Merrymeeting News

Summer-Fall 2019 Vol. XXVIIII No. 3

The Newsletter of Friends of Merrymeeting Bay • PO Box 233 • Richmond Maine 04357 • 207-666-1118 • www.fomb.org

Friends of Merrymeeting Bay (FOMB) is a 501(c)(3) non-profit organization. Our mission is to preserve, protect, and improve the unique ecosystems of the Bay through:

Education

Conservation & Stewardship

Research & Advocacy

Member Events

Support comes from members' tax-deductible donations and gifts.

Merrymeeting News is published seasonally and is sent to FOMB members and other friends of the Bay. Article hyperlinks and color images are available online at: www.fomb.org

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Celebrating America's *Song Dog**

"Coyote power: surviving by one's intelligence and wits when others cannot; embracing existence in a mad, dancing, laughing, sympathetic expression of pure joy at evading the grimmest of fates; exulting in sheer aliveness; recognizing our shortcomings with rueful chagrin."

~ Dan Flores, Coyote America

Photo: Ed Friedman

Perhaps no other wild animal has endured the wrath of humans while evoking such genuine heartfelt admiration than the coyote. Some livestock owners curse her existence, many Native Americans consider her the smartest animal on Earth, and others experience joy in seeing or hearing this vocal Song Dog.

While other wild carnivores have confronted extinction, the coyote's intelligence, adaptability and resilience have helped her survive and even thrive in the face of persecution. Devoted parents and mates, trapped coyotes caught in cruel leghold devices have been known to be cared for by their packmates as they await an unknown fate.

The coyote provides myriad benefits to our communities, both urban and rural. She offers free rodent control (preying on mice, rats and gophers), works sanitation (cleaning up dead animal carcasses and reducing the spread of rodent-borne diseases), and protects gardens and crops by controlling populations of rabbits, raccoons, and other animals.

Photo: Monte Deignan

Despite all her charms, the coyote is much maligned. Stereotypes and fallacies follow her wherever she goes. Her ability to adjust to changing conditions and diverse environments makes it difficult to pigeonhole her, perhaps further contributing to people's fear and misunderstanding. She is the flagship species for all misunderstood and exploited carnivores. Poisoned, trapped, gunned down from the air and shot for prizes, an estimated half a million coyotes are killed every year in the United States—roughly one per minute.

Fortunately, the tides are turning for the coyote. The best available science shows that killing coyotes does not reduce their numbers, increase populations of deer and other species that appeal to hunters, or reduce conflicts with livestock, pets or people. In fact, indiscriminately killing coyotes may even increase their populations and increase conflicts. More significant, though, is the increasing recognition that senselessly targeting coyotes for death is ethically indefensible.

The coyote is a vital part of America's fabric, both historically in the lessons she's taught us and in the valuable role she plays in our urban and rural communities. She's a delight to those who truly understand her.

**Excerpted from Project Coyote's 10-Year Anniversary Commemorative Calendar celebrating America's native Song Dog. To order a calendar (16 month- Sept. 2019-Dec. 2020) visit ProjectCoyote.org. Project Coyote is a national nonprofit organization that promotes compassionate coexistence and conservation between people and wildlife through education, science, and advocacy.*

Winter Speaker Series 2019

All events free and open to the public, 7:00 p.m., Curtis Memorial Library, Brunswick, unless noted.
With support and door prizes from Patagonia, Inc.–Freeport
More information at www.fomb.org

OCTOBER 9 E.A. Robinson, Gardiner's Pulitzer Poet 1869-1935. *Gay Grant, Author & Former Legislator*

NOVEMBER 13 "Bugs" of the Bay. *Hamish Greig, Asst. Professor of Stream Ecology, UMO*

DECEMBER 11 Meet Your District Forester. *Shane Duigan, District Forester, ME Forest Service*

JANUARY 08 "Let There Be Dark" – Preserving our Night Skies. *Rob Burgess, President, Southern ME Astronomers & NASA Solar System Ambassador. FOMB Annual Meeting & Potluck. 6:00pm, Public Welcome; Cram Alumni House, Bowdoin College, 83 Federal St., Brunswick*

FEBRUARY 12 George Sproule's Mapping of the Mid-Coast, 1770. *Matthew Edney, Osher Prof. in History of Cartography at USM*

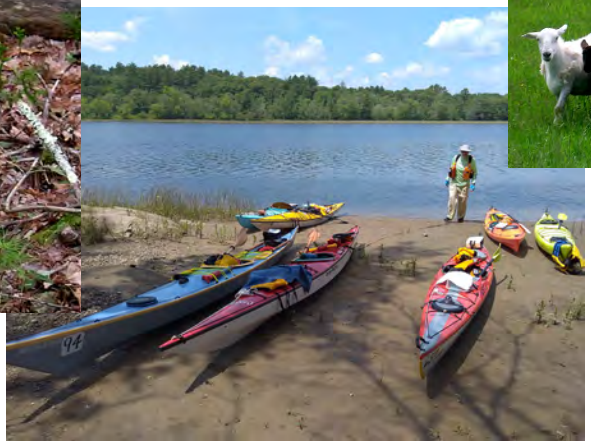
MARCH 11 Redfin Pickerel, Endangered, Elusive, & Here! *Merry Gallagher, Fisheries Biologist, MDIF&W*

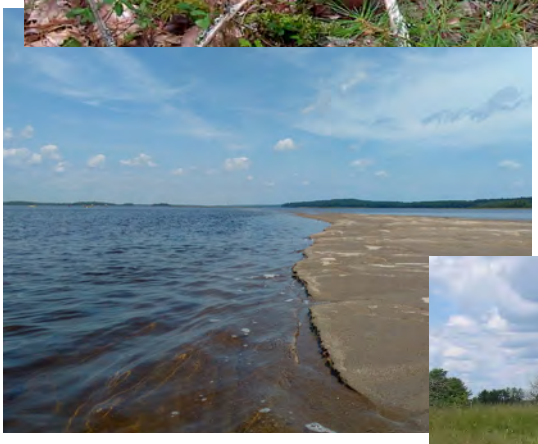
APRIL 08 Seabrook Nuclear Plant - Still Operating, More Perilous. *Doug Bogen, Executive Director, Seacoast Antipollution League*

MAY 13 The Sonic Sea - Voices of the Deep. *Chris Clark, Sr. Scientist & Researcher, Dept. of Neurobiology & Behavior, Cornell University*

Summer Outside!

Well over a hundred people enjoyed Summer Outside! series. Special thanks our volunteer trip leaders - Joe Grady, Mauricio Handler, Michelle and Stan Moody, Cathy Reynolds and Jay Robbins! Also thanks to John Pratte and Keel Kemper at MDIF&W.





Paddle photos: Michelle Moody
Emerald ash borer: web
Other photos: Ed Friedman

Fall Bay Day

Photos:
Wigwam: Steve Musica
Non-point-source pollution: Christine Egan
Other photos: Ed Friedman

In sharp contrast to our cold, wet Spring Bay Day, cancelled for the second time ever, Fall Bay Day on September 24 was an "awesome" success with great students, fantastic volunteers and superb weather. 160 students from Brunswick, Bowdoinham and Bowdoin enjoyed sessions in everything from watershed modeling, marine mammal rescue, and archaeology to anadromous fish printing and conservation canines.

Thanks to our guides:

Leslie Anderson, Betsy Steen, Fred Koerber, Jason Bartlett, Nate Gray, Tina Goodman, Julie Rea, Hannah Goodman, Megan Ely, Roy Morejon, Russ Estes, Raija Suomela, Justin Schlawin, Steve Eagles, Kent Cooper, Bethany Brown, Steve Musica, Dick Brown and several students from Brunswick High School who assisted with archaeology.

And thanks to chaperones:

Tina Phillips, Tom Hughes, Pam Hanson, Carole Sargent, Heather Cox, Becky Bowes, Dana Cary, Phil Brzozowski, Vicky Sebell, Bob Fesler, Elise Straus-Bowers, Martin McDonough, Jim Rea Jeff Sebell and Stephen Shaw.

Special thanks to:

Wild Oats Bakery for the great grub, Dave Whittlesey and Erin Macro for signage and organizing help!

A Fisheries Surprise, Longtime Coming

Every field season we (Maine Department of Marine Resources) perform beach seine surveys of index sites on the lower Kennebec and Androscoggin rivers. Every two weeks we go out and beach seine all 23 sites. A beach seine is a simple affair. A fine mesh net about six feet deep and anywhere from sixty to a hundred fifty feet long that you can deploy from a boat or shore. A person wades out with one end of the net and loops around to come back to shore some thirty to sixty feet away from where they started. Then the net is hauled up onto the beach. Then you get to see what you've caught. It's like Christmas! We get up to twenty-five or so species of fish. Most of which we're good at identifying. Identification gets progressively harder, the smaller the fish.

Beach seining is one of the favorite Bay Day activities.
Photos: Ed Friedman

One particular site in the reach above the old Edwards dam at head tide in Augusta had a species of fish we identified as larval American shad. This is the world's largest herring species. They can get real big if they survive long enough. The Kennebec has a pretty decent run of shad now. They range in size from three to five pounds mostly. We worked on a hatchery program and stocking to bolster the greatly depleted run. For fifteen years we hauled adult brood-stock shad from the Connecticut River in Holyoke, Massachusetts to either directly stock into the Kennebec or to the Waldoboro Shad Hatchery for tank spawning. The tank spawning seemed to have good results. We stocked out fall fingerlings as well as larval shad. It turns out larval shad were the way to go. Once the eggs hatch out you'll have a tank filled with tiny pieces of thread with eyeballs at one end. Maybe ten millimeters long. Small. Unless you know your species inside and out, at this size you refer to the larval fish as icthyoplankton. Fish plankton. Tiny.

The American shad run on the Kennebec usually starts in April depending on water temps and flows. The fish will enter the lower river and slowly ascend as temperatures and daylight hours rise. By the time the shad reach Gardiner it's getting close to May. The shad will hang out at the confluence with the Cobbosseecontee system. We think they do this to "bathe" in the warmer water of the Cobbossee until the main stem Kennebec warms up more and flows drop off. At this point they travel further up-stream. Spawning usually takes place around eighteen degrees Celsius (65F). Sometime in mid to late May. Spawning occurs over several weeks. Several males attend females actively spawning. Males chase the females all over the place. If you know where to go, you can witness this ancient ritual. Huge "V" wakes and vigorous splashing on the surface all chasing one another. The eggs float around for a couple of weeks and then hatch. Voila, you have a larval shad.

Once the spawning is done, adult shad head back out to sea and resume feeding on plankton. The larva will stay in the river feeding on fresh water plankton. Larvae are super delicate and don't have much in the way of swimming ability for near a

month. They drift where the river takes them. The larva often form up in eddies and pocket water near shore. Metamorphosis happens after about a month. Here the larval shad slowly take on the form of an adult, albeit miniaturized. Now they can swim well and some of the fingerling shad will actually ascend the river to find the choicest feeding lanes. They will stay in these lanes for months growing as fast as they can to be the biggest and strongest juvenile shad they can be before finally dropping out of the system in the fall. Once they drop out of the system it is four to five years before they reach adulthood and return to spawn.

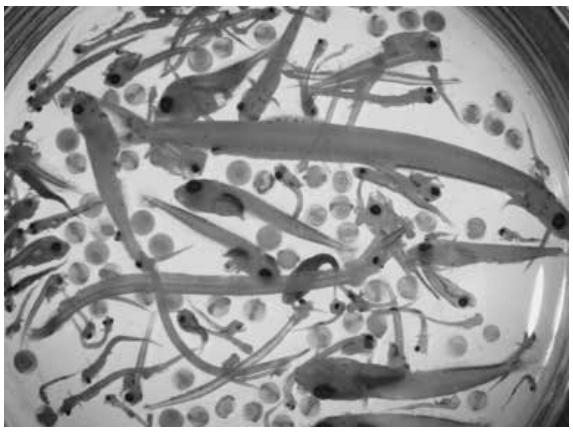


Photo: Jose Maria Rodriguez

Now, back to the beach seine site above Augusta I started with. This is back in 2007. We hauled the beach seine up on shore and found the usual mix of small mouth bass, a couple of fingerling alewives, some fingerling American shad as well. Everything was normal except when we saw the larval fish in the net. We took a sample back to the lab and laboriously keyed the sample out. There was no question in our mind short of a DNA analysis. These were larval American shad. Here is the problem: there is no way we should be collecting larval shad in mid-September. They should be fingerlings. We'd worked at the hatchery and looked at literally thousands upon thousands of larval shad in May and June. Stunting was not an option. Shad either eat and grow or die.

There was only one logical conclusion to this conundrum. There were adult shad spawning in the Kennebec way outside their "normal" spawning window. Given the size of the larvae in question we concluded that the shad had to have spawned at or near the end of August. A good six weeks after the adult shad had finished spawning and departed the river system. What was frustrating was our inability to detect the presence of adults spawning in river other than the obvious larvae. The fish passages at Benton and Lockwood dams had not captured any adults since early July. Now we know that all the shad don't head as far upriver as they can to spawn. Some will spawn well down the system. That could account for the lack of detection at the fishways. Nearly every year we would detect these larvae at this site this late in the season. We never saw an adult……until 2019. And then it happened. We got a call from the fishway operator at Lockwood in late August. They had just lifted fifteen adult shad. Sea bright silvery fresh with eggs running out of half of them. Now we don't have to do DNA analysis! So far, I've seen no literature regarding a fall run of shad in any river anywhere in these parts. Maybe it's time we wrote some.

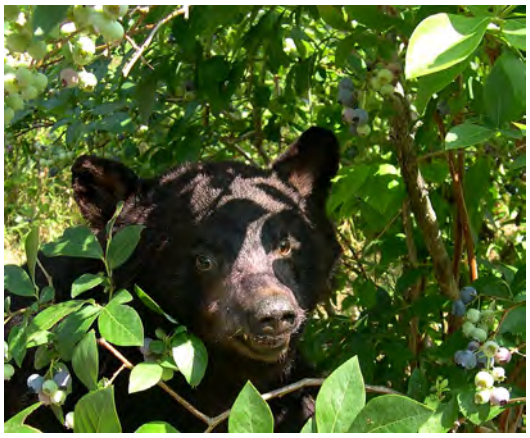
Nate Gray

(Ed. note: In other unusual goings on in the upper lower Kennebec, a harbor porpoise [Phocoena phocoena] was sighted in Waterville during July. While this is the first sighting we know of, this porpoise often ventures up rivers, and within its range, has been seen hundreds of miles from the sea. One of their favorite prey species is herring so we may expect to see more of them as the Sebasticook river herring run continues to lead the state in recovery.)

Two New "Friends of the Bay"

We welcome our latest taxidermy mounts (thanks to Creative Maine Taxidermy)—adult male great blue heron and black bear.
Call or email Erin Macro to arrange a "critter visit" to your class or activity: fomb@comcast.net, 207-666-1118.

Photos: Ed Friedman



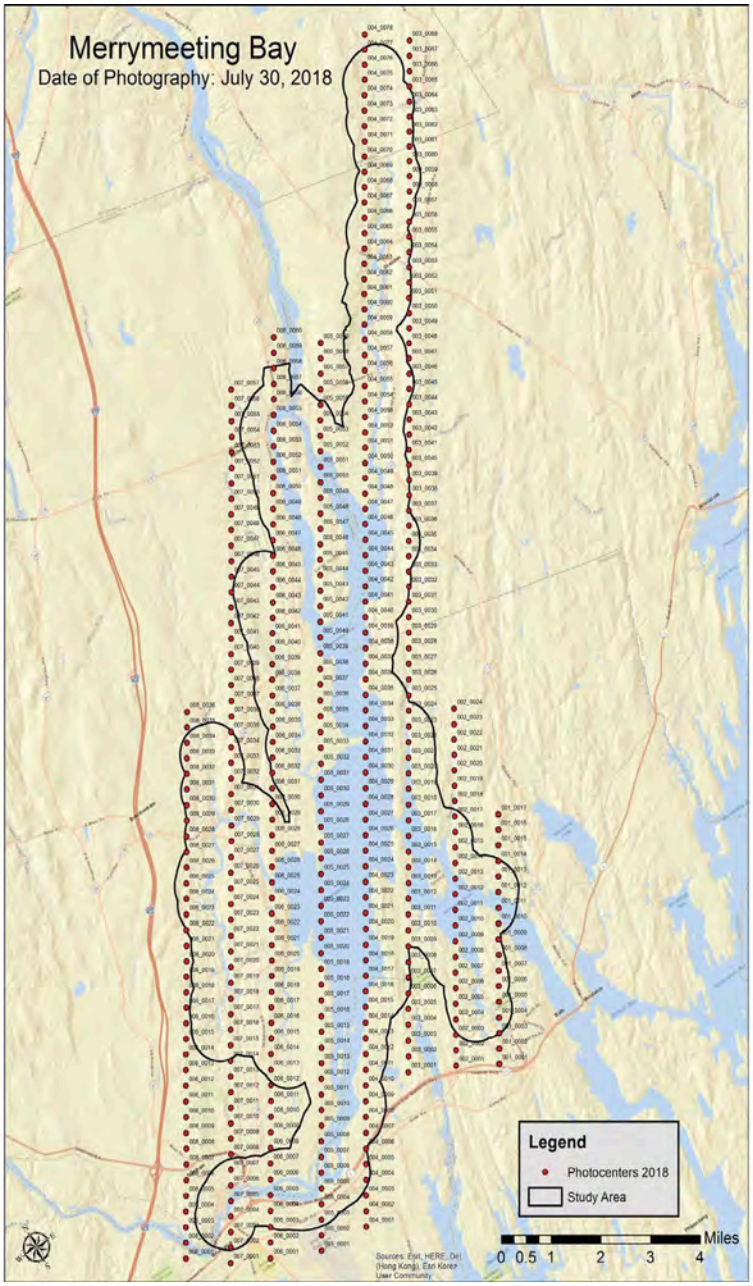
Merrymeeting Bay
Aquatic & Upland Habitat Assessment Update 2019

In May of 2018, Friends of Merrymeeting Bay (FOMB) commissioned James W. Sewall Company of Old Town, Maine to provide technical support for aerial photography, mapping, and analysis of trends in the Bay and surrounding half-mile buffer area. Previous photointerpretation studies of the Bay were conducted in 1956, 1961, 1966, and 1981 (Spencer, 1966; Anderson, 1982).

In 1998, FOMB hired Sewall, in the first project of its kind; to fly aerial photograpy of the Bay using color infra-red film, conduct photo interpretation for aquatic and upland cover types as well as anthropogenic structures, create a new GIS base integrating the earlier years 1956 and 1981 and perform an analysis of trends for the period. (Sewall, 2000, Friedman, 2000). In 2009, FOMB and Sewall repeated the work and in another study updated the vegetation and land use data and created a new baseline GIS with consistent horizontal accuracy across the study area.

The 2019 report, found in the Cybrary section of the FOMB website discusses results of the latest update to the study, based on aerial photography flown by Sewall in July 2018. This report first discusses aspects of the methodology (field method, orthophoto production, photo interpretation, and GIS). It then presents summary figures, tables, and a brief discussion of changes in the study area over the five study years, with primary emphasis on the latest period –2009 to 2018.

Methods used allow detailed cross-tabulation of conditions between years, showing acreage differences in land use and vegetation and where those changes occurred. The 2018 orthophoto base, maps, an ArcGIS geodatabase, an ESRI ArcGIS summary .mxd file, and a comprehensive data table in Excel spreadsheet format accompany this report on DVD and will provide a sound basis for further analysis and future studies.



Flight lines and photo stations for stereoscopic imaging

Mouth of the Cathance.
Point of View Helicopter Services

We Need You! Please Support Our Important Work

FOMB Leadership

Our accomplishments are due to the hard work of dedicated volunteers, especially those who serve on our committees. If you want to get involved and serve, please contact the committee chair or Ed Friedman. We always welcome member input and we'd love for you to join us!

Steering Committee
Ed Friedman, Chair (Bowdoinham)
Vance Stephenson, Treasurer (Kettering, OH)
Tom Walling, Secretary (Bowdoinham)
Simon Beirne (Bowdoinham)
Becky Bowes (Brunswick)
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Membership Levels

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☐ $750 American Eel
☐ $500 Wild Salmon
☐ $250 Striped Bass
☐ $100 Shad
☐ $50 Alewife
☐ $20 Smelt
☐ Other

Name _____

Address _____

Town/State/Zip _____

Phone _____ Email _____

☐ $7 Enclosed (optional) for a copy of *Conservation Options: A Guide for Maine Land Owners* [$5 for book, $2 for postage].

☐ Renewal
☐ New Member
☐ Send information about volunteer opportunities
☐ I would like a sticker

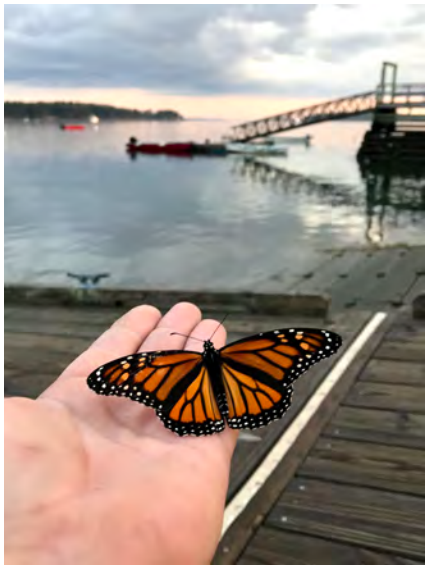
Thanks to Rebecca Bowes for newsletter layout.

Shout Out to Our Web Volunteers

Special thanks to Stan Moody, custodian of our Cybrary (a widely acclaimed research resource "for all things Bay") and Martin McDonough who maintains the rest of our website.

What's New on the Web

- We now have all Winter Speaker Series Calendars posted going back to 1996. For many of these the press releases are hyperlinked.
- If you missed a speaker, we have about 60 presentations filmed and posted.
- We have also posted all newsletters we had copies of, going back to our reincarnation in 1991. Thanks guys!



Photos: Great egret and great blue heron: Chet Gillis
Monarch: Cody Gillis

Friends of Merrymeeting Bay
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Frankenfish!

On September 9th Earthjustice attorney Steve Mashuda, presented oral arguments in US District Court supporting our positions that genetically engineered salmon cannot be treated and approved as a "drug" by the Food & Drug Administration (FDA). Causes of action include the FDA failed to ensure environmental safety from creation and marketing of this fish, that their failure is arbitrary and capricious and that it is contrary to the National Environmental Policy Act (NEPA). See our Spring 2016 newsletter for more on this important case.

Our plaintiff coalition, jointly represented by legal counsel from Center for Food Safety and Earthjustice, includes Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, Golden Gate Salmon Association, Kennebec Reborn, Friends of Merrymeeting Bay, Ecology Action Centre, Food & Water Watch, Center for Biological Diversity, Friends of the Earth, Cascadia Wildlands, and Center for Food Safety.

Courtesy of Steve Greenberg, www.greenberg-art.com