



The Newsletter of Friends of Merrymeeting Bay • PO Box 233 • Richmond Maine 04357 • 207-666-1118 • [www.fomb.org](http://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

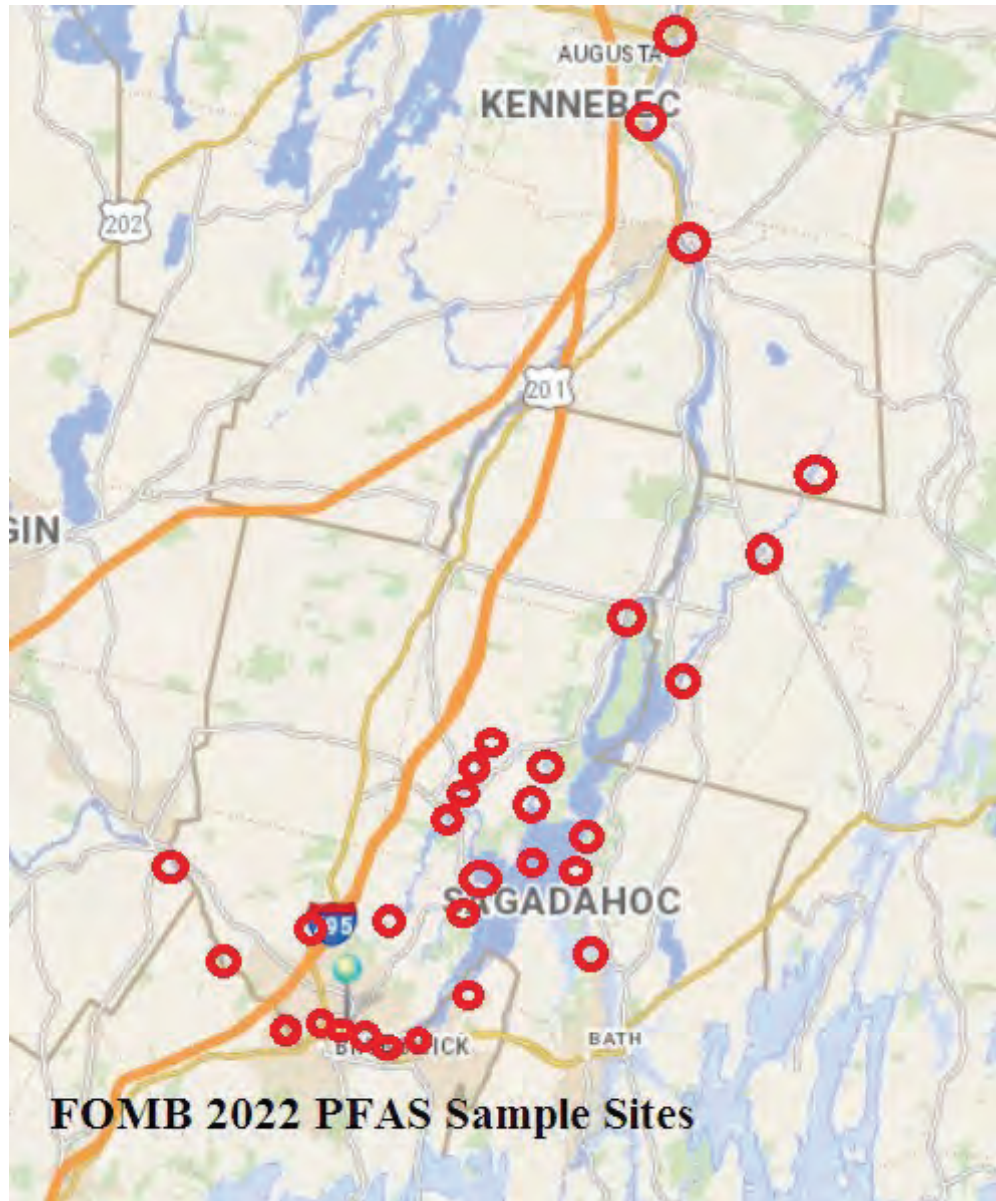
Support comes from members' tax-deductible donations and gifts.

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](http://www.fomb.org)

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## *FOMB Surveys Lower Watershed for PFAS Chemicals*



Please read excerpts on **pages 4 and 5** from our extensive report on this first-ever area PFAS survey. The following comment is typical of several we received:

*"This report is outstanding. I love the map at the beginning!! Well done!! It reads well and is accessible to lay readers. Now, how to get this in the hands of the news media and our legislators? The major effort FOMB did to plan and execute this project deserves top billing and the widest possible circulation."*

*David S. Page,  
Bowdoin College Professor of Chemistry and Biochemistry Emeritus*



## Yesterday and Today in History

It was 1797 when James Rogers and Ebenezer Temple of Bowdoin paid the Selectmen of Bowdoinham \$2,000.00 for the privilege of building a road from Bowdoinham’s Cathance Landing to the Bowdoin line... So begins another joint educational venture between the Piti Theatre Company, FOMB, and Bowdoin Central School.



A swath of the 80 kids in their group song.  
Photo: Ed Friedman

Just as this road gave Bowdoin residents access to the Kennebec River and hence to the world, opening up possibilities for trade and travel, so, too, has our theatre program, focused on Bowdoin history, opened new doors for third and fourth graders at the town’s elementary school. Students learn not only about their local history but about the writing, acting, and filmmaking processes. This follows on the heels of successful and exciting interactive performances last fall of Piti’s “To Bee or Not To Bee” at both Bowdoin and Bowdoinham schools.

Now enthusiastic third and fourth graders with teachers Katie LaPointe, Gayle Toolin, Angela Wheeler, and Christine Egan have the opportunity to



be in a streaming theatre production about Bowdoin local history with the same troupe. During COVID, Piti adapted their “Your Town” program where they travel to different towns around New England, research local history, and put on a production with a combination of professional and local actors. The result is essentially documentary filmmaking where our students have the chance to reenact important moments from Bowdoin’s past, like ice harvesting, working in a saw mill, learning in a one-room school house, supplying timber for Kennebec schooners, and building the first road from Bowdoin to navigable tidewater at the Cathance River.

Left and below: Inside and outside the one-room schoolhouse.

Photos: Christine Egan (left and right), WGME Channel 13 (center)



Above: Bees pollinate and swarm in the apple orchard  
Right: The swarm.  
Photos: Ed Friedman



*Continued on next page*

*Yesterday and Today in History, continued from page 2*

spring of 2023. It will be available on FOMB, Piti, and probably Bowdoin websites, and we hope will be shown as a double feature during one of our speaker series presentations.

As you can imagine, anything that involves this much research, editing, script-writing, filming, music, and post-production requires funding. While we have received funding so far from New England Foundation for the Arts and Bath Savings Institution, we are about \$5,000 short of completing the project. If this sort of educational work strikes a sweet spot in your heart, contributions sent to FOMB and marked “Education” will be dedicated to the project. For contributions of \$1,000 or more, you’ll become a Producer in the film credits. For a minimum of \$500, you’ll become an Associate Producer. Business logos can also be included in the credits.

If you would like to learn more about the Your Town program and see examples of what has been made for other towns, visit [www.ptco.org/yourtown](http://www.ptco.org/yourtown). The most relevant example (and inspiration for our work here), is the movie “Dexter and the Dinosaurs” (use this direct Vimeo link or scroll down on the left on Piti’s home page).

*Jon Mirin, Ed Friedman*



**Clockwise from above:**

**Bluebird and Squirrel worry about loggers.**

**What was it like in the old days?**

**Restaurant scene.**

**Country store.**

**Planning the road to Cathance Landing.**

**Photos:**

**Angela Wheeler (restaurant), Ed Friedman (all others)**



# *Spatial Probe for PFAS Chemicals in the Surface Waters of Merrymeeting Bay and its Tributaries*

A few report excerpts are below. Please see the full report in the [Chemical section](#) of our web Cybrary.

In the summer of 2022, FOMB conducted the first widespread surface water sampling for polyfluoroalkyl substances (PFAS) in the lower Merrymeeting Bay watershed. PFAS were found in 27 of 30 samples sites, and 19 PFAS compounds were detected from a possible 55. The study area ranged from Lisbon Falls on the Androscoggin River to the Bay and from Augusta on the Kennebec River to Thorne Head between Woolwich and North Bath. The other four main tributaries were also covered, as was the West Branch of the Cathance River.

The highest levels of PFAS contamination were found from three creeks draining the north end of the former Brunswick Naval Air Station (BNAS). Detected PFAS compounds are consistent with inputs from past and current firefighting foam use and storage. BNAS is a known CERCLA or “Superfund” site, now being managed by the Midcoast Regional Redevelopment Authority (MRRA), a State of Maine entity. Cyclopure water test kits were used to measure the levels of PFAS compounds in surface water samples throughout the area. These relatively inexpensive and reliable water test kits have proven very suitable for PFAS screening purposes. Limitations to surface water sampling are discussed in the report.



**Ed Friedman samples water draining from the former BNAS into the Androscoggin.**  
Photo: Chris Gutscher

Of the 30 sites sampled by FOMB, the three sites not showing evidence of at least one PFAS compound were Hallowell (HLK), Abbagadasset Point (ABK), and Kennebec Thorne Head (KTH). All of these were deep water sites. This is not surprising, as dilution is probably a major factor in identifying detectable concentrations.

Both DEP and EPA recommend total PFAS levels in any drinking water sample not exceed 20 parts per trillion (ppt). The highest levels of contamination found in our survey were, in descending order to 20 ppt, the three sites downstream of former BNAS: BNAS-W (922 ppt), BNAS-M (147 ppt), BNAS-E (125 ppt); the Brunswick Sewage District (BSD) outfall pipe (56 ppt); Gardiner (GRK) 52 ppt; and just above head tide of the Cathance River (CHT) 20.3 ppt. While other site totals are often by comparison rather low, Table 1 shows that even very small PFAS concentrations should be of concern.

Two of the several PFAS compounds EPA has set drinking water health advisories on are perfluorooctanoic acid (PFOA) at .004 ppt and perfluorooctane sulfonic acid (PFOS) at .02 ppt. Average levels of these two prominent chemicals by river segment are shown in the following table:

Compound	River	Avg. in ppt	Excess of EPA advisory
<b>PFOA</b> EPA limit: .004 ppt	Abbagadasset	1.73	433X
	Eastern	1.33	333X
	Muddy	2.2	379X
	W. Branch Cat.	1.8	450X
	Cathance	2.5	613X
	Kennebec	.6	150X
	Androscoggin	5.3	1,325X
	Andro w/o BNAS	1.78	445X
<b>PFOS</b> EPA limit: .02 ppt	Abbagadasset	1.4	70X
	Eastern	1.2	60X
	Muddy	1.2	60X
	W. Branch Cathance	2.36	118X
	Cathance	2.05	103X
	Kennebec	6.7	335X
	Androscoggin	26	1,300X
	Andro w/o BNAS	3	150X

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### *Spatial Probe for PFAS Chemicals in the Surface Waters of Merrymeeting Bay, continued from page 4*

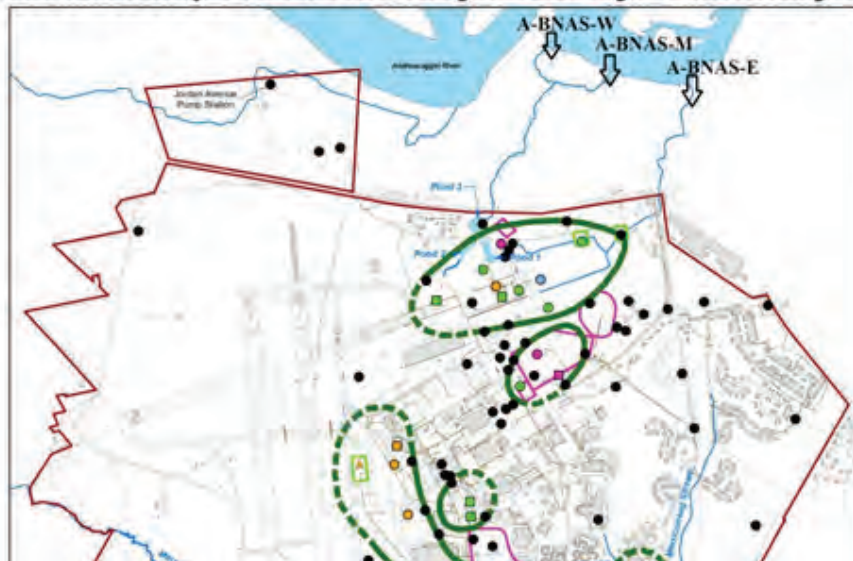
Nineteen PFAS compounds were detected in the study area. The breakdown by river was: Androscoggin-19; Cathance-9; Abbagadasset-6; Kennebec-5; West Branch of the Cathance-4; Muddy-4; Eastern-4.

Without inputs from BNAS and BSD, the Androscoggin would have been 7.

According to the [U.S. Agency for Toxic Substances and Disease Registry](#), some, but not all, studies in people who have higher PFOS or PFOA levels in the blood have shown that these chemicals may:

- Increase the risk of kidney and testicular cancer;
- Increase cholesterol levels;
- Increase the risk of high blood pressure or pre-eclampsia in pregnant women;
- Lower infant birth weights; however, the decrease in birth weight is small and may not affect the infant's health;
- Decrease how well the body responds to vaccinations;
- Cause changes in liver enzyme levels.

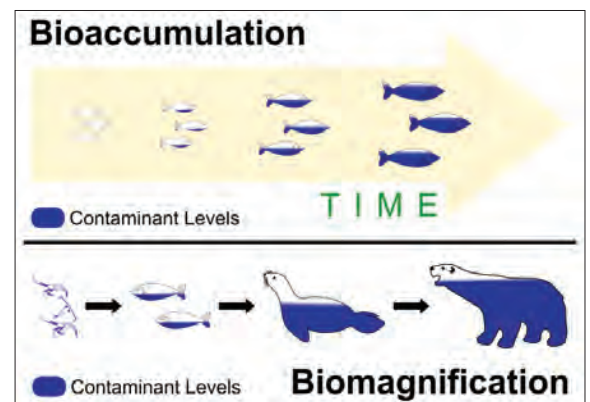
### **BNAS PFAS Hotspots From Navy 2020 5 yr Summary Report**



Extraordinarily high PFAS levels point to the westerly creek (BNAS-W) as the primary contaminant conduit from the former base to the river.

PFAS testing and advisories for fish and other food are almost entirely lacking, and it is here, as a result of bioaccumulation and biomagnification, that the problem may be most acute, rather than from drinking water. A brook trout caught in the vicinity of the former Loring Air Force Base with PFAS levels of 1,080,000 ppt, 6.13 million times the EPA advisory level for water, is a great local example of bioaccumulation.

PFAS testing remains very expensive, which, if nothing else, provides an economic disincentive to test. While Cyclopure offers an inexpensive water test suitable for screening (although generally not for regulatory purposes, because they are not certified for this), no such option exists for tissue testing. State and federal agencies have a long way to go in this area. With virtually every state dependent to some extent on hunting and or fishing, whether for commercial catch or for their tourist industries, the economic disincentive for thorough testing may be even more acute than for the average homeowner concerned with the state of their tap water. Perhaps nongovernmental organizations will need to step in where agencies may fear to tread. Time will tell.



## *36 Acres Protected on the Kennebec by FOMB Conservation Easement*

If you have ever had the pleasure of kayaking or boating on the Kennebec River's western channel between Swan Island and the Bowdoinham shore, you know that it's a relatively undeveloped and peaceful stretch of the River. Swan Island is well known for a variety of wildlife. The island and surrounding tidal flats are a Wildlife Management Area conserved and managed primarily for wildlife habitat. Our property sits about 300 yards off to its southwest on the opposite shore of the Kennebec.



View down the field to the Kennebec  
Photo: Ed Friedman

Our family has had the good fortune and pleasure of living on 31 acres of land along this shore for over 35 years. We have enjoyed kayaking, boating, ice-skating, cross-country skiing, and snowshoeing on the Kennebec. We have come to understand and appreciate some of the long history of this area, including its importance to Native Americans, the Kennebec ice harvesting industry, and shipbuilding in the immediate area.

Over the years we have seen abundant wildlife, including untold numbers of eagles, osprey, owls, deer, fox, porcupine, and a skunk or two. While kayaking we have seen deer and turtles swim across the river and have routinely seen sturgeon jump and splash back onto its surface. There is a limited amount of boat traffic on this stretch of the river, which typically includes eel fisherman, sightseers, and occasionally a Coast Guard Cutter cruising up-river to break up the ice, always a welcome sign of spring.

When we first discovered this property, it had lain fallow for many years like so many old farmsteads in Bowdoinham and Maine. The property was covered with scrub brush, including alder bushes, young ash trees, and small pasture pine. In 1986 we built our home here and began raising our two daughters and a number of happy Labrador retrievers. Over the years we worked to reclaim some of the former fields and continued to mow the fields just enough to keep them open for bird and animal life. We have also been able to harvest enough firewood to keep us warm in the winter and plant gardens for our enjoyment. It's a beautiful spot. We wanted to keep it that way and protect it from further development if we could.

A number of years ago we started talking to Friends of Merrymeeting Bay's Ed Friedman about protecting the property in some way. He was very helpful and patient as we lingered. After too long, we finally got down to business. Ed was there to help.

We spent a good amount of time thinking about how to best protect the property, which includes over 1,200 feet of shoreline on the Kennebec and about 5 acres of high-value tidal wetlands. At first it felt a bit daunting. For example, what future activities were to be permitted on the land by our successors? Should we allow farming and grazing activities? How much and what kind? What about access to and maintenance of the property itself? We wanted provisions for the smooth transfer of the property when the time inevitably comes, while still providing for its protection. These were just a few of the questions that we needed to resolve.

Over time, we sorted through the issues and we finally arrived at a mutually satisfactory Conservation Easement. We signed it in late September and had an instant feeling of relief and satisfaction. This was something that we wanted to do for a long time but weren't sure how to go about it or how it would all work out.

Ultimately it was worth the time and effort to make it happen. With help from Friends of Merrymeeting Bay, we now feel we have given something back to the land that provided us with a lifetime so closely and richly connected with the beautiful natural environment of the Kennebec River and Merrymeeting Bay.



Southeast toward Abbagadasset Point  
Photo: Ed Friedman

*Barbara and Jim O'Hare, Bowdoinham, Maine*

## *Justice Fails in CMP Tower Case*

Seldom is justice found within the law. Or as Scott Sells, the attorney working with us on the Androscoggin upgrade, was told when he was a young lawyer, “Don’t forget, it’s not the Justice House and it’s not the Truth House, it’s the Court House.” With 7–8,000 petitions to SCOTUS each term and only 70–80 chosen for the docket, it is no surprise that our petition in the CMP Chops Tower case was denied.

The real problem, however, lay with the lazy or blind-to-the-facts ruling we received from Superior Court Judge Michaela Murphy, which was then rubber-stamped by the Maine Supreme Judicial Court. Murphy denied our claim against CMP, brought under state nuisance law, ruling in favor of CMP’s Motion to Dismiss, which was based on federal preemption by the FAA and FCC.

We appealed the FAA preemption aspect because the FAA explicitly states that their lighting and marking guidelines are advisories or recommendations **only** and cannot violate state or local laws. They, in fact, use the advisory status as a rationale to avoid any environmental review under the National Environmental Policy Act (NEPA) or otherwise.

How can federal preemption apply, when so explicitly stated otherwise by the subject agency? Only a blind-to-the-facts or lazy judge knows for sure.



Image: Lightspring/Shutterstock.com

## 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 (Beavercreek, OH)  
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#### Membership Levels

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| <input type="checkbox"/> Renewal    | <input type="checkbox"/> Send information about volunteer opportunities |
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\$7 Enclosed (optional) for a copy of Conservation Options: A Guide for Maine Land Owners [\$5 for book, \$2 for postage].



Thanks to Rebecca Bowes for newsletter layout.



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## Some Human Health Effects of PFAS (European Environmental Agency)

— High certainty  
- - - Lower certainty

