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**Picture courtesy of Scott Rando**

Twenty-five years and still going strong is a testimony to our members and to the vision of our founders. The articles in this newsletter cover many aspects of that vision and the success we have had in meeting it.

At the beginning it was important to understand our watershed including potential threats and establish a baseline for future monitoring. This was accomplished in 2003 with a grant to hire FX Browne to conduct a thorough assessment of the watershed for three Shohola, PA lakes (Big Twin, Little Twin and Walker). The study determined the existing water quality of the three lakes and the streams that flow into them and a comprehensive inventory of non-point source pollution problem areas many of which have been addressed. The water quality data provided a baseline for the annual testing that continues today and is used to monitor the health of the lakes. As part of the study, extensive physical, biological and cultural information was compiled.

TWCWC's educational programs have addressed new threats such as fracking pipelines crossing the watershed, ticks, and spongy moths. It has helped residents understand the importance of maintaining septic systems and good watershed management and provided annual programs at the local elementary school. Our most popular programs bring wildlife close to our supporters. Our website (TWCWC.com) contains our annual lake testing summaries and our newsletters making this information available to anyone.

Many of our members have received similar training to professional lake managers. This has helped us better understand our lakes and watershed and interact with the scientific community such as FX Browne and now PLEON. These strengths continue into the next quarter century.

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- Torey Donato Tisbler, Pat Dawson*
- David Vonderheide,*
- Joyce Laudise, ex officio*

***Join Us to Kick Off Our 25th Anniversary Celebration***

*Sagamore Pavilion Big Twin Lake*

*Saturday June 27, 2026, 1 to 3 PM*

*Information Tables, Children's Activities. and Wildlife Talk by Wilderx Pocono Wildlife*

*For Directions and More Info go to TWCWC.com*

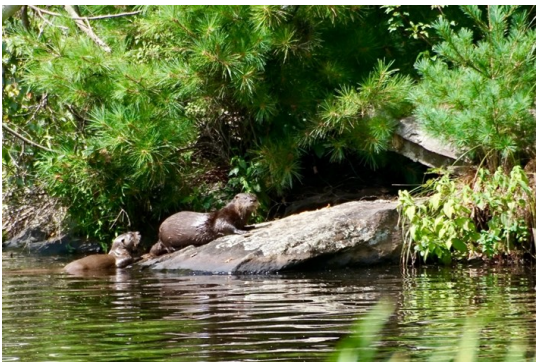
## *Lake Monitoring The Key to Successful Lake Management*

*Chet Dawson*

TWCWC founders knew from the beginning that a strong lake monitoring program was needed to stay ahead of any changes that might be of concern. We now have 25 years of data, tracking what is occurring with our three lakes and while we have seen some changes the lakes all remain healthy.

Several important decisions were made in setting up the testing program. We wanted citizen scientist trained to conduct the testing and needed a strong lake consulting team behind them. If we were going to have citizen scientists, they needed to be trained. A training manual with assistance from the PCCD was developed, and the first members trained to collect and interpret samples. We still needed test equipment the costliest a probe to automatically read: oxygen, conductivity, pH, temperature, and suspended solids at various depths, a Secchi disc to measure clarity and a device to collect water samples. With these purchased, TWCWC began in 2002 monitoring once a month from June to September. All that remained was hiring F.X. Browne to conduct a watershed study that would include monitoring data for the three lakes that could be used as a baseline against future tests.

F.X. Browne, Inc was contracted to not only provide expert guidance but also to analyze data and put it into a report. They continued as our partner until Dr. Browne's retirement in 2019. At this same time, TWCWC members Chet and Pat Dawson and Peter Loewrigkeit attended a seminar by a PLEON scientist at the Lacawac Sanctuary. PLEON or Pocono Ecological Observation Network was established by the Sanctuary to assist regional lakes better understand their water quality. The three TWCWC members were so impressed by the seminar and a follow up meeting that they recommended PLEON to succeed F.X. Browne. PLEON was contracted and continues in that role.



The testing program has been tweaked over the years but remains pretty much the same. Initially, phytoplankton samples were only taken at the surface, and we did not do zooplankton studies. Both have since been extended to multiple depths with an added emphasis on algae blooms. Chemical analysis has been conducted twice by Dr. Chen using a mass spectrometer. Lake depth profiles were done first manually by Joe Messineo, P. D. McCullough and Scott Rando and more recently electronically by two lake consulting firms which confirmed the accuracy of the manual testing. We have added to the length of the cable on the probe allowing for testing to the bottom of Little Twin Lake and now showing during the summer that Little Twin as well as Big Twin and Walker lakes have little or no oxygen at their lower depths during the summer. PLEON conducts a light probe for water clarity, and we now test for carbon which has become an issue in temperate zone lakes following the reduction in acid rain.

Nutrient loading, primarily total phosphorous and total nitrogen has a huge impact on lake health. Fortunately for our three lakes these levels are all well below Penn State warning levels. Phosphorous levels for both Big and Little twin lakes have been steadily declining since 2002; They are also declining but less so and overall higher for Walker Lake. Nitrogen levels have been dropping for Little Twin and have remained about the same for the other two lakes. This is expected with the elimination of phosphorous from fertilizers and detergents. Chlorophyll a is measured to determine the density of phytoplankton or algae and as expected has generally followed the variation in nutrient concentration. With less algae you would expect improved clarity: however, clarity has lessened for all three lakes.

With global warming, you expect to see warming water temperatures. While we have seen a slight increase in temperature over the past decade for the two Twin Lakes, surprisingly for the darker Walker Lake temperatures in general are lower and remained mostly constant except for a couple of outliers. All three lakes are stratified in the summer months and lose their stratification as they turn over in early autumn. We recently determined that phosphorous is being released from the depleted oxygen bottom of both Twin Lakes but not Walker Lake. Due to the much higher concentrations of certain salts. Little Twin has always had significantly higher conductivity than either of the other two lakes. Chris Proce is working with Kirk Mackey of the Sterwards to determine if this is due to road treatment salts running into the lake or some other reason. We are also looking at ways to address invasives such as the curly-leaf pondweed in Little Twin or the Chinese Mystery Snails in Walker Lake. The presence of both and the difficulty in removing them emphasizes the importance of following good practices to prevent them from getting there and in quickly identifying them when they do.

Thankfully our lakes and watershed remain of high quality, and we can swim, fish, boat and enjoy the variety of wildlife and fauna that we have.

## *What Is a Watershed? - Lorraine Gibbons*

A watershed is the area of land where all the water — rain, snowmelt, and groundwater — flows downhill to the same place. That place might be a creek, a lake, a wetland, or a river. Water follows the shape of the land, moving through forests, fields, and neighborhoods as it travels.

One easy way to picture a watershed is to imagine a funnel. Wherever a raindrop lands on the funnel, it eventually moves toward the spout. A watershed works the same way. Hills, ridges, and slopes act like the funnel's walls, guiding water toward streams and lakes. Even a raindrop that falls far from the nearest creek will eventually find its way into the small channels that feed larger waters.

Across Pike County, there are 18 distinct watersheds, each shaped by its own mix of hills, wetlands, streams, lakes, and communities. One of these is the Twin & Walker Creeks Watershed, a connected landscape covering about 11.5 square miles before draining into the Delaware River. What happens in the watershed next to ours can influence the water that flows through Twin and Walker Creeks — and the choices we make here can influence our neighbors downstream. Watersheds are separate on a map, but connected in reality.

The Hydrologic Unit System (HUC) is a national mapping framework used across the United States to organize watersheds by size and scale. It arranges the landscape into nested levels, from the broad Delaware River Basin — which includes the Twin & Walker Creeks Watershed — down to the stream-sized HUC-10 areas that the Pike County Conservation District monitors, including ours. These mapped boundaries help us see how water moves, how creeks relate to one another, and how to track changes in water quality from the headwaters downstream.

When rain falls, some of it soaks into the soil and replenishes groundwater. Some evaporates. The rest runs across the land, picking up whatever it meets — soil, leaves, fertilizers, road dust, or chemicals — and carries it into streams and lakes. Everyday actions on our properties, roads, and shared spaces all contribute to the health of our watershed.

For 25 years, the Twin & Walker Creeks Watershed Conservancy has worked with neighbors, volunteers, and community partners to protect the waters that define this part of Pike County. Long-term monitoring, education, and stewardship have been possible because people across the watershed care deeply about the place we share — and want to keep it healthy for future generations.

## *What is Stormwater? - Peter Wulfhorst*

In Pennsylvania, we get an average of 41 inches of precipitation each year. When it rains or the snow melts, where does this water go?

In more natural areas, water is quickly able to infiltrate into the ground. Impervious surfaces like pavement and rooftops offer no infiltration at all. All of the water that doesn't infiltrate flows over the ground, over roofs and through gutters on buildings, into storm drains, and into the nearest waterway —our lakes, rivers, and streams. This is stormwater.

In 2003, the Conservancy contracted with FX Browne to identify areas that contribute non-point pollution to the 3 lakes in the watershed. The study identified 8 sites in Walker Lake & 3 sites in Twin Lakes. Conservancy members updated the Browne study in 2020.



The Conservancy & Shohola Township addressed a site in Walker Lake which included Maple Drive in the vicinity of the old Shohola Township Fire Department Walker Lake fire house. Shohola Township crowned the road when it was recently repaved. A second 30 in. pipe was added to take stormwater coming from Pond Drive and to the North on Maple to a constructed detention pond for water quality before going on to the lake. The basin was constructed adjacent to the mailboxes on Maple Drive; however, it only handles stormwater coming down Pond Dr. and Maple from the north. Natural vegetation has been allowed to grow between Sandy Beach on Walker Lake and Twin Lakes Road that is absorbing sediment before it reaches the lake. A silt trap was installed at the top of Clubhouse Beach at Walker Lake, and road and culvert improvements are helping with some other sites for Walker Lake.

The Conservancy & Twin Lakes addressed Twin Lakes Park Beach. There was sedimentation accumulating in Big Twin Lakes at this site. Large stones were placed on the steep portion of the stormwater channel, and a detention pond was constructed. Conservancy members Peter Loewrigkeit & Joe Messineo oversaw the placement of the stones and construction of the pond. The pond needs to be dredged periodically to remove sediment that accumulated there. In the future, hopefully with additional funding more stormwater problem areas will be addressed at both Walker Lake & Twin Lakes.

## *Working Together for a Healthier Watershed: TLPOA and TWCWC Partnership - Chris Proce TLWQC Chair*

Over the past decade or more, the **Twin Lakes Property Owners Association (TLPOA)** and the **Twin and Walker Creeks Watershed Conservancy (TWCWC)** have deepened their collaboration to ensure the long-term health of our 11.5-square-mile watershed. This partnership is built on a shared mission: to protect the water quality of Big Twin, Little Twin, and Walker Lakes while empowering our community to be actively involved.

At the heart of this alliance is a robust water quality monitoring program. Since 2001, TLPOA and TWCWC have worked side-by-side to collect and analyze samples from the three lakes, tracking long-term trends and to monitor the overall health of the lakes. In 2024 and 2025, these efforts were bolstered by comprehensive watershed assessments that pinpointed specific nutrient loading issues, focusing on road runoff mitigation and proper septic system maintenance.

Education remains our strongest tool for prevention. TLPOA and TWCWC have integrated their outreach efforts to provide residents with actionable ways to protect the watershed. Recent and ongoing initiatives include:

- **Workshops & Resources:** Distributing annual newsletters and fact sheets on best practices, such as reducing fertilizer use and maintaining on-lot sewage systems.
- **Hands-on Engagement:** Organizing community "weed pulls" to remove invasive plants and hosting guided hikes to discover local ecosystems.
- **Native Landscaping:** Encouraging the development of rain gardens and meadows that naturally filter runoff before it reaches our lakes.

By combining resources and expertise, TLPOA and TWCWC are not only preserving the aesthetic and recreational value of our lakes today but are also securing a clean-water legacy for the future residents of Pike County.

Recently, there have additional efforts by TLPOA and TWCWC to more fully coordinate and engage with the Stewards of Twin Lakes and we look forward to all three organizations being stronger together working towards the common goal of preserving the health of the watershed.

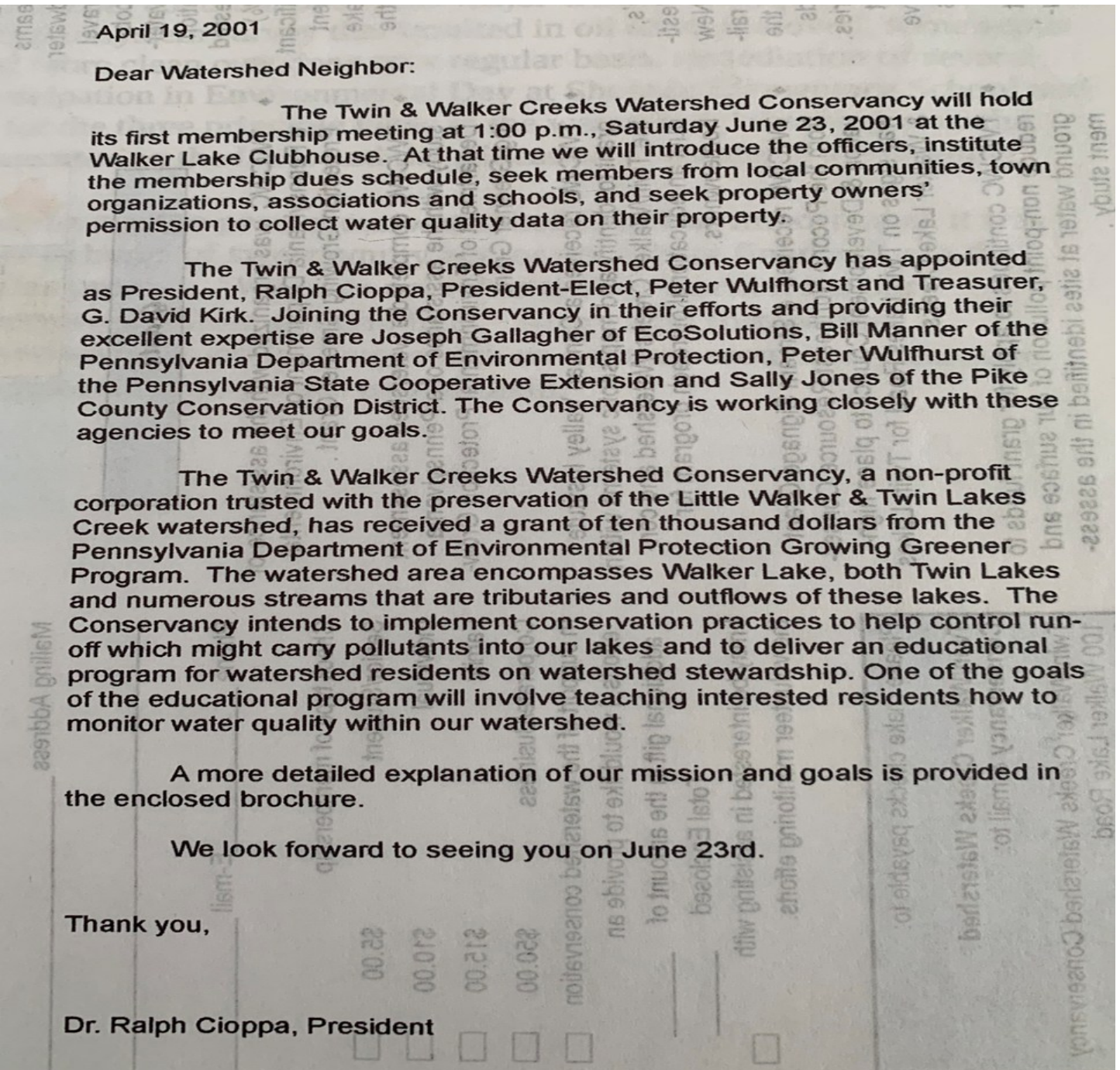
## *The Beginnings of the Twin/Walker Creeks Watershed Conservancy - Joyce Laudise*

It was early in the summer of 2000, Dave Kirk was fishing at a stream near the house on Walker Lake that he and his wife Leanne had recently built, having left New Jersey for a quieter life as retirees in the Poconos. Bill Manner, a representative of the PA Dept of Environmental Protection (PADEP), happened by, and casually asked for Dave's fishing license. They started talking about Walker Lake, the nearby streams and Dave's passion for fishing. Dave was in disbelief that he could take a short walk from his house to catch then release some of the best fish he had ever caught. Discussion got around to the need to protect such a special place. Bill told Dave about a meeting that would take place on Saturday, July 8, 2000, at the Pike County Conservation District (PCCD) Office in Hawley. Bill mentioned that the main purpose of the meeting was to enlist citizens as volunteers to monitor and protect PA lakes and streams, and that state money was available.

Walker Lake and Twin Lakes had been monitored over the years by their respective association members. Joyce Laudise, who was on the Environmental Monitoring Committee of the Twin Lakes Property Owners Association (TLPOA) had been in contact with Sally Corrigan from the PCCD seeking advice and funding for upgrading equipment to continue monitoring the Twin Lakes. Sally encouraged Joyce to attend the July 8 meeting.

Dave and Joyce both attended the meeting. Sally introduced them to each other. Bill said they should work together because the Twin Lakes and Walker Lake are parts of a common drainage area (watershed) that enters the Delaware River as Twin Lakes Creek. He suggested a watershed association would be eligible for a PADEP Growing Greener Grants if members worked to prevent pollutants in the waters of the watershed thereby preserving the pristine Upper Delaware River.

Dave enlisted Ralph Cioppa and Peter Wulforth. All four (4) worked to get a plan in place. They (1) defined the boundaries of the Twin Walker Creeks Watershed, (2) applied for and received a Growing Greener Grant to start the organization, (3) wrote a constitution and by-laws, (4) incorporated, filed for and received 501c3 status, and (5) identified interested stakeholders within the boundaries and sent out a brochure and the following letter.



The Walker Lakeshores Landowners Assoc (WLLA) was fully supportive of the Conservancy, allowing the group to use its clubhouse for meetings and contributing financially. The TLPOA learned about the Conservancy at its first meeting of the year on June 9 when Joyce and Dave explained its purpose and showed off the newly acquired probe that would be used for some lake tests. TLPOA agreed to join and support the Conservancy by contributing \$1000. President, Steve Mihaly encouraged all to join as individuals and attend the June 23 meeting.

After June 23, the executive board was expanded to include Linda Cioppa, PD McCullough, Peter Loewrigkeit, and Joe Messineo. The winter of 2001-2002 was a busy one. Using a second PADEP grant a consultant was hired to do a comprehensive study and offer suggestions for managing the watershed. He relied on Conservancy members for help with such things as measuring stream flow, identifying runoff and erosion sites, observing the flora and fauna, and even getting him out of a ditch in a snowstorm.

## *TWCWC's Photo Contests: "The Nature of Pike County"*

- Pat Dawson



A part of its mission, the Conservancy has held educational events to inform everyone in the watershed how to enhance and protect their properties, water wells, and septic systems. In 2017, the organization decided to hold a photo contest as a means of encouraging children, teens, and adults to take photos of nature in Pike County. The Conservancy hoped that documenting the beauty of the environment would instill a love for saving and protecting the watershed. The contest was open to everyone in Pike County. Ribbons for first, second and third place were given out to entrants in four categories: children up through 4th grade; 5th through 8th grades; Senior High and adults. At first, submissions were hardcopies either mailed or dropped off at the Walker Lake clubhouse office; in 2021, electronic submissions were allowed. In 2022, the Photo Contest Gala was instituted along with prize money, thanks to the efforts of Jackie Kaiser Cozzolino. The photos were displayed on black felt banners and hung from the ceiling.



## *Embrace the "Messy Woods" approach to protecting our Lakes*

- Bettina Proce and Lorraine Gibbons

At the Twin Lakes & Walker Lake, we have an incredible opportunity to safeguard the health of our lakes, forests, and local wildlife by embracing the "Messy Woods" philosophy. This approach celebrates the beauty and complexity of nature rather than attempting to control it. By adopting small but thoughtful practices, we can preserve thriving ecosystems for generations to come.

Think twice before cutting down trees - both living and dead trees are essential for maintaining ecological balance, supporting wildlife, and protecting water quality. Their roots anchor the soil, reducing erosion and preventing sediment—laden with nutrients like phosphorus—from contaminating the lakes. This reduces the likelihood of harmful algal blooms and promotes water clarity.

Dead trees, or "snags," also play a critical role by providing cavity-nesting birds, insects, and fungi habitats. As they decay, they enrich the soil, fostering new plant growth and further supporting the ecosystem. Ideally, trees should only be removed for safety reasons, such as severe disease or a high risk of falling. Consulting a certified arborist can help determine whether a tree should remain or be removed.

Leave fallen logs and branches; avoid clearing brush - dead wood left on the ground provides critical wildlife habitats and slows water runoff. This natural barrier protects lakes by reducing sediment and nutrient pollution.

Be strategic when raking - leaf litter acts as a natural erosion barrier, reduces runoff, and nourishes soil as it decomposes. To protect water quality and support pollinator health, allow leaf litter to remain near wooded areas and slopes, raking only where needed—for example, on paths or in manicured spaces. Avoid raking leaves into the lake, as excess nutrients degrade water quality and encourage harmful algal blooms.

Plant and protect native plants - Native plants, adapted to local conditions, offer food and shelter for diverse wildlife species. Their deep roots stabilize soil, reduce stormwater runoff, and filter out excess nutrients before they reach the lakes.

Minimize lawn areas - reducing lawn areas in favor of native grasses or meadows can significantly protect water quality. Turf grasses provide minimal value to pollinators and wildlife and do little to manage stormwater runoff. Lawns require extensive maintenance and can harm lakes by introducing fertilizers, grass clippings, or by attracting waterfowl. If keeping a lawn is important, consider scaling it down and incorporating small native plant islands or strips of mini meadows.

**Above all, maintain a riparian buffer near the water's edge, which offers protection for all the reasons mentioned above!**

## *Treasurer's Report - Kevin Dowd*

I hope you all have kept warm during the cold and snow of this winter! It is good we had some snow because we were very dry at the lake all last year. At the Big Twin Lake we ended about 12 inches below normal, but our finances are in good shape!

We attracted 20 new and returning members and now are back to 50! That was the high in 2023. I thank everyone who donated, especially those new or returning. Your generous contributions are appreciated.

Twin Walker Creeks Watershed Conservancy (TWCWC) collected \$8,250 in donations, \$750 less than 2024. As usual a few large donors, their matching grants and the Twin Lakes Property Owner's Association (TLPOA) provided the bulk of our income - \$5,750 with \$2,500 in donations of \$100 or less from 40 members. Interest on the new CDs was up to \$1,200.

Our total income of \$9,450 matched last year and was exceeded by our expenses of \$11,500 and gave us a net expense of \$2,100 for fiscal 2025, versus our net of \$2,500 for 2024. Some of this was planned, as we increased our testing expenses by \$2,600 and had a members' program for \$500, which we did not last year. We had some special expenses of \$1,000 but newsletter expenses of \$2,000 and operating \$1,000 were the same. We have a healthy reserve and will be trying to spend more on programs in 2026 and will have a net expense for the year – unless you can all become Eagle Members!

Our sponsorship of the Water Quality Committee (WQC) of the TLPOA is going well. We collected \$15,725 from 40 donors, down from \$48,000 last year. Lower donations were expected as the WQC is working on using the funds on Curly leaf pondweed spending was a bit higher, at \$3,600 and we contributed \$2,790 towards the repair of the Twin Lakes Park retention pond. PA registration expenses of \$450 added up to \$6,850 for a net of \$8,885. Information on plans and projects for 2026 is available from the TLPOA WQC.

TWCWC is celebrating its 25<sup>th</sup> year of monitoring the lakes and promoting good environmental habits. This special issue has lots of good information!

Please visit [twcwc.com](http://twcwc.com) and email [twcwcwpresident@gmail.com](mailto:twcwcwpresident@gmail.com) with ideas on fundraising, specific projects that need funding or to volunteer for projects with the Conservancy.

Have a great summer and I hope to see you at our annual meeting.

## Twin & Walker Creeks Watershed Conservancy

108 Lakeview Drive  
Shohola, PA 18458  
[www.twcwc.com](http://www.twcwc.com)

### Resident

#### Twin & Walker Creek Watershed Conservancy

C/O Kevin Dowd, Treasurer, 108 Lakeview Drive, Shohola, PA 18458

Spring 2026

Name \_\_\_\_\_

Phone \_\_\_\_\_

Addr \_\_\_\_\_ City \_\_\_\_\_ St \_\_\_\_\_ Zip \_\_\_\_\_

Email \_\_\_\_\_

Memberships: (Circle One)

Sparrow \$25, Hawk \$50, Owl \$75, Eagle \$100, Lifetime Member \$500

Membership: \$ \_\_\_\_\_ + Additional Donation: \$ \_\_\_\_\_ = total

\$ \_\_\_\_\_

Please visit [twcwc.com](http://twcwc.com) and email Ralph Cozzolino at [president@twcwc.com](mailto:president@twcwc.com) with any suggestions or to volunteer for projects. We value your input!