

District Mission :

“To protect and enhance the natural resources of Chemung County by developing partnerships and networks to implement innovative solutions to our Natural Resource Concerns”

**CHEMUNG COUNTY
SOIL & WATER CONSERVATION
DISTRICT
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HORSEHEADS, NY 14845
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Annual Report of 2018 Activities

District Board Members

- Kenneth Bush-Chair
- Thomas Rhodes-Vice Chair
- Richard Gunderman-Watershed Coordinator
- David Boor-Treasurer
- Joel Klose-Grange Member
- John Pastrick Jr. –Legislator
- Brian Hyland-Legislator

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THE 2018 STORMS WERE UNUSUAL (TO SAY THE LEAST)



As of January 5th, of this year, I have completed 35 years with the County. In those years, there have been many storms with Federal disaster declarations and much damage. Just to name a few, we had Hurricane Beryl in 1994, as well as two declarations in 1996. Furthermore, we also have had areas in the County hit hard with intense microbursts having devastating impacts upon small areas, but the associated cumulative damage was not large enough to be declared a disaster. These isolated, intense storms have occurred in Catlin, Veteran, Chemung, and Southport, as well as other municipalities. For all of these storms, it seemed that we would have the event and after it was over, we would get to work and fix things up.

For 2018, however, things were different, as we never stopped getting hit by large storms from July through October. A portion of the County would get a big storm then, as we were cleaning up, get hit again and again. One road within the County washed out 4 different times. Just as that road was brought back to being passable, the next storm would hit and it would be as if we did nothing. The August 12th and 13th storms delivered enough damage to be declared by FEMA, but stopped

short of being County wide. Then in September, we were hit again in the other parts of the County which were not declared, although devastating damage occurred. In all of my years with the District, I have never seen the amount of debris and gravel move within our stream systems as occurred in 2018.

2018 Storm Events Continued

Besides the damage that could be seen from the overland flow in our streams, the water table in the County became an issue. Homes that had never seen water in their basements did so this year. As you would travel around the County, it was evident with the hoses being seen pumping water from basements and crawl spaces. As we entered into the winter months, we still had a high-water table and only time will tell how we will fair this spring.

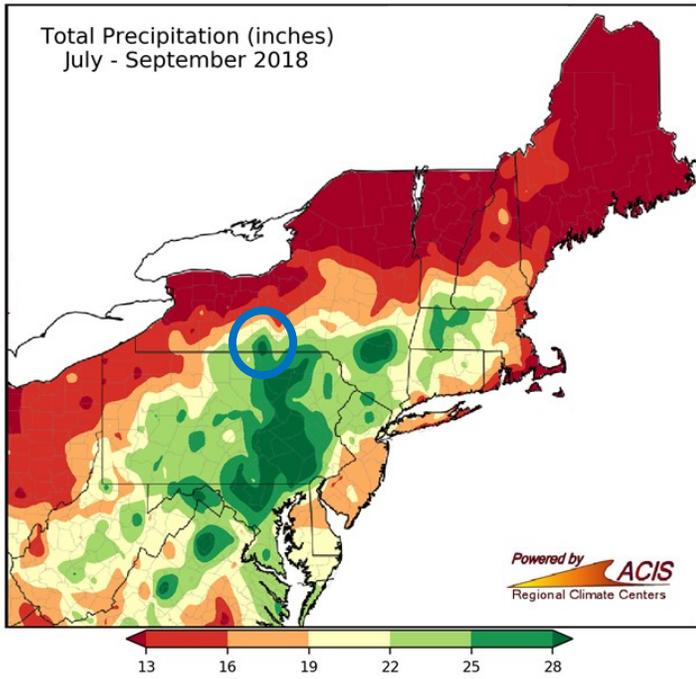
The total annual precipitation for Chemung County was over 55 inches, which is significantly greater than the average of about 35 inches. Over 35 inches of rainfall occurred from the beginning of July to the end of October.

Our hope is that the residents of Chemung County will be patient with us as we work diligently to bring everything back to normal. Attached to this article is some information regarding the rainfall received in Chemung County between July and October, as well as a few photos of what Mother Nature can do in a short period of time.

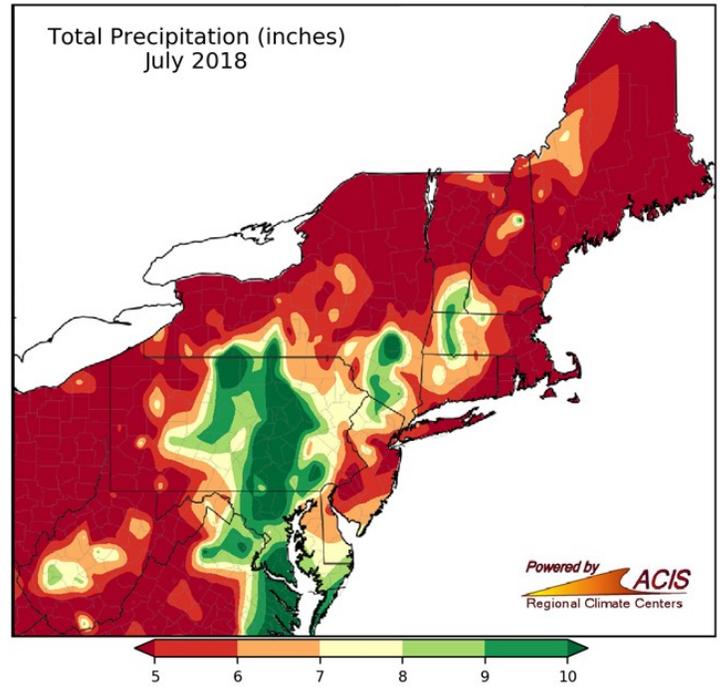
In the table below, monthly rainfall amounts (as recorded in two gauges within the County) are compared to historic average monthly rainfall for the County. In July for example, the rainfall in Pine City was 3 times the historic average.

During July through October, a number of storm events with return periods of over 10 years occurred.

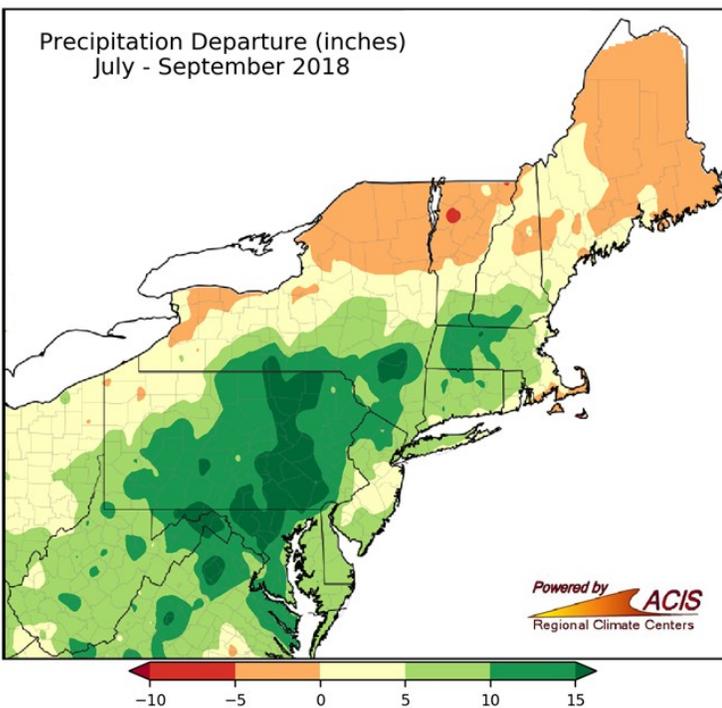
COMPARISON OF 2018 MONTHLY RAINFALL TO HISTORIC AVERAGES					
	JULY	AUGUST	SEPT.	OCT.	Notes
Rainfall (inches) Recorded at Pine City Gauge (US1NYCM0017)	11.41	9.39	10.93	5.59	<i>In July, 3.55" of rain occurred within a 1-day period and 5.79" occurred within a 2-day period.</i> <i>In August, 3.18" of rain occurred within a 1-day period and 6.27" occurred within a 5-day period</i> <i>In September, 3.47" of rain occurred within a 1-day period. There were 3 days with rainfall amounts of over 2.2 inches.</i>
Rainfall (inches) Recorded at Gauge in Town of Chemung (US1NYCM0024)	9.74	8.08	10.82	4.62	<i>In July, 6.29" of rain occurred within a 3-day period.</i> <i>In August, 2.64" of rain occurred within a 1-day period</i> <i>In September, 3.83" of rain occurred within a 1-day period</i>
Historic Average Monthly Rainfall (inches) for Chemung County	3.73	3.62	3.5	3.07	



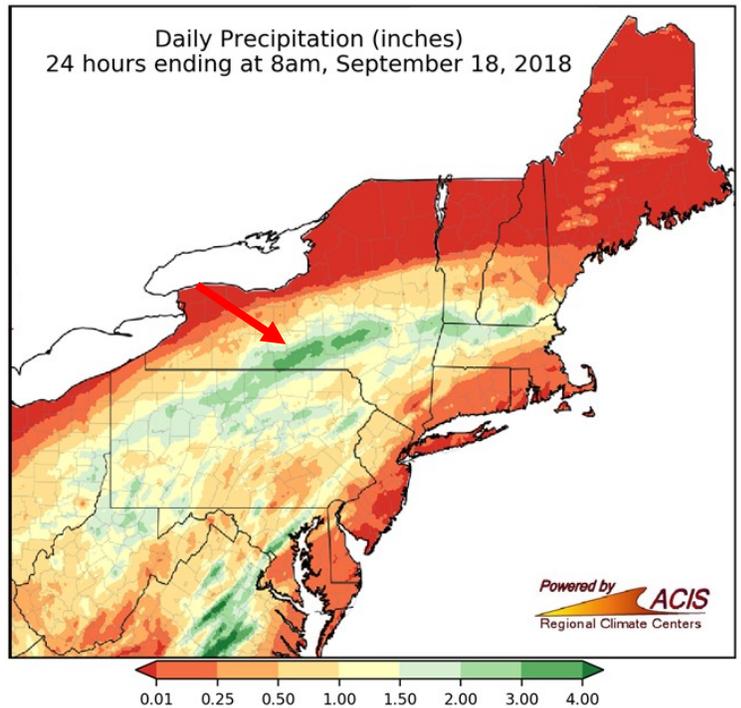
The map above shows the total precipitation in the northeast for July, August, and September 2018. As shown, Chemung County had the highest precipitation of any of the Southern Tier counties.



The total precipitation across the northeast for July 2018 is shown in the map above. As shown, Chemung County was one of the areas within the state that received the most rainfall.



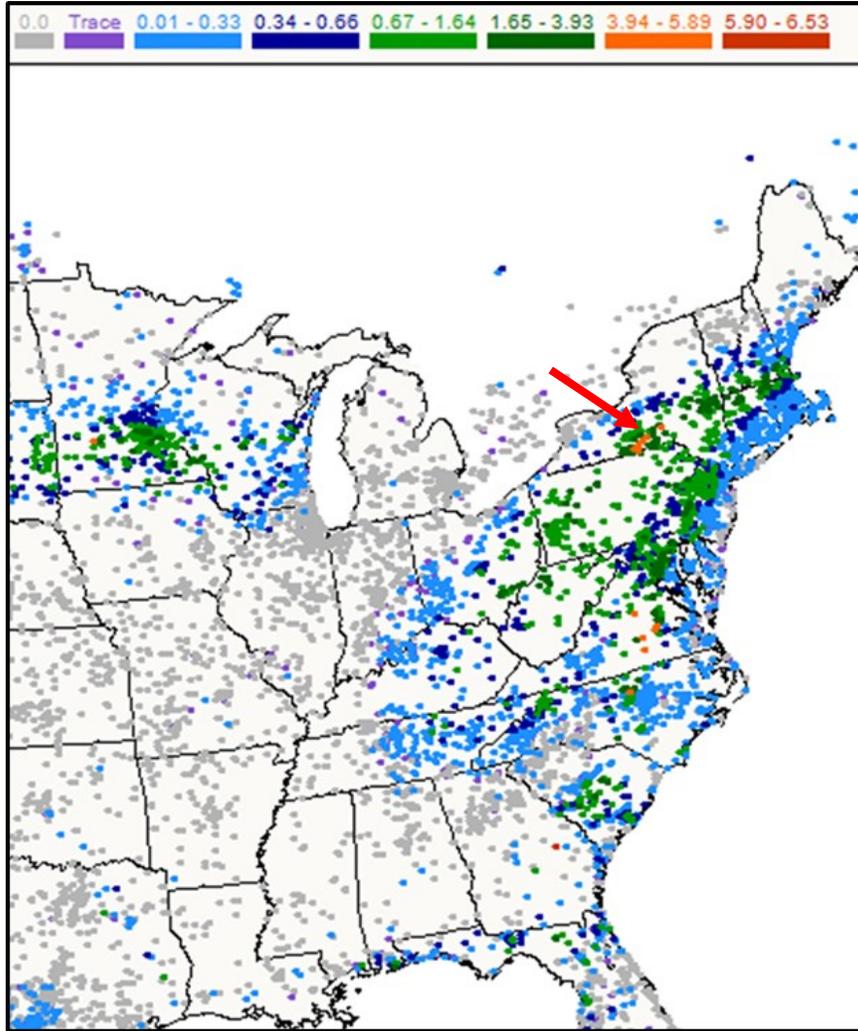
In this map, Chemung County is shown to have received over 15 inches of rainfall beyond the normal amount from July to September



On September 17/18, 2018, a large storm passes across Chemung County. Daily rainfall amounts of 3.82 inches and 3.47 inches were recorded in Pine City and the Town of Chemung, respectively.

These rainfall amounts were significant. The rainfall in the Town of Chemung corresponds a 25-year return period.

2018 Storm Events Continued



The map to the left shows the daily precipitation amounts across the eastern half of the country for the 24-hour period ending at 7:00 a.m. on September 18, 2018.

As shown, Chemung County received the most rainfall in New York on that day.

Below are some storm event photos within Chemung County



Prospect Hill Road



Route 14 Catlin



Eacher Hollow



Harris Hill Road

Countywide Stream Equipment Program –District Manager, Mark Watts

In 2011, the District, along with the County and eleven Towns, developed a Stream Maintenance Program that is now entering its 8th year. As part of the agreement each year we submit an annual report of what was accomplished, please accept this as our annual report. When we started the program the County provided funding to purchase a D6 Dozer and Cat 321 Excavator. Since that time we were able to add to this list a Cat 311 Excavator.

In 2018, with the help of Senator O’Mara, we were able to purchase a new 2018 D6 Dozer and with the funds from the Towns replaced the Cat 311 with a new one and we are also awaiting the delivery of a new 325 Cat Excavator. So as we enter 2019 we will have all new equipment as we did when the program was initiated in 2011.



The 2018 year was a busy one and we hope all of the municipalities feel it is a worthwhile program. Below we will discuss projects that the District was involved with. Besides being involved with these projects towns also call and utilize the equipment on their highway projects that we at the District were not involved with. Town Boards can inquire with the Town Highway Superintendents

Town of Ashland

The District did a Rock Rip Rap project at the North Star Mobil home park. The project was at the request of the local health department as the building that was compromised housed the public water supply for the Park and if damaged would have caused the need to evacuate the residents of the park. For this project the owners of the park purchased the materials. The Town Highway folks also utilized the stream equipment on various projects throughout the Town.



Countywide Stream Projects continued

Town of Baldwin

This year the Town did not utilize our equipment with operator, but did utilize the other equipment for projects throughout the Town. The D6 dozer was utilized on Chapman Road, as well as A Little Road to re-align the stream and build back the road. The Town also utilized the various excavators we have to accomplish road work.

Town of Big Flats

The Town utilized the District to assist in the replacements of two culverts on Breed Hollow, as well as use of our other equipment to accomplish work in the Town.



Breed Hollow Culvert



Big Flats Breed Hollow Culvert #2



Town of Catlin

The District accomplished four projects within the Town, with the first being the installation of an engineered riffle for the County DPW on Chambers Road. The second project was the removal of gravel and installation of a rock weir on Joe Scudder's property. The third was the demolition and grinding of the Town's old salt barn. The fourth was the replacement of the Mary Road Bridge with a new culvert.

Below are photos of the Mary Road Project



Countywide Stream Projects continued



Town of Catlin's Salt Storage

Town of Chemung

The District replaced two road crossings on Dry Brook Road, one a culvert and the other a concrete box. We then utilized one of the culverts and replaced the Sharpstein pipe. The Town Highway folks also utilized our other equipment for various projects within the Town.



Countywide Stream Projects continued –Town of Chemung



Culvert Replacement

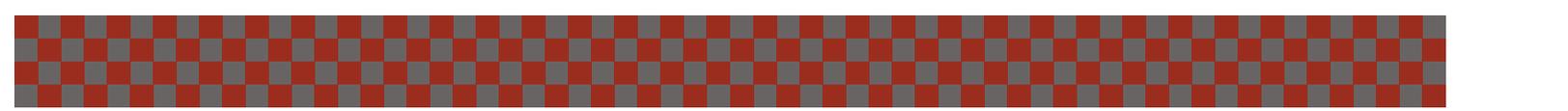
Dry Brook Road



Concrete Box Replacement

Countywide Stream Projects continued –Town of Chemung





Countywide Stream Projects continued

Town of Elmira

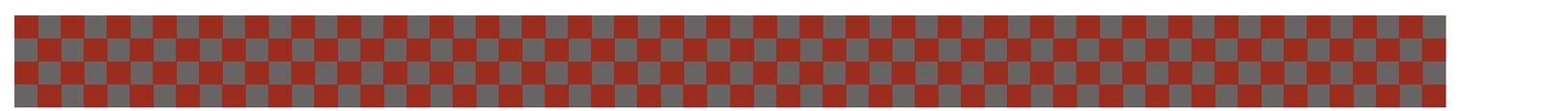
For the Town we accomplished three projects that included the construction of the Jerusalem Hill Road storm water basin. The next project was the Whirts Creek Project at the bottom of Coleman Avenue. The District also accomplished a project for the NYS DOT on Interstate 86. The Town also utilized the Districts equipment to accomplish maintenance on Hillcrest as well as other projects.



Countywide Stream Projects continued

Town of Elmira Continued -Whertis Creek Project





Countywide Stream Projects continued

Town of Elmira Continued



Town of Erin

The District was utilized to replace a culvert on Rorick Hollow along with 4 stabilization projects on the same road. We also accomplished a Rock Rip Rap project on the Chapman Road. The Town also utilizes the other equipment to accomplish work on their Town roads.



Rorick Hollow



Countywide Stream Projects continued

Town of Erin continued



Rorick Hollow



Chapman Road

Town of Horseheads

The District assisted the Town with two stabilization projects on Halderman Hollow. We also completed a repair on the Bannister Road as well as tree removal in Newtown Creek and gravel removal on the Larry O'Brien property.



Bannister Road



Halderman Hollow



Countywide Stream Projects continued

Town of Southport

The District worked on many projects within the Town which were the result of the extreme storm events this year. The District worked on Pine Hills Drive, Bird Creek, as well as Sunset drive to remove trees and gravel to reopen the stream channel. We also did stabilization work on Bartholomew Road, Walsh Road, Comfort Road, Lightizer Road, as well as Left Branch.



Countywide Stream Projects continued

Town of Veteran

The District worked with the Town on English Hills ditch, Lower Middle Road headwall repair, Church Street Extension debris removal, as well as the cleanup of the houses on Smith Road and Watkins Road.



Town of Veteran –Lower Middle Road



Trailer cleanup on Smith Road

Countywide Stream Projects continued –Town of Veteran



House cleanup on Watkins Road



Rock & Concrete on Catherine Valley Trail



Town of Van Etten

The District assisted the Town with the removal of trees on Cooper Hill and the rocking of various road ditches within the Town. The town also utilized the Districts equipment for various projects within the Town.

The District would like to thank the County and Town DPWs for all of their help when working with us on the various projects. A special thanks to the Town of Horseheads and County DPW who help transport the equipment from job to job as well as help in maintain the equipment. The District is looking forward to the 2019 season.



Tree removal at the town hall

Millport Fire Station Drainage Project-District Manager, Mark Watts

In 2017, the District and County partnered in purchasing two flood prone properties within the Town of Veteran. As part of the project, the Village of Millport Fire Company burned the homes as part of their training. While working with them on this project, it was brought to our attention that the fire station had severe issues with their parking lot drainage to the point where during the cold times it was an ice rink and warmer times a nice pond.

Working with fire department and the Village of Millport, Town of Veteran, as well as the County, we were able to tear out their old lot and replace it with underdrainage, as well as plumb it in with an existing storm sewer. At the conclusion of the project we were able to construct a new parking lot free of standing water. A big thanks to all that were involved with this successful project.



House Buyout Program 2018-District Manager, Mark Watts

As you may recall from our 2017 newsletter, we purchased two homes that were flood prone and were plagued with flooding issues. In 2018 we continued with the program and partnered again with the County and purchased two more flood prone homes.

One was located at 3607 Watkins Road and the other was at 26 Smith Road within the Town of Veteran. Once we had possession of the homes we contracted with Keystone Associates to accomplish an asbestos survey and then Sullivan's Contracting for the asbestos homes for training. We then went in with our equipment and help from the Town of Veteran Highway Department to clean up and seed the disturbed area. The District and County feel this is a great tool for us to utilize in mitigating the flooding issues felt within the County.



County Composting Facility-District Manager, Mark Watts

In 2004, the District worked with the County and New York State DEC Recycling Grant Program to purchase a tub grinder to work with our local municipalities to process their debris, grass, and leaves. At that time, the municipalities had their own sites and the tub grinder traveled.

In 2017, the County, working with the Village of Horseheads, has now leased five- acres that is now the home of our countywide compost facility. The purpose was to find a central location whereby all county residents could drop off their trees, shrubs, grass clippings, as well as leaves. There are no tipping fees and is co-managed by the County and District. Manpower during the week is provided by the County and on Saturday's the towns take turns providing a laborer.

The site is registered with the New York Department of Environmental Conservation and we are currently working to upgrade the equipment needed to process the material brought in to help make a useable products. Currently we have upgraded to a table grinder, compost turner, trommell screen, excavator loader, skid steer, 100 -horsepower tractor and water wagon all utilized in the composting process.

The site is open to all county residents from April through November and year round for the municipalities. In 2017 we had 8,855 drop offs and 272 residents that picked up mulch, then in 2018 numbers increased to 9,572 drop offs and 841 that picked up mulch. Our hopes are to continue to evolve on how we process the material dropped off and to also make other products. Keep watch on the County Composting site and see how we progress.



Electronic Recycling Event –Stormwater Educator , Nikole Watts



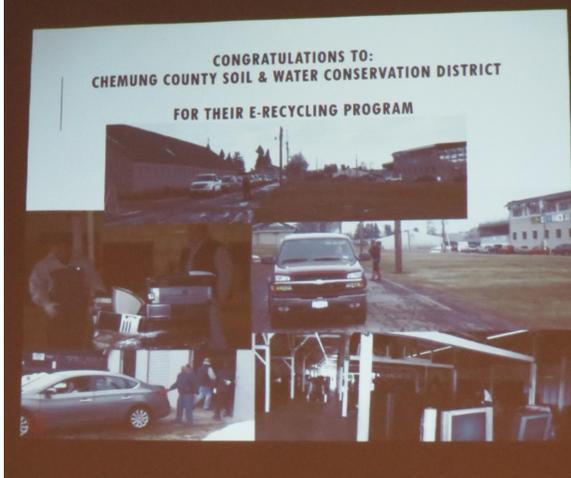
Over the past two years we have seen an overwhelming amount of electronics being dumped, due to the increase in price when people try to dispose of them. In recognizing this, Chemung County Soil and Water partnered with ReAct Recycling to dispose of electronics properly. Due to grant funding through New York State Department of Environmental Conservation and Chemung County, we are able to host this collection event for Chemung county residents at no cost.

This past year we held four collection events at the Chemung County fairgrounds. Through these four events we had 700 county residents attend and collected 95,258lbs of electronics. The total cost off all four events was \$11,150.96, which with the grant funding from DEC the county was reimbursed half of the total cost.

While holding these events we have also created and maintained great partnerships through the county. From our partnership with React recycling this is the company who takes the electronics. To GST boces conservation class and Chemung County Probation, who provides assistance on the day of the event and Chemung County DPW who transports all the items to React. We can't thank you all enough because without you, this event would not be possible.

With the great success of these events and the rave reviews from the county residents, we will be hosting three more events in 2019. Please go like Chemung County Stormwater Coalition on Facebook to see the event postings.

Electronic Recycling Event State Award



New York State Conservation District Employees Association (NYSCDEA) host a Water Quality Symposium every year. Before the event conservation districts throughout New York State are eligible to submit a proposal for a Special Project award. This award is given to the district that holds an event that has a positive impact on their district.

In 2018 Chemung County submitted the Electronic recycling event for the award. At this point in time we held 6 events and collected 249,850 pounds of electronics. Throughout this event we also cultivated many great partnerships with business and community groups in the county.

While attending the awards dinner, Chemung County was privileged to receive the special projects awards. We are extremely proud and excited of how this event was received not only for our county but also throughout New York State. This past year we had a great response and we look forward to hosting more of these events.



Jessica Verrigni, Steve Lorraine, Nikole Watts

Tire Collection Day-District Manager, Mark Watts

This year marked the 15th year the District has sponsored a tire collection event. This popular event has enabled us to recycle nearly 40,000 tires. These are tires that no longer fill our waterways or lay alongside our roadways. A big thanks go to all who have volunteered on those Saturday's sometimes in the rain to help rid the County of these mosquito breeding waste. We also would be remiss if the District did not thank all of our highway departments who both provide trucks, fuel, and manpower to transport the waste tires to their new home. Our hopes are to continue these collections to keep our stream and roads clear of waste tires.



Following Articles by Mark Richer, District Technician

Dam Maintenance

Last year started as a normal year for our dam maintenance. We started with the usual debris removal from the principal spillways and the normal mowing. Then the rain events came and came and came and didn't seem to stop. The dams backed up water several times throughout the summer. With those events came storm debris on the banks and around the spillways. The worst offender was Sullivanville Dam. We had a storm event that left the dam a mess with trees and debris. Once it was dry enough, for us to get on it with equipment we removed all the trees and debris left behind. We were able to get it mowed and a few weeks later another storm event came and left more trees and debris worse than the first one. We got a small window when things dried up just enough to get back on it again when we had some equipment failure. Our Marooka track dump truck blew a track which kept us from finishing. While the Marooka was being repaired the rains kept coming and didn't let up and since then has not dried up enough to get back on the dam for debris removal. Our hopes are to get there this winter if things freeze up if not its going to be a very busy spring once it all dries out!

We were able to get the other dams mowed with the use of the District new Steiner tractors. The wet ground was not an issue for these remarkable tractors.



Hoffman Dam



East Sullivanville Dam



Marsh Dam



Hydro-seeding

The hydro-seeder saw some action last year. We seeded the road banks on West Hill road for the County Hiway dept. For the Town of Big Flats we seeding road banks on Steege Hill Rd, Leach Rd, and Knealy Rd. There was some seeding done for the town of Southport on Pine Hills Drive and the Elmira Water Board had us seed a new berm at their maintenance facility on Reservoir St. With all the rain we had all the seedings remarkably stayed put on the ground without washing off and took very well.

Big Flat Mowing

The District once again contracted with Big Flats to mow their stormwater detention basins and drainage swales. The very wet year made some areas challenging with standing water and extremely muddy conditions. We were able to complete the first mowing but not the second. The enormous amount of rain tore up many of their swails and basins. Repairs will be needed to get mowing equipment back on some of them.



2018 Summer Intern

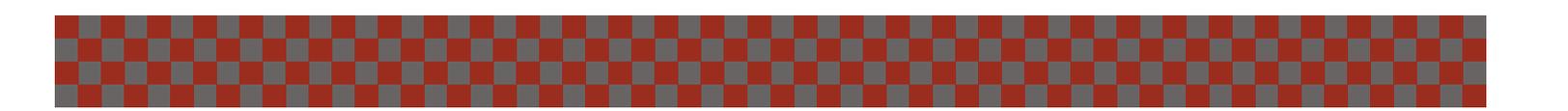
Last summer the District re-hired Ryan Richer for a fourth season to help out with the seasonal summer work load. As in past years the duties of the summer intern are to assist the District Technician with all the Districts summer activities and projects.

The majority of his time last summer was spent helping the District Technician with mowing and clearing debris from the counties 5 dams. This entailed the operation of our Steiner mowers, tractor with brush hog, Morooka track dump, gator, numerous hand and power tools and moving equipment.

Ryan's other duties included: assisting with hydro-seeding and mulching projects. Mowing the town of Big Flats storm water detention basins, Cleaning and greasing equipment, assist with equipment repairs, build rain barrels and set up of the County Fair displays along with landscaping around the District's office. Over the last 4 seasons Ryan has gained experience and improved his skills on some of the Districts smaller equipment such as our skid steer and wheel loaders, small rollers, and excavators. This helps the District during the busy season to have another operator on some of our jobs. It also helps to have someone like Ryan come back for several years as they already know the drill and have been trained on what to do. This helps the flow of work in the spring to facilitate that much faster.

Ryan has graduated from the Community College of the Finger Lakes with a two-year degree in Natural Resources and Conservation Law. He is continuing his education at Paul Smith's College in the heart of the Adirondacks, NY. He is working towards his bachelor's degree in Natural Resource Management. He has aspirations of becoming a Conservation Officer or a Forest Ranger. In his spare time, he loves to fish, and watch NASCAR racing. He just starting hunting for the first time this past year and got his first deer last winter. We wish him well with his final semester at Paul Smith's and look forward to having him back for the 2019 summer season.





New Conference Room Table

When the District moved into its new office in 1996 there wasn't much money to buy new office furnishings. We used what we could find and what was given to us. We fixed it up painted it and put it to use. Our existing heated garage bay was turned into a meeting/conference room. We had no tables or chairs so we purchase four basic fold up banquet tables and some metal chairs to sit at and that was our conference table all those years until last March.

Last March we decided to spruce up the office with some new paint, freshly waxed floors and a new computer desk for our clerk Karen. The old banquet tables in the conference room were looking pretty ratty and worn. It was time for something new. District Manager, Mark Watts wanted something different and unique not store bought. A custom hand-built table utilizing local lumber was what he was looking for. So, with that in mind we decided to build the table ourselves.

We were looking for something special to make the table from and as luck would have it, Chris Yearick, at the time an employee with the Upper Susquehanna Coalition and housed in our office had just the thing. Chris had purchased a 100 plus year-old post and beam barn from a local dairy farmer in Elmira (Bob Brewer) with the intentions of re-erecting it on his property. It became too problematic to re-erect the barn so it laid in a pile behind his house for several years. Chris had begun to cut up the barn and its beams to burn as fire wood. When he learned of our project, It became the material we were looking for to build the table. Coming from a local dairy farm of over 100 year's old just seem right to preserve some history in a new form. Chris was happy to donated the remainder of the barn beams to the District.

Once we got the beams back to the Districts facility, we carefully selected the beams and parts of beams we could use. We needed to salvage enough to make lumber and legs for a table that was to be approximately 5 feet wide and 19 feet long. We decided to use sections of the beautiful hand hued beams for the legs of the table. They were carefully chucked up in the Districts band saw mill and cut to length. Mark Watts did some research on table building and found it would be best to make a base and top it with the barn beam lumber. The base needed to sit on something other than a few barn beam legs. We solicited the help from our very talented equipment operator Todd Jansen. Todd fabricated a heavy angle iron frame which was welded and then painted. As we started building components of the table, we realized just how big this thing really was and determined it was too large and heavy to build in the shop and try to move so we had to construct the table on site in the conference room. The legs were attached to the steel frame and then it was time to set the base that Mark Watts had constructed to go on top. It literally took three men and a boy to bring this top in (Mark Watts, Todd Jansen, Mark Richer and the boy Ryan Richer). The base was then secured to the frame.

The table was to be topped with lumber made from the barn beams with a black cherry border around the outside. The beams as I'm sure you can imagine were chuck full of nails, the old square headed kind. There was no pulling these things out so now what do you do. Well, we found sections of beams with the fewest nails possible and put them on the band saw mill. Yes, we went through 20 blades cutting through all those nails, about half the blades were able to be re-sharpened and used again and the rest were junk, but it was worth it. These old rustic beams produced some beautiful lumber with a lot of character, splits, knots and bug holes which was exactly what we wanted. Once the lumber was cut, we carefully inspected each board for nails and either punched out the nails or cut the bad sections out as they were going to the planer next. We contacted Matt Bryant at the GST BOCES Conservation program and asked if he and his students would plane the boards for us with their industrial planer. He was happy to help and the boards were planed. Next, they went to Andy Mallow a guy Mark Watts knows who could put a tongue and groove edge on the boards to make them fit tight together.

Once we got the lumber back it was time to top the table with the beautiful rustic 100 plus year-old oak boards. We turned again to our multi-talented equipment operator Todd to help us finish the table. With a profuse amount of cutting, nailing, gluing and sanding the top was on and it was finally ready for the polyurethane finish.

After many coats of polyurethane, the table was finally done. It is so large and heavy it will forever be a beautiful historic landmark in our office. Special thanks to all those who helped make the table a reality especially, Todd Jansen, Matt Bryant, Andy Mallow, the Town of Horseheads Highway Dept. and Chris Yearick.

See photos of project on the next page



District Office Gets New Roof

Last summer the District got some new shingles on the office roof. The Office was built in 1996 and after 22 years and a couple of leaks it was time for some repairs. With the help of Bob Dieterle and the county buildings and grounds crew, some beautiful new green shingles were put on and all leaks were fixed. A big thank you to Bob and his crew for a great job done!

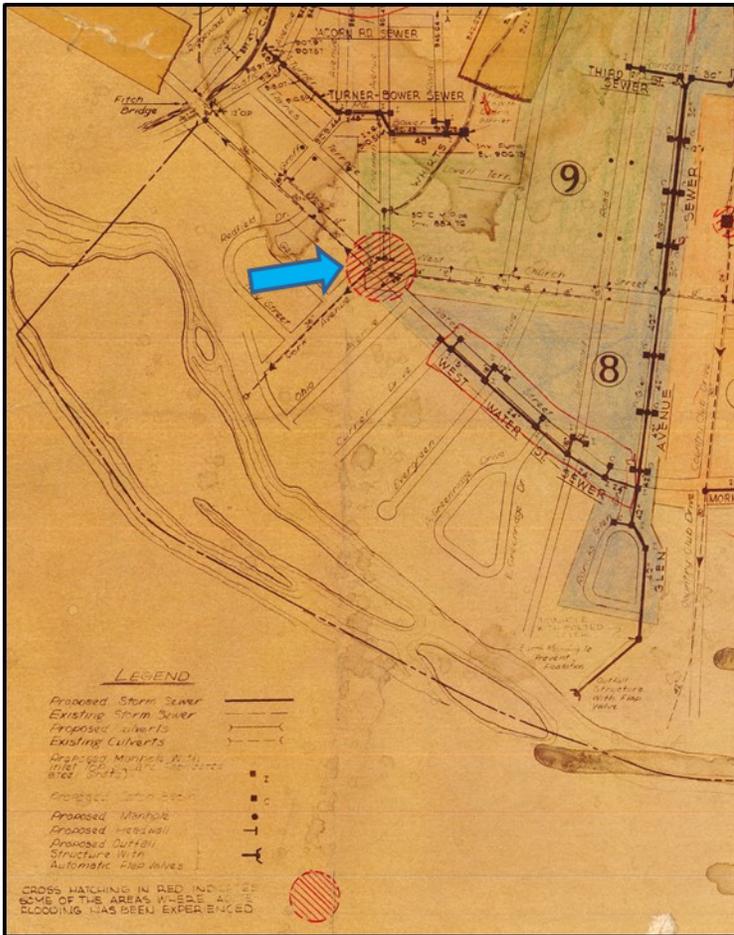


Drainage Improvements within Town of Elmira's Whirts Creek Watershed Address Long-Term Flooding Issue-

Stormwater Engineer, Mr. Jimmie Joe Carl

The Whirts Creek watershed is located within West Elmira and historically has had significant drainage issues. The most pronounced of these issues is the periodic flooding at the intersection of Coleman Avenue and Church Street.

This flooding occurs during heavy rainfall events that results in stormwater flows in Whirts Creek to overtop the culvert entrance at Coleman Avenue and, in turn, flood the Coleman Avenue/Church Street intersection. These overflows cross Church Street (NYS Route 352), presenting a hazard to motorists. Refer to the photograph to the right of a flooding event during the summer of 2018 (looking west across Coleman Avenue).

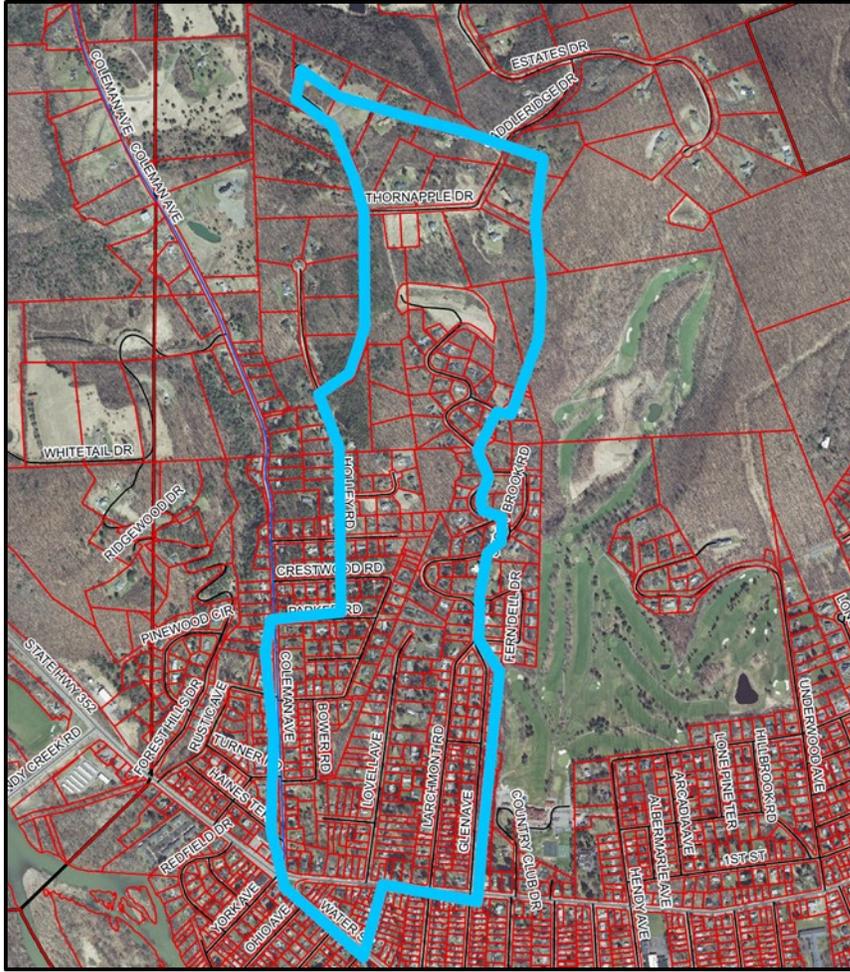


The flooding issue at the intersection of Coleman Avenue and Church Street is not new. Interestingly, this flooding was identified in a 1965 plan and was described at that time as an “area where acute flooding has been experienced”.

A portion of the 1965 plan is provided to the left. The intersection of Coleman Avenue and Church Street is indicated to have had flooding issues via the cross-hatched circular area in red. For clarity, this area is also indicated with a blue arrow.

As such, the flooding issue at this intersection has existed for over 50 years. The obvious reason for these stormwater overflows and associated flooding is an existing undersized storm sewer system to accept peak stormwater flows from Whirts Creek and, in turn, convey these flows to the Chemung River.

Drainage Improvements within Town of Elmira's Whirts Creek Watershed Address Long-Term Flooding Issue-
Stormwater Engineer, Mr. Jimmie Joe Carl



The Whirts Creek watershed is approximately 248 acres. The land use within this watershed consists primarily of single-family residential development.

The top of this watershed is the crest of the hill to the north of Thorn Apple Drive. The bottom of this watershed is intersection of Coleman Avenue and Church Street.

The approximate length of the watershed is 1.3 miles.

For over the past 20 years, the Town of Elmira has completed a number of improvements within the Whirts Creek watershed to reduce the frequency and magnitude of flooding at the Coleman Avenue/Church Street intersection. Furthermore, recent drainage improvements have been constructed by the Chemung County Soil & Water Conservation District and the Town of Elmira (and funded by the Chemung County Department of Public Works) with other large-scale drainage improvements being implemented in the near future. The following is a chronology and description of some of the drainage improvements that have completed in the Whirts Creek watershed.

Stabilization of Upstream Portions of Whirts Creek

In the late 1990s, a number of improvements were completed to stabilize the Whirts Creek stream channel in the upper portion of the watershed. These improvements included the installation of grade control structures and check dams to reduce the erosion of the stream channel, as well as reducing the amount of sediment reaching downstream areas, including the storm sewer system that begins on Coleman Avenue. This project was implemented by the Town of Elmira Drainage Committee.

Drainage Improvements within Town of Elmira’s Whirts Creek Watershed Address Long-Term Flooding Issue-
Stormwater Engineer, Mr. Jimmie Joe Carl

Construction of the Upper Larchmont Flood Control Basin

In 2003, the Upper Larchmont Flood Control Basin was constructed by the Town of Elmira Highway Department and BOCES students.

This flood control dam receives stormwater runoff from a 54-acre drainage area in the top of the Whirts Creek watershed.

During larger storm events, stormwater flows are temporarily stored within this basin and discharged at a greatly reduced rate to the downstream drainage system, reducing the magnitude of downstream flooding.



Improvements to Whirts Creek Channel near Coleman Avenue

In 2018, improvements were completed to the Whirts Creek channel near Coleman Avenue. The improvements consisted of replacing the existing channel with a new channel that is constructed of pre-cast concrete block walls with a dimensional rock floor. The new channel was constructed by Chemung County Soil & Water District and Town of Elmira personnel.

The photograph to the right is of the Whirts Creek channel, prior to the recent improvements. As shown, the channel construction consisted of repurposed sidewalk blocks that were placed to form a defined channel. This channel had been in place for over 20 years.



Drainage Improvements within Town of Elmira’s Whirts Creek Watershed Address Long-Term Flooding Issue-
Stormwater Engineer, Mr. Jimmie Joe Carl



The photograph to the left was taken with a drone soon after the new channel was installed in late October 2018.

Storm Sewer Improvements on Coleman Avenue & York Avenue

The Chemung County Department of Public Works is pursuing the installation of an improved storm sewer to convey stormwater flows from Whirts Creek to the Chemung River. As of January 2019, the design of this project has been completed and construction is anticipated to begin in spring 2019. This project includes the installation of a 3' x 5' box culvert from the Whirts Creek entrance structure on Coleman Avenue to the north end of York Avenue. Along York Avenue, a new 36-inch diameter shall be installed in parallel to the existing 36-inch diameter storm sewer that discharges to the River.

In conclusion, the flooding of the Coleman Avenue/Church Street intersection historically occurred on the average of once every 2 to 3 years. During the summer of 2018, an exceptional wet summer, this intersection was flooded on four different occasions. Upon completion of the proposed storm sewer improvements on Coleman Avenue, the flooding frequency of the Coleman Avenue/Church Street is estimated to be decreased (on the average) to once every 10 years.

New Salt Storage Facility for Town of Catlin-Stormwater Engineer, Mr. Jimmie Joe Carl

In 2018, the Town of Catlin replaced their aging salt storage building with a new, larger facility at their Highway Department site. The project was funded through a State and Municipal Facilities (SAM) Program grant.

The Town's existing salt storage barn was a wood frame structure that was constructed in 1987 via Town employees. The dimensions of the footprint of this structure were approximately 140 feet x 50 feet. A Condition Survey/Structural Inspection, completed in 2015, revealed a number of shortcomings of a structural nature and a recommendation was made to discontinue its use and pursue the design and construction of a new salt storage facility.

The new salt storage building is a steel-framed, fabric covered building and was constructed in the fall of 2018. The steel trusses are hot-dipped galvanized. A pre-cast concrete foundation/wall system is utilized. The trusses for the superstructure are anchor bolted into the pre-cast concrete foundation/wall system. The footprint of the proposed new salt storage building is 72 feet x 105 feet and is capable of storing 600 tons of salt and 3000 tons of sand. The approximate cost of the project was \$350,000.

The Chemung County Soil & Water Conservation District provided assistance to the Town in various aspects of their salt storage facility project, including the following.

- ◇ A Preliminary Application of the State and Municipal Facilities Program was prepared by Soil & Water in July 2017. This Preliminary Application was an engineering report that documented the need for a new salt storage facility, a description of the proposed salt storage facility (including the proposed sizing of the facility), and the estimated project cost. This report was integral to receiving the SAM funding.
- ◇ Demolition of the existing salt storage building was completed in the fall of 2018 with a combination of Soil & Water personnel and Town personnel. Soil & water personnel and equipment ground the wood structure and, in turn, Chemung County provided the vouchers to have the ground material landfilled.
- ◇ Survey and topographic mapping of the project site was completed through the efforts of three college students, whom were interning with the Chemung County DPW.
- ◇ Soil & Water personnel and Town personnel worked together to stake-out the footer system for the proposed salt storage building.
- ◇ The review of the shop drawings for the proposed salt storage facility, including the pre-cast concrete footer system, was completed by Soil & Water personnel.

The Soil & Water Conservation District greatly appreciates the opportunity to work with the Town on such an important project, as well as Town Supervisor Lavern Phelps' efforts and superb organizational skills.



The Town's wood-framed salt storage building is shown in the background. The demolition of this building was completed in the fall of 2018 and took less than one day.



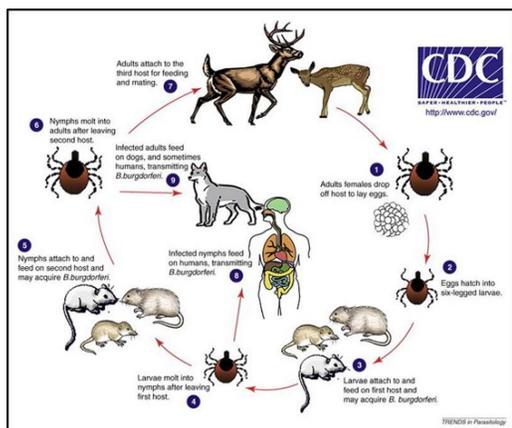
The Town's new salt storage facility



The official ribbon-cutting ceremony for the new salt storage facility occurred in January 2019.

Owl Box Program in Preliminary Stages-Stormwater Engineer, Mr. Jimmie Joe Carl

The Chemung County Soil & Water Conservation District is in the preliminary stages of developing an Owl Box Program. The goal of this program is to introduce more predators into the environment that would reduce the white-footed mouse population, which (in turn) would reduce the tick population, as well as a reduction in the number of ticks being infected by the bacterium that causes Lyme disease. With these reductions, it is the hope that the instances of Lyme disease would also be reduced.



The Tick Life Cycle & the Role of the White-Footed Mouse

White-footed mice are efficient transmitters of Lyme disease in the Northeast. White-footed mice are primary hosts for deer ticks, as well as being a reservoir for *B. burgdorferi*, the bacterium that causes Lyme disease. It is estimated that 95 percent of the ticks that feed on white-footed mice become infected with *B. burgdorferi*.

In turn, after becoming infected, ticks transmit this bacterium to humans and other inadvertent hosts.

Although deer are important hosts for adult ticks, deer are not effective reservoirs for *B. burgdorferi*.

It is believed that the population of the white-footed mouse has increased over the past decade. A number of theories have been put forth regarding this increase in population, including the following.

- ◆ Bunker crops of acorns and other nuts in recent years have provided a large food source for rodents (including the white-footed mouse), resulting in increases in these populations.
- ◆ With the expansion of the coyote across the northeast, it is believed that a large percentage of Red Fox have been pushed out of the area. Red Fox are believed to be efficient predators of mice and, therefore, a reduced population of Red Fox would translate to a greater population of white-footed field mice.

Use of Owls for Rodent Control & the Declining Population of Owls

Owls are being used to control rodent populations in a number of locations in the United States and other countries. In California, owl boxes were installed in a vineyard to control vole and gopher populations that were damaging the grape vines. Similarly, in Japan, owl boxes were installed in an apple orchard to control a type of rodent that was damaging the roots of the apple trees. In Vancouver, Canada, a population of younger Barred Owls has migrated into the City to exploit the large population of rats and mice that have been a historic problem, and locals are encouraged that these owls will reduce the rodent population.

It is recognized that the populations of certain owl species within the Southern Tier of New York State have been on the decline for over the past 30 years. Possible reasons for this decline include the following.

- The demise of Elm Trees, which often had large cavities, has resulted in a reduction of nesting opportunities for owls.
- The number of wooden barns has been reduced, resulting in a loss of nesting sites.

These reasons speak to the potential that the decline in the owl population may perhaps be attributed to a housing shortage and that owl boxes could possibly help fill the gap in housing.

Accomplishments Achieved to Date

Important early steps have been completed to build a foundation for the Owl Box Program, including the following.

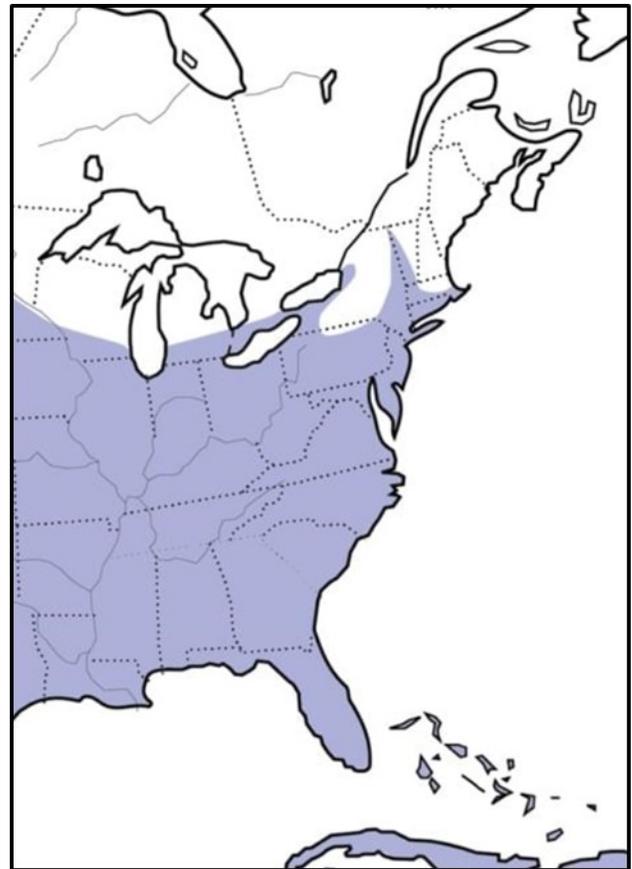
- In the summer of 2018, Olivia Card, a biology student between her Junior and Senior years of College, was hired by Soil & Water to complete some research regarding the potential viability of an Owl Box Program to increase the owl population and subsequently reduce the white-footed mouse population. Topics of her research included which species of owls would be most beneficial; challenges and limitations of different owl species; owl box designs; and best locations to install owl boxes for different owl species.
- Olivia met with an ornithologist at Cornell University's Sapsucker Woods Ornithology Lab and gained input regarding the use of owl boxes, as well as the potential of establishing a population of Barn Owls outside of their historic range.
- The Chemung County Soil & Water Conservation District has developed partnerships with the Friends of the Chemung River and the Chemung Valley Auduban Society in regards to the development of the Owl Box Program. The skills, knowledge, and energy offered by these groups will be valuable in every phase of the Owl Box Program.
- Permission has been gained to install owl boxes on State land along the Catharine Valley Trail, which is known locally for its abundance of ticks.
- At this time, a pilot program is being developed that would involve the installation of 10 to 20 owl boxes across the County. As part of this pilot program, installed owl boxes would be monitored for occupancy and maintained as needed. The owl boxes would be constructed of lumber milled by the Soil & Water Conservation District. It is hoped that some of these owl boxes would be constructed by Boy Scouts pursuing their Eagle rank. A prototype owl box has been constructed for display purposes and includes a replica barn owl.

Potential Challenges

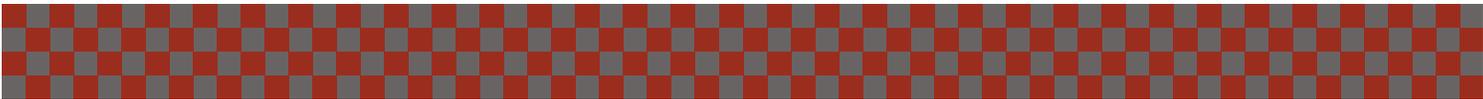
Based upon our initial research, Barn Owls are most commonly utilized for rodent control and have diets that involve primarily rodents. A challenge for Chemung County is that Chemung County is outside of the historic range of Barn Owls. In the map to the right, the historic year-round range of Barn Owls is shown in blue and extends to the northern border of Pennsylvania to the south of Chemung County.

The question exists whether Barn Owls can be enticed northward with the better housing opportunities provided by owl boxes. It is our hope that the pilot program will help answer this question.

If Barn Owls can't be coaxed north, initial thoughts include changing our direction and focus upon other species of owls (such as Barred Owls and Screech Owls) and/or raptors such as Kestrels.



From Cornell Lab of Ornithology's Birds of North America





851 Chemung St.
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607-739-2009 or 607-739-4392
Office Hours: 7:00AM-4:00 PM

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Items below are available at the District Office



Blue Bird Nesting Boxes \$8.00



Wood Duck Nesting Boxes \$30.00



Bat Roosting Boxes \$25.00

Chemung County SWCD's Annual Report of 2017 Activities is made possible though funding from the Finger Lakes-Lake Ontario Watershed Protection Alliance (FL-LOWPA) Funding