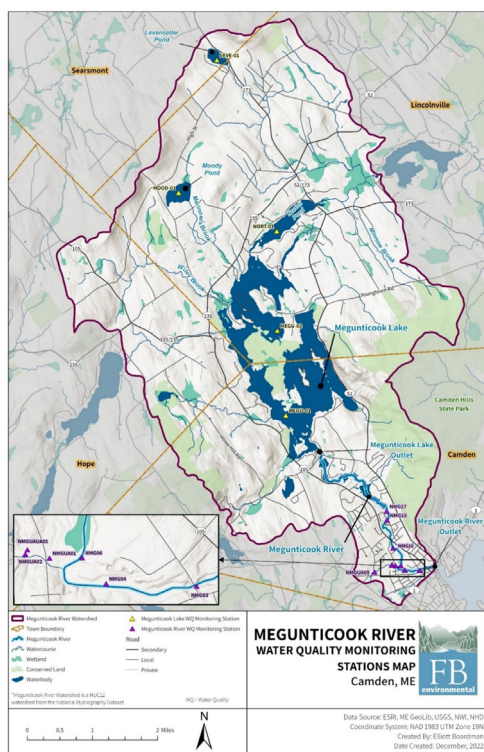


FEATURED PROJECT: MEGUNTICOOK RIVER RESTORATION IN CAMDEN, ME

FBE is working with the Town of Camden to facilitate the education and outreach component of the Megunticook River Restoration Project. This ongoing project with the Town is assessing dam management alternatives that balance the social, economic, and environmental needs of the community. The Town was recently awarded a \$1.6 million National Fish and Wildlife Foundation grant to further explore the feasibility of alternative dam management options along the river. FBE's role is to listen to the community to determine the interests, needs, and questions that the community has related to dam management and watershed health. As part of this mission, FBE is helping to facilitate the Megunticook River Citizen's Advisory Committee (MRCAC), a nine-person Town committee that is responsible for providing recommendations to the Select Board for preserving and improving sustainability and resiliency of the Megunticook River and its watershed. Much of the education and outreach completed as part of the Megunticook River Restoration Project will be completed through the work and guidance of this committee. Check out the MRCAC website [here](#) to learn more about the project and stay updated!



LONG-TERM CLIENT RECOGNITION: KEZAR LAKE WATERSHED ASSOCIATION

Kezar Lake Watershed Association (KLWA) is one of FBE's longest-running clients and has served as a tremendous model for other regional lake associations. For the last 15 years, FBE has supported the dedicated volunteers of KLWA with a number of projects, including annual water quality monitoring, lake nutrient modeling, watershed surveys, climate change tracking and trends reporting through the Climate Change Observatory, and education/outreach initiatives. Visit their [website](#) for more project information. We look forward to continuing this great partnership well into the future!



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FEATURED PROJECT: PLANNING FOR THE TOWN OF HAMPTON AND THE HAMPTON-SEABROOK ESTUARY



Hampton Harbor. Photo by Sarah Large, FBE.

FBE has been working diligently in Hampton, NH on a master plan for the Town, as well as an estuary management plan (EMP) for the Hampton-Seabrook Estuary that spans Hampton, Hampton Falls, and Seabrook. The community of Hampton is bustling in the summer season with tourism, requiring a unique approach to management that involves the dynamic year-round community and visitors alike. In 2021, Resilience Planning & Design led a team of consultants to begin the process of updating the Town's master plan. FBE provided support for the assessment and prioritization of natural resources in the planning process. The recently completed plan guides future sustainable development as well as acknowledges the community's vulnerabilities to coastal hazards such as coastal flooding, sea-level rise, storm surges, and groundwater rise impacts. The Town of Hampton Master Plan, adopted in February 2023, is available on the Town website [here](#).

In partnership with the Seabrook-Hamptons Estuary Alliance (SHEA), FBE recently completed the Hampton-Seabrook EMP, which uses science, data, and policies on current and future threats, conditions, and uses of the estuary to formulate effective management strategies. These strategies can be implemented by the watershed municipalities and numerous other partners and stakeholders to achieve the vision for the estuary, which stakeholders identified as being a sustainable, healthy, and resilient environment providing ecosystem services for the benefit of communities and wildlife. The impetus for developing the Plan was to streamline all previous and ongoing efforts related to the estuary into a single guiding document for more effective stakeholder collaboration. The Plan serves as a roadmap for the collaborative management of the estuary across stakeholder groups regardless of political boundaries. Municipalities may want to adopt the Plan as a companion document to their individual master plans so that each town's vision aligns with the collective vision for the estuary. Stakeholders can use the Plan to prioritize planning and support funding opportunities for implementation of the recommended management strategies in the action plan. SHEA will treat the Plan as a vibrant working document to be updated on a regular basis (every 5-10 years) so that the management goals, objectives, and actions are evaluated against expected milestones and timeframes and adjusted accordingly to adapt to any changes in the threats, conditions, and uses of the estuary over time. The hope is that the Plan demonstrates an understanding of the estuary's stressors and provides a holistic management approach for the communities to achieve their shared vision.

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97A Exchange Street Suite 305 Portland, ME 04101 (207) 221-6699

383 Central Ave Suite 267 Dover, NH 03820 (603) 828-1456



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FEATURED PROJECT: KEARSARGE BROOK-SACO RIVER WATERSHED MANAGEMENT PLAN

In 2022, FBE completed a Watershed Management Plan for the Kearsarge Brook - Saco River watershed in collaboration with the Greater Lovell Land Trust and Streamworks, PLLC which satisfies both Natural Resource Conservation Service Water Quality Initiative and EPA Nine Element watershed plan requirements. The Kearsarge Brook - Saco River watershed, a 38.7 square mile watershed located at the gateway to the White Mountain National Forest, New Hampshire, encompasses a network of tributaries that empty into the Saco River as it winds through Bartlett and downtown North Conway. The Saco River and surrounding watershed, an important recreational destination and historic agricultural region, has experienced sediment deposition and stream bank erosion as the watershed responds to hydrological restrictions from centuries of human activity in the river corridor. Development along the relatively flat river corridor and along its major tributary, Kearsarge Brook, has increased exponentially in recent decades, exacerbating anthropogenic impacts and threatening the stratified drift aquifer, an important groundwater resource for the entire Upper Saco River headwaters region.



Maggie Mills of FBE leads a watershed planning discussion with local municipal staff adjacent to Kearsarge Brook.

During plan development, FBE completed a watershed survey, a build-out analysis, and pollutant load modeling to understand the watershed. Partners at Streamworks concurrently completed a rapid geomorphic assessment. Based on these assessments, the alternative watershed plan focuses on four key areas of pollutant sources and causes of problems within the Kearsarge Brook - Saco River watershed, including erosion, land use (including development, floodplain encroachment, and agriculture), hydrologic impediments, and climate change. FBE developed a suite of action items to guide implementation efforts over the next 10 years, including restoring channel geomorphology and habitat, remediating nonpoint source pollution, implementing municipal management, land use planning, zoning, and conservation strategies, and engaging the community. The plan was developed with funding from the National Fish and Wildlife Foundation.



Mindee Goodrum discusses the riparian bank vegetation along the Saco River with a local landowner during a technical assistance visit.

FBE PARTNER HIGHLIGHT: DAVID ROCQUE



FBE is partnering with David Rocque, retired Maine State Soil Scientist and State Site Evaluator, to conduct an Expert Panel process that will evaluate advanced septic systems technology for the Piscataqua Region Estuaries Partnership, in close collaboration with the NHDES. This effort will bring together experts from across New England to evaluate technologies that prevent nitrogen and phosphorus pollution from onsite wastewater systems, nutrients which threaten waters with nuisance and hazardous algal blooms, low oxygen which can kill fish, reduced fish nursery habitat, and many other effects. An Advisory Committee of locally affected stakeholders will guide the Expert Panel in identifying these new technologies and their implementation in NH communities through suggested regulatory and/or policy actions. We are delighted to work with Mr. Rocque, who brings over three decades of exceptional experience and engagement to this effort.

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FEATURED PROJECT: GOULDSBORO VULNERABILITY ASSESSMENT

In 2022, FBE worked with the Town of Gouldsboro, Maine Shore Program to complete a climate vulnerability assessment and develop a suite of recommended next steps to enhance the Town's coastal hazard resiliency. Critical areas of vulnerability were identified using sea-level rise and storm surge projections in line with the Maine Climate Council's Maine Won't Wait planning recommendations for municipalities, as well as predictions of hurricane storm surges, extreme precipitation events, and existing FEMA flood zones. The assessment focused on four areas of concern most impacted by climate change, including Jones Cove, Corea Harbor, Grand Marsh Bay, and South Gouldsboro and identified vulnerable roads, culverts, buildings, and working waterfront infrastructure. Rocky shoreline bluffs along the western shores of Gouldsboro face erosion from intensified storm surges and wave action, while low-lying salt marshes along the southeastern shores of Gouldsboro face inundation from sea-level rise that will continue to impact infrastructure. Results were presented alongside a series of maps highlighting vulnerabilities. These data were used to develop an action plan to improve Gouldsboro's climate resiliency. The assessment was funded by the Maine Coastal Program. Read it [here!](#)



Corea Harbor, in Gouldsboro, including working waterfront (commercial fishing docks, lobster co-ops, lobster pounds, and fishing infrastructure), restaurants & tourism, and some residential properties, is a highly vulnerable area to sea-level rise, storm surges, and 100-year flood events.

PERMITTING SPOTLIGHT

The US Army Corps of Engineers (USACE) issued a new General Permit (GP) for the State of New Hampshire! Check out the new NH GP [here](#). Two key changes in the GP include:

- New GP activity: GP 20 – Living Shoreline Projects.
- Lowered the compensatory mitigation threshold for non-tidal wetland loss from 10,000 square feet (SF) to 5,000 SF.

In Maine, the USACE is planning to change its mitigation threshold from 15,000 SF to 5,000 SF. A public notice on this is anticipated to be issued at the end of March.

The Maine GP can be found [here](#).

In other key news, the US Fish and Wildlife Service (USFWS) updated the status of the northern long-eared bat (*Myotis septentrionalis*) from threatened to endangered due to the significant and continued population decline from white-nose syndrome threatening species extinction. The reclassification and rule took effect March 31, 2023. More details about the final rule to reclassify the northern long-eared bat and updated USFWS consultation rules can be found [here](#).



Photo: National Park Service

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FBE WELCOMES NEW AND RETURNING STAFF



Christine Bunyon will be rejoining FBE in June 2023 following her graduation from the University of New Hampshire with a M.S. in Natural Resources and the Environment, concentrating in remote sensing of freshwater ecosystems. Her research focused on using imagery from an unmanned aerial system (UAS) to detect and monitor cyanobacteria blooms in New Hampshire waterbodies. At FBE, Christine will assist with project task management and fieldwork, including geospatial analyses, water quality sampling and analysis, data sonde deployment and maintenance, data organization, land-use modeling, and technical writing. Christine has successfully hiked all 48-4,000 footers in New Hampshire!



Lauren Caffè will be joining FBE in May 2023. Lauren is a 2022 graduate of Bowdoin College and a current master's student in the Department of City and Regional Planning at University of North Carolina-Chapel Hill. Her interests involve climate change adaptation and hazard mitigation planning on both a rural and regional scale, as well as the intersections of policy and placemaking. At FBE, Lauren will assist with community outreach on the Megunticook River Restoration Project in Camden, ME. She will also be assisting Bina Skordas with coastal and climate resiliency planning projects. Lauren enjoys exploring new areas, talking with people, and baking sourdough bread!



Evan Ma will be joining FBE in May 2023 following graduation from Bates College with a B.A. in Environmental Studies with a Concentration in Ecology and Earth Systems and a minor in Mathematics. During his time at Bates, he worked with a professor to conduct water quality sampling and data analysis to study the drivers of cyanobacterial blooms in Lake Auburn, a critical public water supply. Evan also participated in research using autonomous surface vehicles for water quality monitoring in various Maine lakes. Evan worked with the City of Auburn for his senior thesis which centered on estimating phosphorus transport from septic systems to Lake Auburn. At FBE, Evan will assist with various projects such as watershed management plans, technical writing, water quality sampling, and other environmental field work. Outside of FBE, Evan loves playing volleyball, bowling, hiking, and swimming (no matter how cold the water is).

CONFERENCES

Maine DEP Watershed Managers Roundtable

Maggie Kelly-Boyd presented at the 2022 Maine DEP Watershed Managers Roundtable on “Assessing Geomorphic Stability in the Saco River-Kearsarge Brook Watershed”. The presentation shared lessons learned on methodology for identifying geomorphic and in-stream habitat conditions for alternative watershed planning and preliminary key findings of the plan.

Lakes Environmental Association Lake Researcher Retreat

Laura Diemer presented at the 2023 LEA Lake Researcher Retreat on “A Lake Management Success Story: Using alum treatment to restore Long Pond, Parsonsfield, ME”. Maggie Mills also attended.

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2022 FIELD SEASON RECAP



Dr. Kevin Ryan & Sarah Large performing a wetland delineation on Peaks Island, ME.



Mindee Goodrum & Luke Frankel performing monitoring on Salmon Falls.

Elliott Boardman holding a snake during a Natural Resource Inventory of Peaks Island, ME.



Munsell Soil Color Book used for Wetland Delineations.



Luke Frankel (above) and Maggie Mills (right) performing monitoring on Kezar Lake.



Mindee Goodrum (right) & Maggie Kelly-Boyd (below) taking water samples in Harspswell, ME.



Photos by [Alex Morrow](#)

FBE STAFF HIGHLIGHTS



Bina Skordas and her family welcomed their second born, Wyatt Angelo Woolf, on February 21, 2023.

FBE Project Manager Luke Frankel is currently a member of the NH CoastWise 2022-23 cohort. The CoastWise program, run by NH Sea Grant, is a year-long immersion program that connects students and professionals working on coastal resilience and marine resource management issues in the state. Through education, training, and networking, the CoastWise program seeks to cultivate an engaged and diverse workforce that can better tackle the challenges facing our coasts.



Maggie Mills, FB Environmental Division Lead, poses with Gene Pierotti, the retiring superintendent of Riverside Golf Course in Portland, Maine. Maggie has led efforts over many years with FB Environmental to help Gene make many environmental improvements on the golf course and become fully certified by Audubon International.



Laura Diemer recently just became the second person in the State of New Hampshire to receive the status of Certified Lake Manager (CLM). She has also been serving on the state mandated NHDES Cyanobacteria Plan Advisory Committee. Go Laura!



Gene is a great steward of the environment and a leader in the industry. We will truly miss working with him. Painting by Julia Bell, daughter of Forrest Bell and SCAD Class of 2027.

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