

THE Voice OF THE RIVER

Spring 2019 Newsletter / 2018 Annual Report



Reliable Water by Achievable Means *by Executive Director Wayne Castonguay*

Water conservation has been a part of our mission from the beginning. Over the years, we have seen many changes in our watershed's climate patterns: more droughts, floods, rain and heat. What has changed less is how we manage growth and development and how it impacts our most precious resource, water.



SAFE YIELD

The Safe Yield is defined as the amount of water that can be removed from the watershed without risking the reliability of water supplies and the health of the ecosystem. Staying within the Safe Yield and achieving net-zero water use is possible if municipalities, developers and watershed residents work together.

Now that the state has established a mandatory Safe Yield, the amount of water that can be safely withdrawn from the Ipswich River Basin, the contrast of where we need to be with our water use and where we are is stark. Current state-approved water withdrawals, which do not account for private wells, are already above the amount of water determined to be the river's Safe Yield. As a result, any future additional water use in the Ipswich River watershed must remain under the current allocations, forever.

The tools to address this challenge exist, and we are working to improve their implementation, availability and success. By working towards net-zero water use, we can protect the future of both our water supplies and the river. The first step is a perception switch—how communities think about water, their usage and the value water has. You, the friends and supporters of the Ipswich River, are integral to making this

shift happen. With the example you set and by being the voice of the river, you can open a dialogue in your community about how water should be better valued and managed.

As we shift our perceptions about how we use water, we also need to think about what water is worth. When additional demand is placed on our water supply, it has tangible impacts. Establishing a Water Bank is one way that towns can not only make a statement about the value they place on their resources, but also mitigate the impacts from new demand.

Towns have many areas of responsibility to consider when they make decisions about their water, and we are here to help them more easily keep water both clean and reliable. There are opportunities to revise regulations and bylaws to support climate and water smart growth and development.

The lull in new development and residential growth of recent years is over. As the dramatic increase in new development projects puts pressure on our communities across the region, it is crucial that we consider how our water will be impacted. Just as natural landscapes shift and change over time, it's reasonable for human-made landscapes to do the same. Creating developments that work with our natural surroundings rather than fighting against them is a better solution for the long-term. Add to that the immediate benefits of low-impact developments: the incorporation of natural beauty, innovation, and (something friends of the river know very well) the great feeling of doing the right thing.

Reliable water means many things: health, safety, industry, tourism, property value, quality of life. The example actions highlighted in this edition are not new or revolutionary, but they will help to protect our water resources. We have the means to achieve net-zero water use and now is the time to make it happen.

Above: Pike Messenger communes with the river he loves. When there is enough water it supports the integral aspects of our day to day life as well as nurtures elements that make that life more enjoyable.

Developer Supports Net-Zero Water Use

Development can meet the need for housing and industry without negative impacts to the environment. Harborlight Community Partners, a nonprofit developer on the North Shore, feel it is essential to their mission to “consider the full impact and benefit on our host communities,” states Andrew DeFranza, Executive Director. “As part of this work, we always seek to reduce the environmental impact of our projects through innovative ideas and systems. By working closely with the towns in which we work, and being in consultation with partners like the Ipswich River Watershed Association, we are confident that it is possible to build new, needed housing with little demand on precious and limited water resources. We have found that careful project design, along with offsets which reduce water use elsewhere, make it achievable to be responsible in responding to regional housing needs and do so while respecting equitable and sustainable water use.”



Danvers, whose water treatment station is pictured here, is the only town in the watershed to currently have a water bank, a municipal regulation that requires developers to offset their new water use by paying into a fund to support water-saving activities elsewhere in the watershed.



Did you know fish need oxygen to survive just like we do? More, cooler flowing water generally equates to greater dissolved oxygen concentrations, which support food sources (benthic macroinvertebrates), healthy fisheries and bird populations.

See 1000 Gallons in 2 Inches by Will Finch & Kim Honetschlager



We have been interested in water conservation since we moved into our old house near the Ipswich River in 2005. We entered (and won) IRWA's first contest for members to see which household used the least water per person per day, we were active in the Stream

Team's rain barrel programs in Reading and North Reading in the early 2000s, and at home we've built a 1,000 gallon rainwater collection system.

Our primary use for rainwater is a 30 by 40-foot raised bed vegetable garden. The water is pumped uphill from a pair of 275 gallon "totes" for hand watering, supplying soaker hoses, or to run a garden sprinkler. We also have five rain barrels that are linked together with 3/4" garden hose. We also use stored rainwater for new perennials or shrubs in order to get them established, but we try to only plant drought tolerant varieties.



Will Finch and Kim Honetschlager are water saving heroes, as evident by their 1,000 gallon rainwater collection system. Take a first step towards their fine example by building and installing a rain barrel at our upcoming workshop. More info at www.ipswichriver.org/events

For the most part our system keeps up with garden demand. Your needs will vary, but we have found that having one gallon of storage per square foot of roof area is adequate. Given our roof size, a 2-inch rainfall event can fill over 1,000 gallons of storage. This is double the amount often mandated for new homes in sensitive areas or on lots with too much impervious surface.

Couple this with careful use of water saving appliances and the goal of 20 gallons per person per day of municipal water consumption becomes attainable.

We are blessed in the Northeast with adequate rainfall to store for outdoor use. Imagine living in the desert Southwest where water must be imported from hundreds of miles away. Even in the Northeast water supply will become more and more of an issue. The small things we do at home can make a real difference in the health of our watershed.

The Town of Ipswich Explores Net-Zero Water Use

By Vicki Halmen, Ipswich Water and Wastewater Director

Ipswich has faced significant impacts from the river's persistent low flow and irregular precipitation conditions; in particular, the Town's public drinking water supply is extremely vulnerable to drought. We know that climate trends are likely to bring longer stretches of dry days and higher summer temperatures, particularly in June through September when public water usage is highest. In addition, we know that the population of the Town of Ipswich is estimated to increase by about five percent over the next twenty years.

In recent years, the combination of insufficient rainfall, high temperatures, increased water use and changing land use has caused new record-low streamflow and groundwater levels across the state. To address these challenges, the Town of Ipswich is engaged in a discussion of water needs, climate impacts and resiliency. We have retained a consultant to evaluate existing and future water use and recommend water source enhancements to provide drought resiliency. Several large subdivision and development proposals currently under review are shining a light on town-wide concern over expanding water use, with some vocal individuals advocating for a building moratorium. In 2017, the Town took an

Watershed Association funded by the Barr Foundation and the Metropolitan Area Planning Council will thoroughly review the steps the town has taken and research what more can be done to better manage and reduce the community's current water use and minimize new demand. This project will address the concerns raised by the community about further growth, development and the impacts future climate change will have on the community water supply.

Together the Town of Ipswich and the Ipswich River Watershed Association will:

- Review land use regulations and bylaws and develop recommendations for climate-smart, net-zero water use revisions.
- Research water use mitigation mechanisms that reduce or eliminate the strain of new development on the Ipswich water system, and develop a model Water Bank with recommendations of programs appropriate for Ipswich and other Ipswich watershed towns.
- Work with our state and regional partners to review, quantify and recommend enhanced Water Conservation Strategies that can be a model for all communities.

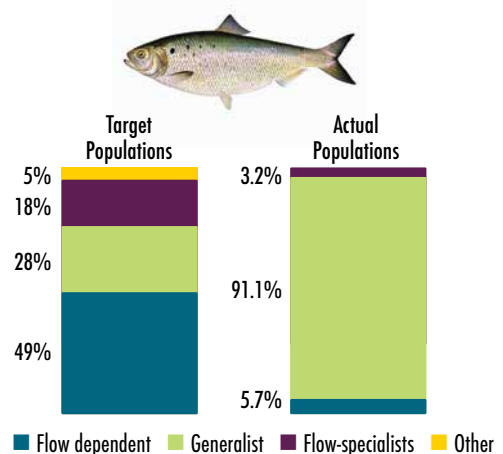


Ipswich Water and Wastewater Director Vicki Halmen (right) discusses the resiliency of the Town's water supply at the community's recent Municipal Vulnerability Workshop. The Town is currently partnering with the Ipswich River Watershed Association on a project funded by The Barr Foundation and the Metropolitan Area Planning Council called "Accelerating Climate Resiliency."

important step to address community water use by passing a bylaw that establishes water restrictions on private well usage consistent with those on the municipal supply. However, overall water usage in town is up slightly in recent years.

Discussions of these issues have extended beyond the municipal Water Department and the Board of Water Commissioners to Select Board, Planning Board and Zoning Board meetings and to town social media discussions. Ipswich recognizes that a variety of tools must be developed so the community can sustain future residential growth and economic development. This year, a project with the Ipswich River

MORE WATER = MORE FISH Ipswich River Fish Populations



The existing fish community is dominated by typical pond or generalist species such as pickerels, eels and sunfish. Fish that would be expected to dominate the Ipswich River, were there no flow problems, make up only a small percentage of the total recorded fish community or are missing entirely. Enough water means plentiful habitat for fluvial fish and ample recreational fishing opportunities!



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Reliable Water by Achievable Means



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Raise a Paddle for the River!



**Paddling. Volunteering.
 Birding. Swimming.
 Celebrating.
 And Much More Fun.
 Together!**

Join us in supporting and celebrating the river at the Paddle-a-thon and Riverfest on **Saturday, June 15.**

Registration opens April 22

Spring Calendar

Dow Brook Vernal Pool Walk April 14, 1–3 PM, Partner ECTA

Weed Watchers Training April 24, 7–9 PM

Annual Meeting April 25, 6–8 PM

Rain Barrel Workshop April 27, 10 AM-Noon

Garden Volunteer Day May 2, 9–11 AM

For more event details and chances to connect to the river visit **www.ipswichriver.org/events**

Connect to the River!

Let this lifejacket ensō bring to mind warm weather and fun days on the river. In 2019 we are asking everyone to get out walking, paddling and exploring through our Connect to the River campaign and to leave an ensō behind. This open circle symbolizes a zen state of mind, strength and wholeness. #riverzen Learn more: ipswichriver.org/connect-to-the-river



THE Voice OF THE RIVER

Summer 2019 Newsletter / Paddle-a-thon Issue



Raising Paddles, Voices and Awareness for Clean, Plentiful Water

Keeping the Ipswich River flowing with clean, plentiful water requires many staff hours, volunteer commitments and collaboration with towns and other partners, as well as donor support, including yours. Protecting our river's health is not a one year or even multi-year project. It's the day-in, day-out mission of our organization and it wouldn't be possible without you.

The RiverWatch program is our canary in the coal mine, ready to find where problems exist.

Supporting a nonprofit's general operations is often referred to as keeping the lights on, but we see it as keeping our water bottles filled.

Paddle-a-thon, held this year on June 15, is a chance to raise funds that enhance and build upon ongoing efforts to monitor and safeguard clean

water, all while having a fantastic time. This year Paddle Raisers, individual donors and corporate sponsors collectively netted \$50,000 for the river, which will help to improve our most important water monitoring efforts, like the RiverWatch program.

The foundation for the RiverWatch program has been long-term monitoring of dissolved oxygen (DO) and temperature, which has established a general profile of the Ipswich River's health in varying conditions and highlighted challenges linked to low flows. Now, new initiatives are being incorporated into the program including bacterial, chloride, and invasive plant monitoring. Low DO, chlorides from road salt and harmful bacteria are all emerging threats for our river. The RiverWatch program is our canary in the coal mine, ready to find where these problems exist. Data collected through the program will

help inform where the roots of these threats may be and enable us to develop on the ground solutions.

One example is a new dissolved oxygen study to take place in the Wenham Swamp section of the river along the Mass Audubon Wildlife Sanctuary in Hamilton and Topsfield. Jim MacDougall, a local scientist and natural resource professional, discovered a specific part of this stretch with unusually low DO. This could act like a dam that could prevent the movement of migratory fish and other species such as brook trout from freely moving through this area. We do not know the causes, but we are partnering with volunteers from Mass Audubon to investigate the timing and location of this phenomenon so we can better understand what it might mean for river life.

There is also a growing need for more widespread monitoring of bacterial pollution levels. Bacterial pathogens can prevent water bodies from meeting safe standards for swimming, clamming or boating. Expansion of our bacterial monitoring program will allow us to identify when and where the problems occur that prevent other areas from meeting important recreational and commercial uses. The Massachusetts Department of Environmental Protection (MassDEP) considers bacterial monitoring a priority and has contributed funding to us to establish an expanded

Thank you so much for being part of Paddle-a-thon (above)! This year was a resounding success with our highest numbers yet. Paddle-a-thon 2019 had 126 Paddle Raisers (including Peter Weigele and Dan Heiter, below), 37 Corporate Sponsors, 32 Volunteers, 153 people at the Riverfest party and together we netted \$50,000 for clean, plentiful water! Together, paddlers, volunteers, sponsors, Riverfest goers and others, WE DID IT!

Your Voice Matters!

Thanks to Jim MacDougall of Topsfield, on right, we are aware of a possible water quality barrier to migratory fish and are preparing next steps to address this issue. If you are interested in learning more about water quality monitoring, contact Ryan O'Donnell at rodonnell@ipswichriver.org





Wayne Castonguay was honored to be the keynote speaker at Greenbelt's Annual Meeting in May.

Nothing We Care About Can Occur Without Abundant Clean Water

The Ipswich River Watershed Association is a group of people who care about the River. This care is represented in many ways including our love for the natural world and how we benefit from the river through our drinking water, paddling, fishing, swimming, birdwatching or simply being outside. However, nothing we care about can occur without abundant, clean water. Protecting water quantity and quality is therefore our most important duty. This newsletter focuses on just a few aspects of this work and how each of us can help keep water clean and plentiful.

We've been at it more than 40 years and our efforts are paying off. Our river is among the cleanest in Massachusetts and our low flow problem, which is one of the most challenging in the state, is slowly getting better. While we still have a ways to go to fix our low flows and

there are always new threats to our river we have shown that through hard work and perseverance positive change is achievable.

Keeping the river clean and flowing takes all of us working together either through our individual behavior or banding together to advocate for change among our neighbors and in town and state government. Each year, we all come together at the Paddle-a-thon to raise funds and awareness for our clean water programs. With your continued help and hands on participation, we can ensure a clean healthy river into the future.

Wayne Castonguay
Executive Director

Raising Paddles, Voices and Awareness for Clean, Plentiful Water (cont'd)

bacterial monitoring program in our region. We will be working with our partners at the Parker River Clean Water Association and the Chebacco Lake & Watershed Association to identify which streams and water bodies to monitor and to develop sampling and testing procedures.

Alongside monitoring the health of the river are efforts to keep that water protected from overuse and contamination. For these efforts, policy plays a major role. In the last few years, major new regulations have been enacted by state and federal agencies in the areas of stormwater and water withdrawals. Concurrently, MassDEP is working with communities on the permits controlling public water withdrawals. Together, these new regulations and water permits are good news for our river, but present a challenge for watershed communities.

Good news, there are ever more sources of funding to help towns comply with new rules. These include stormwater assistance, water quality monitoring, culvert replacements, and particularly, climate resiliency planning and project implementation as part of the State's Municipal Vulnerability Preparedness Program (MVP). However, with municipal staff

and local budgets stretched thin, communities may need to find partners to support their efforts in order to take advantage of these opportunities.

That's where our Municipal Services Program comes in. Along with the other 20 partners in our regional Parker-Ipswich-Essex Rivers (PIE-Rivers) Partnership, our staff members are working in many ways to provide technical assistance and support to the 28 cities and towns in the three watersheds. The primary

Supporting a nonprofit's general operations is often referred to as keeping the lights on, but we see it as keeping our water bottles filled.

purpose of this program is to provide towns with tools, services and resources that help make compliance, infrastructure improvements and environmental stewardship cheaper and easier.

Lynnfield provides a recent example. The town's Conservation Office realized that they were hearing many more inquiries about all types of water topics: water bans, usage, supply, quality and more. Seeking partners to explore these topics in a public presentation, they reached out to our Greenscapes North Shore



Thanks to our Greenscapes program, local kids above the age of 9 can tell you what groundwater and stormwater are; that's amazing! Kids (and this awesome parent volunteer) particularly love the program's groundwater model. Your support sustains the youth education, events and presentations that increase local knowledge of watershed issues, in particular the power individuals have to protect clean, plentiful water.

Is your town or city talking about water? Are citizens looking for ways to help town staff and municipal leaders make progress on resiliency and other water issues? Conservation Agent Emilie Cademartori, right, reached out to us and made a Water Talk in Lynnfield happen. To help organize a talk in your town, contact Kristen Grubbs at kgrubbs@ipswichriver.org.



New regulations and water permits are good news for our river, but present a challenge for watershed communities.

room also benefited—further developing their working relationships. Plans are already underway in Lynnfield for additional Water Talks in the future, building upon the relationships developed that night.

To those of you who speak up on water issues in your town, like the residents in Lynnfield, thank you! The more armed with knowledge communities are, the better you will be as advocates and practitioners for clean water. Far more damage comes from a lack of understanding than willful malice, and water pollution is an excellent example.

Thankfully, the Ipswich River is not faced with certain traditional sources of pollution such as industrial discharges or combined Sewage Overflows (known as point sources) which have been in the news so much lately. The main pollutant in our river is stormwater runoff

which is known as non-point source pollution. This pollution is exacerbated by water withdrawals which reduce the amount of water in the river to dilute its impact. Unfortunately, this type of pollution is harder to deal with since it's so widespread and all of us contribute to it through our every-day living. Fortunately, we have the tools and knowledge to mitigate the impact of stormwater pollution and water withdrawals and each of us can play a role by modifying the way we live.

Increased awareness and involvement for our river is as crucial an aspect of Paddle-a-thon as raising funds. To best protect our river, we need to understand and track the threats continually facing it. We want to thank the 153 of you who came to the Riverfest party, signed up as Paddle

Raisers and spread the word about why clean water matters. Thanks also to the 42 Corporate Sponsors who not only contributed funds, but also showed their support through the 33 corporate team members at the party! This was a record breaking year. We hope you will join us next year for Paddle-a-thon & Riverfest 2020!

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Clean, abundant water is critical to healthy fish populations. River herring were once a dominant fish of our coastal rivers during their spring migration. Their decades-long decline has left the river without a vital part of its food web. One solution is to restock ponds so a run can be reestablished. As a partner with the Division of Marine Fisheries, Restoration Manager Kaitlyn Shaw releases herring into the Ipswich River.

Stand Up for Clean, Plentiful Water

Aaron Mearns of Coast to Coast Paddle did his Paddle-a-thon Long Haul paddle in the rain, traversing 29.8 miles of our beautiful river and loving every minute of it. He streamed it all on Instagram and Facebook from his Stand Up Paddleboard so others could join the fun. And join they did, helping Aaron raise another \$525 for clean, plentiful water. Thank you, Aaron! You redefine Standing Up for water.

Donate Now at www.ipswichriver.org



Name _____
 Address _____
 Town/City _____ Zip _____
 Email _____ Phone _____

Enclosed is my tax deductible donation of:

- River Steward \$1000
- Friend \$100
- Individual \$40
- Patron \$250
- Family \$50
- Other _____

- For:** Where needed most Paddle-a-thon Membership

You may make check payable to IRWA and mail to: **IRWA, PO Box 576, Ipswich, MA 01938**
Thank you for your support!

Card # _____ Exp. Date: _____ Security Code: _____
 Name on Card: _____ Signature: _____





**IPSWICH RIVER
WATERSHED ASSOCIATION**

The Voice of the River

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Stand Up for Clean Water



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Keep on Paddling!



Thank you to all who supported and participated in Paddle-a-thon & Riverfest 2019. Together, we raised \$50,000 to support our clean water program. Employees of Cell Signaling Technology and other friends of the river had a ton of fun together. Visit ipswichriver.org/PAT to see more photos and a full list of sponsors.

Events Calendar

JULY 31 **Outreach Volunteer Training**
7:00–9:00 pm at Riverbend, Ipswich

AUGUST 3 **Rain Barrel Workshop**
10:00 am–12 Noon at Riverbend, Ipswich

AUGUST 6 **Beginners Paddle**
5:30–8:00 pm at Riverbend, Ipswich

SEPTEMBER 21 **Ipswich River Paddle**
1:00–3:00 pm at Riverbend, Ipswich

SEPTEMBER 28 **Morning River Paddle**
7:00–10:00 am at Riverbend, Ipswich

OCTOBER 5 **MacroInvertebrate Training**
10:00 am–12 Noon at Riverbend, Ipswich

OCTOBER 12 **Fall Foliage Paddle**
1:00–4:00 pm at Riverbend, Ipswich

SEPTEMBER 30: **Submissions Due**
for “Images on the Water Show”

**For more information on events
visit ipswichriver.org/events**



This issue highlights projects made possible by the Barriers Report, one of the most comprehensive watershed-scale barrier assessments ever done in the United States. The report inventoried, prioritized and assessed 1,196 barriers to flow in the Parker, Ipswich and Essex (PIE- Rivers) watersheds. These include the South Middleton Dam (above) which is currently in permitting process for removal.

Which culvert would you choose?

Undersized and blocked structures, like the tidal crossing shown here (right) are not only difficult for wildlife to pass through, but also contribute to flooded conditions during storms as well as roadkill, both of which can make travel unsafe.

The design of the upgraded culvert below allows wildlife and water to move freely beneath the road.



Free Our Rivers

Improving River Connectivity

A brook might sometimes be called a stream, an ocean a sea, but no one would ever confuse a river and a pond. Except that, they often have. Dotted the landscape of New England are lakes and ponds not naturally formed, but manufactured by human intervention. The reasons are varied and include industry, recreation and resource management, but the why of dams is less important than the what. What happens when a river loses its most defining characteristic, when it no longer flows freely?

You've likely heard the Heraclitus quote, "A man can never step in the same river twice." The ancient Greeks are far from the only people to have used the metaphor of a river for the inherently impermanent nature of life. Change is what rivers do. They rise and fall, widen and narrow, make entirely new courses for themselves and shift the world around them. And all the plants and animals that are adapted to river life need these changes.

That transformative aspect is crippled when we sever rivers with dams and poorly designed culverts or hem them in by building walls where their banks should be. Stagnant, ponded areas are created where there should be dynamic flow. When the river should meander, it is forced to rush through a confined space. Harmed, too, are the many species that live in and along a river. Whether they live on land or in water, animals use rivers and streams as highways. Dams and culverts represent one more way in which habitats have been fragmented, which isn't good for animals, clean water, or people.

When it comes to the environment, it sometimes feels as if there's no turning back, no way to reverse the damage that's been done. How comforting, then, to see barrier removal projects throughout the country breathing new life into rivers. Even better to know that some of those projects are happening right here on the Ipswich River, with your help. Thanks to the support of partner organizations and town staff, and guided by the assessments in the recently completed Barriers Report, we are making huge strides forward in restoring river connectivity and improving the resilience of our waterways.



A Word from Wayne

River Connectivity is perhaps the biggest buzzword in river protection across the country these days. Undoing the severe damage we've caused to our rivers over the centuries by removing and/or upgrading these damaging and often obsolete structures has become one of the major priorities of river advocates. Not only do these projects restore rivers' natural function and health, but also they can protect communities by reducing flooding and making our built environment more resilient.

I'm proud to say that here at Ipswich River, we've become leaders in this national movement! Our barriers assessment in the Parker, Ipswich and Essex watersheds was the first of its kind, a comprehensive analysis of every barrier, which prioritized the need for upgrades based on both ecological impact and infrastructure risk assessment. This cost-effective model is now being used by river advocates in other watersheds. Building upon this success, we were honored to be chosen by the leading barrier removal and upgrade entity on the Eastern Seaboard to aid in the development and testing of a new protocol for assessing tidal barriers, which are uniquely complicated structures. This protocol will soon become the standard for conducting such assessments nationwide. And, most recently, we were recognized for this work by being awarded a National Fish & Wildlife Foundation grant to conduct a comprehensive barrier and fisheries restoration project in the Pye/Howlett Brook sub-watersheds of the Ipswich River, becoming one of the first small community-based organizations to be awarded one of these highly competitive grants – wow!

We now have nearly 30 barriers projects in various stages of implementation and our first mainstem dam, in South Middleton, is due to be removed next year. In the coming years and with your help, we hope to dramatically increase the pace of barrier removal and upgrades thereby protecting the River's natural environment and the communities that depend upon it for generations to come. Free our Rivers!

WAYNE

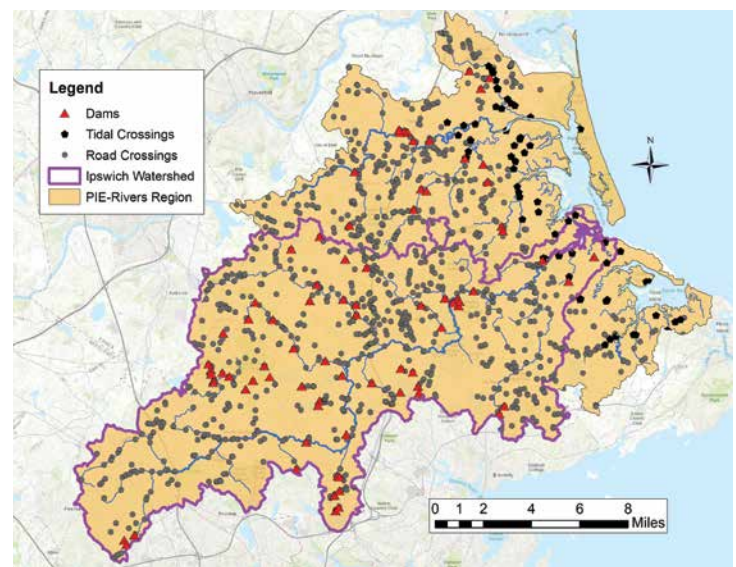
Wayne Castonguay
Executive Director

The Right Project in the Right Place

Thanks to funding from Essex County Community Foundation (ECCF) and the New England Biolabs Foundation (NEBF), the PIE-Rivers Partnership is increasing the pace of on-the-ground project implementation in the Parker, Essex and Ipswich watersheds. Crucial to getting these projects off the ground are near-term implementation plans, recently developed by PIE-Rivers partners. The plans focus on Water Quality Management, River and Stream Connectivity, Land Use Management and Water Conservation.

No official protocol existed to assess tidal river crossings, until now. With funding from the Massachusetts Environmental Trust (MET) we worked with North Atlantic Aquatic Connectivity expert Scott Jackson to finalize and test a protocol that was then used to assess 83 tidal or tidally-influenced sites in the PIE-Rivers watershed. Three workshops have taken place to train volunteers and encourage the use of the protocol regionally. These assessments are the first step to restoring impacted salt marshes, improving fish passage and increasing resiliency.

Barriers in the Parker, Ipswich and Essex Watersheds



Additional funding through a MassBays Healthy Estuaries Grant made the Great Marsh Barriers Mitigation project possible. As part of this project, 27 sites out of a list of 182 identified barriers in the Plum Island Sound/Essex Bay study region have been selected for on-the-ground implementation plans. We will facilitate partnership coordination and assist municipal and local partners in seeking funding so that these barriers can be upgraded and stream continuity improved.

Already the Town of Essex received \$41,000 from the Division of Ecological Restoration Culvert Replacement Municipal Assistance Grant Program. The grant will fund field data collection, permitting, and the engineering and design work to replace the Apple Street culvert, located on an important alternate route when the town's main causeway floods. This highlights the utility of supporting municipal efforts to re-size structures throughout the target assessment area and advances progress on the MassBays Comprehensive Conservation Management Plan goals.



Did you know? Proceeds from the purchase of specialty plates like these are what made the creation of a tidal crossings protocol possible.

Visit mass.gov/orgs/massachusetts-environmental-trust to get yours today!

A Watershed Restoration Model

One of the best and most cost effective ways to improve river conditions is to reconnect fragmented aquatic habitats by removing migration barriers, dismantling obsolete dams and replacing culverts that are either too small or poorly installed. A new project with incredible restoration potential, funded by a grant from the National Fish and Wildlife Foundation (NFWF), will restore 25 stream miles and aid passage to spawning habitat.

The Howlett Brook Watershed Restoration Project encompasses parts of Topsfield, Boxford and Ipswich, including Hood and Four Mile ponds. We are hopeful that both ponds could be future river herring spawning grounds. The herring habitat assessment for Hood Pond is complete and is progressing for Four Mile Pond. Many of the areas in the Ipswich River watershed that once hosted herring are now inaccessible to this migratory species. Restoration of herring runs hinges on opening up access to tributaries and ponds for spawning. The Howlett Brook project is an example of a systems-level approach to connectivity, which can be used regionally as a model. In addition, restoring Alewife is beneficial to water quality, a win-win!

Returning the Tide

Reconnecting the freshwater and estuarine portions of the Ipswich River is a long process, but we are making headway at last. In 2010, a unanimous vote by the Ipswich Selectboard initiated the exploration of the environmental, technical, logistical and economic factors surrounding the removal of the Ipswich Mills Dam. The feasibility study, completed in early 2019, generated findings on flooding and hydraulics, ecology, recreation, sediment transport, cultural resources, technical considerations, costs and impacts to buildings and infrastructure as well as highlighting potential next steps.

Those next steps have begun with a public presentation of the feasibility study and a recent presentation to the Ipswich Selectboard. Keeping up steam is critical for the project, and we look to you for help in that regard. Among the many benefits of dam removal are improved passage for wildlife, protection from flooding and the creation of rare tidal freshwater habitat. In addition, dam removal would free the Town from the cost of future dam maintenance, repair and liability. This fall, we will release a short video on the Ipswich Mills dam feasibility study to help spread the word and encourage progress on this important project.



Science and Restoration Project Manager Kaitlyn Shaw and Jake Lehan, Stream Crossing Assessment Coordinator for the Division of Ecological Restoration, measure the outlet drop at one of the 27 sites prioritized in the MassBay's Barrier Mitigation project. With the culvert raised so high, this stream is more like a waterfall and is impassable for wildlife.

Poorly designed culverts force animals to cross roads, rather than continue along waterways. Next time you see roadkill, such as this beaver, check the location. Chances are you're near a stream crossing



Why keep a dam that no longer fulfills its intended purpose?

Some may argue for its historic significance, the role the dam played in early industry, settlements, and culture. Would there be a dam, however, without a river? What better way to foster memories of the people who once lived along the Ipswich River's banks than to return it, as much as we can, to the natural state in which they found it? Return it to a river, flowing freely, rich with thriving runs of fish, diverse aquatic life, and plentiful, healthy shellfish. Rivers have been a key component of human civilization and have helped us to grow and prosper. The time has come to give them our thanks by setting them free. #freeourrivers #ipswichriver

Donate Now at www.ipswichriver.org

Name _____

Address _____

Town/City _____ Zip _____

Email _____ Phone _____

You may make check payable to IRWA and mail to: **IRWA, PO Box 576, Ipswich, MA 01938**

Thank you for your support!

Card # _____ Exp. Date: _____ Security Code: _____

Name on Card: _____ Signature: _____

Enclosed is my tax deductible donation of:

- River Steward \$1000
- Patron \$250
- Friend \$100
- Family \$50
- Individual \$40
- Other

For: Annual Fall Appeal
 Membership
 In honor of _____





**IPSWICH RIVER
WATERSHED ASSOCIATION**

The Voice of the River

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Please Support our Annual Appeal



Our local rivers and streams are under threat and you can help. Please look for the appeal arriving in your mailbox and make your annual appeal gift.

- The annual Fall Appeal is our biggest and single most important fund-drive of the year. Please make a donation today using the form inside or visit ipswichriver.org/donate. Thank you!
- 5,000 housing units are now in the planning process. Just think about that extra water demand and increased pollution.
- Happily, we welcomed 259 new members in 2019. Thank you for joining!
- We are now asking all 1,000+ of our members to answer our appeal.
- With your support, we will prepare watershed communities for the future by developing a Water Neutral Growth toolkit and educating 5th grade students and their parents in 24 communities about water conservation and protection. Together, we make the voice of the river stronger. **Thank you!**