Merrymeeting News

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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 in our online edition at www.fomb.org

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Wet Ramblings on History

History is a funny thing. History comes from the Greek *historia*, to inquire. History informs us where we are, based on where we've been as a people. But is history the truth? That's what makes history funny. History is subjective—it changes over time, based on the study of available materials and opinion. History is written, as they say, by the victor. Ignoring history is a human coping mechanism. Sometimes it's a lot easier to not know a particular history. It can be extremely uncomfortable at times. We've seen a fair share of recent American history called into question. Memorials being torn down. Presidential election outcomes questioned. Some of this stuff is downright disturbing. Throw COVID on top of a 2-year-long stint in our cabins and folks are getting twitchy. Just watch the news (or maybe it's better if you don't).

Merrymeeting Bay has a whole bunch of history. I happen to be interested in a lot of it. The Bay's natural history is a complex beautiful tapestry. It covers many thousands of years. We know a lot of the pre-history of the Bay and its surrounding watersheds by the archeological evidence left behind by the first peoples. I would give my eye teeth to go back millennia and witness their lives, the rhythms of their world. And to see the fish. I'm a fish guy. We know a lot about the endemic fish species of Merrymeeting Bay. We know they were once far more abundant. Even in very recent history, the fish were more abundant. The thing is we **know** what happened: we know who, what, where, when, and why the fish populations plummeted. We know exactly why.

The author, wet and rambling
Photo: Ed Friedman

You can ignore the "true" history, but that ignorance comes at tremendous ecological, spiritual, and monetary cost. It's hard to put a dollar value to it, but we can come to some informed guesses. Over the course of 300 years European colonization slowly yet inexorably squeezed the life out of the greater Merrymeeting Bay complex. The smaller streams were the first to fall. Gradually, as Yankee know-how got better, the larger systems fell. Ever more ambitious dams slowly choked a huge 9,500 square mile riverine complex. Meanwhile all the fisheries continued full bore. These fisheries had been underway for centuries and the fishing was good. In the end, the fisheries couldn't survive the enormous pressures brought to bear. A thousand or more people involved in the fisheries hung their nets for the last time, pulled their weirs, and headed to work at the new mills now lining and then fouling the rivers. It didn't take people long to turn their backs on these vital arteries, to forget what once was. The coming of the dams and the end of the fisheries was not the end of the transgressions. All that new industry and burgeoning population needed someplace to get rid of its waste. The rivers became a wet dumping ground.

Despite this 300-year beating, the Merrymeeting Bay complex somehow managed to cling to its original complement of diadromous species. Eels still plied its waters. River herring, too. American shad, Atlantic salmon, Atlantic sturgeon, shortnose sturgeon, sea

Continued on next page

Wet Ramblings on History, continued from page 1

lamprey, tomcod, striped bass, and smelt. They're all still stubbornly here. Fortunately, we know a lot about restoration. Give the fish their habitat back and voila! You get a run of fish. Biologically, a simple exercise. It's when we involve commerce, politics, and apathy that restoration gets hard. It's hard on many levels. It costs a lot to do restoration, but the rewards are priceless. Unlike Shel Silverstein's ***The Giving Tree***, our story of the Merrymeeting Bay complex doesn't have to end with a depressed old dude sitting on the stump of his beloved apple tree. I'm an optimist. In my story, *The Giving Waters*, old and young alike plant a 9,500 square mile orchard. It's worth doing. Will you help?

Nate Gray

A Fish(ing) Story

Guzzles galore in just one Bay area
Credit: James W. Sewall

Guzzle (*noun*). Most people know guzzle as a verb, to rapidly and copiously drink down some liquid. A stream pretty much limited by the area of one's throat. For the Merrymeeting Bay noun form, take this stream, lay it horizontally, and insert it into the tidal flats. Sometimes our guzzles transect the flat and sometimes they peter out after a while. For more on guzzles see ***Confluence***, the wonderful book on the Bay by Frank Burroughs and Heather Perry.

There's a relatively small and shallow Merrymeeting Bay guzzle section, maybe 60' across by 6–12" deep, depending on how low the tide, that I've skittered out to for years. I say skittered because to walk normally ensures my knee-high boots and I may part company and suddenly a wild dance ensues to remain upright.

My interest in guzzle monitoring has been to loosely survey the only freshwater mussel population in the Bay accessible from shore in my area, mostly *Anodonta implicata*, the alewife floater. Freshwater mussels are built for comfort, not for speed, and so they travel by luring in with an appendage display, particular host fish, in the case of *Anodonta*, alewives, blueback herring, and shad. The mussels then release their larval glochidia (looking something like a miniature Pacman) which latch on to the fish gills or other surfaces and ride along for a couple of weeks until dropping off in a new location and beginning their slow and sedentary growth to maturity.

The EPA notes one adult mussel can filter up to 15 gallons of water per day; a 6-mile stretch of mussel beds can filter out over 25 tons of particulates per year. Sometimes mussels are referred to as "biosentinels," a living indicator of the presence of chemical contaminants or microbial pathogens. Because the presence of freshwater mussels can mean a water body is healthy, they provide a low-cost way to quickly monitor water quality. Back in 2001, FOMB began using caged freshwater mussels as biomonitors to ascertain whether Kennebec and Androscoggin pulp mills were still discharging dioxin after a switch in their bleaching processes and to locate PCB hot spots on the Kennebec.

Late last summer I slithered my way out to the guzzle to check on my bivalve friends. Walking about on its firmer bottom, I noticed the 2–3" diameter end of a tree trunk or branch sticking up a couple of inches. Moving along, I noticed another, and my archaeology/history antenna went up. All told there were 7 or 8 of these stubs 2–3' apart in a slight curve. I realized I was looking at remnants of a fish weir.

This place was lousy with fishing and fish weirs. Historically, European settlers turned from farming to fishing whenever migratory shad, alewives, smelt, and the other species rolled in. Both drift nets and weirs were tools of harvest for bringing fresh protein to the table. This went on into the first half of the 20th century and, as with waterfowl, much of the Bay fishing was done for commercial purposes, as well as for home use. Albert Dunlap in his autobiographical ***Life on the Abbagadasset: Memoirs of Boyhood on a Bowdoinham Farm*** provides a wonderful detailed account of making and working fish weirs as a boy in the early 1900s. Shad and the other river herring are notoriously bony and after discussing ways in which to remedy the problem of bones stuck in the diner's throat, Albert recounts that "someone said there were families living on the Eastern River who ate so many herring every spring that, come summer, some of the menfolks who hadn't changed their undershirts since Christmas couldn't get them off because of fish bones protruding from their backs."

Continued on next page

A Fish(ing) Story, continued from page 2

Beyond the end of my weir row lay what appeared to be a stout 12–15" length of wood of similar diameter to the stake stubs. I picked it up thinking to photograph it and get it to Art Spiess, senior archaeologist with the Maine Historic Preservation Commission. As it turned out, the stake was still partially embedded, probably having been partly exhumed by the grip of rising and falling ice over time.

I photographed it, cut a couple of 2"-thick cookies off, sanding one surface of each to better count the rings, and found the age of the tree to be about 100 years old, pretty old for a 3" stick. I got the material to Art, and he sent a piece off for species identification (most likely northern white cedar) and a piece off for carbon dating.

Here's where it gets exciting…the calibrated carbon date came back at 3,500 years old!!! Art's eyes lit up over the phone and tears came to my eyes. This was pretty cool. After all, pyramids were still being built in Egypt while some Native American was tending his fish weir on the mud flats of Merrymeeting Bay. This is only the second prehistoric fish weir to be found in Maine, the other being in Sebasticook Lake and whose age ranges from 1,800–6,000 years old. Imagine what a good fishing hole that was and for how long!

Weir stake cross section: both 100 and 3,500 years old!
Photo: Ed Friedman

What does this Merrymeeting Bay find mean? What sort of follow-up might we do? What might we learn about earlier peoples, climate and resources? Art takes it from here...

There are many remnants of Native American (pre-European) wooden-stake fish weirs known across North America, preserved in anaerobic mud. In some cases, bits of brush or netting that was strung between the stakes survive. In rarer cases, associated stone or wood tools survive as well. Some of them are in fresh water lakes, and some are intertidal. Most of them are relatively recent, dating to the last couple of thousand years. Until now the only wooden fish weir site in Maine, a complex of multiple overlapping wooden stake fish weirs, was located in the mouth of a stream inlet on Sebasticook Lake. The oldest stakes in the Sebasticook site, radiocarbon dated about 6,000 years, are the oldest we know in North America. In Boston, the Boylston Street fish weir is a complex of intertidal fish weirs (about 4,000 years old) first discovered during subway construction early in the 20th century.

Broken biface found on shore not far from weir.
Photo: Ed Friedman

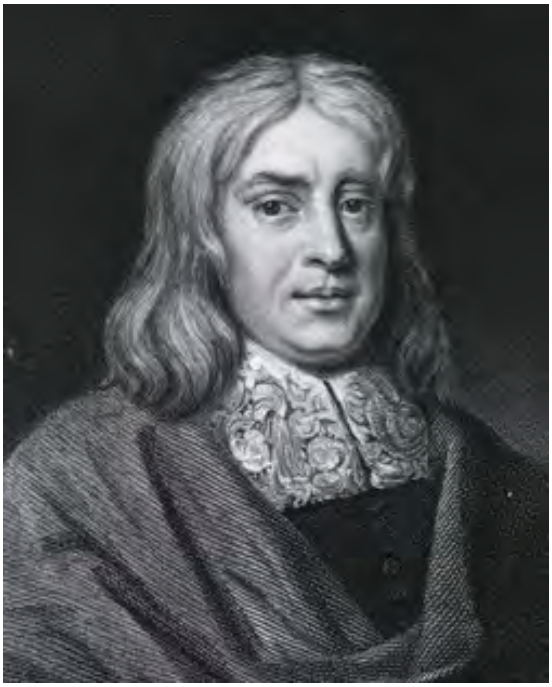
At present we have one calibrated radiocarbon date, about 3,500 years, on one stake from the Merrymeeting Bay fish weir. Assuming that date is confirmed by a similar date on another stake, we will have the second confirmed Indigenous fish weir in Maine and the first confirmed here from an intertidal location. There are a number of things about this weir that make it especially interesting. Relative sea level has been rising along the Maine coast since the end of the ice age, and Merrymeeting Bay was likely a fresh water swamp complex until rising sea level breached the Chops, sometime around 6,000 years ago (at a guess). There has been relatively little geological research done on how and when Merrymeeting Bay became tidal, so we are ignorant of the details.

Is this fish weir one that was located where a stream came into the tidal Bay about 3,500 years ago? Maybe the location was submerged by the rising water and no longer useful for weir fishing after a short period of time? The one wooden stake recovered appears to have been a white cedar tree that grew slowly (as many freshwater swamp cedars do). It is about 97 years old and about 3 inches across. Those 97 years of growth rings contain a dendrochronological record of tree growth for a century around 3500 years ago that may preserve information about rainfall and temperature variation. And what was the weir used for, assuming it was in the upper reaches of a tidal channel or lower freshwater stream? Was it a fall eel weir or a spring herring (alewife, blueback, or shad) weir, or for spawning sturgeon and used during the summer? Maybe some more geological studies and testing will tell us more.

Ed Friedman and Arthur Spiess

From the Chair

COVID and fractured politics brought us another crazy year, with revisionist history made before our very eyes and on film for all to see. Whoever said "seeing is believing" was apparently wrong. At the end of the day, or should I say year, FOMB was mostly impacted by politics and pandemic as we again missed the face-to-face and hands-on aspects of our education program.



Thomas Sydenham, oil portrait
Mary Beale, 1688.
National Portrait Gallery, London

Early in the season we made the cautionary decision to cancel our summer outside series, as well as Spring Bay Day. The rise of viral variants and continued health hazards also cancelled Fall Bay Day. With different pronouncements daily and weekly from the CDC, FDA, NIH, Surgeon General, White House, Maine CDC, and Governor's office, this was a wise choice. Since agency pandemic recommendations were (and remain) consistently all over the place, we felt it in everybody's best interest to follow a guideline we've always espoused in our years of toxics work, the precautionary principle. This is not dissimilar to a popular saying often thought part of the Hippocratic Oath (which it's not literally, but in essence it is), "first do no harm," derived from the Latin phrase, "*primum non nocere*." The Oath was written in Greek during the 5th century. The phrase "first do no harm," however, dates to medical texts from the mid-19th century. It is generally attributed to Thomas Sydenham, a 17th century British physician, sometimes referred to as the "English Hippocrates."

Despite COVID, we kept our backs and shoulders to the mission. As reported in the fall newsletter, we managed to sneak in a couple of participatory outside theatre performances with hundreds of Bowdoin and Bowdoinham elementary school children on a couple of picture-perfect July-like October days.

Other highlights include some awesome land protection gains and efforts, endangered species, water quality, and river upgrade work, and data gathering necessary for input to relicensing interventions on the Brunswick-Topsham dam. Our Speaker Series has bloomed on Zoom. While many are attending from coast to coast and even from abroad, the in-person connections, juice, and cookies are still missing and missed.

In the positive legal department, an amicus brief on the problems with radio frequency radiation for people and the environment we submitted last year in a Pennsylvania case (yes, we have members in PA!) helped get those litigants to the PA Supreme Court this year (decision still pending). And in some very bad news that came in as I write this column (1/14), the Maine Law Court ruled against us in the Chops Tower case. Their very brief decision upheld the lower court's ruling in favor of CMP's motion to dismiss, based on federal preemption of the FAA and FCC.

Our appeal focused on the FAA because their lighting and marking advisories are exactly that, advisories or recommendations, not law. Not only that, but the FAA "No Hazard Determination" specifically states their determination "does not relieve" CMP from compliance with state and local laws (state nuisance laws aside, Woolwich codes prohibit flashing lights). And, reinforcing the discretionary nature of their guidelines, the FAA refused our request for environmental review, stating they do not perform environmental reviews for matters only advisory in scope. If lighting and marking were required, so too would be consideration for review under the National Environmental Policy Act (NEPA). With all of these considerations, how blind justice prevailed we can't fathom. We are considering other possible options for pursuit of this important matter.

I, of course, close with a big thank you to all of our members and partners, our committed steering committee, and our many exceptional volunteers, without whom we could not accomplish so much on so little.
THANK YOU! THANK YOU! THANK YOU!

Respectfully submitted,
Ed Friedman

Friends of Merrymeeting Bay 2021 Accomplishments

Media

Print, radio, internet (over 30)—Endangered species, Androscoggin upgrade, Chops lawsuit, Centers Pt. protection, speaker series, etc.

Volunteers

Approximately 1,650 volunteer hours (206 days)

56 volunteers

Membership

450 households

Newsletters—4

Grants

$1,650—Education

$20,000—Chops/CMP lawsuit

Education

Zoom Speaker Series—466 registrants

2 school visits (320 people)

Website updates

Conservation and Stewardship

Additional easement work

Continuous landowner outreach

Ongoing easement monitoring

Maintain Pork Pt. field

Control Bowdoinham phragmites

Monitor all easement and fee properties

Protect Centers Pt.

Research

Water-quality monitoring—17 sites

Shad-counting methodologies—Brunswick dam

Intern—Altered lake-level research

Prehistoric fish weir

Advocacy (postings, letters, testimony, etc.)

Lower Androscoggin upgrade—Won BEP recommendation

Healthy Rivers/Healthy Gulf promoting safe fish passage

Smart meter appeal—PA Supreme Court

Various national efforts—NEPA, ocean plastics, ESA, climate, etc.

CMP Chops Tower lighting—Filed/argued ME Law Court nuisance lawsuit appeal

Predator killing contests

EMF health effects

Primary Partners

The Archaeological Conservancy

Maine Coalition to Stop Smart Meters

Quebec Labrador Foundation

Maine Historic Preservation Commission

Department of Inland Fisheries and Wildlife

Department of Marine Resources

Bowdoinham Public Library

Maine Land Trust Network

Friends of Sebago Lake

Department of Environmental Protection

Downeast Salmon Federation

Native Fish Coalition

Maine Coast Heritage Trust

Grow L+A

Trout Unlimited, Maine Chapter

Environmental Health Trust

Children's Health Defense

Softlights.org

Military Poisons

WILPF Earth Democracy Committee

Piti Theatre

Bowdoinham Community School

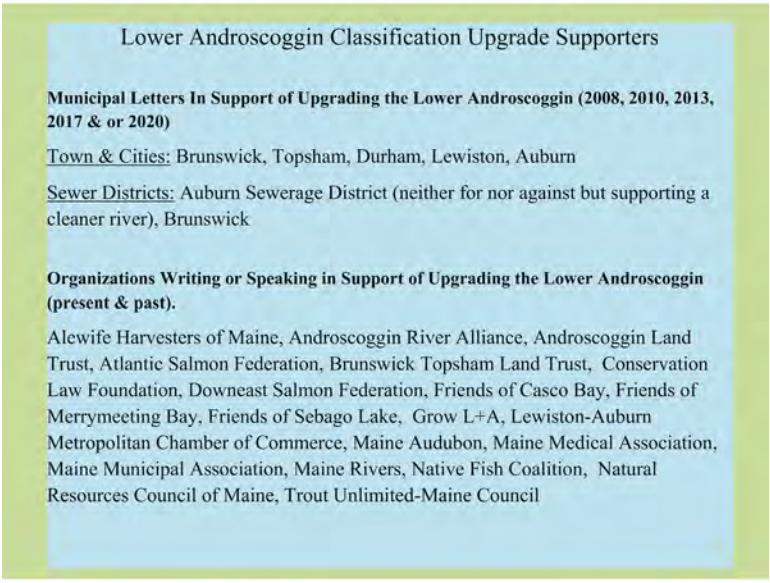
Bowdoin Central School

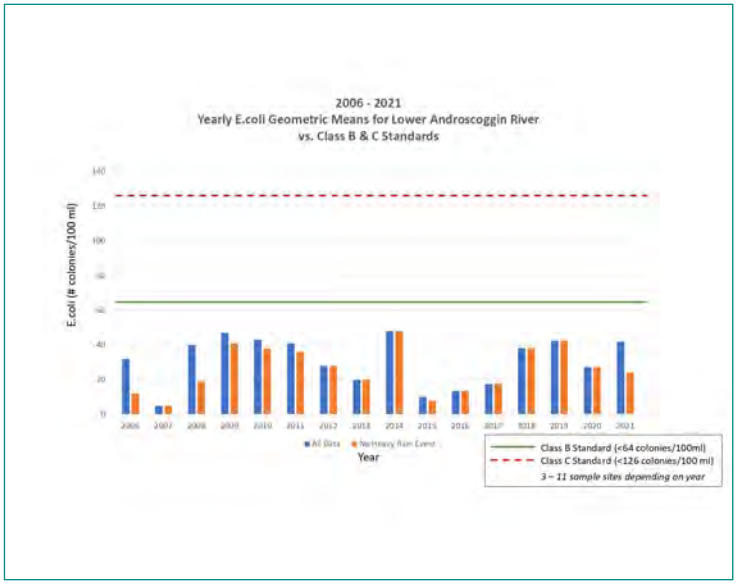
Making History!

In December, the Board of Environmental Protection (BEP) made history, recommending that the legislature upgrade the lower Androscoggin River water-quality classification from C (state minimum) to B. In doing so, the Board bucked advice from their Department of Environmental Protection (DEP) staff.

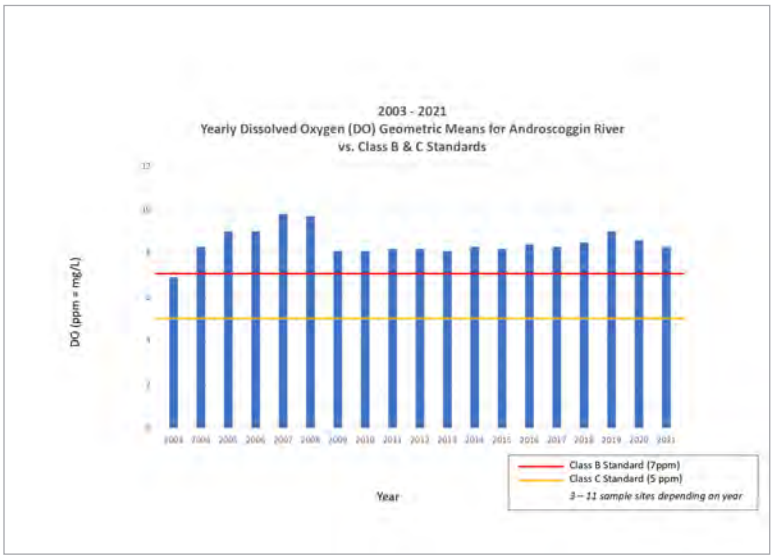
The DEP has opposed FOMB's efforts and definitive data for nearly the last 20 years. Classification is based on dissolved oxygen, *E. coli* bacteria, and modeled aquatic-life standards. Only the legislature has the authority over water-quality classifications, so the Environment & Natural Resources Committee, for starters, and then presumably the entire body, will need convincing in the face of opposition from upstream paper mills and the city of Rumford.

After years of work, our real toil has begun, but we hope celebrating the Clean Water Act's 50th anniversary will help ease the way. Huge thanks to our many supporters and especially to our volunteer monitors and lab personnel over the years! Please start drafting your support notes to legislators and watch for our alert.

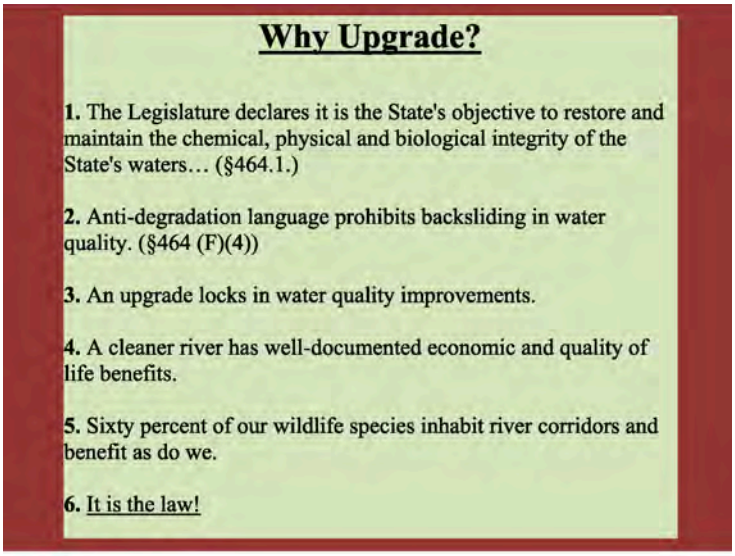




***E. coli* below Class B maximum levels (solid line) and far below Class C limits (dashed line).**



Dissolved oxygen levels easily surpass Class B threshold of 7 ppm and far exceed Class C limit of 5 ppm.



FOMB Preliminary 2021 Financial Statement

This is an early read on financial results for FOMB during 2021. We are awaiting receipt of a few key documents and need to complete some extra legwork associated with closing the books at year end. However, I am confident that once we file our annual charitable nonprofit tax returns with the IRS, these numbers will not sway significantly (and any changes should be in a positive direction). **In summary:** Income exceeded expenses by $20,900. Key revenue sources and expense drivers are broken out below. Total unrestricted liquid assets are approximately $382,500 with an additional $45,300 in restricted stewardship funds for a total of $427,800. Despite the organization's many initiatives, we maintain a lean and mean structure, with only 7% of annual expenses applied towards fulfillment of administrative tasks. The charitable rating organization GuideStar, continues to award FOMB its Gold Seal for Transparency.

Respectfully submitted,
Vance Stephenson, Treasurer

2021 Income $79,400		**2021 Expenses $58,500**	
Annual Appeal	36%	Programs	90%
Membership	31%	Administration	7%
Grants	27%	Membership & Fundraising	3%
Other	6%		

Cash Income less Cash Expense for 2021: $20,900

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 (Gardiner)
Becky Bowes (Brunswick)
Phil Brzozowski (Brunswick)
Nate Gray (Vassalboro)

Education Committee
Betsy Steen, Co-Chair, 666-3468
Tom Walling, Co-Chair, 666-5837

Conservation and Stewardship Committee
Chair Vacancy

Membership and Fundraising Committee
Nate Gray, Chair, 446-8870

Research and Advocacy Committee
Ed Friedman, Chair, 666-3372

Friends of Merrymeeting Bay · PO Box 233 · Richmond, Maine 04357

Membership Levels

☐ $1,000+ Sturgeon
☐ $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.

Friends of Merrymeeting Bay
P.O. Box 233
Richmond, ME 04357

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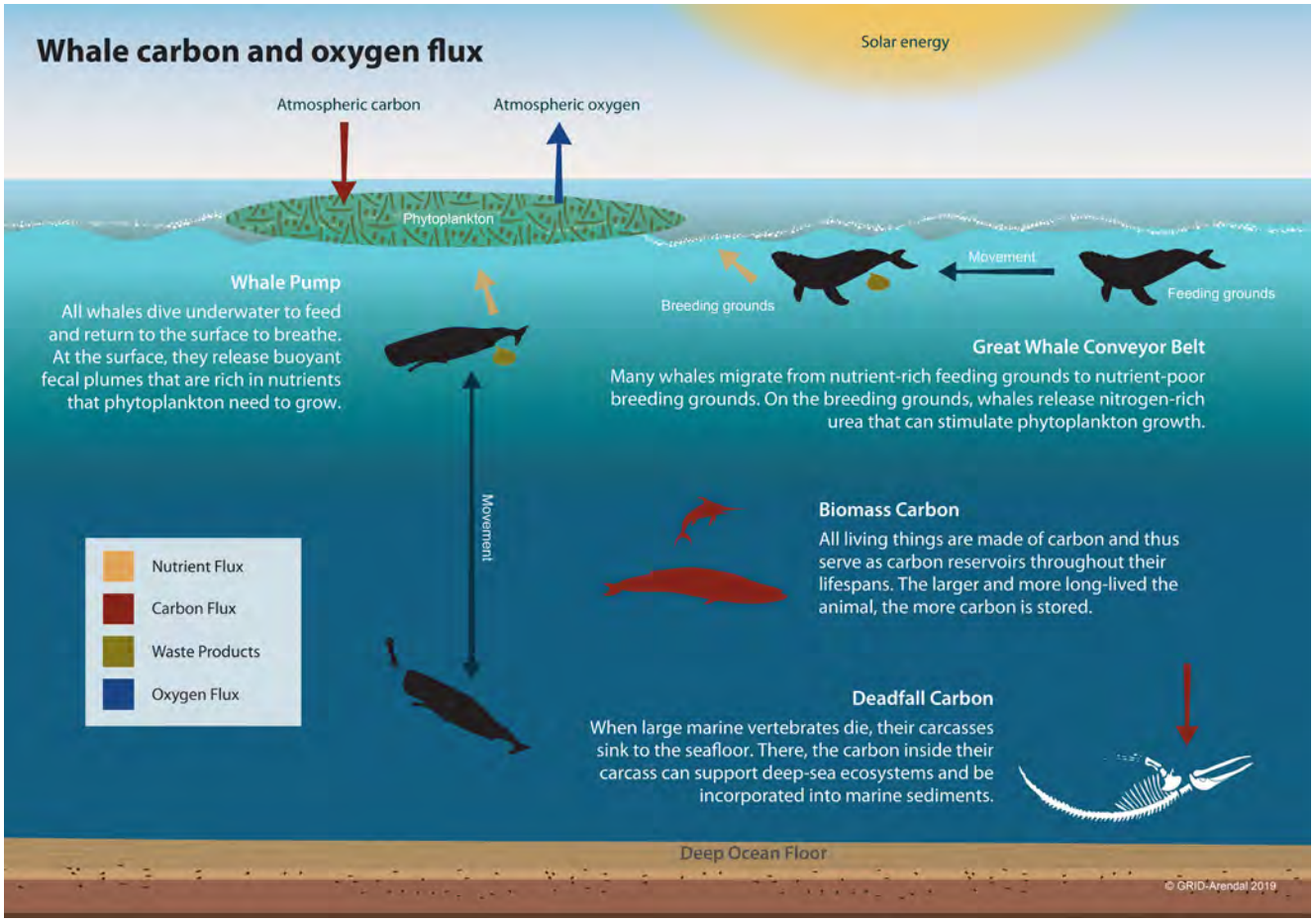

The Great Whale Carbon Pump **Credit: GRID Arendal**