

Jones River Watershed Association

2015

Annual Progress Report



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Jones River Watershed Association

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Jones River Landing Environmental Heritage Center

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Reuben Smith, *Mass Bay Maritime Artisans*



Report Published
JAN 31, 2016

CONTRIBUTORS ▶

Pine duBois, *General, Exec. Dir. Report, Editing*
Peter Baird, *President's Message*
Alex Mansfield, *Ecology Program*
Karen Vale, *Cape Cod Bay Watch, Editing*
Peter Arenstam, *Mass Bay Maritime Artisans*
Karon Wierman, *Financial Summary*
Iris Gallagher, *Design/Graphics & Editing*

55 Landing Road
Kingston, Massachusetts
781-585-2322
www.jonesriver.org

Progress, Partnership and Transition

It was a year of progress and transition, of bringing closure and of laying the basis for new beginnings. We began the year with updated elevation maps for the Pilgrim Nuclear facility and immediately saw the effects of storm action when the late January storms shorted out their switching facility and forced a plant shutdown. This sparked our outreach to the Governor to urge better storm emergency policies. Months of storms and high water also were challenges for the Landing, but we got through and saw the benefit of our new, higher floor in the Shiverick building.



In June, JRWA was honored to receive the Gulf of Maine Council's 2015 "Visionary Award" for Massachusetts (left). This award recognized JRWA's "tireless efforts to protect and restore the natural resources of the Jones River watershed." The Council went on to say, "We sincerely appreciate the significant accomplishments that the Jones River Watershed Association has achieved by establishing effective partnerships."

One of those partnerships has been supporting the re-birth of the Central Plymouth County Water District Commission, which began to assert

management authority over water diversions into Silver Lake and from there to Brockton. This provided hope for better management of water policy decisions that affect the quality and quantity of water available to flow into the Jones River. Flow at the headwaters is controlled also by the Forge Pond dam, where JRWA has been working with the MA Division of Marine Fisheries to address fish passage, and with the Town of Kingston to design significant enlargement of a the tiny culvert currently under Lake Street. Both of these projects reached 90% of the design phase in 2015.

The other major impediment to fish passage and river flow is the Elm Street dam.

In July, we submitted a proposal to obtain grant funding from the National Oceanic and Atmospheric Administration (NOAA) to remove the Elm Street dam and to replace the Lake Street culvert. In the process, JRWA received support from Kingston Selectmen for this grant application. For the first time, we now have all of the projects on the table that, if (WHEN!) funded, will open fish passage from the bay to Silver Lake. We did not receive funding in the first round, but will re-submit for consideration for a second round of funding.

In June, JRWA's Cape Cod Bay Watch (CCBW) program published a report, *Entergy, Our Bay is Not Your Dump*, documenting Pilgrim's massive marine destruction and water pollution of Cape Cod Bay. The report was based on facts from Entergy's own records, which were obtained from U.S. EPA and MassDEP over the last few years. Karen Vale and Meg Sheehan put enormous effort into this comprehensive report which was sent to the Governor and was a call to EPA and MassDEP to terminate Entergy's long-expired Clean Water Act permit for Pilgrim Nuclear.

Pilgrim on Manomet shore in Plymouth, MA – Paul Rifkin



Of course, October brought Entergy’s announcement that they will be closing Pilgrim by 2019 at the latest. This is wonderful news for the region’s ecology, provided that the decommissioning is well handled. That last provision is critical and sets the basis for new and ongoing work by JRWA and CCBW: to understand the process of decommissioning a nuclear plant and to take the necessary actions to ensure that Pilgrim is closed down safely and the various forms of contaminants it has introduced to the environment get dealt with immediately. This will be a time-consuming, progressive process and will take a major effort. However, the prospect of plant closure ending the massive entrainment and impingement of aquatic life provides a light at the end of the tunnel. It may be several years until this happens, but we can finally look forward to a wonderful opportunity to monitor recovery of the ecosystem.

If we can also have success with our other efforts to restore flow and reduce restrictions along the Jones River, such as removal of the Elm Street dam and improvements for flow and passage at Forge Pond, we will finally have the prospect to observe the renaissance of alewife and of other anadromous species in the Jones River.

So, on that optimistic note, I want to thank the Board, the Staff, our volunteers, all of the agencies and organizations we collaborate with and all of our members for your interest, attention and continued support. We go into 2016, our 30th year of operation, as a highly effective and energized organization, which will play a critical role in events to come. I am honored to serve and look forward to the new year.

– **Peter Baird**, JRWA Board President

Thirty Years, Sea Level Rise and What's Next

Thirty Years Later – The more things change, the more they stay the same? Today our organization is grappling with the very same issues of three decades ago. Depletion of Silver Lake, poor water quality that results from lack of flow to the Jones, even Pilgrim Power Station and sea level rise. The difference today is we are thirty years down the road of impacts since then. That bumpy road has led to very difficult conditions in the water supply region, depletion of fisheries, a climate crisis of global proportions, and yes, nuclear waste stockpiled on the shores of Cape Cod Bay. Sea level rise is beating on that shore and we need to do something about it. What a bummer! To every action there is an equal and opposite reaction! We use the energy, we pay the price – not just us, everyone. And that means the additional three billion people we have shared the planet with since 1985. Our performance can impact the world!



We have spent each year of these past three decades learning more about the environment around us, and this knowledge has guided our work. As we grew to understand the concept of “ecosystem,” “services” and “functions,” we have grown more holistic in our appreciation of the river, its watershed and the larger environment that it serves. JRWA has been instrumental in securing conservation lands along the river, from Silver Lake Sanctuary (our birthplace!) to the Bay. The greater part of the riparian corridor has been protected with the acquisition of the Albertini estate. This land was secured due to the Sheehan Family Foundation pledge, a town meeting vote last April, and a successful Kingston application to the state. Kingston was awarded \$195,000 in December to complete the purchase. Now, from Bay Farm to Silver Lake, people can access the river; and from the Bay to Forge Pond dam, migrating fish can *almost* make it to Silver Lake. Each step along this path seemed difficult, and perhaps the greatest challenges are in front of us this year: get cooperation from Brockton and achieve consistent flow to Jones River; guide Kingston through steps to ultimately remove the Elm Street dam; help motivate Pilgrim and the NRC toward rapid and complete decontamination of the nuclear power station; and design our path forward at Jones River Landing.

Visionary Award! – It was with considerable surprise and appreciation that we accepted the Gulf of Maine Council on the Marine Environment's “*Visionary Award*” last June. We were deeply touched by the recognition, and honored to be among the hard working advocates from Cape Cod to the Bay of Fundy that are always at work to protect and enhance conservation of the tremendously significant resources just off our coast. We sometimes lose sight of how lucky we are, how rich our environment still is despite grievous assaults, how much is being done, and how much there is to do. The rich production of fish and its wild diversity attracted explorers from the time of the Vikings through to Captain Jones and since. What makes us great is this resource and we still have much to learn to protect and cultivate this endowment. Here at Jones River, we are still setting up shop to do just that, and we will be at it long after we succeed in getting the herring back to their spawning grounds in Silver Lake.

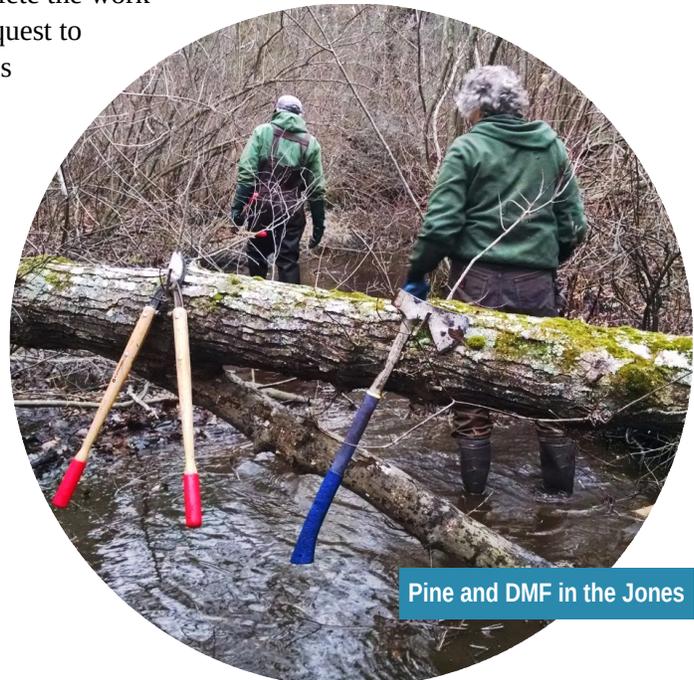
Sea Level Rise and Climate Change, Our Lifetime Issue – Imagine my surprise last January 27th, coming to the Landing to find that Juno pushed the sea into the building, flooding the bottom of file cabinet drawers, as water rose two feet in the main room and three feet in the back. Praise be the boatshop boys that raised the floor a foot, which saved most of the machinery. We knew the water was coming, but the predicted surge was much lower than the four feet that arrived. We flooded. Pilgrim scrambled. We had damage to papers and pictures and the circuit breaker on the fridge. Pilgrim had damage to the switchyard and almost lost much more. Nine months later, Entergy announced it would close the facility just as soon as it can cover its contract with the New England power grid (ISO).

We should not be surprised by sea level rise. A review of old news clippings from the 80's reveals a clear prediction of the current-day events. Since we came to the Landing in 2003, we've experienced flooding each year, as did the owners before us. Some years, the flooding is more frequent, some years it is higher. Reliable statistics show that tidal heights are increasing, but unevenly. This causes confusion and makes absolute predictions difficult, but we should not be lulled into inaction. We live in an age of some certainty. And, for certain, the tides are getting higher still, and the storms will make them worse. Timing is everything. Hurricane Sandy inundated New York and New Jersey, but spared Massachusetts because it hit us at our low tide. Things can be different in the future. Whether that future is close or far, no one knows. We do know we have to build up to keep our records safe, to keep the buildings secure and useful, and to stay where we are – at least for a time. We are developing our plans for this, which include significant fundraising and program development. Our hope is to build a useful, practical and educational facility that will keep track of our ecosystem as the climate changes, so that we can continue to adapt, protect, educate, and prosper well into the future.

Preview of 2016 – We launch into our next decade actively writing proposals to support the needed science and alternatives analysis to resolve the environmental and water supply crisis in the Central Plymouth County Water District. Our work with active partners over the past couple of years clearly signal the need for change now to address significant water quality impairments, evidenced by toxic algae blooms in Monponsett Pond and the dropping of Silver Lake by five feet. We are working closely with partners to bring about a lasting solution. We presented the benefits of removing the Elm Street dam to the Kingston Board of Selectmen, at their request; and as we complete the work with Smith College we are preparing to renew our request to NOAA to fund the needed engineering steps to take us through the removal process (*see Alex's account on page 10 within*). And, we will be pursuing the clean up and proper decommissioning of Pilgrim (*see Karen's CCBW report, page 14*).

Our tasks are significant, but the past thirty years have established a firm foundation upon which to build our restoration program. With good planning, luck, and ongoing generosity of our members and partners, we will also create a great facility for the long-term stewardship of the river and the bay at Jones River Landing. With the dedication and skill of our boat builders, we may even be ready with the ark of the future!

– **Pine duBois**, JRWA Executive Director

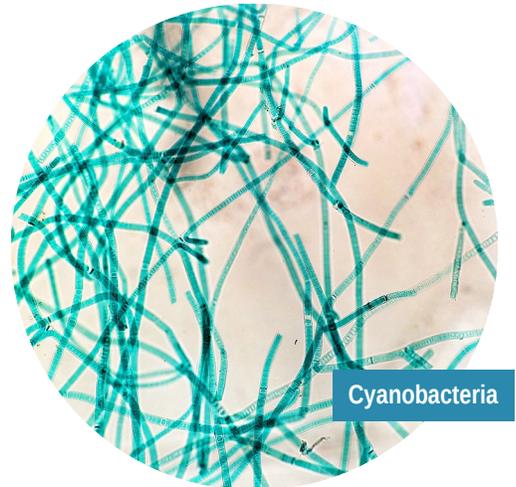


Pine and DMF in the Jones

The Ecology Program

Tri-Basin Restoration Initiative

Like last year, a large portion of our attention in 2015 was focused on the broad interconnected issues that impact us at our headwaters. The issues of water *quantity* and water *quality* have come to a head as the result of Brockton's regional water transfers. Monponsett Ponds in Halifax have been suffering from severe blooms of cyanobacteria. Cyanobacteria blooms throughout the U.S. have been associated with health risks to humans, pets, and wildlife. Cyanobacteria blooms also have negative impacts on aquatic ecosystems due not only to toxins, but also creation of low dissolved oxygen conditions. The bloom levels in Monponsett Pond are the worst in Massachusetts.



What is the importance of Monponsett Pond to the Jones River Watershed? The Monponsett Ponds serve as a considerable portion of Brockton's drinking water supply. Brockton accesses Monponsett water by diverting it into Silver Lake through a 48" wide, 3-mile long pipe at a rate of up to 30 million gallons per day. That can add up to over two billion gallons per year! Two billion gallons of water with high nutrient levels and toxic cyanobacteria is not what we want being dumped into Silver Lake and flowing down the Jones River. That is why in 2015, JRWA regularly participated in the Monponsett Working Group meetings where multiple local organizations, state agencies, town officials, and concerned residents get together in an attempt to come up with solutions for improving Monponsett Water quality.

JRWA staff also regularly attend and participate in the meetings of the Central Plymouth County Water District Commission (CPCWDC) where the same issues are addressed but with formal authority. The CPCWDC has taken action by directing Brockton not to transfer water from Monponsett to Silver Lake when the cyanobacteria counts exceed state health thresholds. This is a good thing.



Unfortunately water *quality* is the not the whole story. Silver Lake and the Jones River are also impacted by a lack of water *quantity*. Brockton takes approximately 10 million gallons per day of drinking water out of Silver Lake. They do this regardless of whether they are diverting Monponsett water or not. So when Monponsett water is unavailable and "turned off" due to water *quality* issues, Silver Lake bears the full burden of water quantity. Silver Lake on its own cannot sustainably provide that much water and lake levels plummet.

Low lake levels result in loss of habitat, dead mussels, no flow to the Jones River, and a list of other negative impacts too long to describe in this summary. This is why JRWA is working outside its watershed boundaries to find real, regional solutions. We cannot restore the Jones River without solving these regional water quality and quantity issues.

JRWA is not casually working on these solutions, we are attacking them and leading the way. In 2015 our efforts on this front have included:

- Presenting at numerous meetings of the CPCWD Commission, the CPCWD Advisory Board, the Kingston Water Commission, etc, to provide scientific and historical information on these issues.

- Working with Massachusetts Division of Ecological Restoration (DER) to scientifically identify water budgets and management solutions. DER has designated “Jones River Flow” as a Priority Project. In 2015 (and 2016) they funded several modeling efforts where consultants are developing an understanding of surface water and ground water dynamics and availability. JRWA has played an active role in the modeling efforts.
- Seeking large scale federal funding to develop real answers. JRWA played the lead role at the close of 2015 in helping the CPCWDC apply for over \$500,000 in EPA funds. This proposal pulls together a partnership of 8 towns, 5 state agencies, and 6 non-profit organizations. We will find out about the funding in 2016, but rest assured that JRWA will continue pushing for solutions regardless.

Forge Pond Dam and Jones River Restoration

One of the things that really got us going on the regional issues described above is our commitment to restoring fish passage and connectivity between the Jones River and Silver Lake. For several years we have been working with MA Division of Marine Fisheries (DMF) and other parties to get river herring in and out of the Silver Lake past Forge Pond dam. The biggest obstacle to success is the lack of consistent lake levels and flow to the Jones River. The Tri-Basin work described above will address the flow issue, but there are also other obstacles to fish passage that we are actively addressing, including:

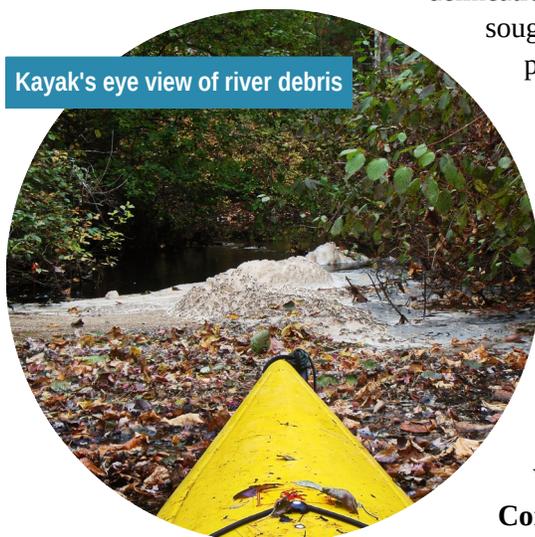
The Forge Pond Dam Itself – We have a preliminary design for a fish ladder that will get river herring past the dam. We are working with DMF and the City of Brockton to endorse a Memorandum of Understanding that ensures the fish ladder will be properly installed and maintained over time.

Lake Street Culvert – Just downstream from the dam, the Jones River flows under Lake Street. The culvert here poses its own threat to fish passage under certain flow conditions. All of our efforts to enable fish passage may be of limited success unless we also address this culvert. In 2015, JRWA participated with the town on a design project for replacement of the culvert. JRWA conducted the wetland

delineation and provided technical assistance on the design. JRWA also sought federal funding for the culvert replacement. The funding proposal was unsuccessful this year, but helps set the stage for future funding.



Existing culvert under Lake Street



Kayak's eye view of river debris

Stream Clearing – Several severe winters have taken down many trees in the woods along the river. Tangled branches and vines create a trap for natural and manmade debris. The river gets choked with leaves, plastic bottles, old tires, and other random junk. The lack of flow doesn't help, and areas of the river are clogged with sediment that would otherwise move downstream. MA DMF took the lead on an intense stream clearing effort in 2015 and JRWA was there to help.

We've done some serious work, but we need a LOT more help.

Come volunteer with us to catch up on long overdue maintenance!

Elm Street Dam

In our 2014 Progress Report, we mentioned that Beth Lambert of MA DER gave a presentation to Kingston Board of Selectmen (BOS) about dams, dam ownership, and benefits of dam removal. (DER considers removal of the Elm Street dam to be one of the best potential environmental



improvement projects in MA). Following that meeting the BOS formally requested that DER conduct a reconnaissance survey to evaluate the potential for dam removal. DER approved this request and hired the engineering firm Stantec Consulting Services Inc. to conduct the survey. The report from that survey was released in February 2015. This report describes the condition of the dam and the general approach required to remove the dam. It's a well-written, easy to understand report, and we urge you to read it yourself:

jonesriver.org/ecology/dams/elm-street

Here are the basics: The dam is in rough shape. The dam is a cost and a liability to the town. The dam blocks fish passage. The dam creates flooding. The dam creates poor water quality. The dam no longer serves its original purpose. The dam should come out.

Stantec and Smith College – Stantec is a pretty cool company. They enjoy their work and they like to help out others. They recently got involved with Smith College's Picker Engineering Program (Stantec has an office in North Hampton where Smith is). Stantec offered financial and technical support for engineering students at Smith working on their senior theses. The students were interested in designing a dam removal and Stantec felt that Elm Street dam would be a perfect site for their project. So in 2015, JRWA teamed up with Smith and Stantec to help the students learn about dam removal and restoration design through a hands-on design project. The students are approaching their project as if they are an actual engineering consulting firm. They are conducting the project from soup to nuts: goal setting, field work, preliminary designs, public presentations, and final designs. In 2015, they were out at the site with JRWA and Stantec taking field measurements of the dam dimensions, sediment depths in the impoundments, surrounding infrastructure, etc. Local surveyors Rick Grady and staff even chipped in some pro bono work to provide them a very high-tech 3D survey of the site. We can't thank Rick enough for that one! The students' design will be a great informational tool for public discourse on the approaches to removal of Elm Street dam. **Look for announcements of local public presentations by Smith early in 2016.**



Stantec and Smith students at Elm Street dam

NOAA Grant Effort and Partnerships

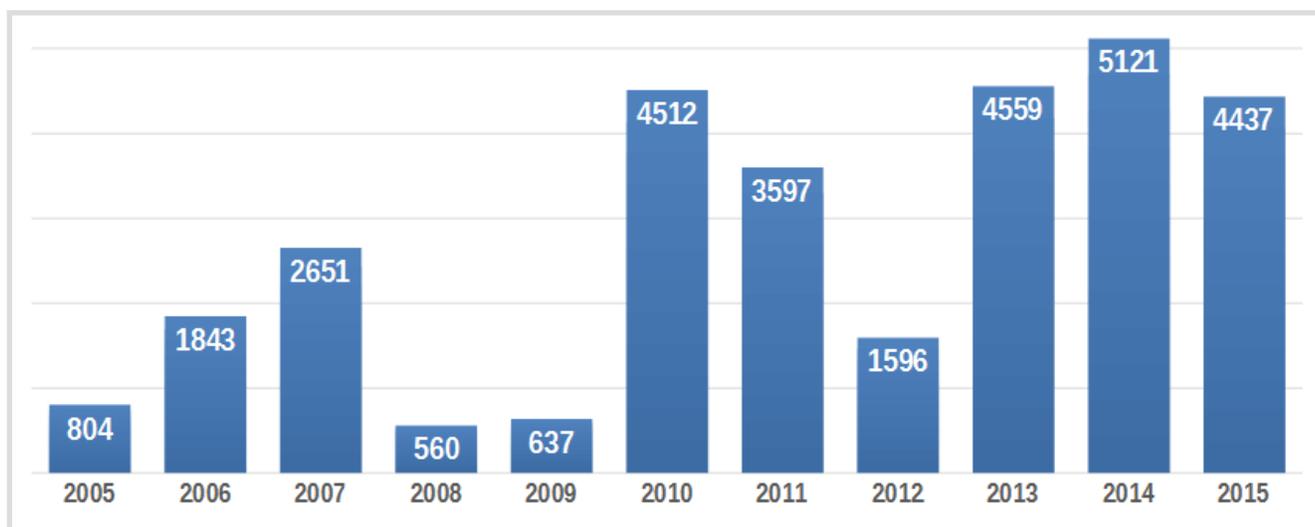
– The concepts of river restoration are fairly simple. Implementing river restoration projects is hard. It takes broad cooperation, extensive planning, and significant funding. JRWA’s strong suit is pulling all of these things together. In 2015, we pursued a major NOAA funding opportunity and proposed almost \$900,000 in work that would begin the project to remove the Elm Street dam and replace the culvert at Lake Street. Spoiler alert: we didn’t get the funding. But the broad cooperation and planning that we pulled together were a success in themselves. The proposal included partnership and support from the Kingston Board of Selectmen, Kingston Department of Streets, Trees, and Parks, Kingston Conservation Commission, and MA Department of Fish & Game, with agency letters from MA Division of Marine Fisheries, MA Division of Fish & Wildlife, MA Division of Ecological Restoration; as well as written support letters from Senators Markey and Warren, Congressman Bill Keating, and MA Senator deMacedo and Representative Tom Calter. Bringing together all of these parties, describing the details of required work, and submitting it for federal review brings significant attention to the project need. The debrief we received from NOAA explained that the proposal scored very high, but there simply wasn’t enough money to go around for this very competitive national grant, and only 5 were awarded around the country’s coastline. We have moved up the ladder of that national competition and expect that the next outcome will be more favorable. We need everyone’s support in keeping these partnerships together, strong, and growing.

Fish Count and Regional Status Updates

In 2015 we conducted our tenth(!) annual volunteer herring count. With the Elm Street bridge replacement finally finished, our volunteers had much easier and safer access to the counting station. As a result we had a terrific turn out and coverage. We cannot thank our faithful volunteers enough. Don’t forget to join us in 2016! Unfortunately the results of the count were not so great. After crunching the numbers we found that the estimated Jones River herring population was down a little bit from 2014. We’ve been at a pretty flat level for the past 5-6 years. Statewide, the picture is more variable. Many runs have shown the same flat-lined, lack of growth that we see in the Jones, but some runs are doing much better. This gives us hope. A great example is the nearby Town Brook herring run in Plymouth. Their extensive dam removal and river restoration projects appear to be really paying off as hundreds of thousands of herring have returned to the brook. This further highlights the need to remove Elm Street dam and get fish past Forge Pond dam into Silver Lake. For more on the 2015 herring count, check out this video on Plymouth Cable News: youtu.be/M8Z4zL5rYW0

Estimated Total River Herring in Jones River

Number of Herring Per Year:



We talk a lot about river herring, but they aren't the only fish in the Jones River. We talk about river herring because they are a great indicator of the overall health of a river – when the herring are doing well the river is doing well. But just in terms of water quality, brook trout are the real canary in this “coal mine.” Brook trout occupy less than half of their original range in Massachusetts and that says a lot about the state of our state's water quality. ‘Brookies’ are here in the Jones River. They are elusive, but plenty of our great fishermen know the nooks, crannies, and shady holes where these beautiful fish hide out. One of those great fishermen also happens to be the Southeast District Manager of MA Fish and Wildlife. Steve Hurley has been interested in Jones River trout for years. In 2015, Steve and MA DFW conducted a survey of brook trout and collected enough data to certify portions of the Jones River watershed as a “Coldwater Fishery Resource” (CFR). A CFR is a waterbody where reproducing coldwater fish (such as brook trout) use such waters to meet one or more of their life history requirements. CFRs are particularly sensitive habitats. This designation provides additional protection and additional opportunity for restoration.

Watershed Action Alliance of Southeastern Massachusetts

JRWA is a founding and active member of The Watershed Action Alliance of Southeastern Massachusetts (WAA). WAA is an environmental advocacy and education coalition formalized in 2002 to address the pressing ecological issues in our part of the state, most of them resulting from rapid population growth, which continues to impact all watersheds in our region. As discussed throughout this 2015 annual report, the issues that affect the Jones River are often broader than the boundaries of our watershed. Our participation in WAA is an avenue for progress on a larger scale. In 2015, WAA's major focus was organizing a regional conference called “The Future of Water in Southeastern Massachusetts.” The conference was held at Plimoth Plantation and brought together conservation professionals, legislators, decision-makers, concerned residents, town employees and others in a day-long discussion about critical water management issues in our region. Sessions included: Fundraising, Science and Data Collection, Outreach, Stormwater, Drinking Water, Recreational Waters and Wastewater. The conference was a terrific success and we plan to make it a recurring event. For more information on WAA and the conference visit: watershedaction.org



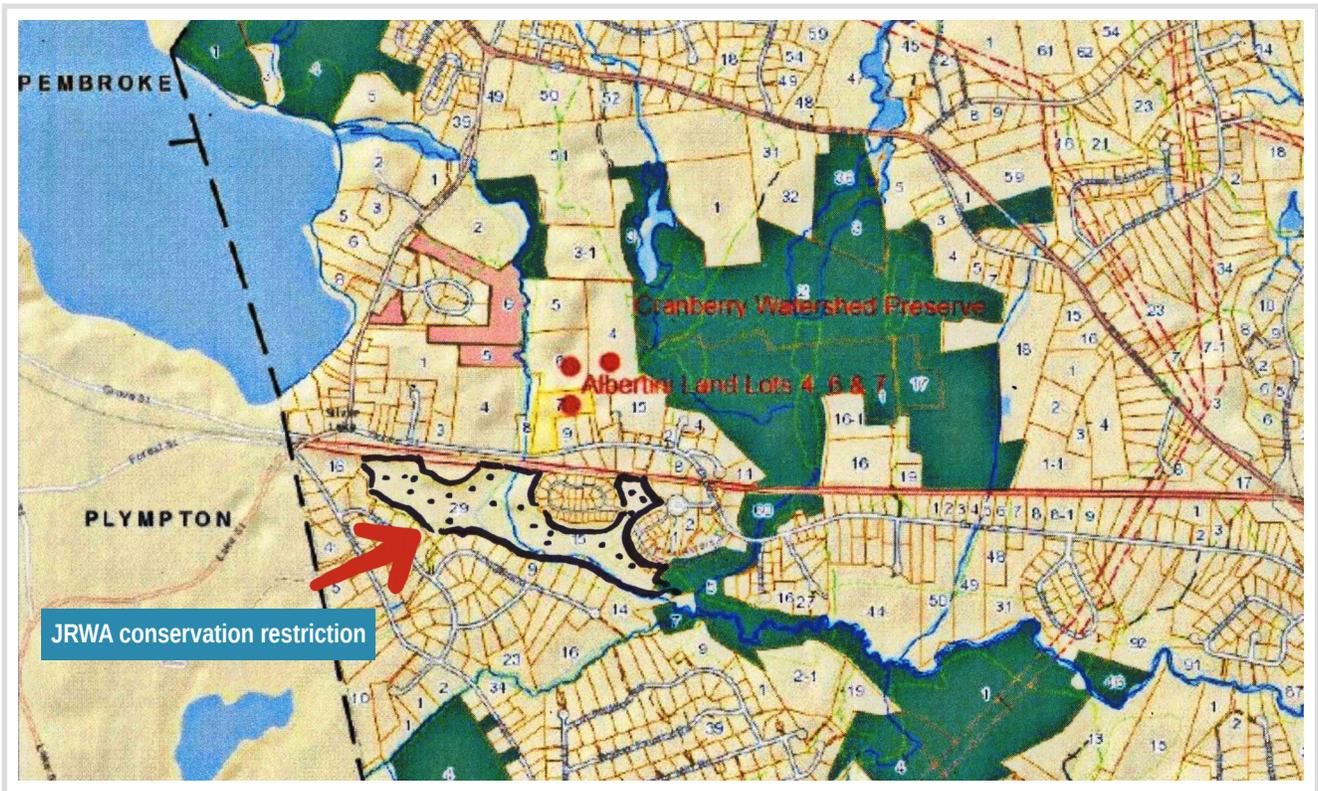
Land Conservation: Albertini Success!

Also in 2015, JRWA implored our steadfast and dedicated supporters, the Sheehan Family Foundation (SFF), to bolster the Kingston Conservation Commission proposal to purchase the Albertini bog estate, off Grove Street along the river. SFF came through with a \$25,000 pledge to support the Community Preservation Act (CPA) article at the Annual Town Meeting. The CPA article asked the town to fund about half of the property cost, and promised that if passed, the town would be in a position to seek a state grant for the remainder. In December, the

Department of Conservation & Recreation awarded the town \$195,000 – and soon the 30+

acre Albertini land, which directly abuts the river and the Cranberry

Watershed Preserve, will be in the hands of conservation. This is a huge victory! Over the past twenty years JRWA has led the conservation of lands along more than three miles of river corridor and Silver Lake, as well as in the estuary. We are actively seeking additional protections through conservation easements so that the nature of the river and the wildlife it supports can have the best chance of future restoration and success.



Open space expanded with Albertini land

Cape Cod Bay Watch Program

The Decision to Close Pilgrim Nuclear Power Station

On October 13, 2015, Entergy announced that Pilgrim would be closing no later than June 2019. Why now? According to Entergy, the short answer is finances. Pilgrim is no longer profitable and hasn't been for some time. The longer answer is that successful citizen pressure caused more government oversight and highlighted poor management practices and age-related degradation at Pilgrim, making the decision inevitable. On September 2, 2015, the Nuclear Regulatory Commission (NRC) downgraded Pilgrim's performance rating to a "Category IV" based on numerous forced shutdowns and equipment failures (most recently caused by the winter storm nicknamed "Juno" in January 2015). This rating is just one step below mandatory shutdown by federal regulators. The Environmental Protection Agency (EPA) was also pressed hard by our concerns and was prepared to issue a new, long-overdue Clean Water Act NPDES (*National Pollutant Discharge Elimination System*) permit, which would have required expensive upgrades and an extensive legal process. In view of the announcement, EPA has backed away from its schedule for permit renewal since Pilgrim will close before the new permit would take effect.



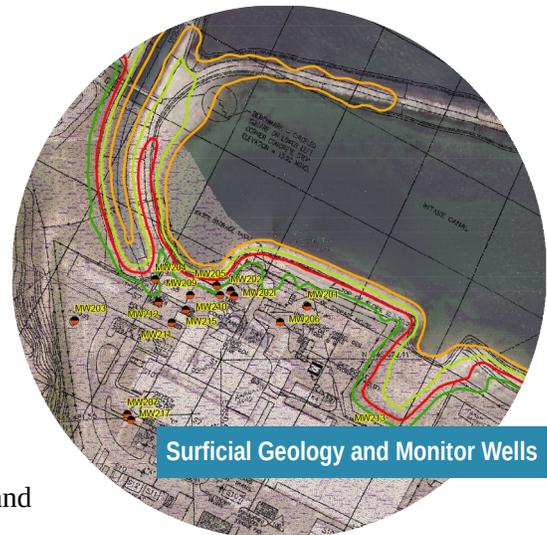
The good news about Pilgrim's closure is that the health of Cape Cod Bay will begin to improve immediately after shut down. The massive impingement and entrainment of billions of marine organisms each year, the withdrawal of a half-billion gallons of cooling water each day, and the super-heated thermal discharge will all come to an end after closure. Pilgrim will also stop producing high-level nuclear waste as a byproduct, hence ending its demand for uranium that causes widespread drinking water, air, and soil contamination along the supply chain from mining to enrichment and processing.

However, Pilgrim's impending closure is providing no rest for the weary. It is critical that we continue to monitor environmental impacts and risks during this ending period. We will work to ensure the best possible decommissioning plan and site cleanup (prompt and full cleanup of soils and groundwater). We will ask that the NRC require rapid clean up, and not defer decommissioning or 60 years of "SAFSTOR" that could allow ongoing contamination of Cape Cod Bay. We will work to see that all high-level nuclear waste in Pilgrim's wet

pool be moved into dry cask storage as soon as possible, and that the dry cask storage facility be robust, stable, and properly sited farther away from the shoreline. As climate change takes hold and sea level rise escalates, these issues will be more prominent within a decade.

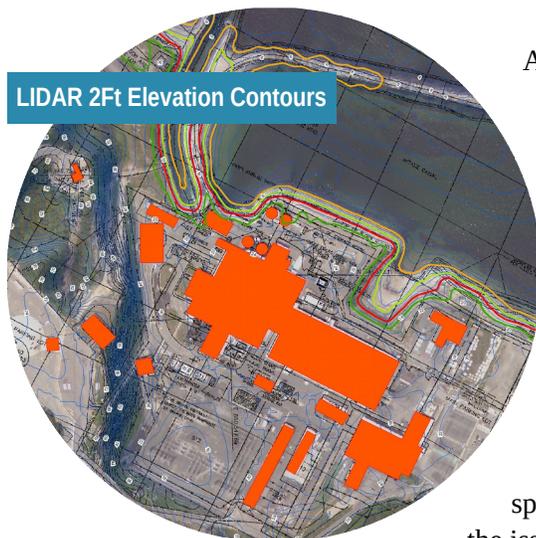
Zoning Lawsuit

We have continued to support a citizen lawsuit seeking Entergy's compliance with Plymouth's zoning by-laws and to obtain a special permit for its nuclear waste dry cask storage facility at Pilgrim. The purpose is to see that the dry cask storage facility is properly sited and secure, and moved farther away from Cape Cod Bay. Pilgrim's nuclear waste may remain in Plymouth for hundreds of years or longer and is currently sited within reach of rising sea levels, coastal storms, and saltwater degradation – creating a potential source of further contamination, long after Pilgrim shuts down. The discovery phase of the case continued throughout much of 2015, and only due to threats of sanctions by the Court did Entergy produce documents for the Plaintiffs. At a pre-trial hearing on January 12, 2016, Entergy announced that it will seek an exemption from the Department of Public Utilities in an attempt to avoid zoning laws and so it will not have to face local residents in court. Pending the success of Entergy's exemption request, the final Land Court trial could take place in summer 2016.



Flooding and Sea Level Rise Assessments

Throughout 2015, we continued to push for better assessments for flooding, sea level rise and other climate-related impacts that pose significant risk to the stability of Pilgrim's nuclear waste storage project currently sited a little more than 100 feet from the Cape Cod Bay shoreline.



As a result of the NRC's post-Fukushima orders, Entergy was required to provide a re-evaluation of the flooding risk at Pilgrim that is beyond "design basis." To prepare for this, JRWA worked with a geographer and coastal resiliency planning experts to develop reports and maps that demonstrate flooding and other coastal risks at Pilgrim. *Pilgrim Elevation Analysis* (jonesriver.org/pilgrim-elevation-analysis) was published last Febuary by Northeastern Geospatial Research Professionals, and identifies elevation inaccuracies in Entergy's site plans for Pilgrim's infrastructure and nuclear waste storage facility.

We presented the maps to the NRC at a private meeting in the spring and testified at its public hearing in Plymouth. We also raised the issue with regulators and legislators through letters and meetings, including a Joint Committee on Public Health hearing at the State House. We will continue to raise these concerns in 2016 and pressure regulators to require changes to ensure Pilgrim's site and long-term storage of nuclear waste are protected from climate change impacts.

In August, we provided a lengthy comment letter (j.mp/2015aug5-jrwa-areva-comment) to the NRC on Entergy's post-Fukushima flooding re-evaluation. Since we felt additional input would help clarify our concerns, we contracted the Florida-based Coastal Risk Consulting (CRC) firm to assist us with further evaluation. Their

report, *Analysis of AREVA Flood Hazard Re-Evaluation Report for Pilgrim Nuclear Power Station* (j.mp/2015dec15-crc-areva-report) was published in December 2015. CRC's report highlights the facts that Entergy's post-Fukushima flooding re-evaluation underestimates and omits important risk factors, uses outdated data, and does not consider future risk estimates for rainfall and sea level rise. The report was submitted to the NRC on January 18, 2016. It is clear from our work that the Pilgrim site should be decontaminated and decommissioned as soon as possible – within a decade of closure. The longer this work is postponed, the more difficult it will become and the more likely Cape Cod Bay will suffer the consequences.

Chapter 91 Legal Appeal

Due to our understanding of Pilgrim's site elevations and coastal conditions, in March 2015, a '10 Residents Group' and JRWA filed a legal appeal of the state's decision to grant Entergy a Chapter 91 Waterways License to install an emergency cooling water system on the Cape Cod Bay shoreline for Pilgrim. The appeal aims to ensure Entergy's activities truly protect the public and environment. Throughout 2015, we provided support to Earthrise Law Center and volunteer attorneys Meg Sheehan and Anne Bingham, who are representing JRWA and the '10 Residents Group.' There was a hearing in September 2015 before a MA Department of Environmental Protection (MassDEP) Administrative Law Judge, where all parties' witnesses were cross-examined on their testimonies. A legal decision is due February 5, 2016.

Public Outreach and Education

Outreach and education continued strong in 2015, with education and outreach efforts targeting individuals of all levels – from environmental policy students at Clark University, professionals at the Northeast Naturalist Conference in Provincetown and Toxic Action Center's Local Environmental Action Conference in Boston, to hundreds of high school students at Cape Cod Academy and Bridgewater-Raynham High School. We provided information and attended many events throughout the year, including Pine Fest, Herring Fest, and the Cape Cod Wildlife Festival.



We hosted three interns this year from UMass Boston and Lesley University, who worked on a variety of legal and educational efforts related to Pilgrim. Our work continued with several coalitions, including Pilgrim Coalition, Cape Cod Wildlife Collaborative, and a new group called Mass Power Forward, which promotes clean energy policies in Massachusetts.

On June 8, 2015, we issued the report *Entergy, Our Bay is Not Your Dump* (j.mp/our-bay-not-your-dump) documenting Entergy's 43-year history of polluting Cape Cod Bay and destroying marine resources. The report, endorsed by 24 state and regional groups, calls on EPA and MassDEP to terminate Entergy's 21-year expired Clean Water Act NPDES permit.

Education and outreach will move forward in 2016, with a shift in focus on Pilgrim's pending closure and decommissioning.

Jones River Landing

The first part of 2015 was literally swamped. A day after last year’s annual meeting, Juno came running in with the highest floodwater we have experienced since purchasing the property in 2003. We paid close attention to the predicted tidal surge – unfortunately the river came in two feet higher than those predictions, teaching us yet another lesson about the awesome power of water! Some equipment was drowned and repaired, lots of records and pictures were drenched and got moldy, some were drier and saved. To quote *The Raven*, “nevermore!” Meaning, we will never accept a prediction as the worse case scenario, and we will escalate our planning to accommodate the rising sea levels.

Facilities

Rendering for the Future – Thanks to the initiative of Board member Jon Daley, we have a “rendering” of what we think the Landing needs to look like in the future. We need to get higher. Yet, we want to preserve the boat building, river access and aquaculture opportunities that our position on the estuary provides. It is interesting to learn about tides – and that not all regions are equal in the face of the sea. Here, our average range of tide is now close to 10 feet. That means low tide and high tide are an average of 10 feet apart. Averages make good talk, but lousy planning! Our lowest high tide is 7.5 feet, our highest high tide is 12.6 feet. How about a tidal surge of 4 feet on a 12.6 foot tide... this was our reality in Juno. Greater tidal heights will come, and much sooner than we want – this is not a matter of opinion or debate, but the song of what is to come.

So, we need to turn our attention to raising several million dollars soon to purchase the adjacent property, demolish the existing shed and sawmill buildings, and build new, green infrastructure as a venue for long-term stewardship, education and programming so that we can monitor and adjust to the changes a new climate paradigm is sure to bring.



Concept design by Peter Whitman

Stormwater Improvements – After many years of water quality sampling and requests for improvements to the Town’s polluted roadway discharge through the Landing to the river, finally in June 2015 it was done. The drainage from Wright Court, Maple Street and Landing Road, which previously flowed to the river without intervention, has been upgraded with systems to improve the quality of the discharge. Perhaps you are not aware that with the distinction of “the largest river draining to Cape Cod Bay” the Jones also holds the distinction of contributing the greatest amount of polluting nutrients. Since the development of the central sewer system, the remaining offenders are the roads – local and state. On the local level we are dealing with it – how about the state roads, Route 3 and 3A drainage? These roadways contribute large amounts of pollutants to the river, and this should change. The Landing will provide an easement to the town for necessary



management of its complex stormwater system – but we need something. We need speed control on Landing Road, and we need to preserve access to the Landing, even during snowstorms. It’s not okay for us to be blocked from access, and its not okay for people to travel faster than 30 MPH on the scenic Landing Road.

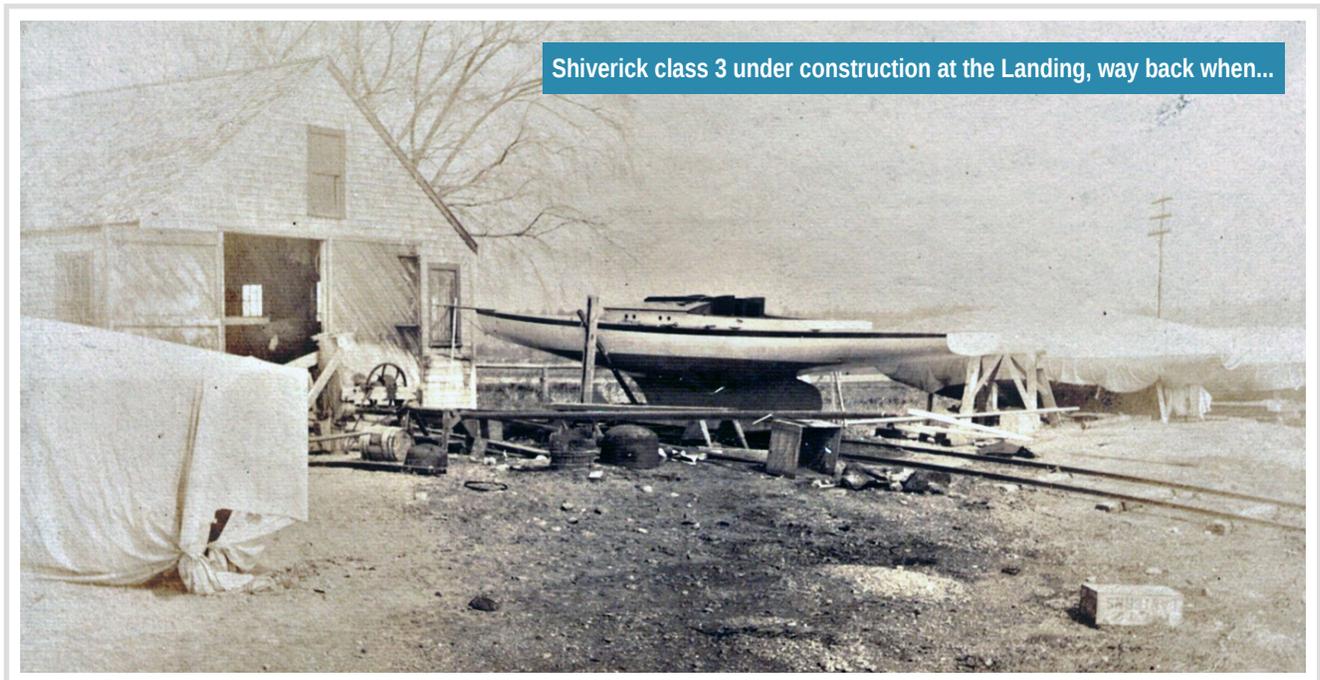
Boat Ramp – Big on this year’s planning effort is the repair of our awful ramp access. We have a contractor, and thanks to some of you, we have some money. We have a permit and a plan, and if all goes well, soon we’ll have an improved ramp for your safe access to the river!

Holmes/Watson Boatyard – It took longer than we’d hoped, but both the Holmes and the Watson boatsheds are looking good! Thanks to the CPA and Town of Kingston’s support, both buildings are in great shape and sheltering *Merry Wing*, *Periwinkle*, *Revival*, the *Blue Heron*, the *Cats Paw*, dory, and a few other of our boats. We have some modifications in mind to help us store the boats above the highest tides, and will be working on this as time and volunteers allow. We still want to improve access to the water there, and permit the storage of neighborhood canoes/kayaks (at your own risk) outside the buildings. Our plans for additional secure docks will enhance access – and we really want to keep up with the phragmities there, but will only be able to do that with some additional help. We did host an open house November 1 of last year, and everyone seemed to enjoy the upgrades. Yet we want to preserve and relish the history of this storied place. Noted area artist, Marshall Joyce, left us a wonderful painting of the early shop; and Edith Holmes wrote some interesting tidbits in the *Ships of Kingston* in 1926 for Kingston’s bi-centennial. As the year 2020 comes closer, we will be working with others to share information about this noteworthy area. We hope the town will take measures to enhance Landing Road and our buildings as it establishes the new Historic District. Hopefully this will mean speed control on the road as well!



New Board Members

We are fortunate to have people willing to give their time, resources and thought power to the effort of building the Landing. This past year, two new members joined the Board: Don Salmond, who has been volunteering in the boatshop for nearly a decade; and Joe Sikora, a long-time friend and Kingston resident with wide-ranging talents. They join the other members, who prefer action to words, and have a penchant for work that makes a difference. This attitude and availability will help the Landing develop. Jon Daley has brought in the Pintail class of sailboats to maintain and store at the yard, while Peter Arenstam has been working to develop the shop; and the rest of us do what needs to be done to keep the Landing functioning and improving in many ways. We have many ideas for developing the relevance of the Landing as a place for environmental stewardship, learning, recreation and sharing of the traditions and skills of wooden boat building. If you want to be more involved, please let us know!



Mass Bay Maritime Artisans

There are years of great excitement and enthusiasm, usually centered on the completion of a major project or the implementation of a long considered plan. This past year should be looked at as a building year – on several fronts. On the river we were fortunate to have the use of a mooring down at the mouth of the river, courtesy of the Kingston Harbormaster, on which we could keep *Merry Wing*. This allowed us to use the boat that so many had labored for so long, in the way her original builder, George Shiverick, intended. Members were able to sail the boat on Kingston Bay, enjoying the local waters and the beautiful surroundings. A cockpit cover, donated by local friend of the shop and the original donor of *Merry Wing*, Sherm Hoyt, prevents the boat from filling up with water every time it rains as it sits on the mooring.

Our connection with George Shiverick continued this year with the visit of his granddaughter, Susan and her husband (*right*). They live in Alaska but have family living in New York State whom they visited this summer.



In Susan's words, since they were so close, they figured they should come visit her grandfather's shop here in Kingston, Massachusetts. She very kindly allowed us to scan some old pictures of some of George's boats.

The Wednesday night volunteers completed the restoration of an 8' pram, donated to the Jones River Landing. This boat will be used as part of our fundraising efforts for bigger projects, either by selling it outright or using it as an incentive item for our Kickstarter campaign. Likewise, a Beetle Cat, donated by a Duxbury resident, is in the process of restoration. The proceeds of its sale will aid our fundraising efforts. It needs some work, but the sails, mast, rigging, rudder, and centerboard are intact and will aid in the timely completion of the restoration.

We continue with fundraising for boatshop programming. Building a reproduction of the Kingston Lobster Boat, a type designed and built on the Jones River in the 1890's, is one of our major goals. We have solicited a number of funding agencies. To date we have raised over \$5,000 toward our goal. The Traditional Small Craft Association, centered in Mystic Connecticut, gave us \$2,000 toward the construction of the boat. Massachusetts Charitable Mechanic Association, located in Quincy Massachusetts, gave us over \$3,800 primarily for a new dust collection system for our stationary power tools in the shop.

Installation of the dust collection system, accomplished last fall, allows us to continue to upgrade and improve our workspace and the working environment in the shop. Finally, planning for improvements to the boat ramp and access to the river happened late in 2015 with the construction of a model for the contractors to follow when they start work, now planned for early February of 2016.



Acknowledgements

I could say, and do believe, it is a miracle that JRWA is still in business. After all, our message of environmental advocacy and protectionism has not always been a welcome one. The miracle is that in times of bleak politics, human aggression, and unbridled development we have managed to learn enough to create and implement a strategy for recovery. We are here because of the consistency of interested, like-minded people engaged in the work, sufficient financial support from government and gracious private donors – and members like you!

Our long road has been a bumpy one as we learned about limits and stresses, and tried to share that knowledge. Through time, we've eked out relevant studies to understand what shaped our formerly healthy ecosystem, and the activities that brought it to its knees in such short order. Water quality is constantly reduced by a flagrant waste of available supply, shot into the sky to irrigate landscapes that offer an overabundance of nutrients and pesticides, killing what remains of a once integrated environment. Roads that crisscross the territory demand more salt and leave behind more petroleum residue to wash into flowing rivers. So much quantity is exported that the important links to the greater whole have weakened to the breaking point. The cumulative impacts have been devastating. Yet here we are, trying to reverse the trend. What drives us? What chance do we have?



It is with a great debt of gratitude that we acknowledge the continuing support for various projects that build our strength, resolve and success. In particular, the **Sheehan family** has sustained many of our schemes over the years, and supported our day-to-day operations when times were especially lean. Through individual contributions and foundation grants, the generosity of this family has been most remarkable in helping to clean stormwater before discharged to the river, save land and habitats that would otherwise be degraded, and launch campaigns such as Cape Cod Bay Watch. We simply would not exist without them! Other anonymous donors have stepped up as well with significant donations, like the friend that helped us buy the Landing. Such incredible generosity creates wonderful outcomes. The reward for these donors is our success, and we accept this as a personal commitment: to restore the natural ecosystem to health and vibrancy and build a facility that will support its stewardship for generations to come.

For our work, the government on all levels is a needed partner. The many grant opportunities from state and federal agencies have kept our blood flowing and helped improve the chances for the river and bay to be restored to health. While disparaging things are often said about “government intervention,” we know that we would not succeed without this help. The dedication, perseverance, inspiration and hard work of many staff in the **Division of Ecological Restoration, NOAA**, and others have been so important to us. The funding available through the **Executive Office of Environmental Affairs, Massachusetts Environmental Trust**,

Department of Conservation and Recreation (DCR), and **Division of Marine Fisheries (DMF)** keeps us moving forward productively. These state and federal funds (and staff engagement) are essential and a welcome help to restore a river that has been critical to the development and success of not just the state, but also the country. This is not to say that we don't share your disappointment when rules and regulations are compromised and the environment suffers as a result, but we have and will continue to find ways to get the best out of our government and give our best as a result. For help along the way we have relied heavily on our state and congressional representatives, and will continue to do so!

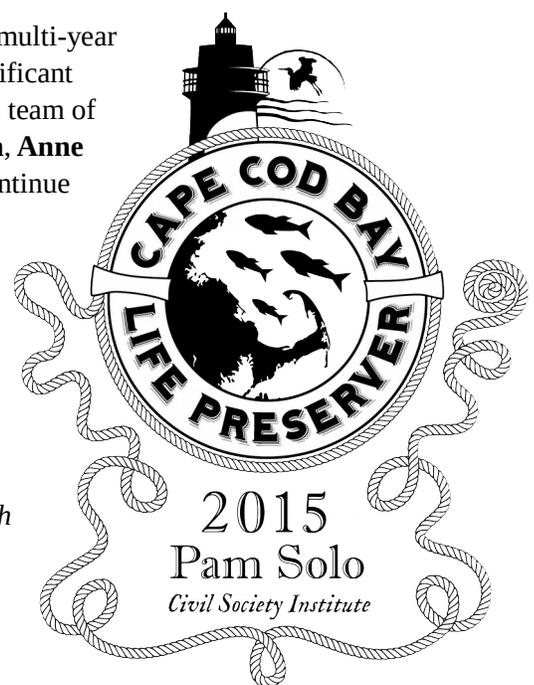
Not the least of government is the **Town of Kingston** which over the years has helped to protect the river corridor and address water quality. This year we worked, as we always do, with **Maureen Thomas** of the Conservation Commission securing both the Albertini land and improved stormwater quality from Landing Road to the river. We thank Maureen for her hard and sometimes unnoticed efforts on behalf of the local environment. Essential to her and our success, and also to the work with the recently reformed Central Plymouth County Water District (CPCWD), is a relative newcomer to Kingston – **Robert Fennessy**. Bob is the Kingston Town Administrator, who has stepped into the breach on the CPCWD as the town's representative on the Advisory Board. He jumped through several hoops to sign grant applications and support letters in time, and has been a great help moving the agenda forward for the river. For those reasons, we award Bob our 2015 "*Champion of the Environment River Rat Award.*"

Our work in the river has also been supported by **Patagonia**, which launched a nation-wide campaign to remove dams. Their support is now helping us sustain our level of effort at Elm Street dam as we work with Smith College and continue to take the steps necessary to undam the river. When **Grady Consulting** stepped up to contribute a survey, we were thrilled by their investment and generosity in this restoration effort. The cumulative effort of loyal volunteers who help year after year with our annual fish count is a demonstration of community support, which is essential to win state and federal support.

For the last decade at the Landing, **Massachusetts Charitable Mechanics Association** has provided annual gifts of shop equipment and tools. This organization was founded in 1795 by Paul Revere and friends, and is particularly important to us. I find their legacy inspiring, and also extremely helpful as the shop becomes more equipped to execute some great projects for the future. The weekly volunteer crew has laid a solid foundation for some great future programming.

Our Cape Cod Bay Watch program would not be possible without the multi-year support of the **Civil Society Institute (CSI)**, **Island Foundation**, significant private contributions, and endless hours of hard work by our dedicated team of attorneys: **Kevin Cassidy** from **Earthrise Law Center**, **Meg Sheehan**, **Anne Bingham**, **Genevieve Byrne** and **James Lampert**. Ultimately, we continue to be focused on the rapid and complete cleanup of the site and secure storage of nuclear waste if we cannot achieve off-site transport for safer disposition in the near-term. With their help, we have brought considerable expertise to the table and have been able to implement strategies that have made a positive difference.

For all of her work in the past twenty years to build a "civil society," free of nuclear power and full of renewable energy, we award CSI Founder and Director, **Pam Solo** with this year's "*Cape Cod Bay Watch Life Preserver Award.*" Thank you Pam for your most welcome, needed and useful support to our program to bring accountability to Pilgrim Nuclear and save Cape Cod Bay.

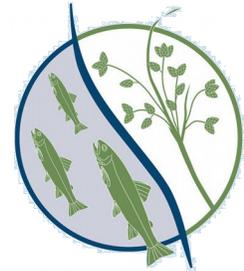
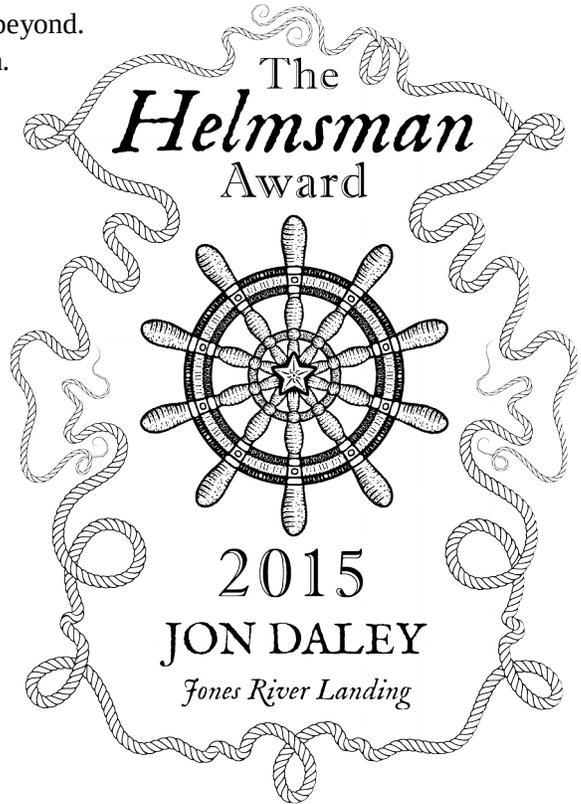


We succeed, however, because some people just go above and beyond. It's their nature, and our good fortune to have them on our team. Among such help, we were inspired this year to create a new award, just to be sure to thank him for his consistent, meaningful contributions and support, constantly stepping up when someone was needed.

The Landing's new "Helmsman Award" this year is given to **Jon Daley**, for his steadfast leadership. Thank you Jon!

We want to (and should) grow and diversify our membership, and also attract the interest of local universities for a long-term involvement. Some of our members are exceedingly generous, and sustain us in so many ways. But we have room to grow and share the wealth of our resources with more families in the area. Education is a must, and monitoring and adapting to climate change will be an essential result. If I was a kid now, I'd live here by the river. Somehow we need to cast our net wider, and we could use your help to do just that. **Invite your family and friends to join us, and THANK YOU for all that you do!**

– Pine duBois, Executive Director, JRWA



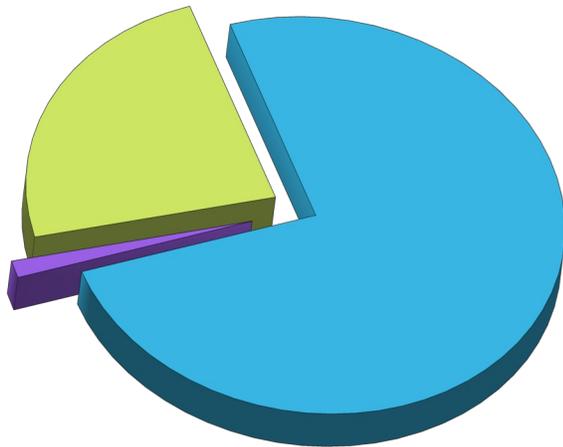
Financial Summary

Jones River Watershed Association

Karon Weirman, *Treasurer, JRWA*

INCOME

Foundation & Government Grants	\$ 119,409.00
Program Support	\$ 89,556.69
Memberships & Private Gifts	\$ 7,365.00
Interest Income	\$ 41.00
Total Income	\$ 216,371.69



EXPENSE

Programs	\$ 147,825.53
General & Administrative	\$ 46,787.95
Fundraising	\$ 2,673.95

Total Expense \$ 197,287.43

Net Ordinary Income \$ 19,084.26

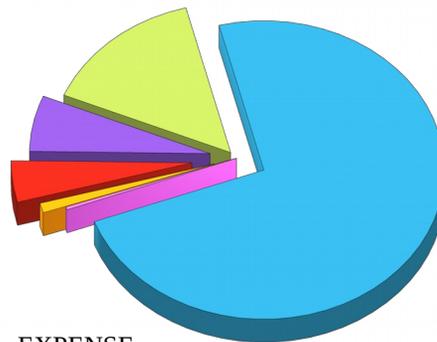
Jones River Landing

Pine duBois, *President, JRL*

INCOME

Memberships & Private Gifts	\$ 13,328.03
Grants for Programs	\$ 2,697.80
Events	\$ 550.00
Reimbursed Expenses	\$ 142.56
Miscellaneous Income	\$ 50.00
Interest Income	\$ 3.64

Total Income \$ 16,772.03



EXPENSE

Program Expense	\$ 12,136.04
Utilities (water, sewer, electric)	\$ 2,436.42
Professional Fees	\$ 1,000.00
Supplies & Repairs	\$ 742.67
Event Expense	\$ 174.11
Fees & Permits	\$ 53.50

Total Expense \$ 16,542.74

Net Ordinary Income \$ 229.29

The members of the JRWA Board of Directors extend their sincere gratitude for the financial support of our donors. The Board is committed to ensuring that each dollar received from Donors, Foundations and Grants are spent wisely and appropriately. Detailed financial statements are prepared monthly and presented to the Board, ensuring appropriate financial decisions are made. The yearly financial statements and financial activities are reviewed by Gonzalez & Associates.

To all who support us, thank you for your stewardship of the Jones River Watershed.