



Tichora Conservancy, July 2020

SUMMER IN REVIEW

The summer of 2020 was a busy one here at the GLSD. A big THANK YOU to our staff who worked very hard and very carefully to keep our office, sewer system, Conservancy Properties, and watershed projects on track during and after the state Covid lockdown. Here are some highlights of the GLSD projects this summer.

CARP HARVEST IN THE COUNTY K MARSH

Approximately 2,500 lbs of carp were removed in preparation for the placement of the turbidity barriers in the marsh. Though the GLSD did receive reports of increased numbers of carp seen in Beyer's Cove, there were reduced numbers of carp seen along the carp barrier at the County K bridge. Unfortunately, due to these lower numbers at the barrier, the commercial carp harvester was unable to complete a harvest on the main body of the lake in 2020. The harvester is planning to return in 2021 to harvest from the marsh and lake. A thank you to the GLA for their continued cost share of these efforts!



GLSD staff (with assistance from Outdoor Impact) working to install turbidity barrier, May, 2020.

THE COUNTY K MARSH RESTORATION PROJECT

ramped up in May. The GLSD and Lake Management Team Partners have been working for years to improve the water quality entering the lake from the County K marsh. To this end, the GLSD blocked off 3 separate bays within the marsh to reduce both wave energy and carp impacts in those areas. The purpose of these barriers is to break the distance waves have to gain energy before hitting these sensitive shoreline areas. Additionally, limiting carp access to these



Sago pondweed growing behind turbidity barrier, July, 2020.

enclosures will help allow for rooted aquatic plants to grow. After the barriers were installed in May, native wild rice, sago pondweed, and wild celery were planted. As with carp removal, this project is a multiyear effort. After 2 to 3 years, the barriers will be moved to new locations within the marsh as aquatic plants become established in each area.

CONSERVANCY PROPERTIES

The 16 Conservancy Properties saw a big increase in use during the state mandated lockdown. These properties are a wonderful community asset that enriched many of our lives during that time. Tichora, Hammer’s Trail, Winnebago Trail, Sunnyside, Norwegian Bay Preserve, and the Tuleta Hill prairie trails saw more hikers than ever before. A big thank you to the Green Lake Conservancy,



AIS toolboard at Dodge Park, July, 2020.

who since 1995, has had the foresight to acquire and protect these properties. Thank you, also, to all those who utilized these GLSD-maintained properties so cautiously during lockdown so that we could safely keep them open to the public.

NEW AIS TOOL BOARDS

The new AIS tool boards were installed by the county and townships at boat launches around the lake. This was a GLSD and Partner supported project to help keep new aquatic invasive species out of the lake. A big thank you to Anna Cisar, our AIS specialist with Golden Sands RC&D, along with Stephanie Prellwitz of the GLA, and Paul Gunderson and Jordan Dornfeld of Green Lake Land Conservation for their efforts to stop the spread of AIS into Green Lake.

AQWEED HARVESTING

The summer Aqweed harvesting season began in early June. The cool spring delayed aquatic plant growth in most of the lake though some shallow water areas such as Beyer’s Cove and the Millpond grew up quickly. The GLSD follows a DNR approved Aquatic Plant Management Plan for the lake which allows for the harvest of non-native, aggressive species which are usually seen in dense colonies. We’ve had increasing reports of duckweed collecting along certain areas on the main body of the lake. Duckweed is a native species and the removal of it is limited by our Aquatic Plant Management permit. Similar to floating filamentous algae mats, duckweed is difficult to harvest. We are working with the DNR to ensure that our permit allows us to keep lake access open while adhering to our harvesting permit.

BEACH SAMPLING

As in the past, the GLSD weekly beach sampling around the lake ran between Memorial Day and Labor Day. We sample at each public beach as well as several boat launches to determine the E. coli levels at these locations each week. E. coli is a bacterium commonly found in the intestines of humans, birds, and other animals; some strains of which can cause severe illness. In July, a sample taken at Sunset Park on the east end of the lake, showed excessively high levels of E. coli. Concerned about the results, the GLSD immediately undertook follow up testing which showed elevated levels, but just above normal range. Continued sampling showed E. coli levels returned to normal 2 weeks after the initial high level was discovered. Discussions with the WI State Lab of Hygiene and the WI DNR suggest possible impacts from large amounts of goose and seagull droppings washing into the nearshore area from the park. The GLSD will continue to monitor this issue in 2021.



Seagulls and droppings at Sunset Park boat launch area, early August, 2020.

SWIMMERS ITCH

Unfortunately, in early June the GLSD was notified that cases of swimmer’s itch were being reported after swimming in Norwegian Bay. In 2019, cases were reported for 3+ weeks. In 2020, the GLSD was only notified of cases for about 2 weeks. We hope this illustrates a downward trend. As swimmer’s itch is generally thought to be a cyclical occurrence, we’re hoping to see little to no swimmer’s itch in 2021.

BLUE-GREEN ALGAE BLOOM

As the GLSD monitors the progress of the County K Marsh Restoration Project, we noticed a heavy green color to the water in

the marsh in late July. Concerned that this coloring could indicate a blue-green algae bloom, GLSD staff took water samples from locations in the upper and lower parts of the marsh. Results confirmed that a bloom had occurred. Spurred by a week of temperatures in the 90’s, the nutrient-rich, shallow water of the marsh had warmed allowing for a bloom to occur. The GLSD immediately notified the County Health Department as well as the GLA so the information could be put on social media. We saw the marsh ‘green up’ and clear repeatedly during the remainder of the summer. As these conditions can change rapidly due to wind, temperatures, and rainfall, testing the water and having real-time results is not possible. For this reason we remind people to always look at the water in any lake, river, or marsh before swimming or allowing any children or pets to jump in. If the water looks green or cloudy, find another location to enjoy the water.

RESULTS OF 2020 GREEN LAKE COUNTY DRINKING WATER STUDY

In the fall of 2019, the Green Lake County Health Department (GLHD) secured an Environmental Health Tracking Grant from the Wisconsin Department of Health Services to “protect and enhance the groundwater in Green Lake County.” Sampling was completed in early March of 2020. Several parameters were tested for including bacteria, nitrate, and pH. Due to the overwhelming requests for participation in the project, the GLSD funded the 111 samples taken within the Green Lake watershed. By doing so, the GLSD would not only help ensure the health of residents within the District, we would also gain critical information regarding possible high nitrate levels impacting the lake.

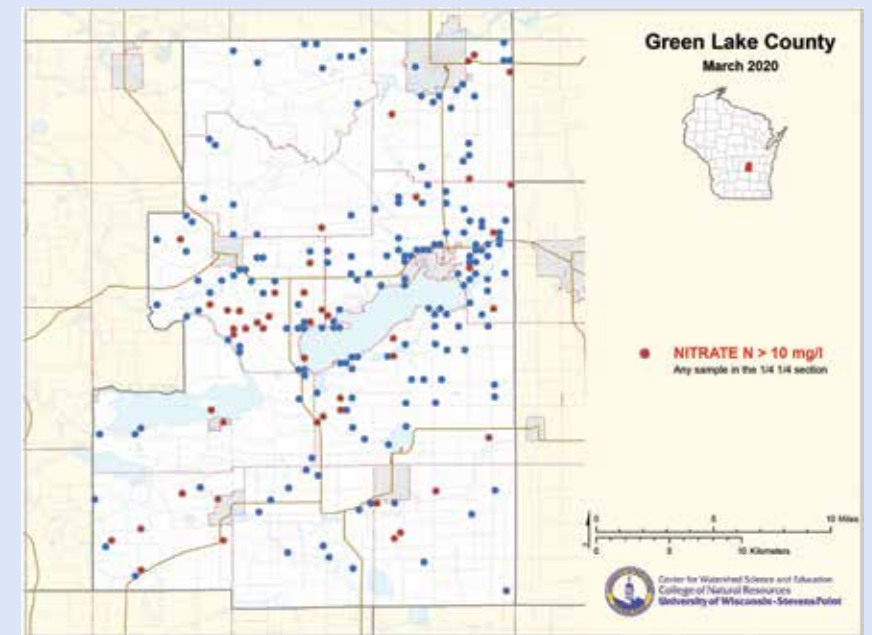
Nitrate is a nutrient commonly found in agricultural and lawn fertilizer as well as septic system effluent. The drinking water standard for nitrate-nitrogen is 10 mg/L. Water with greater than 10 mg/L of nitrate-nitrogen should not be consumed by infants less than 6 months of age, pregnant women, and women who are trying to become pregnant. Some studies suggest that high nitrate water may be linked to birth defects, miscarriages, and several types of cancer. The WI Dept. of Public Health recommends people of all ages avoid long-term consumption of water with nitrate concentrations greater than 10 mg/L.

In total, the study sampled 263 wells throughout the county. Specific to nitrate,

48 out of the 263 samples (18%) showed levels of nitrate above the health standard of 10 mg/L. Within the watershed, 17 out of 111 samples (15%) showed levels above 10 mg/L. These sites correlated strongly to areas of intensive agriculture with additional factors of sandy soils or shallow bedrock possibly being a contributing factor. Approximately 20 samples taken within the watershed were adjacent to Green Lake itself. Of these shoreland samples, only one (taken in the Terrace area) showed nitrate levels over the health standard. While this property is located very close to agricultural lands that could be impacting local groundwater nitrate levels, samples taken from other properties in the terrace did not

show high nitrate levels. Overall, the study results indicate that nitrate is entering the lake through groundwater, but at levels below the current health standard. The GLSD and the lake management team are working hard to reduce nutrient levels entering the lake from agricultural runoff, aging septic systems, construction site erosion, and other known sources.

For additional information on this project check for updates on our website: www.glakesd.com or check the Green Lake County Health Department Facebook page: www.facebook.com/glcodhhs/.



SPOTLIGHT – SUNNYSIDE CONSERVANCY

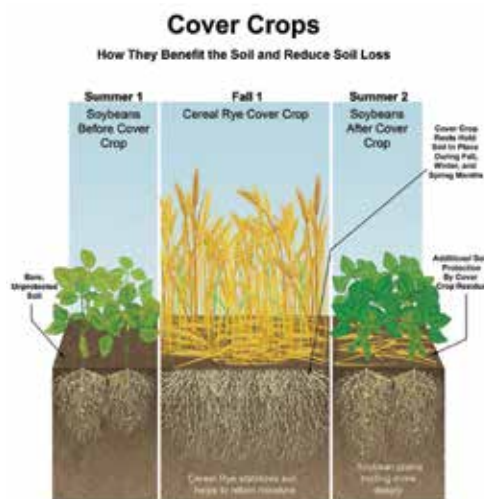


The Sunnyside Conservancy property is located 1 mile east of the City of Green Lake within the boundaries of the Town of Brooklyn. The 44+ acre property sits along 6,500 feet of Silver Creek. The Sunnyside Nature Conservancy is a mixture of woods, shrub-carr and grassland. Wetlands border several man-made channels. Walking trails begin at the trailhead which is adjacent to Lakeview Road. Trails can also be accessed by boat via Silver Creek Inlet. The property was purchased for just over \$300,000 between 2008 and 2010 through a mix of DNR grant funding as well as major

contributions from the Green Lake Conservancy and the Green Lake Sanitary District. The property has existed in a very natural state until 2015 when work began in earnest to remove the buckthorn from the site. There are no structures on the property. A 9-acre prairie was seeded in 2019 as part of an oak savanna restoration. Sunnyside is one of the most used of all 16 Conservancy properties. Bikers, hikers, snowshoers, cross country skiers, fishermen, and bird watchers are frequently found on the trails.

BMP SPOTLIGHT – COVER CROPS

Cover crops are grasses, legumes, and other forbs that are planted for erosion control, improving soil structure, moisture, and nutrient content, increasing beneficial soil biota, suppressing weeds, providing habitat for beneficial predatory insects, facilitating crop pollinators, providing wildlife habitat, and as forage for farm animals. Although cover crops can perform these multiple functions in an agroecosystem simultaneously, they are most often grown for the sole purpose of preventing soil erosion. Dense cover crop stands physically slow down the velocity of rainfall before it contacts the soil surface, preventing soil



eroding and splashing and erosive surface runoff. Additionally, vast cover crop root networks help anchor the soil in place and increase soil porosity, creating suitable habitat networks for soil macrofauna. This soil enrichment lasts for several years. Furthermore, cover crops can provide energy savings both by adding nitrogen to the soil and making more soil nutrients available, thereby reducing the need to apply fertilizer. The GLSD is working with Green Lake County Land Conservation on an outreach project to provide cost sharing for cover crops to farmers on critical lands in the watershed. The goal of this project is to reduce soil loss from these fields consequently reducing nutrient loading into Green Lake.



Soybeans growing after a cover of annual ryegrass.

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GREEN LAKE SANITARY DISTRICT ROLE IN LOCAL GOVERNMENT by Ken Bates

One of the benefits of serving on a local government board is the amount of learning that takes place over time. I have owned a home on Green Lake for over 44 years and didn't realize all the efforts taking place to maintain our infrastructure and improve the health of the watershed around Green Lake. Learning about topics such as flow rates, effluent discharge, grinder pumps, nutrient loading, and filamentous algae has really enlightened me into how valuable the GLSD is to maintaining a world-class lake.

The long-term goal of the Green Lake Sanitary District is to protect the lake by providing a quality sewer system to our residents. The District is comprised of, with the exception of the City of Green Lake, the critical shoreland areas around Green Lake. As we consider both our purpose to our customers as well as our lake protection responsibilities, the sewer extension of additional lands adjacent to the lake is being considered. This takes a great deal of study in terms of the topography, geology, and connectivity of each area. One thing that property owners in the district should be aware of is how important it is to provide input during the planning process of sewer extension projects. A sewer extension is really a win-win decision for the lake, ground water, and the homeowner. It's not an inexpensive undertaking; but neither is a replacement septic system or a being forced to utilize holding tank if a replacement septic system is not an option.

A secondary function of the Green Lake Sanitary District is providing conservation efforts in the watershed to control agricultural runoff and improving the lake's ecology. I have learned how using the U. S. Geological Survey (USGS) to monitor all the tributaries leading into the lake has taken lake improvement efforts from anecdote to scientific data.

The budget for the USGS is a major part of Sanitary District's conservation budget. It is vital for sound decision-making and providing information to our partner groups around the lake. I am proud that the GLSD is taking the lead in funding this work and helping lead conservation efforts for the future.



Conversely, climate change and the threat of aquatic invasive species worry me. The number of high rainfall events has increased 50% in recent years causing phosphorous runoff/loading into the lake to increase by 25%. Without the watershed efforts of the GLSD and our partners, algae growth within the lake would be even worse than we have seen recently.

While the Sanitary District stands alone in providing sewer service around the lake, we are fortunate to have so much support and teamwork surrounding the efforts to improve lake water quality. There is an opportunity for everyone in our watershed to be involved in these efforts by joining the Green Lake Association, supporting the Green Lake Conservancy, attending Green Lake County Land Conservation Committee meetings, and talking with our county UW-Extension staff. If your schedule and time permit, consider participating in a Green Team event. Having a quality lake and watershed it takes management and hard work. The Green Lake Sanitary District Commissioners are servant leaders who take that work seriously.

-Ken Bates, GLSD Treasurer

RECOMMENDATIONS FOR SEPTIC SYSTEMS

If you are one of our many customers still be isolating at home (and utilizing your septic system more than in the past), it's critical to take good care of your system. More time at home can increase the load on your septic system as more laundry is being done and more food is being prepared on site (meaning additional dishwasher loads and garbage disposal use). Reports have come in from other areas of the state where septic system installers have reported replacing 60% more septic systems in 2020 due to increased septic use. There have been horror stories all over the U.S. about clogged wastewater systems including home pipes and sewer system pumps. No matter which kind of system you have, you need to be mindful of what you are flushing or putting down your drain. Landowners often fail to realize that septic systems don't last forever. They have an average life span of approximately 30 years depending on how heavily they are used and how often they are maintained. The cost of having a new septic system installed can range from \$25,000 to \$35,000+.

In addition to regular pumping and inspections, if you reduce the amount of wastewater and solids that enter your septic system, you can often prolong its life. Common methods include minimizing the amount of water you use, avoiding the use of a garbage disposal (which sends solids into your septic tank) and avoiding the regular repetitive use of bleach and other chemicals which kill the bacteria your septic system relies upon. One of the biggest things to remember – don't flush wipes down the pipes! Even if a product label says it is flushable, DO NOT FLUSH WIPES OF ANY KIND. For more information, visit the EPA's website: www.epa.gov/septic/how-care-your-septic-system.



GREEN LAKE SHAPES CONSERVATIONIST'S CAREER



Growing up in the small rural area of Clear Lake, Wisconsin, I was surrounded by dairy farms. I was always intrigued by the various approaches to farming that our neighbors had. At that time, like most kids, I had no idea what I wanted to do as a career. As my high school

years passed by, I decided to attend the University of Wisconsin - River Falls to pursue a degree in computer science. After a couple of computer programming horror classes, I began to ponder the thought of doing something I truly enjoyed. That is when the light came on! Thinking of my childhood, I decided to major in Conservation which would allow me to work directly with the type of people I grew up around...farmers.

After graduating college in 1985, I worked as an assistant farm manager (fancy name for hired hand) for one year before I landed my first job away from home. I was hired as an Erosion Control Planner for Wood County Land Conservation Department. The job was a one-year project position that proved a stepping stone for my move to Princeton, where I currently reside.

In 1980, the Big Green Lake Watershed was selected as a priority watershed project under the Wisconsin Nonpoint Source Water Abatement Program. At the time, Green Lake was the first lake in the state of Wisconsin to receive such a grant. The program was administered by the DNR, with the Green Lake County and Fond Du Lac County Land Conservation Departments being responsible for the implementation of the project. The goals of the Big Green Lake Priority Watershed Project were to protect existing high water quality areas, to improve areas degraded by nonpoint sources of pollution, and to halt or reverse the trend of declining water quality.

That's where I came into the picture. In May of 1987, I was hired as a watershed technician to work within the confines of the Green Lake Watershed to implement a variety of Best Management Practices (BMP's). I was hired to focus all my energy on addressing crucial sites. I first did an inventory of all the barnyards within the watershed and ranked them from worst to best. I also gathered information from existing staff to identify areas thought to be the worst areas of runoff within

the watershed. With a pocket full of statistics, I began visiting all the landowners that were on my essential list.

In the 3 years prior to my first visits, 88 projects had been lined up. I was given 6 months to sign up as many additional critical properties as possible. During that period, I secured 49 additional contracts. Those contracts included all but two of the top 20 barnyards known to be potentially impacting the lake. The other two eventually were forced to alleviate their issues after being reported to the DNR under the Notice of Discharge program.

After the signup period, an installation period of 4 years was given to the Land Conservation Department to install the various BMP's. With that kind of workload, 2 additional staff members were added to complete the work. Great progress was made with the Big Green Lake Priority Watershed Project which included: 18% soil reduction in Upland erosion, 17% soil reduction Gully erosion, and 75% phosphorus reduction from Barnyard runoff. All in all, the project was a great success.

Throughout my 33 years of service, Big Green Lake has always been a focal point of my career. From the efforts of federal NRCS office, the state DNR office, the County LCD departments, and our local Green Lake Sanitary District and Green Lake Association, we continue to strive to eliminate the impaired status of the lake. I have been truly blessed to be part of this effort and know that there are others that have that same passion. There is a reason why Big Green Lake was chosen as the first lake in Wisconsin to participate in the DNR's Priority Watershed Project...it is one of Wisconsin's greatest treasures!

- Paul Gunderson, Conservationist,
Green Lake County Land Conservation Department



WASTE MANAGEMENT

There have been many surprising footnotes to the Covid pandemic. One such tidbit is that when people are forced to stay home, apparently they clean house! In speaking with Waste Management this spring and summer, they updated us on the fact that residents within the GLSD put out more than 15% more trash in the 2nd quarter of 2020 than average. WM found this trend to be similar across all the communities it serves. Additionally, WM has seen a huge increase in cardboard being thrown away due to the increase in home deliveries from Amazon, Walmart, etc. Please remember that you can sign up for recycling through the GLSD or you can take your recycling to the township in which you live. The schedule for this is listed in the right column. The GLSD has a 5 year contract with WM which locks us into annual charges for collection throughout the District. For this reason, the GLSD did not have to pay additional fees for the unexpected increase in trash collected. Additionally, though the GLSD-run 'Spring Clean Up' event was delayed this year due to Covid, the District itself collected 38% more trash than in 2019.

Here are some reminders about trash collection within the District:

- Keep carts in easy to see locations. Having it near your fire number or mailbox is recommended.
- Have carts out by 6 am Monday mornings.
- Remember to place carts with top handles facing away from the road.
- Do not place extra bags on ground next to the WM-issued trash cart.
- Remember that on Mondays following busy weekends, trash collection may extend into Tuesday.
- If roads are unsafe due to ice or snow, WM may not venture down that road. Safety is always a first priority.

If you would like to have recycling service, Waste Management can provide you with a 64-gallon, yellow-topped cart. The cost for the new cart is only \$6.00 per month per cart. The recycling cart will be picked up the first Monday of each month. You may request additional 64-gallon recycling carts at a cost of an additional \$6.00 per cart per month. If you are not currently a recycling customer with Waste Management and would like to sign up for this service, you must call Waste Management at (888)-960-0008. Be sure to let them know you are within the Green Lake Sanitary District so you are charged correctly. WM invoices on a quarterly basis.

In addition to the curbside trash collection/recycling service for our residents, be aware that recycling can be dropped off to your local township as well. The list below outlines the services provided to residents of each township within the Green Lake Sanitary District boundaries.



Garbage and recycling carts on Orchard Ave.

RECYCLING CENTERS

In addition to the curbside trash collection/recycling service for our residents, be aware that recycling can be dropped off to your local township as well. The list below outlines the services provided to residents of each township within the Green Lake Sanitary District boundaries.

TOWN OF BROOKLYN
N6285 Berlin Rd, Green Lake

Accepts garbage, recycling, and yard waste.

HOURS (NOV – APR)
Sat.: 7:30–11:30 am
Mon.: 7:30–10:30 am

HOURS (MAY – OCT)
Sat.: 7:30 am – 1:30 pm
Mon.: 7:30 – 11:30 am

TOWN OF GREEN LAKE
N2298 City Road A
(920) 398-2405
www.townofgreenlake.com

Accepts recycling and yard waste.

HOURS
Sat.: 8:00 am – 2:00 pm

TOWN OF PRINCETON
County Trunk D
(920) 295-4057
www.cityofprincetonwi.com

Accepts recycling only.

HOURS
1st and 3rd Saturday of each month
from 8:00 am – 12:00 pm

TOWN OF MARQUETTE
306 Lyons St., Markesan
(920) 229-6360

Accepts recycling only.

Recycling receptacle available for township residents that can be accessed 24 hours per day.



N5295 CTY RD TT
PRINCETON, WI 54968

PRSR STD
US POSTAGE
PAID
OSHKOSH WI
PERMIT NO 90

GLSD COMMISSIONERS

Jerry Specht | *President*
Ken Bates | *Treasurer*
Boni Jensen | *Secretary*

GLSD STAFF

Lisa Reas
Administrator
Paulette Janssen
Admin. Asst.
Stuart Marks
Plant Operator
Dallas Lewallen
Plant Operator

OFFICE HOURS

7am–3pm, Mon–Fri

For sewer emergencies
after hours, please contact
Dallas Lewallen at
(608) 345-7484 or Stuart
Marks at (920) 369-8199.

NEW GLSD E-BLASTS

The GLSD is collecting the e-mail addresses of our customers in order to reach you more efficiently on important GLSD issues such as updates on garbage collection, beach advisories, etc. We can provide you the GLSD newsletters digitally as well. Paulette Janssen, our administrative assistant, will be accepting the new contact information. She can be reached by phone at (920) 295-4488 or directly by e-mail at paulettej@glakesd.com. Please provide your e-mail address(es), GLSD property address, and current phone number as well. Please note that as a municipality, the GLSD cannot provide our customers'/residents' contact information to a third party.

GREEN LAKE SANITARY DISTRICT RECEIVES AMERICAN TRANSMISSION CO. GRANT FOR HABITAT RESTORATION

Natural habitats are among the features that make communities special places for residents and visitors. American Transmission Co. has awarded the Green Lake Sanitary District a \$5,000 grant to enhance several Conservancy green spaces by restoring native vegetation to the trailhead areas of 5 properties. The main goal of the projects is to restore natural habitat to several of our Conservancy properties where non-native buckthorn, honeysuckle, Oriental bittersweet and other invasive species have recently been removed. These plantings will benefit pollinators, songbirds, and other critters that depend on native ecosystems for food and cover. These plantings have been planned and coordinated by GLSD staff with planting to occur in late

September, 2020. The GLSD thanks ATC for their support of our Conservancy restoration efforts!

