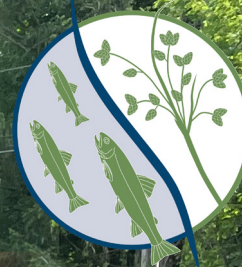


2023 DER Annual Report

Climate Challenges Drive Restoration Solutions



COMMONWEALTH OF MASSACHUSETTS • DEPARTMENT OF FISH & GAME • DIVISION OF ECOLOGICAL RESTORATION

Maura T. Healey, Governor • Kimberley Driscoll, Lieutenant Governor • Rebecca L. Tepper, Secretary
Thomas K. O'Shea, Commissioner • Beth Lambert, Director • Hunt Durey, Deputy Director • Alyssa Sciuto, Assistant Director

Letter from Leadership

Dear friends and colleagues,


I am proud to present the Division of Ecological Restoration's (DER) 2023 annual report, *Climate Challenges Drive Restoration Solutions*. This report showcases the accomplishments of DER throughout 2023, made possible by the hard work of DER staff and municipalities, agencies, non-profit organizations, regional planning agencies, and other partners.

DER and partners are expanding river and wetland restoration in response to the challenge of climate change. Eleven restoration projects reached construction this year. We celebrated three dams removed, three culverts replaced, over 315 river miles reconnected, and other restoration milestones (see page 6). All of these projects restore rivers and wetlands and help people and nature adapt to climate change.

I'm also excited to share the progress of DER's newest program, the Regional Restoration Partnerships Program. This program helps regional and watershed organizations build capacity needed to lead and support restoration within their regions. DER selected three Restoration Partnerships in 2022: the Merrimack River Watershed Partnership, Buzzards Bay Restoration Partnership, and the Berkshire Clean Cold Connected Partnership. Already, these three Partnerships are working with 124 municipalities and have identified over 70 priority restoration projects. Many of those restoration projects are now entering their planning phases.

In 2024, we'll be taking on new restoration projects through our [Priority Projects Program](#) and expanding the [Regional Restoration Partnerships Program](#). Keep your eyes peeled for Requests for Responses for both of these efforts! For more information, follow us on [Instagram](#) or [X](#), visit [our website](#), and [sign up](#) for our quarterly Ebb & Flow newsletter.

I'll see you on the river,



Beth Lambert, *Director*



Hunt Durey, *Deputy Director*



Alyssa Sciuto, *Assistant Director*



Thomas K. O'Shea, *Commissioner*



About DER



**The Division of Ecological Restoration (DER)
restores and protects rivers, wetlands, and watersheds
in Massachusetts for the benefit of people and the environment.**

DER was established in 2009 as part of the [Department of Fish and Game](#) under the [Executive Office of Energy and Environmental Affairs](#), to bring attention, momentum, and capacity to river and wetland restoration. Since then, DER and partners have completed more than 150 restoration projects, with over 40 projects in planning at any time. DER's work includes the restoration of [wetlands](#) and [retired cranberry bogs](#), [dam removal](#), [culvert replacement](#), and [building capacity of restoration partners](#) throughout the state. DER's projects restore healthy habitat while also helping communities increase climate resilience, prevent storm damage, address aging infrastructure and public safety concerns, and improve outdoor recreation. Our projects take place through partnerships with communities, state and federal agencies, regional organizations, and non-profit groups.



Our Team

Beth Lambert, *Director*
Hunt Durey, *Deputy Director*
Alyssa Sciuto, *Assistant Director of Operations*

David Azinheira
Lindsay Azor
Ian Balcom
Carrie Banks
Kate Bentsen
Sabrina Braunlich
Susan Bresney
Jessica Cohn
Kirsten Currier
Melissa De Vivero
Kristen Ferry
Eric Ford

William Giuliano
Liz Gorrill
Joseph Gould
Krista Haas
Chris Hirsch
Robert Kearns
Georgeann Keer
Cristina Kennedy
Anthony Lucivero
Allison Perlman
Holden Sparacino
Calli Willette



www.mass.gov/der



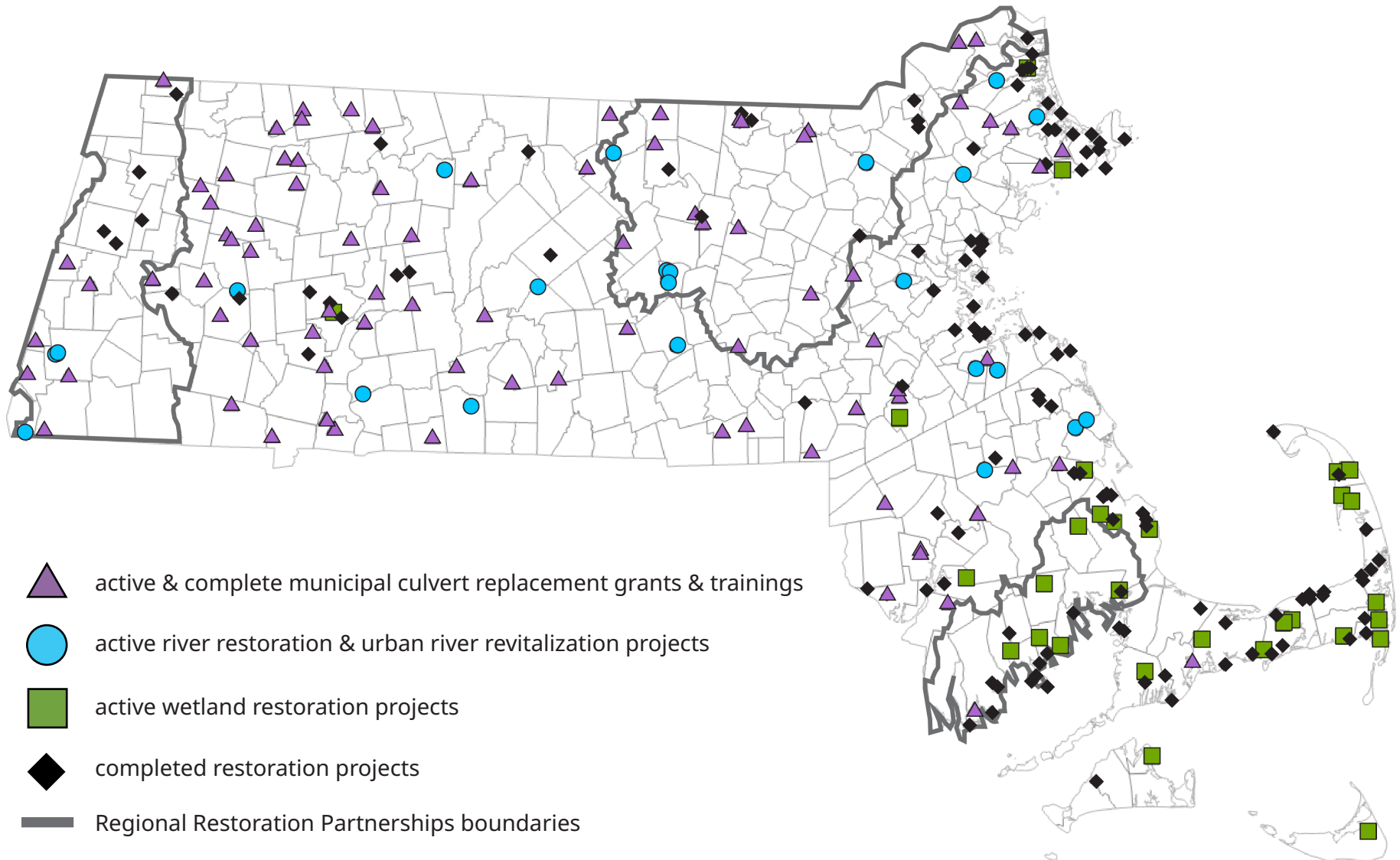
[@MassEcoRestore](#)



[@MassEcoRestore](#)

Where We Work

DER works throughout Massachusetts, with over 70 river and wetland restoration projects currently underway. These projects restore healthy habitat and help communities adapt to climate change. Learn more and find a project near you by visiting DER's [interactive project map](#) on the [DER website](#).



2023 Accomplishments

DER worked with partners from municipalities, nonprofits, government agencies, and other organizations to accomplish our restoration goals throughout 2023.



FUNDING

\$811,000

awarded to **14** municipalities for projects through the Culvert Replacement Municipal Assistance Grant Program. These included Ashburnham, Ashby, Chester, Egremont, Great Barrington, Haverhill, Huntington, Leicester, Norfolk, Raynham, Richmond, South Hadley, Tyngsborough, and Uxbridge. Overall, **71** municipalities requested **\$11,972,449** in funding from this program.

\$5,026,000

awarded to **3** restoration projects in Carver, Ipswich, and Wellfleet through the Priority Projects Program. This includes **\$5,000,000** to the Herring River Estuary Restoration Project in Wellfleet.

\$609,825

awarded to **3** Restoration Partnerships through the Regional Restoration Partnerships Program, which provided capacity-building support to **13** watershed groups and engaged **124** municipalities. These Restoration Partnerships cover the Buzzards Bay region, Merrimack River watershed, and Hoosic, Housatonic, and Farmington River watersheds.

\$350,000

awarded for **7** dam removal preliminary design studies in Athol, Attleboro, Colrain, Groton, North Andover, Monson, Phillipston, and Shutesbury. These studies will evaluate the feasibility of removing specific dams in these areas, to inform potential future restoration work.





PROJECTS

11

projects under construction

3

projects completed

66

Priority Projects in planning, design, permitting, or construction



INFRASTRUCTURE

3

dams removed in Braintree and Bridgewater

3

culverts upgraded in Ashfield, Plymouth, and Washington



BENEFITS

316.2

river miles reconnected

40

acres of freshwater wetlands restored

594

acres of river herring spawning habitat now accessible



Building a Strong Foundation for DER's Future

In the last five years, DER has doubled in size, and has rapidly expanded its restoration programs in response to the demand for assistance. Now, DER is restructuring its programs to better meet the restoration needs of municipalities, non-profit organizations, and landowners. As a young agency, DER is building a solid operational foundation that will serve the Division and its partners for many years to come.

DER's programs have restructured to form three branches: Capacity Building, Habitat Restoration, and Technical Services. These three branches will function independently, tackling various aspects of restoration while working collaboratively, sharing expertise, and collectively contributing to restoration projects and initiatives. These changes will allow DER to strengthen internal and external capacity to lead restoration projects, share tools and approaches with a wider audience, and mobilize restoration across the state.

Capacity Building Branch

This branch provides technical assistance, training, and funding to help nonprofit organizations, municipalities, and others build capacity to lead and support restoration.

Programs: Stream Continuity & Regional Restoration Partnerships



Habitat Restoration Branch

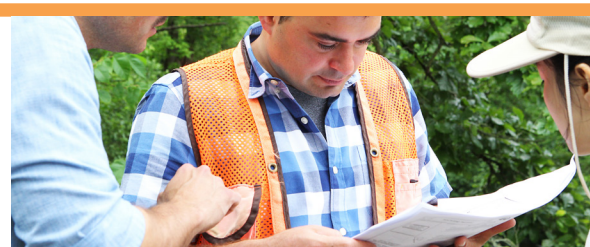
This branch leads, funds, and supports restoration projects throughout the state that benefit communities and restore the ecological health of rivers and wetlands.

Programs: Dam Removal, Cranberry Bog Restoration, & Wetlands Restoration



Technical Services Branch

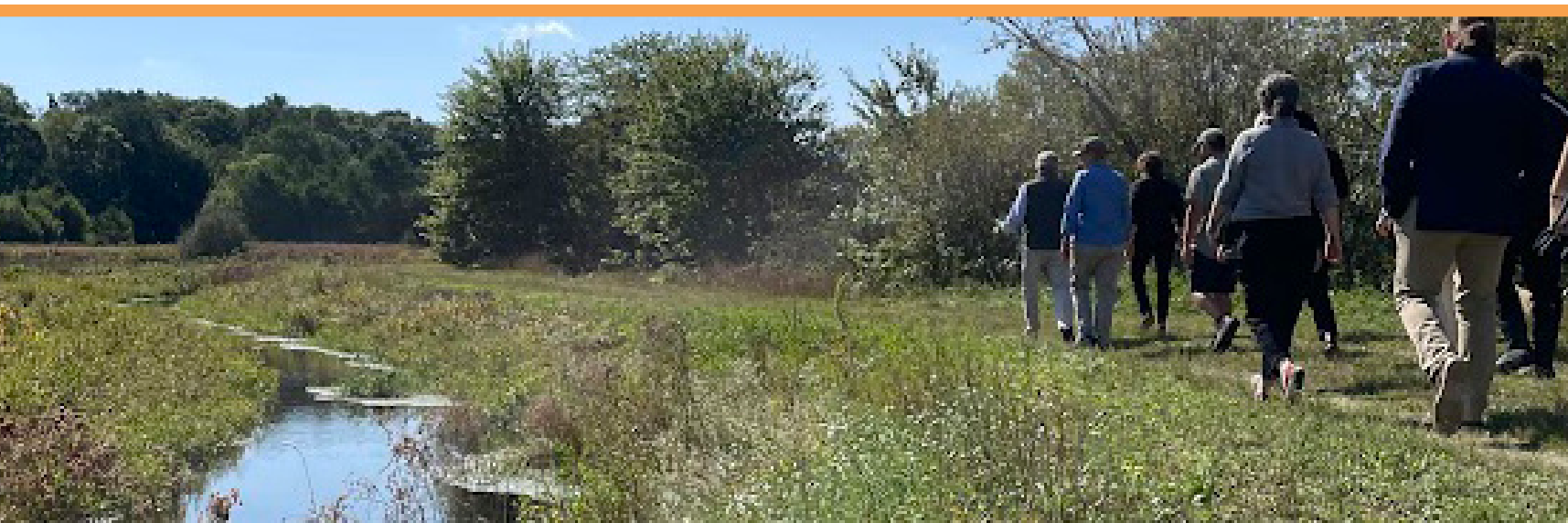
This new branch houses technical experts including restoration planning and engineering, and serves as a repository of restoration knowledge, harnessing insights from DER staff and external sources to generate technical resources for restoration.



Restoration Benefits People & Nature

Climate change continues to impact communities and ecosystems throughout Massachusetts and around the globe. More intense and frequent storms, higher temperatures, and rising seas are just some examples of the effects that are increasingly felt across the state. To improve climate resilience and combat issues like the damaging flooding from last summer, Massachusetts communities are turning to ecological restoration, which provides a wide variety of benefits for both people and nature. Restoration projects—from dam removals to culvert replacements and wetland restoration—can establish storm protection, reduce flood risk, improve water quality, and increase public safety. In addition, this work can boost biodiversity, establish recreational opportunities, and create jobs. DER works with partners throughout the state on ecological restoration projects to establish healthier rivers and wetlands, which in turn benefit the people and natural systems of the Commonwealth in these ways and more.

Commitment to Equitable Restoration: DER is part of EEA's recently-published [*Environmental Justice Strategy*](#). Of DER's active projects, 56% are in a town with environmental justice populations and of those, 30% are in an environmental justice neighborhood. DER also recognizes the importance of integrating multiple perspectives in our work and is working to incorporate indigenous knowledge into our restoration practices. We are committed to continuing to learn how to best serve all communities in Massachusetts.



In September 2023, a site tour of the Marstons Mills Cranberry Bog Restoration Project in Barnstable discusses the many benefits of ecological restoration.



Through DER's [CRMA Grant Program](#), the Town of Pepperell replaced a culvert on Heald Street this fall. The original structure was undersized and degraded, posing a severe risk of failure and a threat to public safety. The new structure meets the state's [Stream Crossing Standards](#), allowing for a more naturally-flowing [Sucker Brook](#) and reducing the danger to the road and surrounding communities.

Project Partner: Town of Pepperell

Storm Protection & Reduced Flood Risk

DER's ecological restoration work protects communities by increasing climate resilience through storm protection and reduced flood risk. Along the coast, DER restores wetlands and salt marshes, which provide a natural barrier to storms by absorbing flood waters and decreasing wave energy, protecting nearby communities. In the western part of the state, Massachusetts experienced severe flooding in the summer and fall of 2023, which resulted in undersized culverts unfortunately contributing to road flooding and failures. DER's [Culvert Replacement Municipal Assistance \(CRMA\) Grant Program](#) helps municipalities replace undersized and deteriorated culverts with larger and more resilient structures. Installing culverts that meet the [Massachusetts Stream Crossing Standards](#) allows rivers to flow unrestricted and lowers the risk of flood damage.

Healthy Infrastructure & Public Safety

Many municipalities are confronted with aging and deteriorating culverts and dams, paired with increasing costs to maintain them. DER's [Dam Removal](#) and [Stream Continuity](#) Programs work with partners to remove dams and replace undersized and deteriorating culverts with those that meet the [Massachusetts Stream Crossing Standards](#). This work improves public safety and helps municipalities address rising maintenance costs. Although replacing culverts with structures that meet these standards [involves more up-front cost, it is less expensive](#) over the lifespan of the structure than inaction or in-kind replacements.

In August, DER [announced \\$811,000 in funding](#) for culvert replacement projects in 14 municipalities.

This funding was awarded through the [Culvert Replacement Municipal Assistance \(CRMA\) Grant Program](#) to replace undersized and/or degraded culverts with those that support public safety, increase flood resilience, and improve wildlife passage. The Town of Chester, where the grant announcement event was held, received funding to work toward replacing a culvert that had previously washed out the road, causing residents to become stranded. This infrastructure improvement will mean increased public safety and the ability to handle high water flows.

This past summer, DER, the Town of Bridgewater, and partners removed the obsolete High Street Dam in Bridgewater as a part of the Town River Restoration Project. This project also included removing and replacing a 100-year-old bridge upstream that consisted of four undersized culverts. Both degraded and hazardous structures contributed to localized flooding that overtopped High Street and inundated nearby buildings. With the dam removed and bridge replaced, high river flows are now better accommodated and 10 miles of river habitat have been opened to benefit fish and provide access to 354 acres of spawning habitat. In June 2023, U.S. Secretary of the Interior Deb Haaland (shown at right with DER's Chris Hirsch) visited this site to learn about this work and its benefits.

Project Partners: The Town of Bridgewater, the Nature Conservancy, the private dam owner, NOAA, Division of Marine Fisheries, Municipal Vulnerability Preparedness Program, Dam and Seawall Repair or Removal Program, US Fish and Wildlife Foundation, the Taunton River Wild and Scenic Stewardship Council, and others



Biodiversity


Creating free-flowing, healthy rivers and wetlands not only benefits our communities, but also improves habitat to support diverse and rare species found throughout the Commonwealth. In 2023, the Healey-Driscoll Administration helped prioritize and bring awareness to this by [signing an Executive Order](#) to develop new biodiversity goals for a nature-positive future. Ecological restoration supports biodiversity by revitalizing habitats for a variety of wildlife, including many endangered and threatened plant, fish, and animal species.

**Restoring biodiverse habitats
is a natural way to increase
climate resilience.**

This fall, the Mattapoisett Bog Wetland Restoration Project (shown in pre-restoration condition to the right) began construction to restore 57 acres of retired cranberry bogs. By restoring hydrology, controlling invasive plants, and introducing native plantings, this project will improve habitat for many species including the Eastern Box Turtle, which is listed as a species of Special Concern under the Massachusetts Endangered Species Act.

Project Partners: Buzzards Bay Coalition and Natural Resources Conservation Service





Restoration creates safe and healthy recreational areas for all to enjoy.

Recreational Opportunities

DER's restoration projects often result in new natural areas for the public to enjoy or improvements to existing conservation land. This work also improves public safety at many of these sites. Massachusetts has many beautiful natural spaces and continuing to restore rivers, wetlands, and watersheds will ensure future generations can enjoy them.

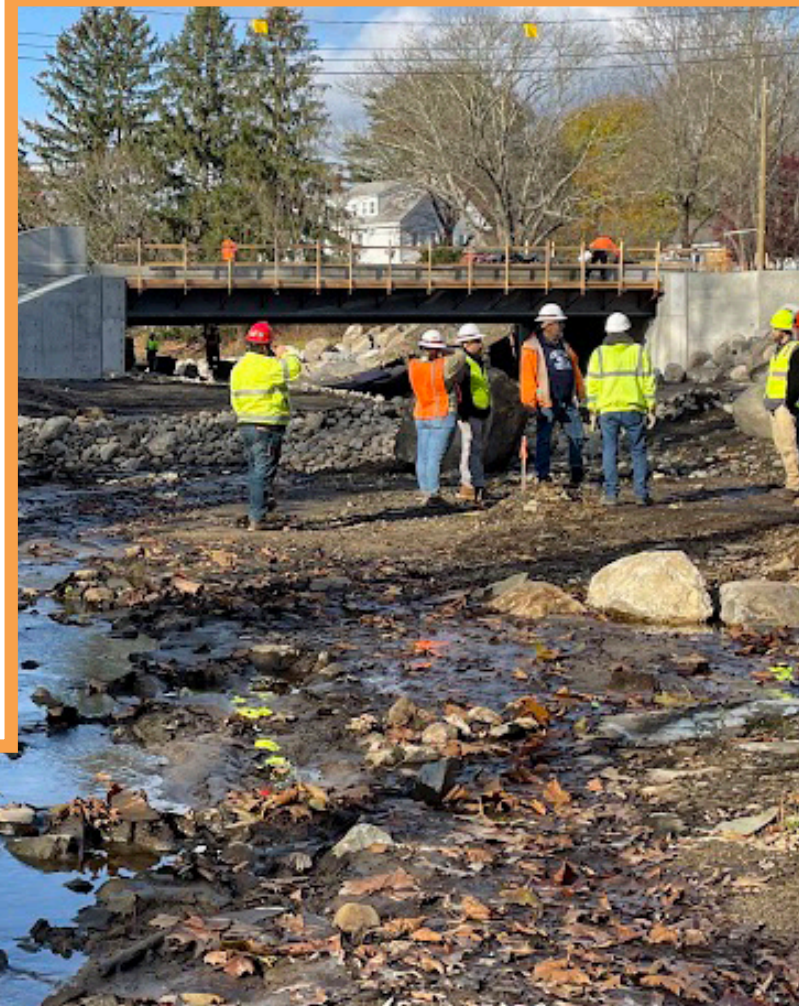
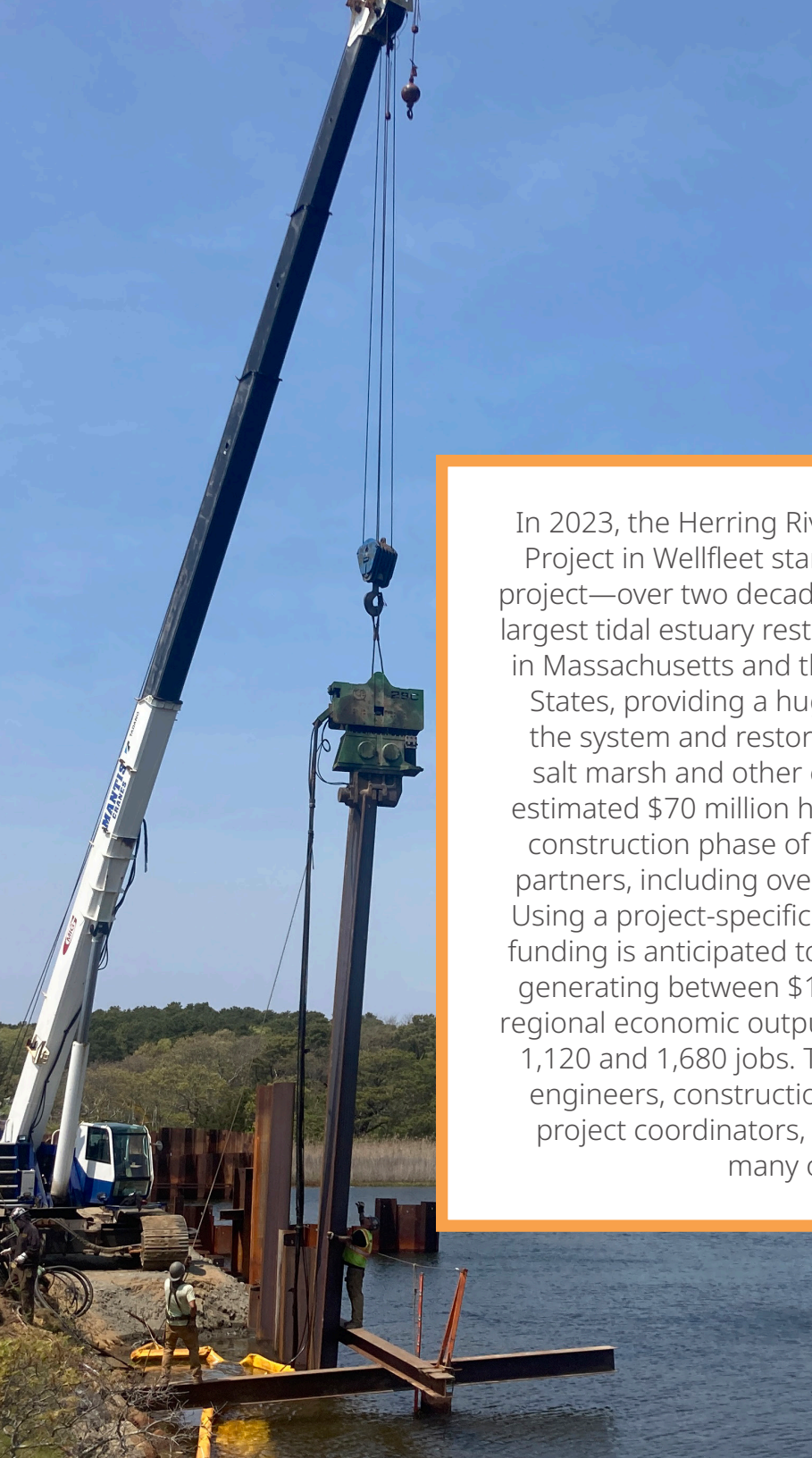
In 2023, DER, the MA Division of Marine Fisheries, the Town of Braintree, and partners demolished the Armstrong and Ames Pond Dams in Braintree as part of the Monatiquot River Restoration Project. Construction began in the summer to remove the dams and open 36 river miles for several wildlife and migratory fish species, as well as strengthen climate resilience and improve water quality. This project will also create new recreational space along the river, including a boardwalk and scenic viewing platform. The platform will give visitors the opportunity to watch river herring migrating upstream each spring. Opening access will allow the public to enjoy the river, including some of the most scenic spots, in an otherwise urban area.

Project Partners: Division of Marine Fisheries, Town of Braintree, the private owner of the dams, Fore River Watershed Association, NOAA Restoration Center, and US Fish & Wildlife Service

Job Creation & Economic Benefits

River and wetland restoration creates jobs, stimulates the economy, and generates long-term economic value. On average, for every million dollars spent on ecological restoration projects, 12.5 jobs are created or maintained, and \$1.75 million in economic activity is created. Based on [those numbers](#), DER estimates that 75 jobs and over \$11 million in additional economic activity will be created with the grant funding that DER awarded in 2023.

In 2023, the Herring River Estuary Restoration Project in Wellfleet started construction. This project—over two decades in the making—is the largest tidal estuary restoration ever undertaken in Massachusetts and the northeastern United States, providing a huge array of benefits to the system and restoring up to 890 acres of salt marsh and other estuarine habitats. An estimated \$70 million has been invested in the construction phase of this project by several partners, including over \$22 million from DER. Using a project-specific economic analysis, this funding is anticipated to boost the economy by generating between \$112 and \$126 million in regional economic output and creating between 1,120 and 1,680 jobs. These jobs may include engineers, construction laborers, surveyors, project coordinators, nursery growers, and many others.



Restoration Success: A Celebration

The Eel River Headwaters Restoration Project celebrated 13 years in 2023.

The Eel River Headwaters Restoration Project, completed in 2010, restored approximately 60 acres of former cranberry bogs located in the headwaters of the Eel River in Plymouth. This project included stream channel and floodplain reconstruction, multiple dam removals and culvert replacements, and extensive plantings including 20,000 Atlantic white cedar trees. Thirteen years later, Atlantic white cedars thrive and wetland plants cover former farmland. [You can visit](#) this beautiful spot, which is managed by the Town of Plymouth as conservation land for public use and enjoyment.

Since its inception in 2009, DER has completed over 150 restoration projects. With each project, DER learns more about the efficacy of restoration techniques and as these projects age, DER continues to provide important information about restoration and its benefits. DER has learned a great deal from the Eel River Headwaters Restoration Project and looks forward to celebrating many more restoration success milestones in the future.





Looking to the Future

DER is excited for all that's coming in 2024, including some of these anticipated activities:

- DER will issue its annual Request for Responses for municipalities that want to upgrade undersized or failing culverts through the [Culvert Replacement Municipal Assistance \(CRMA\) Grant Program](#).
 - DER will expand the [Regional Restoration Partnerships Program](#) by issuing a new request for responses to establish new Restoration Partnerships.
 - DER will continue to oversee over 50 active projects as part of the [Priority Projects Program](#). In addition, DER intends to issue a request for responses to award Priority Project status to new projects, making them eligible for support from DER in the form of grant eligibility, technical assistance, and contracted technical services.
-
- DER will complete preliminary design studies for seven potential dam removal projects. [DER awarded \\$350,000](#) to support these studies in December 2023.
 - DER will begin preliminary design studies to replace near-coastal waterway crossings (such as culverts or bridges) that are expected to be impacted by sea-level rise and increased storm surge due to climate change. Addressing this type of crossing presents a new set of challenges. [DER issued a Request for Responses](#) to identify potential project locations in need of preliminary studies in 2023 and anticipates selecting sites in 2024.
 - DER anticipates completing construction on at least seven cranberry bog restoration, dam removal, wetland restoration, and culvert replacement projects.

Photo Captions & Credits

cover: Construction crews look over the site of the High Street Dam Removal Project in Bridgewater. The dam was removed in summer 2023. *(Credit: DER)*

page one: The site of the Abbey Brook Restoration and Revitalization Project in Chicopee, which includes two dam removals, a culvert replacement, and “daylighting” of a 250-foot stretch of river. This project is currently in the first phase of construction. *(Credit: DER)*

page two, top left: Part of DER’s staff in front of an active cranberry harvest. *(Credit: DER)*

page two, top right: DER staff participate in the Herring River Estuary Restoration Project’s groundbreaking ceremony in March 2023. *(Credit: Solano Film Collective)*

page two, bottom right: DER staff at Duck Harbor, part of the Herring River Estuary Restoration Project site, in September 2023. *(Credit: DER)*

page four: DER staff take streamflow measurements in Worcester in June 2023. *(Credit: DER)*

page five: DER staff, partners, and construction crew excitingly view the removal of the Armstrong Dam in Braintree in August 2023. This dam removal was part of the Monaquot River Restoration Project. *(Credit: DER)*

page six, top: Participants look at an example culvert in Ashfield as part of a past Municipal Culvert Replacement Training led by DER. *(Credit: DER)*

page six, middle: DER staff visit an ecological restoration project construction site. *(Credit: DER)*

page six, bottom: DER staff look at project plans. *(Credit: DER)*

page seven, top: A stream in Worcester. *(Credit: DER)*

page seven, bottom: In September 2023, a site tour of the Marstons Mills Cranberry Bog Restoration Project in Barnstable discusses the many benefits of ecological restoration. *(Credit: DER)*

page eight: DER's Capacity Building Branch Manager and Stream Continuity Program smile in front of an updated culvert in Buckland in November 2023. *(Credit: DER)*

page nine, bottom: Construction equipment in action to remove the High Street Dam in Bridgewater. *(Credit: DER)*

page nine, bottom right: DER's Dam Removal Program Manager Chris Hirsch with U.S. Secretary of the Interior Deb Haaland during her visit to the High Street Dam Removal Project in June 2023. *(Credit: DER)*

page ten: A turtle at the site of the South Meadow Reserve Restoration Project in Carver in June 2023. *(Credit: DER)*

page eleven: DER staff take a walk in October 2023 at the site of the Eel River Restoration Project in Plymouth, a cranberry bog restoration project that was completed in 2010. *(Credit: DER)*

page twelve, left: Construction crews work to construct a temporary bridge at the site of the Herring River Estuary Restoration Project. *(Credit: Wes Stinson)*

page twelve, right: Construction crews at the High Street bridge replacement site, part of the High Street Dam Removal Project. *(Credit: DER)*

page thirteen: The site of the Eel River Restoration Project in Plymouth, a cranberry bog restoration project that was completed in 2010. *(Credit: DER)*

page fourteen: DER staff and partners take a look at the site of the Armstrong Dam removal, part of the Monatiquot River Restoration Project in Braintree in November 2023. *(Credit: DER)*