Trout River Environmental Committee

Annual Report 2022

Prepared by Shayla Steinhoff

December 19th 2022

Contents

Introduction

Trout River Environmental Committee was able to accomplish so many great things in 2022. This year we were able employ 6 staff members in the summer, including our Executive Director and Project Manager who are on all year, two returning staff and two new staff members. Andrew Lush has been the Executive Director of TREC for the past 3 years and has a background in watershed group operations helping to start the Hunter Clyde Watershed Group, and currently sits on the board of the Watershed Alliance. Shayla Steinhoff joined the TREC team in February as Project Manager. She is a recent graduate of Environmental Studies at Trent University with previous watershed experience. We welcomed back Teo Bujenita for the third year, who took over the position of Field Supervisor and is studying Wildlife Conservation in a joint program with Holland College and UPEI. David MacLeod also returned for the second year as a Field Technician and Chainsaw Operator, he is currently studying Climate Change at UPEI. New to the crew this year was Field Technician, Ruby Sharp, who is studying Wildlife Conservation at Holland College, and Field Technician, Gabriel Bujenita, a recent high school graduate with aspirations of working in the field of environment.

We started the field season May 9th, beginning with park maintenance at Trout River Park and The Devil's Punchbowl Trail. Headwater surveys, and dirt road surveys were completed, and restoration work began shortly thereafter. The team completed 3.62km of stream clearing, built 10 new brush mats, and planted and gave away a total of 2,298 trees this summer. Biweekly water quality monitoring was conducted at 33 sites across 9 watersheds, as well as weekly anoxia monitoring throughout the summer. The crew also worked on a few new projects this season such as amphibian surveys, a new educational event called Riverbank Heritage Day, they installed 2 new wood duck boxes made by a community member, created plant ID signs for the Native Plant Garden at the Punchbowl, completed work on the Trout River Park trail, along with many other projects that were began in previous years.

TREC was supported this year by the federal and provincial government, private and corporate funders, memberships, neighboring watershed groups, volunteers, in-kind donations, supply donations, in kind technical support from experts, training opportunities and community support. We are so grateful for all the support we receive; our work would not be possible without it. Thank you to community members who supplied us with valuable information on wildlife sightings, concerns around the watershed, for granting us permission to enter private land, and for coming out to community events. This continued support has allowed us to complete another successful year.

This *Annual Report* is prepared for the public and will go over work completed in the 2022 summer field season, as well as other work completed throughout the year. If you are interested in learning more about our work, donating, or becoming a member, please visit our website at troutriverec.ca or our social media @TREC on Facebook or Instagram. If you have any questions about our work please send us a message on social media or email us using the contact information on our website.

Our Staff

Andrew Lush: *Executive Director* ***Shayla Steinhoff:*** *Project Manager* ***Teo Bujenita:*** *Field Supervisor*

David MacLeod: *Field Technician* ***Ruby Sharp:*** *Field Technician* ***Gabriel Bujenita:*** *Field Technician*

Field Work

Tree Planting

Planting native trees and shrubs is essential to improving the health and resilience of a watershed. This summer, TREC focused on planting native trees and shrubs along streams with minimal canopy cover and habitat, as well as areas that have been impacted by clear cutting, resulting in loss of habitat, increased wind erosion and lack of protection for surrounding habitat area.

Planting native trees and shrubs helps improve riparian health by providing canopy cover, keeping stream temperature low, habitat and food for fish and other wildlife, carbon capture and retention, increased biodiversity, bank stabilization, erosion and runoff prevention.

Making sure streams are kept cool and shaded is becoming increasingly important in the face of climate change, where air and water temperatures are rising each year. TREC's data logger and bi-weekly water quality monitoring data shows that water and air temperature is generally hotter this year, than the previous 3 years. It is important to keep streams cool, as many fish and other aquatic species can have low resilience to heat. These species seek cooler areas such as shaded sections of streams, and springs where the water is cooler.

This summer, TREC planted a total of 1,711 native trees and shrubs across 9 watersheds. An additional 587 trees and shrubs were given away to community members at the TREC Annual Tree Drive. In total, 2,298 trees and shrubs were planted this summer at 19 locations (figure 1.) as well as locations chosen by tree drive recipients.

TREC also caged deciduous trees wherever possible (figure 3.). Caging trees, especially deciduous trees such as oaks and maples, helps prevent predation, i.e. small animals using these saplings for food. In the future, these trees and shrubs will provide much needed food for birds and other wildlife. Berried shrubs such as red berried elder, elderberry, Aronia, and bay berry, provide food for bird species such as cedar waxwings, American robins.

Native Tree and Shrub Species Planted 2022
Aronia
Bayberry
Broadleaf Meadowsweet
Butternut
Cedar
Elderberry
Hemlock
Horse Chestnut
Larch
Red Berried Elder
Red Maple
Red Oak
Red Osier Dogwood
Red Pine
Red Spruce
Spikenard
Spirea
Sugar Maple
Sweet Gale
White Ash
White Birch
White Pine
White Spruce
Willow
Yellow Birch

Trees were received from the J. Frank Gaudet Tree Nursery through the Forest Enhancement Program, as well as some generous donations from community members. Tree cages were built with supplies donated by North Rustico Home Hardware and Spring Valley Building Centre. This planting would not be possible without the support and collaboration of landowners and funders, thank you to all who were involved in making this possible!

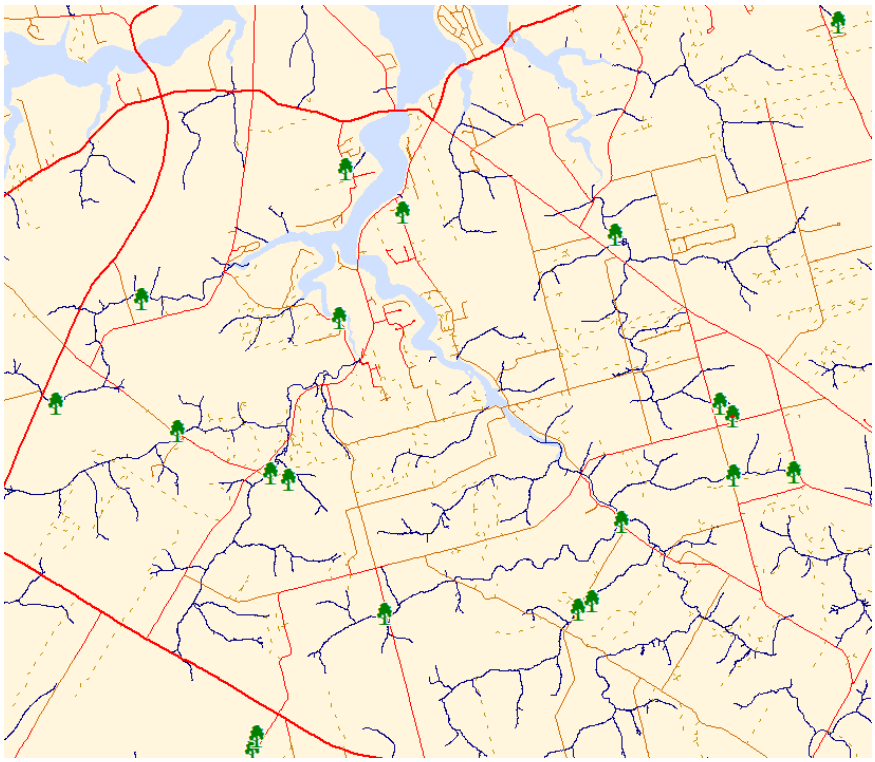

Figure 1. Locations of 1,711 native trees and shrubs planted in 2022.

Protecting standing old growth forests is extremely important in the fight against climate change and biodiversity loss. Standing old growth forests capture more carbon and provide better habitat for wildlife than newly planted trees. Although new trees may capture carbon more rapidly as they grow, old growth forests capture and store carbon more effectively.

It is important to continue planting trees in order to restore ecosystems, but it is just as important to protect standing forests from being cut down/lost. Woodlot owners can and do managed forests sustainably on PEI, for economic and environmental benefit. If you own a woodlot and wish to create a sustainable plan, using the Forest Enhancement Program, organized by the Government of PEI is a good first step.

Figure 2. Teo, David and Ruby after planting a large tree at a headwater in Founds River Watershed, in a project to restore areas with low tree survival rates. This location was planting with Simon Wilmot, who organized this tree planting project through the PEI Watershed Alliance. Figure 3. (Right) Ruby and Teo caging a red maple.

Stream Restoration

Stream Clearing

Large woody debris and other blockages imped fish passage, collecting sediment and other debris, creating even larger blockages over time. Aquatic species such as Brook Trout must migrate through waters in order to spawn, grow, find suitable habitat, feed, and complete other life processes. This is part of the reason clearing blockages within streams and watercourses is so important in order to restore habitat and improve stream health for fish and other wildlife. Blockages can also cause bank erosion, sediment buildup and disrupt stream meander pattern.

Stream clearing is also essential when doing restoration work such as brush matting. Alder swales, excessive growth and large woody debris must be cleared in order to instal brush mats and restore meander pattern. Additionally, large alder swales may cause bank erosion, pulling the bank down as they grow more top heavy, disconnecting floodplains.

This field season, the team cleared parts of Hope River and Trout River, which were identified as blockage sites using past Riparian Health Assessments. 3.622km of stream was cleared in total, with 2.512 km cleared on Hope River from St. Patrick's Road Rte. 226 to the end of Hope Valley Drive (figure 4.) and 1.110 km were cleared on Trout River off of New Orleans Road (figure 5.). The team also assisted Kensington North Watershed Association with stream clearing within their watershed.

When stream clearing, it is important not to completely clear away canopy cover, root mass and large woody debris, as aquatic species rely on trees and woody debris for shade, to keep waters cool, for habitat and for food. Only major blockages which may become worse over time, block fish passage, erode banks or cause other damage are removed (figure 6.).

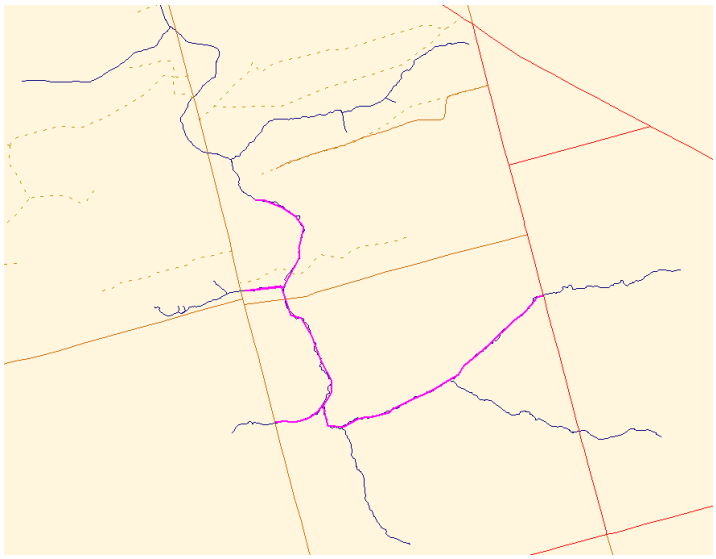

Figure 4. Stream Clearing on Hope River from St. Patrick's Road to Hope Valley Drive.

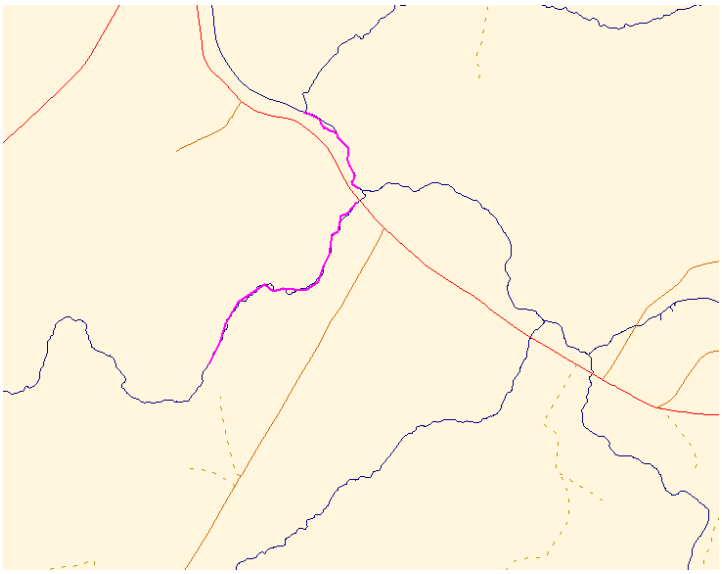

Figure 5. Stream Clearing on Trout River off of New Orleans Road.

Blockages can come in other forms as well such as collapsed bridges, perched culverts, or other man-made structures. The TREC team removed a collapsed bridge which caused a major blockage on a Hope

River tributary, impeding fish passage and collecting sediment. The tributary is now free of blockages and habitat connectivity is restored.

Figure 6. Stream clearing on Trout River off of New Orleans Rd. before and after. Brush mats were later installed.

Brush Mats

Installing brush mats helps to restore stream meander pattern and flow, stabilizing streambanks by allowing sediment to build up within the brush mat and vegetation to grow overtop, narrowing steams, increasing flow as well as cooling water temperature.

It is important that brush mats are placed in the correct locations to be effective. They must be must not exceed the height of the bank, or risk accidentally disconnecting floodplains. We first scout brush mat locations where sedimentation issues and improper meander patterns have previously been identified using a Riparian Health Assessment. These locations are then marked by GPS where brush mats can be placed along the stream.

Figure 7. 10 new brush mats along Trout River on both sides of New Orleans Rd installed 2022 field season.

This year TREC was able to use brush collected from a recent clearing to build brush mats, when material was not widely available in the area. Field Supervisor, Teo Bujenita also suggested using alders as a base for the brush mats when spruce was not widely available. This method worked very well, first inserting the alder branches in the bank as a base and

then adding spruce between and overtop. Brush mats are then staked in place using wooden stakes and tied together using a triangular tying formation to keep the mat together during high flow and heavy rain events. Brush mats can also vary in length and width depending on the need of the area. Thank you to the North Rustico Home Hardware for donating the wooden stakes used to build these brush mats.

TREC built 10 new brush mats along the Trout River off of New Orleans road (figure 7.), and restored 1 brush mat built in 2019 on Hope River. The Trout River tributary on both sides of New Orleans Rd. is experiencing deep sedimentation and a straightening meander pattern, likely due to the road crossing, as well as damming downstream (figure 8.). This area, although in need of restoration work, is home to many large brook trout, muskrats, great blue heron, amphibians, waterfowl and other wildlife, that will now have improved habitat through a reduction in sedimentation and restored stream meander. TREC will monitor this area in following years to ensure brush mats stay in place, if they need to be restored and if they are indeed reducing sedimentation, bank erosion and improving meander pattern.

Figure 8. David MacLeod and Ruby Sharp standing next to a brush mat built on Trout River off of New Orleans Road.

Invasives

Over our years as an organization, TREC has been identifying, tracking, and managing the spread of invasive species within our watershed. Prominent invasive species that were identified this year were Glossy Buckthorn, Japanese Knotweed, Wild Cucumber and Bittersweet Nightshade. TREC has worked to locate where these invasives are spreading, finding large and small patches where seeds and roots may spread and removing them (figure 9.). If you spot any invasives within the TREC watershed area please contact us or the PEI Invasive Species Council (PEIISC) to report, or use the EDDMapS app to report from phone, which will then be checked and added to the PEIISC database.

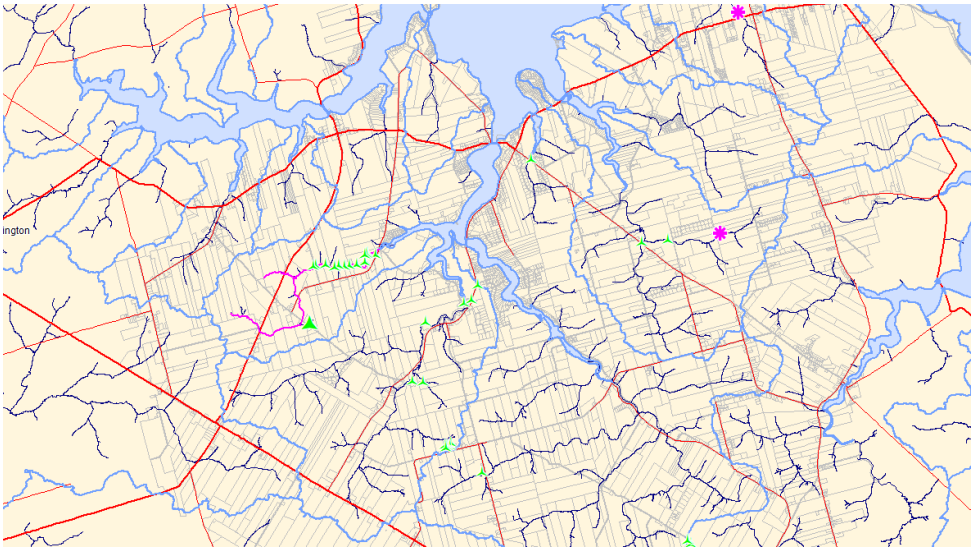

Figure 9. Invasive locations in the TREC watershed area.

Invasives in The Devil's Punchbowl

Glossy Buckthorn was identified and removed from the Devil's Punchbowl Trail with the help of the PEI Invasive Species Council. Removal methods indluded pulling small trees by hand removing roots and all parts or the tree and hanging them so they are not in contact with the ground. Mature Glossy Buckthorn of signifigant size was pulled using an extractegator (figure 11.). If the invasive was too large to pull, even by using the extractegator, the trunk was gurtled to weaken the tree and prevent significant growth. If the Glossy Buckthorn was mature enough to produce berries, branches with berries were clipped and bagged so they could not seed (figure 10.). It is important to remove and bag all berries, including those that may fall to the ground, as seeds can remain in the soil for 2 to 3 years before sprouting. These removal sites must be maintained and monitored annually for complete removal of the invasive.

Figure 10. TREC and the PEI Invasive Species Council after removing Glossy Buckthorn from the Devil's Punchbowl. The bags in the back of the TREC truck are filled with Glossy Buckthorn branches holding berries.

The removal of Glossy Buckthorn is extreamly important in improving survival rates among songbirds. Songbirds such as the American Robin and Cedar Waxwing depend on fruits and berries from native trees and shrubs for food. When Glossy Buckthorn is introduced to an area

it spreads quickly displacing native trees and shrubs and replacing the food they produce with berries of lower nutritional value. Glossy Buckthorn berries are also a diaretic, meaning birds can eat and then spread seeds quickly, as well as not absorbing nutrients properly. All of these factors decease songbird survival rates especially during winter migration, where birds must store fat before their long jouneys, but are unable to because they are filling up on non-native berries, rather than those native berries they require.

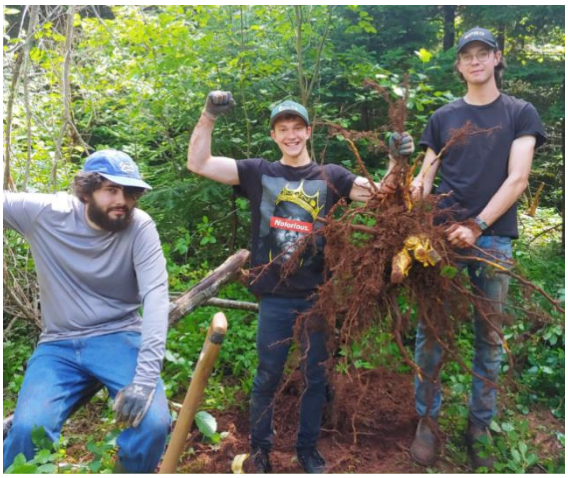

Figure 11. Members of TREC and the PEIISC after removing a large Glossy Buckthorn using the extractegator.

Glossy Buckthorn can be easily identified throughout the year by its unique characteristics. Its bark is dark redish brown with prominent white spots (figure 12.), its leaves are smooth and have fishbone like veins, and its berries can varry from whiteish red to red to a dark purple when completely mature and ready to drop.

Figure 12. Glossy Buckthorn branches with berries bagged to disrupt seed dispersal.

The Devil's Punchbowl has Glossy Buckthorn coming up in several locations in small to medium patches with plants ranging from seedlings to mature trees. The invasive was prominent along the Riverbend Trail, adjacent to a tributary of Granville Creek, this area was a major focal point for removal, where all Glossy Buckthorn trees and saplings were removed. The area will continue to be monitored and invasives removed annually. The Devil's Punchbowl Trail in the upper area of the park as well as the Maple Woods Trail contained mostly sparse clusters of the invasive and were removed as well. There was a large grouping identified off of the trail that must be tackled in the coming years.

Invasives on Private Land

Figure 13. Wild Cucumber.

Wild Cucumber was identified and removed from several sites in the Granville Creek, Trout River and Andersons Creek watersheds. Several large patches were found on private land in the Granville Creek watershed growing over compost piles, climbing trees and chocking out vegitation. The large and small patches of Wild Cucumber were removed through pulling the vine and hanging it to dry before fruits could drop and spread seed. Another large patch was identified on farmland boardering Trout River that was removed with the help of the PEI Invasive Species Council (figure 14). Several road side runaways were also idenfied and removed including vines climbing trees on Millvale Road and along Rte. 224.

Wild Cucumber can be easily identified in the late summer/early fall through its distintive prickly fruit, large leaves, white flowers, and vining nature (figure 13.). Removal inludes pulling vine roots from the ground, removing vining stems from vegitation and hanging to dry out before the plant can spread it's seeds. If the plant must be removed after it has fruited, cucumbers must be removed and placed in a bag for disposal as well.

Figure 14. Large swath of Wild Cucumber found and removed from a compost pile on private property

Large patches of Japanese Knotweed were identified and removed from Hazel Grove Road and from the TREC office property, which must be managed annually. Japanese Knotweed is a herbsious plant resembleing bambo shoots (figure 15.) and must be removed by cutting shoots and placing in bags to dry out and be disposed of propertly at a waste management facility. Japanese knotweed spreads through its roots, meaning pulling it will only spread the invasive further. In addition, it can root through any leaf or stem that is left over, so it is important to remove all traces of the invasive from the area. This invasive takes over large areas, choking out native species and creating a monoculture, it can also grow to be 6m tall. It is best to remove this invasive earlier in the growing season before it can spread, as it has been known to take over large cleared areas such as a mowed lawn, covering entire properties.

Figure 15. Japanese Knotweed that was removed from Hazel Grove Rd.

Invasives around Founds River

Founds River is a problem area for invasives. TREC walks this stream each field season, removing Wild Cucumber, Morning Glory and Bittersweet Nightshade, which are all invasive climbing vines that can choke out native vegitation (figure 16.). The Kensington North Watershed Association also came out to help this year! The TREC team identified large patches of Glossy Buckthorn throughout Founds River that must also be removed next field season.

Figure 16. This is Wild Cucumber growing over Glossy Buckthorn on Founds River. TREC was able to remove the Wild Cucumber but will need to revisit Founds River to remove the large patches of Glossy Buckthorn from the system.

Monitoring and Surveys

Dirt Road Surveys

In late spring, second year field technician David MacLeod conducted our annual Dirt Road Surveys, collecting data on diversion ditches, check dams, crossings, sediment traps and other

infrastructure Transportation has installed to reduce sedimentation in streams. Runoff from dirt roads can be a major cause of sedimentation in streams, and if preventative infrastructure is not properly maintained, the issue can be exasperated during heavy rain events.

TREC collects data on this preventative infrastructure, noting if sediment traps/diversion ditches/check dams need to be emptied, where runoff is occurring and other issues with dirt roads that may impact stream health or public safety. This data is then relayed to The Department of Transportation and Infrastructure, so work may begin to prevent runoff from entering watercourses and wetlands.

Headwater Surveys

After year 1 of surveying, we met with hydrologist's Qing Li and Gavin Toombs to discuss how our methods could change to cover a wider area and move towards more long-term, consistent data collection.

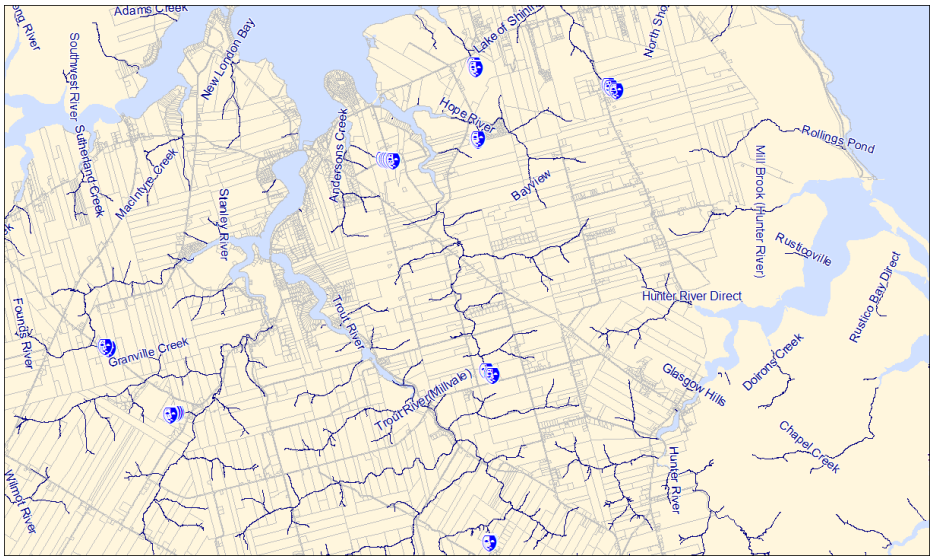

Figure 17. 2022 Headwater survey locations are shown as faces (heads) on the map.

Stream mapping within the Hope-Stanley watershed complex provides insight into the extent of first order streams and confirm the seasonal variability in stream flow. Ground water tables fluctuate yearly, with peaks from mid-April to May and yearly lows from mid-September to mid-November on PEI; comparatively, stream flow fluctuate at similar time periods, with peaks from mid-April to mid-May and lows from late-August to mid-November. Headwater surveys must take place twice annually, ones in early spring at high flow, and once in fall at low flow.

It is important to gather information on the health of our headwaters so we can determine which streams are at risk of running dry due to climate change or other impacts, the seasonal fluctuation in water flow and headwater locations, and assess water connectivity within the watershed Identification of stream flow fluctuations will allow future work to target at risk streams and to focus on remediation.

Figure 18. Each of these locations has several faces showing the exact points measurements were taken approaching the headwater.

The team collected data from each headwater noting changes in flow, status of springs, impacted areas, fish passage, canopy cover and stream temperature. This data

was collected at each point where a change occurred (figure 18.) and the headwater's health was assessed based on these qualifications.

Although the goal for the first year with these 5 new sites (figure 17.) was to collect baseline data from healthy locations, not all of the locations were deemed to be healthy due to land use issues, lack of canopy cover or sedimentation and are now listed as sites to be restored. Anderson's Creek and Lake of Shining Waters headwaters were deemed unhealthy, and restoration work at the Lake of Shining Waters headwater began this summer, planting trees in the area. The Founds River and Hope River headwater were deemed healthy with problems, due to the spring being impacted by farming practices. The Trout River, Granville Creek, Bayview Creek and Grahams Creek headwaters were deemed to be healthy having lots of canopy coverage and headwater temperatures between 6 and 8 degrees Celsius. Additional sites may be chosen next year to continue to gather baseline data for healthy headwaters within our 9 watersheds.

If healthy, headwaters should get colder, to a temperature of around 6-8 degrees Celsius at the source. They should have proper canopy cover, medium to high flow, and be able to provide habitat for wildlife. Fish and other wildlife use springs and headwaters as refuge from warmer waters in the summer months, but they also use it as refuge from colder waters in the winter months, as springs should stay around the same temperature throughout the year as the waters percolate from the ground.

Springs and headwaters should be the cleanest source of water within a system, but can sometimes become contaminated due to road salt pollution seeping into the ground causing high salinity levels to occur, as is what seems to be happening at one of our water quality monitoring sites close to Highway 2, Veterans Memorial Highway. Groundwater and in turn springs can also become polluted by fertilizers, pesticides, and other pollutants. Headwaters with high temperatures are usually caused by a lack of proper buffer zone or canopy cover, as seen at one of our headwater survey sites off of Bumblebee road.

Figure 19. 2022 Spring Headwater Survey Data:

Date	Watershed	Flow Category	Fish Passage	Canopy Cover	Air Temp	Water Temp	Spring Presence
2022-05-12	Hope River	4	none	60%	20	15.7	no
2022-05-12	Hope River	3	none	70%	20	9.7	no
2022-05-12	Hope River	3	none	50%	20	8.5	yes
2022-05-12	Hope River	3	none	0%	20	7.7	yes
2022-05-12	Hope River	0	none	0%	20		
2022-05-12	Founds Mill Creek	4	ok	50%	20	13	no
2022-05-12	Founds Mill Creek	4	none	50%	20	12.3	no
2022-05-12	Founds Mill Creek	3	none	50%	20	10.6	no
2022-05-12	Founds Mill Creek	3	none	30%	20	13	yes
2022-05-12	Lake of Shining Waters	4	bad	5%	20	16	no
2022-05-12	Lake of Shining Waters	3	bad	5%	20	15.4	no
2022-05-12	Lake of Shining Waters	3	bad	0%	20	18	no

2022-05-12	Lake of Shining Waters	0	bad	0%	20	12.8	
2022-05-12	Trout River	4	bad	70%	20	8.4	no
2022-05-12	Trout River	4	bad	60%	20	6.8	yes
2022-05-12	Trout River	0	ok	50%	20		
2022-05-12	Bayveiw Creek	4	good	90%	18.2	7.7	no
2022-05-12	Bayveiw Creek	4	bad	80%	18.2	7.2	no
2022-05-12	Bayveiw Creek	3	good	70%	18.2	6.8	yes
2022-05-12	Grahams Creek	4	good	60%	19	8.4	no
2022-05-12	Grahams Creek	4	ok	60%	19	6.4	yes
2022-05-12	Grahams Creek	0	none	50%	19		
2022-05-12	Andersons Creek	4	none	0%	18.9	10.7	no
2022-05-12	Andersons Creek	3	none	20%	18.9	9.6	no
2022-05-12	Andersons Creek	2	none	0%	19	18	no
2022-05-12	Andersons Creek	1	none	0%	19	18.8	no
2022-05-12	Andersons Creek	1	none	0%	19	10.7	yes
2022-05-12	Andersons Creek	0	none	0%	19		
2022-05-12	Granville Creek	4	ok	60%	15	9.5	no
2022-05-12	Granville Creek	3	ok	70%	15	8.7	no
2022-05-12	Granville Creek	4	ok	70%	15	8.8	no
2022-05-12	Granville Creek	3	bad	100%	15	8	no
2022-05-12	Granville Creek	2	none	100%	15	7.4	yes
2022-05-12	Granville Creek	1	none	100%	15	6.8	yes
2022-05-12	Granville Creek	0	none	100%	15		

Amphibian Surveys

TREC conducted Amphibian Surveys via Call Surveys and Board Surveys to determine what species are within the watershed area where they are occuring, and if these sites are in need of restoration. 1 meter squared of untreated wood, as chemicals from treated wood could hurt the amphibian, were labeled with TREC as well as a contact number and placed in 5 locations around the watershed (figure 20). These were areas that would likely house amphibian species such as Wood Frog, Spring Peeper, Leopard Frog, Green Frog, American Toad, Red-backed Salamander, Yellow-spotted Salamander, Blue-spotted Salamander and the Eastern Newt.

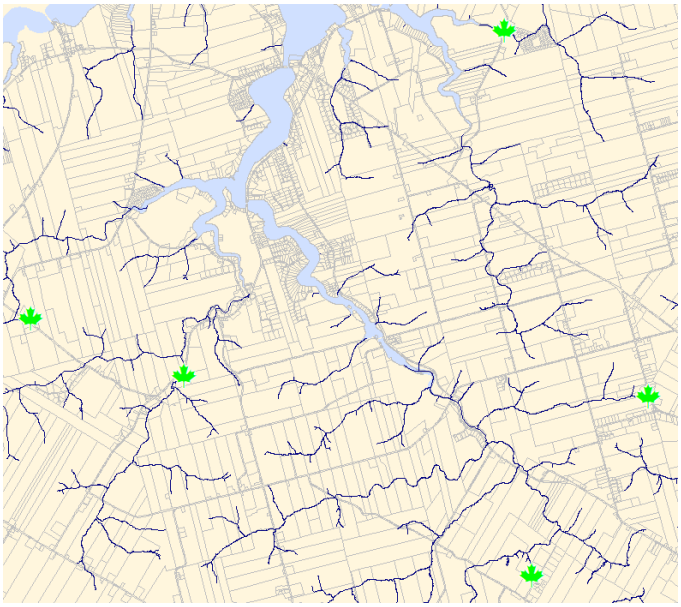

Figure 20. Amphibian Survey locations

Board Survey

1 meter squared or smaller boards of untreated wood, were labeled (figure 21.) and placed in 5 locations around the watershed. These were areas that would likely house amphibian species such as Wood Frog, Spring Peeper, Leopard Frog, Green Frog, American Toad, Red-backed Salamander, Yellow-spotted Salamander, Blue-spotted Salamander, and the Eastern Newt.

5 survey sites (figure 20.) were selected based on previous amphibian sightings, or suitable habitat such as a headwater, marsh or wetland, boards were places along forest edges near these sites (figure 22.) in order to attract amphibians. Boards were left in the field for 2 months before checking underneath to see if amphibians were present.

Figure 21 Amphibian Boards with labels

Sites were checked 3 times throughout the summer field season and will continue to be checked until snowfall, and then starting again in spring of 2023. Boards are lifted by 1 crew member while another records video to ensure all species spotted are caught and identified later, field data entry is completed including site, time and date, weather, species sightings and other notes.

Figure 22. Board placement at survey site off St Mary's Road

4 out of 5 board surveys did not show presence of amphibians, likely due to being too dry. One site off Simpson Mill rd. showed presence of Wood Frogs (figure 23.) on 2 separate survey dates. Higher success rates are expected in following years, after boards can become more weathered and dampened. Amphibian presence was detected at several sites through other observation, Yellow-spotted Salamander eggs (figure 25.) were in a pond at survey site off of Rattenbury rd., and a picture of a Yellow-spotted Salamander (figure 26.) was taken by a landowner at a survey site off of St Mary's Road and a Red-backed Salamander was found at the Punchbowl (figure 24.). Additional Sites will be chosen in 2023 based on amphibian sightings in the field.

Figure 23 Wood Frog at Simpson Mill Rd. survey site

Figure 24 Red-backed salamander found at tree planting site

Figure 25. Yellow-spotted Salamander eggs found at survey site off Rattenbury Road, Figure 26. Yellow-spotted Salamander, photo captured by Beth Hoar at amphibian survey site off of St Mary's Road

Call Survey

Call surveys were conducted 30 minutes after dusk at 2 survey sites, by our field supervisor Teo Bujenita. Calls were recorded via cellphone for a minimum of 5 minutes and then later analyzed and matched with frog species. 2 call surveys at 2 sites revealed Spring Peepers at both survey locations on August 10th and then no calls on August 23rd. In future years additional sites will be added as well additional dates.

Fish Trap

On June 27th, with the help of Alan McLennan, Eastern Habitat Joint Venture Program Coordinator and Mary Finch, Watershed Ecologist, the team installed a fish trap at the top of the Henry's Pond fish ladder (figure 27.). Team members used a net to gather fish from the fish trap, measuring and IDing each fish in order to determine what species and size were present in the Granville Creek System as well as what species and size were able to make it up the Henry's Pond fish ladder. TREC also wanted to determine the presence or absence of Rainbow Trout, a non-native species that can quickly outcompete Brook Trout, and other native species.

Brook Trout (figure 29.) were the most prominent species found in the fish trap, followed by Gaspereau and White Perch (figure 28.). Only one Gaspereau at a length of 24cm and one White Perch at a length of 20cm were found. In addition to checking the fish trap each morning and removing for weekends, the team also cleared the ladder of any debris or plant life that could impede fish passage. The trap was removed August 25th at the end of the summer field season.

Figure 27 fish trap, figure 28. White Perch, Figure 29 Brook Trout.

Riparian Health Assessments

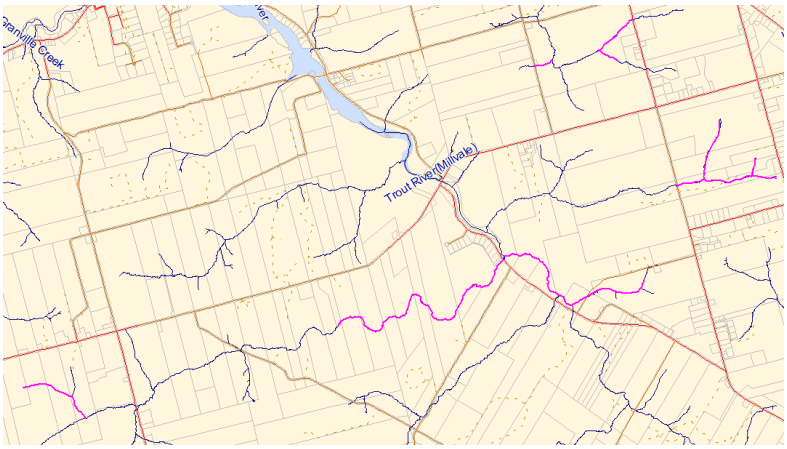

Figure 30. RHA Stanley River, Douglas Rd., Trout River and Hope River.

The team continued to conduct Ripiarian Health Assessments (RHA's) of our watershed to determine stream health, noting where blockages occurred, erosion and runoff, invasives, canopy cover percentage and other factors determining stream health. The team surveyed a total of 8.5km of stream this summer at the following locations within Trout River, Hope River (figure 30.)

Pilot Riparian Health Assessment

The PEI Watershed Alliance is piloting a new Riparian Health Assessment method for all Watershed Groups. TREC and assisted Simon Wilmot in piloting this RHA method within the Hope River watershed (figure 31.). This RHA will build off of current RHA methods, group input, and other data collected while trailing this method in watersheds across the Island.

Figure 31. Shayla Steinhoff, TREC Project Manager and Simon Wilmot, PEIWA trialing a new RHA to be used Island wide

Water Quality Monitoring

TREC has continued to conduct Water Quality Monitoring in the 2022 field season. 33 sites across 9 watersheds (figure 32.) were monitored bi-weekly over the course of 4 months using a YSI from the PEIWA (figure 33). Additionally, bottle samples (figure 34.) were taken from these 33 sites every other monitoring day and tested at Bedeque Bay Environmental Management Association for nitrates. These were also compared against bottle samples tested at the Provincial Analytical Lab for accuracy.

Every other week, the team recorded stream characteristics (width, depth, sediment depth and flow) (figure 33.) as well as its physical and chemical characteristics (temperature, pH, turbidity, conductivity, dissolved oxygen, TDS/TSS, nitrogen content, specific conductance, and salinity). We do this to have an up to date reading of water quality for this area to compare to past and future data and track the health of our streams. All data, along with past data will be uploaded to Atlantic DataStream, an open access website which can be referred to by anyone. This greatly enhanced our understanding of both the physical properties (turbidity, stream depth, water flow and temperature), and chemical properties (nutrient, metals, minerals, and pollutants).

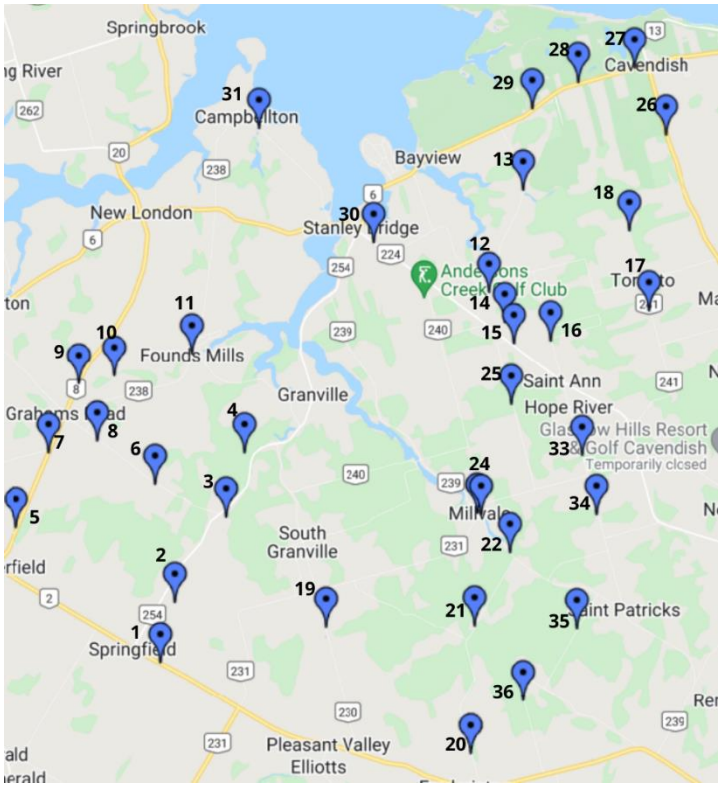

Figure 32. 33 bi-weekly Water Quality Monitoring locations for 2022

Figure 33. Field Technicians, David MacLeod and Ruby Sharp conducting Water Quality Monitoring, using a flow metre and measuring tape.

Figure 34. Bottle sample and YSI.

Estuary Watch

Used to track anoxic events, estuary watch protocol and booklet is a standardized program used across the province. TREC conducts these assessments every Wednesday afternoon at 6 locations for estuaries within Hope River, Trout River, Granville Creek, Founds River and Anderson Creek (figure 35.). At the end of the monitoring period, we relay all data to the provincial government, who collects data Island wide on anoxic events. Knowing where anoxic events are happening and the duration of these events in our estuaries provides valuable data to us and the Department of Environment, Energy and Climate Action.

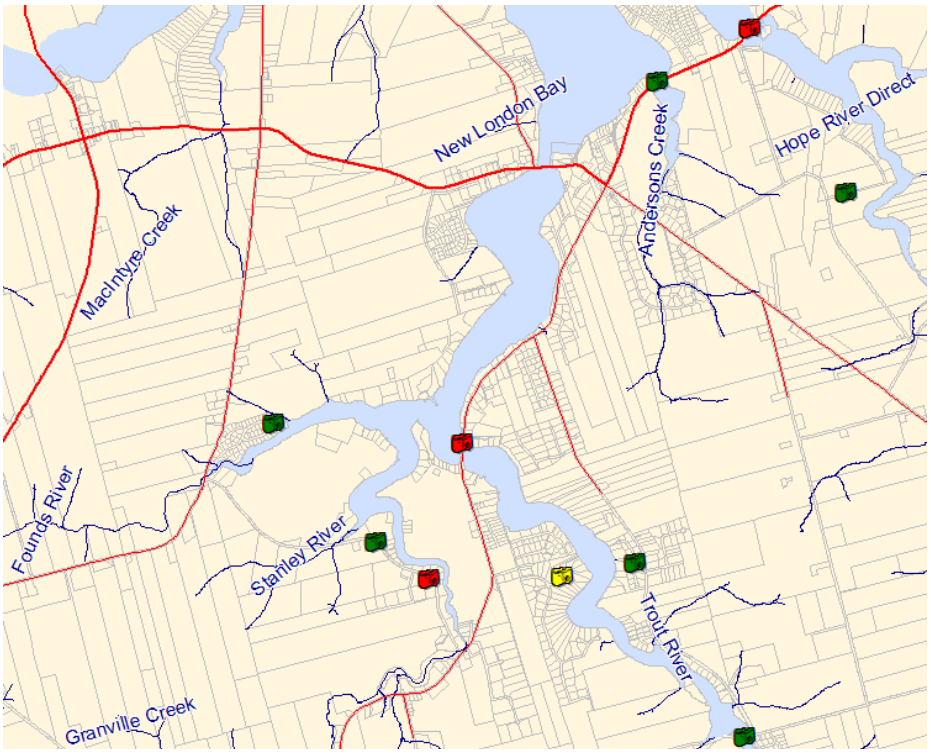

Figure 35. Estuary watch locations. Red markers are sites retired from monitoring. Yellow markers are sites that are proposed as good future alternative sites. Green sites were monitored in 2022 by staff and volunteers.

Data Loggers

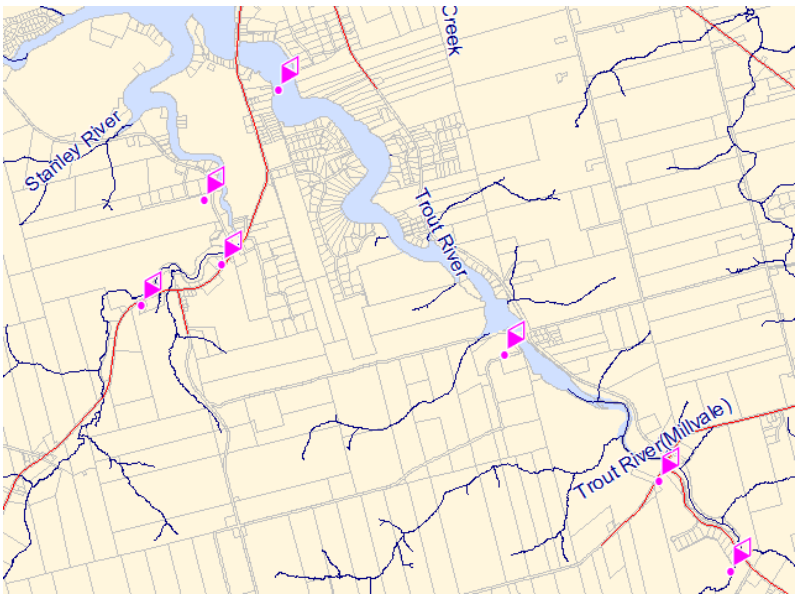

Figure 36. Six temperature loggers and 2 DO loggers continue to collect data for Granville Creek and Trout River systems.

Temperature Loggers

Temperature loggers track changes in temperature throughout the year, and collect data throughout the day showing highs and lows daily to seasonally. TREC installed six temperature loggers in locations around the Watershed Complex in order to track yearly and seasonal temperature changes that may be influenced by climate change, land use, or infrastructure such as dams. Four of these loggers are located above and below dams containing fish ladders in order to see if these dams have an influence on temperature change. Two other loggers are located in estuaries along with dissolved oxygen loggers. High temperatures can influence the growth of aquatic plant matter, in turn influencing dissolved oxygen levels.

Fish and other aquatic organisms can be impacted by elevated temperatures, or sudden changes in temperature. It is also important to track changes in temperature in order to track how climate change and other factors are impacting stream health, and if stream temperature is increasing year to year. These temperature monitors will log data for the next 5 years and are offloaded and data analysed monthly (figure 37).

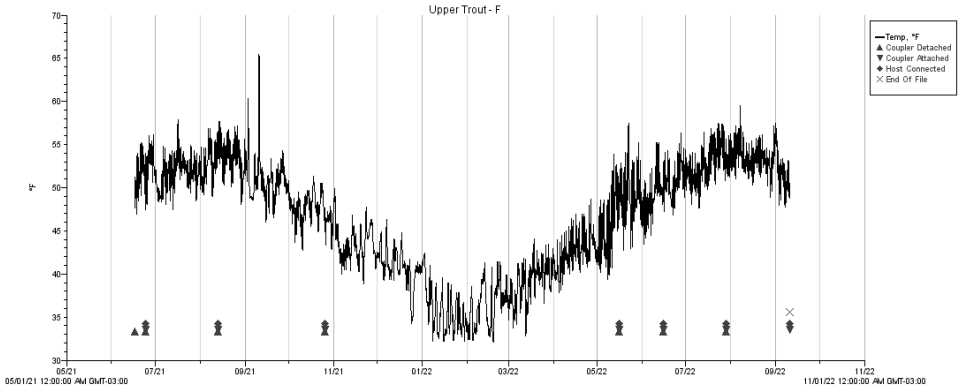

Figure 37. Here is an example of the temperature data collected beginning in 2022. This data was collected from a temperature logger installed above the Millvale Dam on Trout River.

Dissolved Oxygen Loggers

TREC instals 2 dissolved oxygen loggers annually each summer for around four months in order to track anoxic events, and see exactly what length of time an estuary experiences anoxic or hypoxic events. Healthy water should generally have dissolved oxygen concentrations above 6.5-8 mg/L and dissolved oxygen saturation between about 80-120% (figure 38.).

When dissolved oxygen levels are too low, fish and other aquatic organisms can suffocate, impacting mortality rates. Extremely low oxygen levels in estuaries happen at the end of summer when sea lettuce growth has peaked and is has began to decompose, eating away oxygen in the process. In polluted systems with too many nutrients, mostly nitrogen and phosphorus, an overgrowth of plants matter, and even animals, and bacteria cause the oxygen to be used up quickly, sometimes causing the death of aquatic organisms. You can find data from these temperature and DO loggers on Atlantic DataStream, uploaded annually.

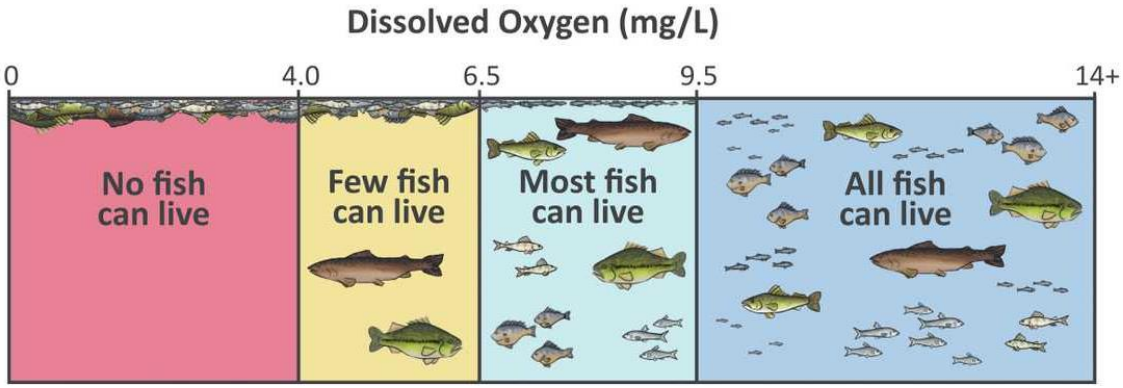

Figure 38. This figure explains how dissolved oxygen below 5.5 mg/L will negatively affect most fish and fish life stages. Each species of fish requires a different amount of dissolved oxygen to live, some are more sensitive than others. (Atlantic Datastream)

Agri-Watershed Partnership

TREC is a part of the Agri-Watershed Partnership (AWP) project, facilitated by the Watershed Alliance. This project allows us to work with farmers and create solutions to farm runoff and other environmental issues farmers may be dealing upland of riparian areas. TREC is currently working with 3 farmers within the Trout River watershed to find solutions to runoff, which can impact ecosystem health as well as the health of farmland by decreasing soil organic matter content and field fertility, as well as increasing nutrient loading and sedimentation within streams. So far, we have looked into solutions such as creating berms to slow runoff, converting wetter areas into constructed wetlands which would help to filter runoff, and increasing the use of cover crops. We have also increased our knowledge of where runoff is likely to happen using concentrated flow mapping with the help of Gwen Vessey, AWP coordinator. We will continue to work with these farmers in the coming years and begin building berms and using other solutions summer 2023.

Bat Monitoring

The PEI Watershed Alliance, under the Habitat Stewardship Program, initiated a bat monitoring program under the NABat framework. This project will last three years with a major focus on detecting bats. We are currently in our second year. Since the fungus that causes white nose syndrome was introduced to North America, bat populations have decreased drastically across much of the eastern coast. The fungus causes the hibernating bats to emerge too early from hibernation in search of food, when food is not readily available. The NABat framework aims to standardize bat monitoring efforts across North America by creating standards of practice and grids. TREC was given one grid square to monitor over the 2021/22 field season. Using acoustic monitors that detects the high frequency echolocation calls of bats, we can determine bat presence or absence (figure 39.).

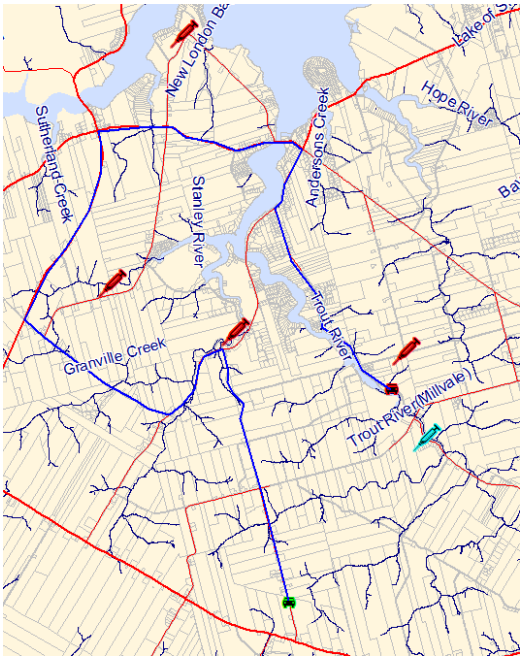

Figure 39. TREC conducts bat monitoring throughout the year during roosting and hibernation peak seasons. The red symbols are stationary monitors which collect data for one week during the summer roosting season. The blue line is a driving transect.

Emergence Survey

The TREC crew assisted Tessa McBurney from the Canadian Wildlife Health Cooperative in conducting emergence surveys. Emergence surveys are conducted at dusk when bats "emerge" from their roosts between. Team members sit at each corner of a building and count how many bats emerge until there is none for at least 10 minutes (figure 40.). This year the crew counted over 200 bats emerging from one building, around 100 more than in 2021. Data was also collected this night using a Walkabout Bat Monitor (figure 40.) in order to determine species type. These surveys are conducted to help track bat populations, and how bats are being impacted by white nose syndrome.

Figure 40. Shayla Steinhoff before counting bats at emergence survey. (Right) Walkabout Bat Monitor recording bat calls during emergence survey

NA Bat Week Stationary Monitors

Five stationary monitors were installed at different habitat types (forest, open field, wetland, stream) around the watershed for a week during peak roosting season (figure 41.). These monitors collect data on what species are in the area. This data is then analysed using a program called Kaleidoscope and used by the NA Bat Program and the Canadian Wildlife Health Cooperative to track bat populations on the Island. The TREC watershed area is particularly batty compared to other parts of the Island. If you see a bat or bats on your property please report it to the Canadian Wildlife Health Cooperative.

Figure 41. Shayla Steinhoff, installing a stationary monitor in a forested area. The monitor is below, and the microphone is installed above, facing an open area.

NA Bat Week Mobile Transects

Mobile transects are driven at a slow speed along the same route each year (figure 39.). This route must be driven at 32km/hr, just slightly faster than the flight speed of a bat as to not record the same bat twice. Using this technique relative abundance of bats in our watershed can be detected.

Bat Wells

Recently discovered, bats hibernate in hand dug wells on PEI. Sandstone wells may be used as hibernaculum for cave-dwelling bats on PEI or for mating swarms. TREC monitors these wells each winter to determine if they are suitable hibernation sites, and if they are being used. This is done by collecting temperature and humidity data from within the well, as well as recording bat calls to see which species are using the wells. A metal powder coated cover was installed at one of the wells this summer by crew members with funding from the Wildlife Conservation Fund in order to protect this well and stop anyone/thing from accidentally falling in, while allowing bats to pass freely through 6-inch gaps (figure 42.).

Figure 42. Teo Bujenita, Ruby Sharp and Shayla Steinhoff after installing the first of two well covers over one of our well monitoring sites.

Trails and Parks

TREC maintains two parks within our watershed area, the Trout River Park and the Devil's Punchbowl Trail. Maintaining parks takes a lot of work, throughout the summer the crew clears trails, cut grass, remove garbage, plant trees, maintain gardens and complete general improvements to these parks.

Trout River Park

The Trout River Park is maintained throughout the year by TREC. In the summer months, crew members cut grass, remove garbage, and generally maintain trails within the Trout River Park.

With the help of volunteers and Kensington North Watershed Association, the crew completed work on the trail connecting to Gunns Bridge. Using rock, gravel and trail mix donated by Transportation, the crew built up the trail as to not be washed away by the surrounding waters (figures 43.). A bridge was installed to replace an existing infilled culvert as well (figure 43.). This work was conducted over a week's time and was funded by The Active Transportation Fund. Thank you to all who helped out!

Trout River Park now has an online presence on the Island Trails website, as well as google maps.

TREC will continue to maintain and improve the Trout River Park, please contact us if you notice any issues with the park or have any questions.

Figure 43. Work completed on the Trout River Park Trail

The Devil's Punchbowl

The Devil's Punchbowl Trail is maintained throughout the year by TREC. In the summer months, crew members generally maintain and improve trails within the Trout River Park by trail clearing, removing waste, removing invasive species, and planting trees.

Figure 44. Early summer, ID signs were installed in the native plant garden. Field technicians, Ruby Sharp and David MacLeod made these signs.

This season, TREC restored the fence in the parking lot, installed ID signs within the Native Plant Garden (figure 44.) as well as planting new native trees and shrubs within. The team also cleared trails when needed by pruning branches, pulling and trimming excess vegetation along trails, and removing waste from the park. TREC also interplanted 100 red oaks and 3 butternuts within the park to improve species biodiversity. This park remains open and is maintained throughout the year. Please contact us if you have any questions or concerns related to the park.

Bat/Bird Boxes

Tree Swallow Nesting Boxes

During past seasons, TREC installed 7 tree swallow nesting boxes around the watershed in order to help protect populations of tree swallows which migrate to the island to bread. After fall migration, TREC cleans out these nesting boxes and tracks their use. Out of the 7 tree swallow nesting boxes, three were confirmed to be used by tree swallows, one was unused, and three were used by other animals. Additional metal guards were installed this season to prevent other animals from using these nesting boxes. Nesting boxes will be checked after fall migration for the 2022 season and results will be available on our website and social media.

An additional 12 tree swallow nesting boxes were built by the TREC team this summer with wood donated by North Rustico Home Hardware. Along with others built in past years, 22 in total will be installed early spring 2023 at suitable locations.

Bat Boxes

Figure 45. TREC bat box donated to Carr's Wildlife Centre with accompanying informational sign

Figure 46. David Macleod and Ruby Sharp holding a bat box before it is painted.

Bat boxes are used by bats to roost and can hold up to 50 bats. These boxes do not require maintenance but may be periodically checked for use using emergence surveys, or noting bat droppings below. The team built an additional 5 bat boxes (figure 46.) and donated 1 previously built, to Carr's Wildlife Centre to be used in an educational display (figure 45.). These 5 bat boxes will be installed at suitable locations around the watershed.

Wood Duck Boxes

Thanks to a generous donation from a community member who built these Wood Duck boxes, as well as Transportation for supplying us with signposts, TREC was able to install 2 Wood Duck Boxes in wetlands within the Trout River (figure 47.) and Granville Creek systems. Wood shavings will be placed in the boxes each spring before wood ducks begin utilization, the boxes will then be checked after use to determine success rates.

Figure 47. The team installing a wood duck box along Trout

Community Outreach

The 2022 Winter Woodlot Tour

The Winter Woodlot Tour is an annual event presented by TREC, HCWG, WRIG, and CQWF and funded by the Wildlife Conservation Fund. The event highlights sustainable woodlot management, environmental stewardship, and local not-for-profits. This year the event was held in a woodlot within the TREC watershed on Millvale rd., March 5th. There were so many great exhibitors that came out including PEI Wild Child, PEI Woodlot Owners Association, MacPhail Woods Ecological Forestry Project and many more. The event also included activities such as snowshoeing, horse and sleigh rides, and nature crafts.

Exhibitors highlighted the significance of forest habitats for wildlife even in the winter, and the relationships and interactions that occur between forest organisms, their environment, and people. For example, the Invasive Species Council highlighted how humans are one of the main causes in the spread of invasive species throughout North America, and how this can alter forest ecosystems, reducing biodiversity and native species abundance. The Climate Lab displayed an exhibit that discussed issues relating to climate change, and how forests can help reduce greenhouse gasses through carbon capture.

Figure 48. Watershed groups preparing this years Winter Woodlot Tour event.

All exhibitors that attended highlighted the important work they do on the Island. Watershed groups highlighted their work in watershed restoration, research on bat populations on the Island, water quality monitoring, bird and bat boxes etc. The PEI Invasive Species Council highlighted the work they do in the tracking and management of invasive species on the Island, and what the public can do to help.

Riverbank Heritage Day

A new event called Riverbank Heritage Day, celebrated Prince Edward Island rivers, an important ecological, economic, and cultural characteristic of the Island, in honor of Canadian Rivers Day. This one-day event included kayak tours, watershed groups and other environmental organizations as presentations and exhibiters, arts and crafts related to rivers and waterbodies, and local cuisine. Riverbank Heritage Day was held at Carr's Oyster Bar on June 12th from 12pm-6pm. Around 150 guests attended the event, with 24 people participating in kayak tours, and 14 people participating in mask making with river clay.

Exhibitors and presenters included: Trout River Environmental Committee (figure 50.), Hunter Clyde Watershed Group, Bedeque Bay Environmental Association (figure 49.), PEI Wild Child, The River Clyde Pageant, The PEI Invasive Species Council, TransCoastal Climate Adaptations' Erin Nelson, and The PEI Watershed Alliance. Carr's Oyster Bar provided food as well as a free sneak peak of their new and improved Carr's Wildlife Centre. Thank you to all groups who came out!

The event was funded by Innovation PEI allowing us to rent a tent, chairs and a stage deck for presentations, print programs and create a Riverbank Heritage Day banner, as well as provide onsite first aid, rent kayaks.

Figure 49. Attendees watching Bedeque Bay Environmental Association present information about monarch butterflies.

Guests gained knowledge of the importance of watercourses, how they are being impacted, and how this effects all life including wildlife, humans, economic and cultural impacts and much more. This knowledge was gained through the lens of many different organizations and topics related to rivers and watercourse such as invasive species, conservation and restoration, policy, recreation, and arts. Attendees learned what they can do to make a positive difference in the protection and restoration of PEI watersheds and engaged in meaningful conversation with exhibitors and presenters.

Figure 50. Teo Bujenita and Ruby Sharp at the TREC booth at Riverbank Heritage Day

This event will be held annually, continuing in summer of 2023.

Nature Walks at the Punchbowl

On July 20th TREC hosted a nature walk at the Devil's Punchbowl Trail. The first was co-hosted by Gary Schneider of Macphail Woods Ecological Forestry Project, who demonstrated proper pruning techniques to attendees, as well as plant ID methodology (figure 51.).

The second nature walk was co-hosted by Hunter Clyde Watershed Group on August 13th. Attendees took part in a walk through the Devil's Punchbowl Trail, learning about bird calls, plant ID, invasive species and other ecological information (figure 52.).

Figure 51. Gary Schneider IDing a tree for attendees

Figure 52. Nicole from HCWG IDing a hobblebush on the left and an eastern cedar (right) during a community nature walk.

TREC Annual Tree Drive

The TREC Annual Tree Drive was held at the North Granville Community Centre on July 8th and 9th and was well attended by community members (figure 54.). 587 native trees were given away to community members, and over $2,000 was raised through donations and memberships. TREC also set up an educational table inside the centre on bat monitoring, watershed work, invasive species, and nesting boxes (figure 53.). Thank you to all those who attended and donated!

Figure 53. David Macleod at the 2022 TREC Tree Drive, informational table inside the North Granville Community Centre

Figure 54. Attendees picking out trees at the 2022 TREC Tree Drive, outside at the North Granville Community Centre

Beach Cleanup

Three Watershed Groups, TREC, Hunter Clyde Watershed Group and Wheatley River Improvement Group completed a beach cleanup at Barachois Beach (figure 55.) one day this summer. The groups found very little garbage, which was mostly made up of washed up fishing equipment. Good job beach goers for keeping our beaches clean! Barachois beach holds ecological significance as it provides habitat to endangered piping plovers.

Figure 55. TREC, HCWG and WRIG after cleaning up garbage at Barashois beach.

Cavendish Beach Hut

TREC attended Cavendish Beach Hut select Tuesdays throughout the summer, along with WRIG, HCWG and members of Cavendish National Park (figure 5.6). Groups set up an educational booth at Cavendish Beach and presented information on watershed work and restoration, bat monitoring, tree planting, piping plovers and other wildlife at Cavendish Beach, preventing litter, sea turtles and other topics to beach goers. Thank you to Cavendish Beach for allowing us to take part in this outreach.

Figure 56. Shayla Steinhoff and Ruby Sharp (left) with HCWG (right) at Cavendish Beach Hut

Swim for the South Shore

On August 13th, Teo and Gabriel Bujenita attended Swim for The South Shore, an event that celebrates clean, healthy water on the South Shore of PEI with an open-water swim, raising money for the South Shore Watershed Association. The two crew members set up an educational booth and spoke to the public about watershed restoration, bat monitoring, nesting boxes, and other watershed work.

River Days

Andrew Lush and Shayla Steinhoff attended River Days at Carr's Oyster Bar (figure 57.) and was joined by fellow watershed group BBEMA, who tagged and released monarch butterflies at the event in an effort to restore and track species population. TREC set up an educational booth at the event with information on watershed restoration, bird and bat boxes, bat monitoring, watershed characteristics, invasive species and the work we do as a watershed group.

Figure 57. Andrew Lush at River Days, TREC booth

WI Talk

The Stanley Bridge Women's Institute and TREC held a talk about hurricane Fiona, highlighting coastal erosion research, bank protection measures, flood risks, and the work TREC and other watershed groups are doing to mitigate the impacts of future storms. This event was held November 15th and was well attended by community members, including Brad Travers, MLA who took concerns raised by attendees to Steven Myers, Mister of Environment.

Figure 58. Shayla Steinhoff presenting on salt marshes at the WI Talk

Xander Wang of the UPEI Climate Lab came out to speak about future projections for coastal erosion and flooding, and what the UPEI climate lab has been studying in recent years concerning this issue. The second presentation was given by Shayla Steinhoff of TREC which highlighted one of TREC's newest projects funded by Nature Smart Climate solution, which focuses on restoring the health of PEI saltmarshes (figure 58.). This presentation covered the work TREC will be doing for this project, and how healthy salt marshes can decrease risk of inland flooding and coastal erosion by buffering storm surge and protecting shorelines. The last presentation was given by Andrew Lush of TREC which highlighted

generally the work TREC, and other watershed groups do as well as the Living Shorelines project facilitated by the Watershed Alliance which finds nature based solutions to coastal erosion.

Other Projects

Goose Banding

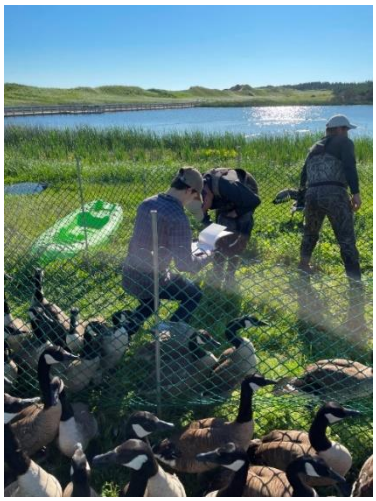

Figure 59. Gabriel Bujenita on his first day of work, taking notes during geese banding

Figure 60. Canada goose patiently waiting to be banded

TREC participated in banding Canadian geese at Cavendish National Park (figure 60.). This year experts banded, and sexed geese, noting previously banded geese and swabbing all for avian influenza.

Geese are carefully corralled into a fence station using kayaks and then banded and tested (figure 59.). This is done during molting, where blood fills the tips of the wings and geese are unable to fly. Banding geese helps to track populations within PEI and migratory populations. Watershed groups from across the Island took part in geese banding this 2022 season.

Cavendish Farms Lab

Cavendish Farms Lab gave TREC and Kensington North Watershed Association a tour of the lab (figure 61.). During this tour we learned about how Cavendish farms and competitors are working to create “the perfect potato” using natural breeding methods to ensure they are pest resistant, drought resistant and suitable for consumers. The lab has a goal of creating more sustainable potato production for PEI. Cavendish farms will continue to work with TREC and other Watershed Groups to help achieve this goal, by reducing fertiliser loading, irrigation and ensuring proper buffer zones, cover crops and other sustainable food production methodology is utilized.

Figure 61. TREC and Kensington North on a tour of Cavendish Farms Lab, at the greenhouse.

PEI J Frank Gaudet Tree Nursery

TREC, WRIG and HCWG took a tour of the PEI J Frank Gaudet Tree Nursery. The visit was a great learning experience, demonstrating just how much work goes into producing thousands of native trees, shrubs herbaceous plants each year. We learned that most seeds must be stored in cool temperatures, that pests can be an ongoing issue, and what goes into each stage of growth before the trees reach us. Watershed groups use trees grown in this nursery to establish habitat in riparian zones and provide shade for streams, to plant hedgerows on farm fields, for reforestation and diversification, and other restoration projects. Thank you to the PEI J Frank Gaudet Tree Nursery for providing us with this tour!

Figure 62. Watershed Groups touring the tree nursery.

Post-Fiona Cleanup Efforts:

Post-Tropical Storm Fiona inflicted extensive damage to the TREC watershed area, including our two parks, the Trout River Park, and the Devil's Punchbowl Trail. Although we saw a large percentage of trees come down within our parks, the response from the community was incredible. TREC held 3 volunteer days to help clean up the trail systems and each time 10 to 15 volunteers came out, around 6 of these volunteers being chainsaw operators. The first 2 volunteer days helped TREC to remove most of the fallen trees on the trail of the Devil's Punchbowl. We also planted red oaks and butternut in newly the formed gaps.

Figure 63. Sarah Langille and Simon Wilmot of the PEI WA helping to clear the Devil's Punchbowl Trail.

We had additional help from Kelsey McDonald, previous TREC Project Manager, and the Watershed Alliance Forestry crew including Sarah Langille, Gaige Waugh, and Simon Wilmot who came out on several occasions to clear fallen trees. The 3rd volunteer day consisted of tree planting red oaks and butternut in the Trout River Park, which will help with forest diversity and successional growth. We are so thankful for everyone that came out to help us clear fallen trees within the parks! This has allowed us to open up both parks for the winter, without the help of volunteers this would not have been possible.

Training

Plant ID and Pruning Workshop

On June 30th, Gary Schneider of Macphail Woods Ecological Forestry Project co-hosted a pruning and plant ID workshop for Watershed Groups at the Devil's Punchbowl Trail. In this workshop groups learned about proper pruning techniques and plant ID methodology (figure 64.).

Figure 64. Perfect pruning just above the collar by Gary Schneider.

Rapid Geomorphic Assessment

Shayla Steinhoff, along with several other Watershed Groups, attended a 4 day Rapid Geomorphic Assessment Course (figure 65.), instructed by 5Rs Environmental Consulting, to learn about watershed hydrology, geomorphology and geomorphic assessment methods.

These assessment tools were then used to conduct an RGA for a section of Founds Mill with the help of the Wheatley River Improvement Group (figure 66.). Results determined that the section was in a state of adjustment, experiencing aggradation and widening. Restoration work to reconnect the stream to its floodplain will take place summer of 2023 if funding is available.

Figure 65. WRIG assisting in RGA for a section of Founds River off of Macgregor Rd. Figure 66. Watershed Groups and 5R Environmental Consulting attending a field session of RGA training.

Kayak Safety Training

Before giving kayak tours at Riverbank Heritage Day, crew members David MacLeod, Ruby Sharp, Teo Bujenita and Shayla Steinhoff attended Kayak Safety Training at Outdoor Expeditions in North Rustico. The crew learned about rescue methods, property paddling techniques, and kayak mechanics. Thank you to Outdoor Expeditions for your helpful guidance.

First Aid

All TREC crew members are first aid certified, and we make sure to keep this certification up to date as an important safety measure in and out of the field. Ruby Sharp attended watershed first aid training instructed by Cornwall Watershed Manager Karalee McAskill at the Miltonvale Park Community Hall.

Watershed Training

All team members attended watershed training, instructed by Mary Finch, Watershed Ecologist. In this training session watershed groups learned about restoration methods, watershed ecology and general watershed facts in the classroom, as well as visiting a restoration site within the Central Queens Wildlife Federation watershed area. In the field, the team learned about proper brush mat building, digger logs and other restoration methods to restore stream meander and flow.

Acknowledgements

We would like to thank our funders from the Provincial Government through the Watershed Management Fund, the Community Celebration Fund, the Agri-Watershed Partnership, and the PEI Active Transportation Fund. Also thanks to our Federal Government funders Skills PEI, CICAN, Canada Summer Jobs, and the Habitat Stewardship Program. Many thanks to our corporate members and sponsors, to FedEx and the community member who nominated us for this funding, North Rustico Home Hardware and Spring Valley Building Centre for donating supplies, and community members who donated trees, nesting boxes, and other supplies. Thanks to the Wildlife Conservation Fund for continuing to support the Winter Woodlot Tour and other projects. And of course, a huge thank-you to the more than 100 people who gave donations or renewed their TREC memberships.

We would also like to thank our volunteers and community members who have helped out and supported us on many occasions. Lastly, we would like to thank the Watershed Alliance for your continued support, as well as other neighboring watershed groups which we work so closely with: Hunter Clyde Watershed Group, Wheatley River Improvement Group, Kensington North Watershed Association and all others along the way. Without the support of the community and our funders we could not continue our work, thank you all so much!

Post Fiona Comments

Although TREC has made many significant restoration efforts in 2022 we will have to work even harder throughout the off season and next summer field season to restore parts of the watershed that have seen significant losses due to Post-Tropical Storm Fiona. We will continue to work together as a community to restore and rebuild our watershed, including planting trees, coastline restoration efforts, bank restoration, and repairing the parks within the area. We would like to extend our sympathy to those who lost land and property due to flooding and high winds, we hope to help out as much as we can to restore this area to its original beauty in the coming years.