparrows as they settle on breeding territories. Heather and her daughter, Maria, had good weather and recorded songs from 17 sparrows, all evidently just arrived. Interestingly, the North Field, that island of moderation, had no sparrow residents until the end of the week. She and Maria returned for a week in June to complete the recording of the breeding males in the North and South Fields. Heather's initial analyses suggest that at least some first-year birds have not completed song development by the time they

arrive. She also hypothesizes that once on the island, songs crystallize rather quickly, perhaps mediated by group singing assemblages. If true, this would be a new paradigm for song development in migratory birds.

• American Redstarts

Barrett Lawson ('06) began what we hope will be an ongoing study of the breeding biology of American Redstarts (*Setophaga ruticilla*). The work was done in collaboration with Ryan Norris (U. of British Columbia, soon to be at Guelph), whose work with stable isotopes in redstart feathers has shed light on the migratory patterns of these neotropical migrants. Ryan came to Kent Island the first week of June to help Barrett get started with the project. Barrett, who is currently living in Costa Rica and writing a book on birding in that country, spent the summer on the early morning shift. He was up every day well before dawn, tracking singing males and finding nests. By mid-afternoon, the birds' activity had waned and Barrett had already done a full day's work.

He caught and color banded 27 adult redstarts (14 females and 13 males), including two females and a male on Hay Island. He found thirteen nests on Kent Island and one on Hay. Of those, 9 nests successfully fledged 27 young. If you are on Kent Island looking for redstart nests, apparently you should look about 2.6 m off the ground (range 0.45 to 5.1m), generally in mountain ash or white birch. The highest nest densities were in Crockett's Point and in the mountain ash grove between the North Field and Petrel Path.

The first redstart egg appeared on June 18, all the eggs hatched by July 5 and the last fledgling left the nest on July 14. Interestingly, the average incubation period on Kent Island (14.4 d) is significantly higher than the 11-12 days reported in the literature, though fledging time (9.5 d), number of eggs (3.8), and fledglings per nest (3.0) were not. Barrett hypothesizes that the long incubation period may have to do with the cold and wet weather normal to Kent Island in early June. The weather may also be responsible for his finding that late hatching nests tended to fledge

more young than early nests, perhaps a function of the five-day stretch of heavy rain and cold temperatures we experienced in mid-June.

• Tree Swallows

It continues to be a tough road for Kent Island's swallow population. Kat Anderson ('09) reports that only 15 nest boxes were occupied this year, attended by 14 different females, of which only 8 produced fledglings -- the fewest nests recorded in the last 20 years. Fledglings per nest (4.13) and nestling mass (20.5g) were in the bottom quartile of our historical records. As you may know, the

population once numbered over a hundred nests but has steadily declined since 1987 (Fig. 1). The big hit came in 1994 when all 37 nests failed

due to an unfortunate coincidental run of thick fog and a trough in the bimodal midge cycle. All the parents abandoned their chicks, and the skies were eerily clear of swallows for the remainder of July. The population has never recovered. Recently, there had been signs of recovery, but this year's data are not encouraging. Similar declines in the Northeast have been attributed to competition for nest sites from house sparrows and starlings, or reduction of their insect prey due to pesticide use. Since neither of these hypotheses explain the trend on Kent Island, we will have to look elsewhere for an explanation.

• Black Guillemots

The black guillemot population on Kent Island has not received much attention in recent years, but that changed last summer. Kat Anderson spent part of her time finding guillemot nests, mapping their locations with a GPS device, and marking them for future researchers. To find them, Kat

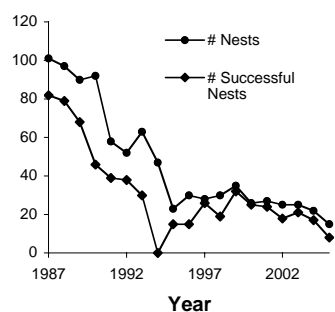
walked the beach. If a chunky black and white bird flew out from under the flotsam and jetsam, she was pretty sure a nest could be found. Otherwise, she searched cliff faces for likely looking holes. In this way, Kat found 15 guillemot nests, primarily along the eastern side of Kent Island. Six nests were in burrows dug into dirt cliffs, four were found nestled between large rocks, and the debris along the beach yielded five nests. Thirteen nests produced 22 eggs (1.7 per nest). By the end of July, 13 chicks had hatched. The oldest was 22 days old when we left the island. For Kat, handling guillemots was a real switch from tree swallows. To give you an idea of scale, the average two-day old chick weighed almost 43 g, which is twice the size of an adult swallow. An adult guillemot approaches 400 g and resembles a brick with feathers. I hope Kat's efforts laid the foundation for future, expanded work with the guillemot population on Kent Island.

• Snowshoe Hares

Ian Kyle ('06) spent the summer working on the hare problem. He both studied the effect of hares on the ecosystem and sought ways to restore the forest to its former glory. On many a night, he also sampled the Kent Island hare population...without replacement.

Much of Ian's work had no immediate gratification. To prepare for the hare-free future, he studied how best to encourage reforestation. To that end, he located 20 sites in the ferns that dominate what was once thick forest just west of the trail between the dorm and the North Field. At each site, he used 3' fencing material to isolate a small patch of "forest" floor. He randomly treated the patches with fire or with Roundup, in both cases leaving half the enclosure as a control. This summer Ian will return for a few days to learn how best to encourage seedling recruitment – fire, chemicals, or nature. Ian also started a tree nursery in the "apple orchard". With the help of Susie Mauck, Ian planted spruce, birch and fir seedlings inside a hare-proof enclosure with the idea that

Figure 1



once the hares are gone, these trees could be transplanted as needed across the island.

Five years ago, Akane Uesigi ('00), now a doctoral candidate at U. of Michigan, had determined hare feeding preferences of captive hares. Ian decided to investigate browsing preferences of free-ranging hares. To that end he placed a smorgasbord of white spruce, mountain ash, balsam fir, white birch, and yellow birch in areas of high hare traffic. Yellow birch, white spruce and mountain ash were obvious favorites, whereas white birch and balsam fir were rarely browsed. Interestingly, the proportion of the favorite browse (yellow birch and white spruce) changed with habitat type, in that the hares seemed to favor birch in areas of mixed forest and favor spruce in the spruce forest. Further testing, in which he limited the choices to two species (birch and spruce) and two habitat types (mixed forest and spruce) bolstered that conclusion. If true, it begs the question of whether individuals stay in one habitat type and specialize on the predominant food type, or whether they move around and shift their feeding preference to the local food type. The answer might even help with our hare sampling protocols.

• Intertidal

Amy Lee ('07) took a two-pronged approach to the inter-tidal in 2005: *Asophyllum* and *Balanus*, a.k.a. rockweed and barnacles. Her main project stemmed from work she did in Lindsey Whitlow's Ecology Class at Bowdoin the previous fall. She investigated the relationship between *Ascophyllum nodosum* and its epiphyte *Polysiphonia lanosa*. Specifically Amy investigated whether the epiphyte has a negative effect on rockweed growth and reproduction. In June, she chose 30 plants on exposed shoreline (East Beach) and 30 on sheltered shoreline (West Beach). On each plant, she identified two branches similar to each other in terms of age, size, and number of *P. lanosa* clumps. She measured growth per year, number of receptacles, as well as number and size of *P. lanosa* clumps on each branch, then randomly assigned one branch as

treatment and one as control. Treatment branches had all *P. lanosa* removed. By the end of July, treatment branches had grown faster than controls, though the difference was not statistically significant. Making good use of Bob Cunningham's long-term weather data, Amy followed this manipulation with an observational study of annual growth of *A. nodosum* as a function of weather. As you might expect for a photosynthetic organism, growth and reproductive output was negatively correlated with fog days and positively correlated with solar radiation.

The work with barnacles addressed the hypothesis that barnacles should orient themselves optimally with respect to the current. Since tidal currents are bi-directional, no single orientation should be preferred over all others. For years, however, Bob Cunningham has told me of the one-way tidal flow through the Thoroughfare, the narrow channel between Grand Manan and Ross Island. Hard to believe, of course, but Howard Ingalls and others confirm it. So, one fine afternoon in July, with the help of Ian, Amy placed a buoy in the Thoroughfare at low tide and watched what happened (the Grand Manan version of watching corn grow). Yes, in fact, for all but the last 45 minutes of the rising tide the water flows the "wrong" way. The plot thickens. To test the prediction that optimally behaving barnacles should face into the current, Amy (with the help of Ian and Kat) took digital photos of 38 rocks at low tide when they were exposed to the air. Tidal flow direction was determined by the orientation of the nearest rockweed stretched across the sand. She then analyzed the digital photos and found that, overwhelmingly, barnacles in the Thoroughfare oriented within 90 degrees of the predominant tidal flow. Evidently, barnacles know what they are doing. So does Amy.

• Meteorological

Although Bob Cunningham made but one trip to Kent Island this summer, Fog Heaven continued to gather numbers and Bob has crunched them. He reports "a pretty average summer" in which we had 13 days in June and 16 in July with at least

some fog. As you know, a good summer for Bob means grey and damp. When Bob evaluates a summer's data, he compares them to "the rather universally used climatologic period of 1961-1990". Of course, Bob's records of Kent Island weather go back a few more years than that...try 1937.

Rain, too, was rather ordinary (5.0 inches for June and July), though slightly below the climatological average of 6.64 inches. July temperatures, on average, were slightly higher than the 30-year average, which surprises me since mid-July seemed a never-ending procession of fog and cold. What the average doesn't tell you is that the cool, wet weather was offset by an unusually high number of days (7) in July in which the temperature soared above 70° F, five of which occurred in the last week and a half of the field season. It is always nice to leave Kent Island under clear, blue skies and we did. One note of interest that didn't make our weather log...when Mark Murray shut down Fog Heaven in October, the anemometer in the Warden's House registered a maximum of 76 mph. Must have been quite the September storm.

For those of you who tend to tell Kent Island stories of idyllic days filled with warm breezes and blue skies, or even of endless fog and rain, you can now bring a dose of reality to your memories. With the help of son Peter, Bob has posted Kent Island weather summaries for each year from 1937 to the present on Peter's web page (<http://www.wordwiseweb.com/fogseeker/data/>). It is right there in black and white. Yes, 1991 was idyllic (only 13 days of fog in all of June and July) and no, 1967 was not (40 days of fog). I also urge you to look to the bottom of the web page and follow the link to "Photos". There lies a photographic history of Kent Island, Ingalls Head, and the Tate family that is a real treasure. I urge you even more strongly to view Peter's Still TV production "All Them Boats" (<http://stilltv.com/grandmanan/>), a beautiful and moving dedication in music and photographs to a way of life that is rare, precious, and beautiful.

• Arctic Terns

Brian Dalzell's Common Tern Restoration Project completed its fourth year on Sheep Island with William Irwin of Cornwall, Ontario serving as tern keeper. William kept a 100m gull-free exclusion zone around the nesting terns. Fifty-eight breeding pairs nested on the island, producing 100 eggs. The first chicks hatched on 2 July, however for the second year in a row, none fledged. The cold, wet weather in early July apparently killed about 20 hatchlings and a Northern Harrier took at least 3 chicks. Similar failures occurred with the Machias Seal population for the second year in a row, suggesting that it may not be Sheep Island that is the problem, but rather some larger issue, perhaps related to a scarcity of the tern's preferred food (small herring). Brian has moved to Moncton and has no plans to return to Sheep, however, Laurie Murison of the Grand Manan Whale and Seabird Research Station is interested in working with us to keep the project going. At this point, we will not station anyone on the island full time, but will make regular visits to the island to census the population. We will see how Mother Nature does on her own.

• Other Bird Species

It was a banner year for migratory birds on Kent Island. Heather Williams reports seeing 41 species during her visit in April, including two significant waves of migrants on the southwest wind. Highlights included hundreds of palm warblers, a dozen harlequin ducks off the south end, and an American woodcock performing its flight display near the well.

Nat and Genie spent a few days in late May on the island sampling hares. On the afternoon of May 28th, Nat reports "a surge in migratory warblers, sparrows, and thrushes such as I've never seen. For about an hour, they streamed by us at the edge of the white spruce forest and low across the adjacent fields. The most common species were Swainson's thrushes and magnolia warblers, but we saw about 17 species, almost all of them common. I would have estimated that the

average spruce had at least five individual birds in it - and I'm talking about every tree, hundreds or thousands of them lining the field. Another surprising observation was that most warblers were sallying for insects (midges?) from the tops of spruces. This wouldn't seem unusual for yellow-rumps or redstarts, but every species was doing it: parulas, yellowthroats, black-and-whites, blackpolls, etc. The height of the fallout was about an hour or two, although there were thousands of birds the following day as well." All of this was part of a larger pattern, according to Brian Dalzell. In late May, Grand Manan resident Jim Wilson reported tens of thousands of warblers and some sparrows. Some highlights were many hundreds of parulas, magnolias, yellow-rumped and black-and-white warblers. According to Brian, these are the highest numbers ever reported on Grand Manan.

Barrett Lawson, this summer's most avid birder, mentions four species of particular note. A pair of American pipits hung around "downtown" for a few days, often perched on the clothesline, and a blue-winged warbler passed through in June. In July, an apparently sick red-necked phalarope found itself stranded in the basin at low tide. Finally, in his quest for redstarts, Barrett discovered the exquisite nest of a ruby-throated hummingbird, which I believe is a first for Kent Island.

• **Buildings and Grounds**

The wharf is somewhat like the Brooklyn Bridge. When you finally finish repairing its entire length, it is time to start all over again. This year, Mark Murray observed that he first started rehabbing the wharf in 1990. Eighteen years later, he is now starting to replace what he did that year. As for me, the organic look and feel of the wharf is an integral part of the gestalt of Kent Island. Mark is committed to keeping it that way and ensuring it will be here in another twenty years. To that end, 32 new posts were put in place, the framing built to them, and about 60' feet of planking replaced.

Years ago, Fraser Shephard built a semi-permanent "wharf" across the basin for use in the

winter. We have always been a bit uncertain as to its utility and its beauty. Since it didn't fare so well in last year's major wharf renovation, Mark decided '05 was the year to resolve the uncertainty. He reports that its final demise "leaves an attractive absence in the landscape and provides material for future wharf repairs".

Among other projects and his never-ending battle with entropy, Mark succeeded in giving the lower lab a skylight that does not leak. Those of you with memories of rainy nights in the Lower Lab may wish you could come back and try it again without the drip, drip, drip effect. The Rat Shack is ready for a new roof. Mark has decided that the historical leaks can only be resolved by a real roof with gabled ends. The wood is cut and laid aside, ready for the spring. I am hoping it means I can stand up inside the place.

• **Artist-in-Residence**

Ivy Blackmore ('07) came to the island with an open mind (and a runny nose), knowing only that she wanted to explore ideas and media she hadn't experienced before. Soon, she was intrigued by the notion of using materials provided by the island itself. According to Ivy, "I felt by using the seaweed, the grass, and the wood I could really get at the essence of the island. For the most part, life on Kent Island is very harmonious with its surroundings. From Marko's different construction projects to all the different research projects, people take what they find on the island, try to make sense of it, see how it works and then come up with something new or something that helps us come to a better understanding. That is what in a sense I was striving for, to take what I found around me, make sense of it and then add my own little spin. I feel Kent Island is about understanding; taking in the world around you and then seeing how you can add to that understanding." From oil pastels, to black and white wood grain drawings, to ink on watercolor, Ivy succeeded admirably.

My favorite was her series of oil studies on driftwood whose theme was "What the Herring Gull had for Dinner". These are exquisitely

beautiful studies of bones, shells and other leftovers from the gulls' omnivorous habits that show us with new eyes the everyday beauty of Kent Island. I feel particularly fortunate to have one of these treasures in my office as I write this – the discarded remains of a green crab's claw in vibrant blues and greens against a whitewashed background on faded and sea-smoothed wood.

• Life on Kent Island

This was the year of families on Kent Island. We were fortunate to have the parents and siblings of two students visit in July, as well as various Maucks, Murrays, and Huntingtons (Grays). Bob and Janet (Keydel) Lawson ('75) and along with son Sawyer visited Barrett. We were treated to the Lawson family singers' renditions of nearly the entire Beatles catalog with Bob on guitar, Sawyer on mandolin, and Barrett on vocals. Ian Kyle's family visited from their farm in upstate New York. In meeting his mother, Carolyn, and brother Keiller, I could see where Ian gained his gentle confidence, easy manner, and self-reliance. Kat Anderson's parents did not make it to the island, but their presence was felt with almost weekly care packages filled with delectable goodies sure to surprise and delight. Kate (Huntington) Gray and husband Bill made a couple of trips to the island to help Chuck with petrels. We were glad to have Bill's innovative thinking and Kate's good cheer and violin. Emily Haussmann, six months pregnant and new to Kent Island, joined husband Mark for a week in July. Emily took to the island as if born to it, which is fortunate since their daughter Kate will spend a good portion of her first year with us. And, of course, all the usual suspects made at least a short visit: Seth and Nina Murray and Katie and Ross Mauck, all of whom have known Kent Island since their earliest years.

I often tell prospective students that fun on Kent Island has nothing to do with modern appliances and everything to do with simple joys. This year, euchre devotee Annie Valuska imported the game from Ohio, while pitch and Taboo were thrown in for good measure. It was Beatles revival summer thanks to Barrett while Ian demonstrated

his talents as both a singer and songwriter with such newly minted classics as *Southbound Trail* and Marko's favorite, *Personal Space*.

Competitive wood-splitting was in vogue and Ben Chan was certainly the MVP of this year's contests. Before he commits to dental school, Ben has volunteered to return this June to split and stack all the firewood we need for the summer.

Flavia Chen's delightfully diverse cultural heritage (Chinese, Hungarian, and Greek) insured that our food was both delightful and diverse. She sometimes discussed possible menus with Amy and Ben, often in Mandarin, or was it Cantonese?

Pride in Asian heritage ran high this summer. Amy took it upon herself to help prepare others for life on Kent Island with her "AZN Survival Guide to Kent Island". Among the pointers was the always essential, "Heat up hot water for 'tea' every night 15 minutes before everyone else goes to bed so you can wipe yourself down with the... 'tea.'"

The Fourth of July clean-up, a tradition started by Nat and Genie almost twenty years ago, was expanded to Hay and Sheep now that Bowdoin also owns them. Mark Murray and I walked Hay, while William scoured sheep. In the end, we filled *Island Bound's* entire work deck five feet deep with this year's collection.

Ivy proved once and for all that Kent Island and training for a fall sport are not mutually exclusive activities. Every day, come rain, wind, or fog, Ivy ended her day with rigorous training, usually joined by Ian and often with Kat. I was impressed. Proof positive lies in her success this fall as part of Bowdoin's soccer team that advanced all the way to the NESCAC semi-finals. Turns out the key to success isn't location, location, location. It is dedication, dedication, dedication.

Susie and Ivy remodeled the Club Dingleberry. Susie and Ross, with Mark's help, scrounged materials to upgrade the study nook with a new desk, file cabinet and shelves. Ivy painted the desktop with a stylized rendering of an exquisite wood grain in the absence of the real McCoy, once again demonstrating that life on

Kent Island is what you make of it.

Addenda to the List of Publications from the Bowdoin Scientific Station

The complete list of more than 155 scientific publications can be found on the Kent Island web page (www.academic.bowdoin.edu/kent_island/public.shtml).

Blackmer, A.L., R.A. Mauck, J.T. Ackerman, C.E. Huntington, G. Nevitt, and J.B. Williams. 2005. Exploring individual quality: basal metabolic rate and reproductive performance in Leach's storm-petrels. *Behavioral Ecology* 16: 906-913.

Freeman-Gallant C.R., N.T. Wheelwright, K.E. Meiklejohn, S.L. States and S.V. Sollecito. 2005. Little effect of extra-pair paternity on the opportunity for sexual selection in Savannah sparrows. *Evolution* 59(2), pp. 422-430. (166)

Mauck, R.A. and R.E. Ricklefs. 2005. Control of Fledging Age in Leach's Storm-petrel (*Oceanodroma leucorhoa*): Chick development and pre-fledging mass loss. *Functional Ecology* 19: 73-80.

Mauck, R.A., K. Matson, J., Philipsborn, and R.E. Ricklefs. 2005. Increase in the constitutive innate humoral immune system in Leach's storm-petrel (*Oceanodroma leucorhoa*) chicks is negatively correlated with growth rate. *Functional Ecology* 19: 1048-1052.

McMaster, R. T. 2005. Factors influencing vascular plant diversity on 22 islands off the coast of eastern North America. *Journal of Biogeography* 32, 475-492.

Wheelwright, N.T and J. C. Beagley. 2005. Proficient incubation by inexperienced Savannah Sparrows *Passerculus sandwichensis*. *Ibis* 147, 67-76. (161)

Peterson, T.S., A. Uesugi, and J. Lichter. 2006. Tree recruitment limitation by introduced

snowshoe hare on Kent Island, New Brunswick. *Canadian Field Naturalist*. In press.

Wheelwright, N.T., E.E. Dukeshire, J.B. Fontaine, S.H. Gutow, D.A. Moeller, J.C. Schuetz, T.M. Smith, S.L. Rodgers, and A.G. Zink. 2006. Pollinator limitation, autogamy, and minimal inbreeding depression in insect-pollinated plants on a boreal island. *American Midland Naturalist* 155: 19-38.

Wheelwright, N.T., C.R. Freeman-Gallant, and R.A. Mauck. 2006. Asymmetrical incest avoidance in the choice of social and genetic mates. *Animal Behaviour* 71: 631-639.

Robert A. Mauck
Director, Bowdoin Scientific Station
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