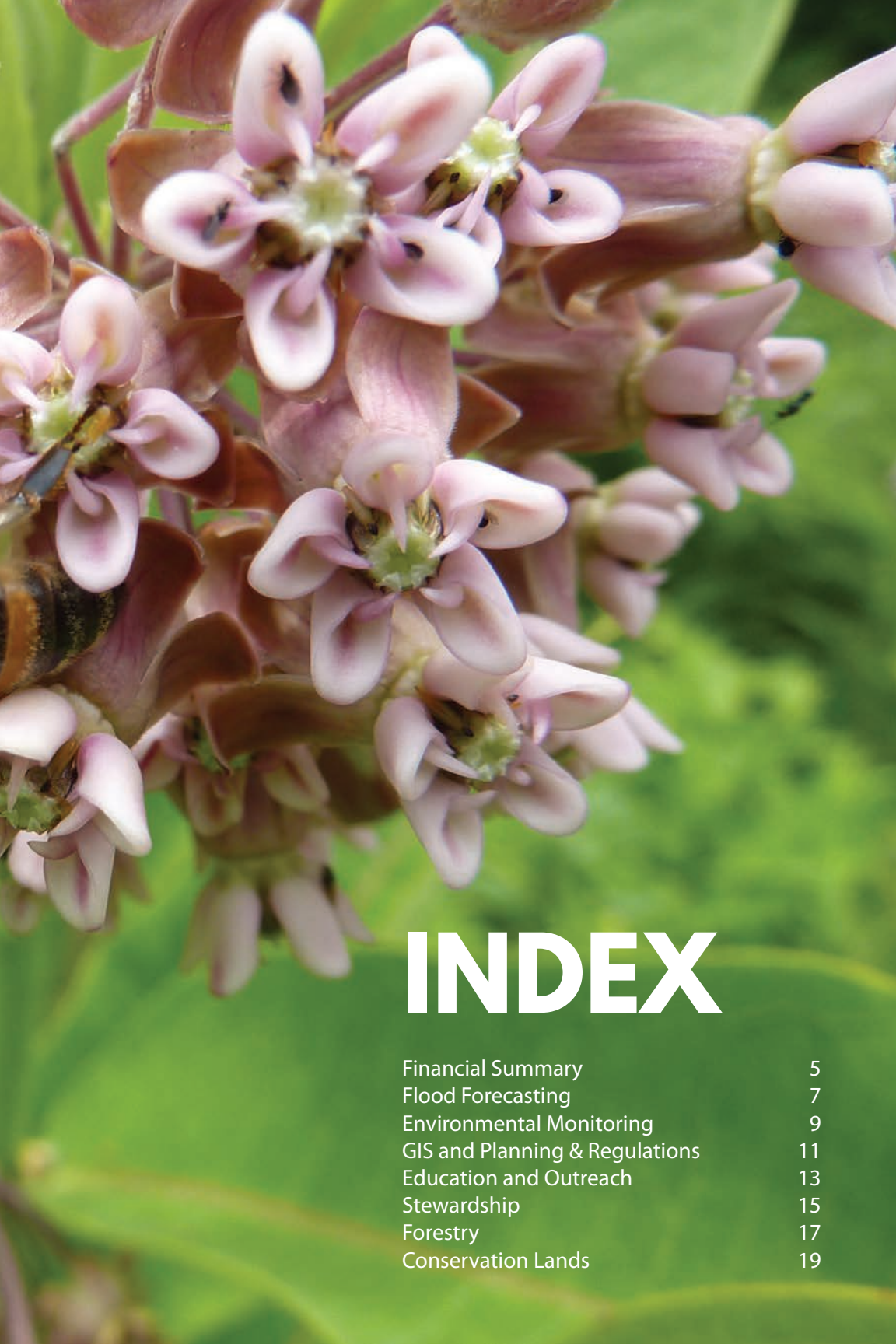
ANNUAL REPORT 2019

Kettle Creek
Conservation Authority



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KETTLE CREEK WATERSHED

The Kettle Creek watershed is hourglass in shape and drains 520 square kilometres of land in the heart of the Carolinian Zone on the north shore of Lake Erie at Port Stanley. Kettle Creek drops approximately 141 meters over its 80-kilometre length. This steep drop in elevation can cause flash flooding, fluctuating base flows and a high degree of erosion. The main branch of Kettle Creek originates at Lake Whittaker, an 11-hectare spring-fed kettle lake.

The watershed is comprised of 3 subwatersheds: Dodd Creek, Upper Kettle Creek, and Lower Kettle Creek. There are seven member municipalities associated with the Kettle Creek watershed: Central Elgin, London, Malahide, Middlesex Centre, St. Thomas, Southwold, and Thames Centre.

WHAT IS A WATERSHED?

A watershed or drainage basin is an area of land that drains into a river or a lake. The boundary of a watershed is based on the elevation (natural contours) of a landscape. A drop of water that lands anywhere inside this boundary will eventually end up draining into Kettle Creek before emptying into Lake Erie. This determination of boundaries is based on the natural shape of the land and therefore the watershed can fall across many municipal boundaries.

4 WETLAND CREATION PROJECTS

~50,000 TREES PLANTED ANNUALLY

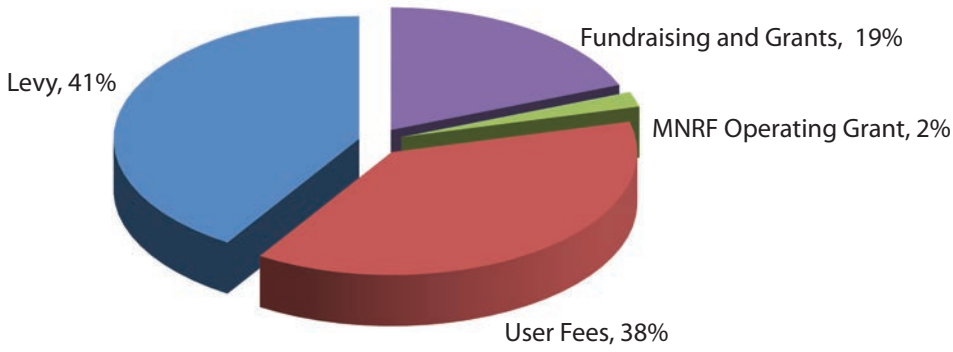
520 SQUARE KILOMETRES OF JURISDICTION

9 FISH SPECIES **IDENTIFIED** IN **15** MUNICIPAL DRAINS

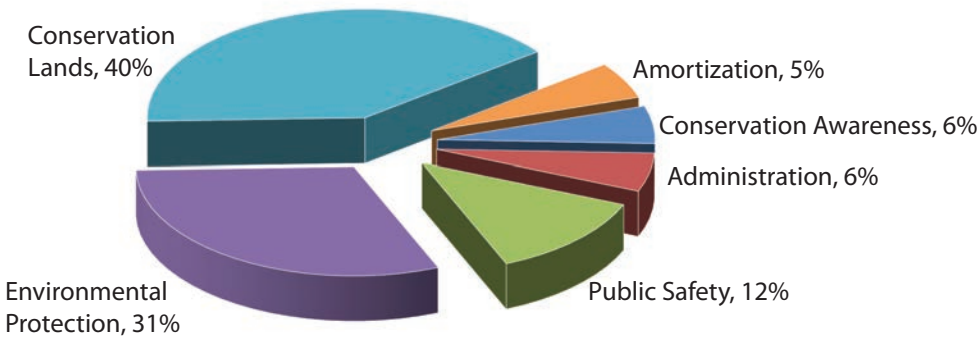
KETTLE CREEK OVERVIEW

FINANCIAL SUMMARY

Total Revenues



Total Expenditures



Full financial statements are available at www.kettlecreekconservation.on.ca

FLOOD FORECASTING

Ontario had plenty to "weather" in 2019: from freezing winter temperatures to a disappointing wet spring and a relatively cool summer. Extensive flooding, especially in Ontario, Quebec and New Brunswick and record-breaking water levels on the Great Lakes were the big weather stories of 2019.

The Kettle Creek watershed experienced an unusual winter with periods of snowy, cold weather interspersed with unusually high double-digit temperatures and rain. As a result of the unusual weather, KCCA experienced a high water event during the first week of February caused by an ice jam that formed just north of Port Stanley followed by a thaw event. Staff issued a Water Safety notice in advance of the event followed by a Flood Warning

on February 5, 2019. The ice jam backed water up to the Roberts Line Retaining Wall upstream of Port Stanley. Mild temperatures and light rain helped move the ice jam downstream and water levels returned to normal within 48 hours.

KCCA maintained a Lake Erie Shoreline Flood Outlook message for almost the entire year due to the record-setting high water levels in Lake Erie. When static (calm) water levels are higher than normal, there is an increased risk for flooding and erosion along the Lake Erie shoreline due to storm surge. The greatest risk for lake flooding and erosion in the Kettle Creek watershed is in Port Stanley when storms bring sustained southwest winds of 50 km/h or higher. The resulting storm surge can drive

waves onto the shoreline, causing flooding, erosion, and damage to shoreline structures. In addition, higher water levels in Lake Erie can decrease the outflow of Kettle Creek, reducing the capacity to handle rainfall events.

As part of KCCA's best management practices, a Hazard Potential Classification (HPC) was conducted on the Dalewood Dam. The contract was awarded to GHD Group who completed a dam break analysis, hydraulic modeling, and inundation mapping. The study concluded that the HPC of the Dalewood Dam is Low. However, additional studies were recommended including a geotechnical investigation and slope stability assessment.

KCCA received $15,000 in funding from the RBC Foundation to implement Empowering Citizens to Become Active in Flood Resiliency and engage residents in flood monitoring by developing a network of citizen scientists to collect precipitation data, and by installing real-time rain gauges and internet cameras at key locations in the watershed.

For up-to-date flood information, watershed residents and businesses can visit kettlecreekconservation.on.ca, or connect with Kettle Creek Conservation Authority socially on Twitter and Facebook.

@kettlecreekca

175.18M
RECORD LAKE ERIE WATER LEVELS

89.3M³ PER SECOND
MAX FLOW IN KETTLE CREEK ON FEBRAURY 5, 2019

1037.3MM
2019 AVERAGE TOTAL RAINFALL

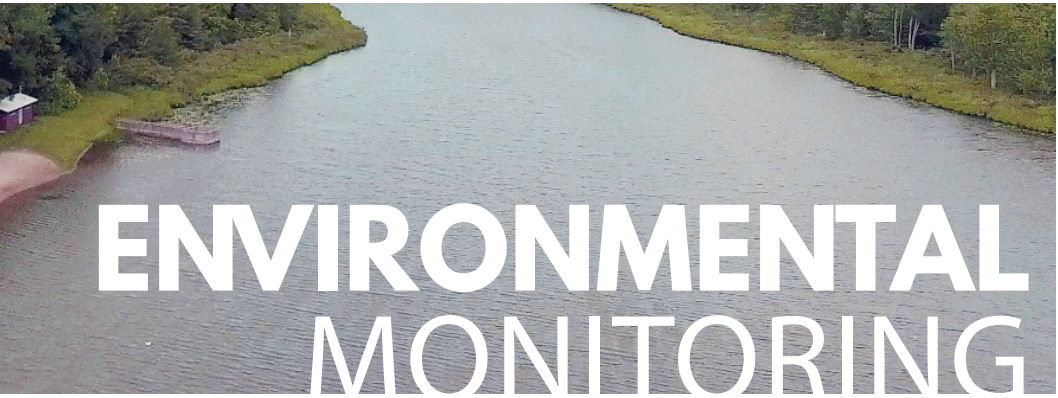
22
FLOOD MESSAGES

Environmental monitoring data is an essential component of the Watershed Report Card which is used to report on watershed health every five years. Data collected also informs the delivery of each program and service at the Authority including flood forecasting and warning, tree planting and source water protection.

Water quality monitoring continued in 2019 at Lake Whittaker with a focus on phosphorus levels, water clarity and bacteria testing for the beaches. Both beaches had improved clarity for the camping season and were only posted once for high bacteria levels due to a storm event in August. Both beaches remained open all season.

Staff continued the baseline monitoring work that was started in 2016 for Lake Margaret in the City of St. Thomas. Monthly surface water samples were collected to monitor bacteria, nutrients, general chemistry and phytoplankton. Samples were collected from April to November with assistance from the City of St. Thomas Fire Department. Preliminary analysis indicates that results from 2019 are similar to results collected in 2016.

Staff filled over 600 sample bottles to monitor changes in surface water and groundwater quality at 19 long term monitoring sites located throughout the watershed. This important data is part of one of the longest running and



ENVIRONMENTAL MONITORING

largest province-wide data sets produced in partnership with the Ministry of the Environment, Conservation and Parks. This dataset is used by educational organizations, consulting groups and researchers from around the world.

Thirty benthic samples were collected throughout the Kettle Creek watershed in 2019 that were sorted and identified using the Ontario Benthos Biomonitoring Network protocol to measure water quality.

In 2019, Fisheries and Oceans Canada provided $9,250 in funding to continue to classify unrated municipal drains in the Kettle Creek watershed. Forty drain segments were sampled in 2019 for flow characteristics and 15 of those were sampled for fish. A total of nine fish species were collected from the 15 sites with 52% of the fish caught Creek Chub, 20% Johnny Darter and 11% Blacknose Dace. No species at risk or invasive species were collected at any sites.

Fathead Minnow

Johnny Darter

Blacknose Dace

Green Sunfish

Dalewood Dam

GIS

KCCA's GIS/IT Supervisor accepted a new position in March, 2019. Before the position could be replaced, the Ministry of Natural Resources and Forestry announced a 50% reduction to KCCA's Section 39 Natural Hazard Management Grant.

This represented a $57,883 loss in funding to the flood forecasting and monitoring program. Consequently, the Board of Directors made the difficult decision not to replace the GIS/IT position to accommodate the funding reduction.

Moving forward, KCCA will be looking to continue the GIS program through shared services with member municipalities and neighbouring CAs.

PLANNING & REGULATIONS

Authority staff work diligently to provide prompt services for member municipalities and residents of the watershed.

In 2019, KCCA issued 48 permits and 23 site clearances with a grand total of 71 permits issued under Ontario Regulation 181/06.

KCCA issued all permits within 21-days of receipt of a complete application – meeting the provincial service standard by 100%.

EDUCATION & OUTREACH

KCCA is Social

KCCA's Facebook page gained 523 new followers and grew by 50 percent in 2019. KCCA has an active Facebook following with an average post reach of 559 people per post. KCCA's twitter account has 1,300 followers and Instagram has 988. If you aren't connected socially with KCCA yet, find us on Facebook, Twitter, and Instagram at @kettlecreekca.

Carolinian Forest Festival

KCCA coordinated the 12th annual Carolinian Forest Festival which engaged over 2,000 grade 6 and 7 students to learn about forest ecosystems and species at risk through hands-on activities linked to the Ontario Curriculum.

2019 Scholarship Recipients

TD Friends of the Environment Cheque Presentation

The Elgin County/Kettle Creek Agricultural Conservation Scholarship

The Elgin County/Kettle Creek Agricultural Conservation Scholarship is an important way for KCCA and its partners to encourage conservation leaders of the future. KCCA, Elgin County Junior Farmers Alumni and the Elgin Federation of Agriculture continue to fundraise to ensure the scholarship can be awarded in perpetuity. The $500 scholarship is awarded each year to a student pursuing agriculturally-related studies with an emphasis on compatibility with the natural environment at a post-secondary institution. In 2019, the scholarship was awarded to two recipients, Riley Temple, a first-year student at the University

of Guelph, Ridgetown Campus and Morgan Racz, a third year student at the University of Guelph.

Education Programs

KCCA led a variety of educational programs for local schools and day camps in 2019. KCCA partnered with Upper Thames River Conservation Authority (UTRCA) to deliver the GREEN Education Program, a year-long environmental education and civic engagement program. Two classes from Éva Circé-Côté French Immersion Public School benefited from the program in 2019. With the support of UTRCA and KCCA staff, students used a six-step process to identify local environmental issues and sustainable solutions that can be implemented in their community.

Outreach

In March 2019, KCCA staff attended the St. Thomas Public Library's Seedy Saturday event promoting KCCA's tree-planting programs to over 700 attendees.

In April, staff assisted Carolinian Canada with the organization of the Go Wild Grow Wild Expo that attracted over 3,000 residents interested in obtaining more information on local environmental products and services.

Staff also participated in the Thames Valley Science & Engineering Fair alongside Lower Thames Valley Conservation Authority and Upper Thames River Conservation Authority to judge submissions and award a student with the Conservation Award.

Through the EcoAction Community Funding Program, KCCA was awarded $49,000 in funding over 3 years in support of wetland creation in the Kettle Creek watershed. In 2019, three wetlands were constructed as part of the project - 1 wetland in each of the City of London, Municipality of Thames Centre and Township of Southwold.

A partnership of KCCA, the Municipality of Central Elgin, Elgin Stewardship Council, Ducks Unlimited and the St. Thomas Field Naturalist Club, resulted in two of the lagoons at the Port Stanley Sewage Lagoons decommissioned and restored to wetland habitat. The site is among the best-known spots in Elgin County to view birds due to the significant habitat provided by the lagoons in proximity to Lake Erie. Adjacent lands will be planted into tallgrass prairie and native trees and shrubs in 2020. In total, 30 acres will be restored.

Partners on-site at the Port Stanley Sewage Lagoons

STEWARDSHIP

The Elgin Clean Water Program, administered by KCCA, funded 30 projects in 2019 totaling $85,461 in grants. Since 2012, the ECWP has awarded $567,583.36 in grants to 205 projects totaling over $2,421,620.34 in total project costs that directly benefit the environment in Elgin County. KCCA staff was appointed to the newly formed Municipality of Central Elgin's Environmental Committee, which was established to research and promote environmental issues and solutions for recommendations to Council for implementation and policy development.

The Kettle Creek Environmental Youth Corps (EYC) continued for a second year. Thirteen local high school students were recruited to gain experience in the environmental field.

EYC projects included the planting of 100 potted wildlife shrubs along the shoreline of Lake Margaret, planting 2,000 tallgrass prairie plugs at the St. Thomas Elevated Park, removing invasive species from Dan Patterson Conservation Area, maintaining the trail at Dalewood Conservation Area and assisting with environmental monitoring.

FORESTRY

Over 50,000 tree and shrub seedlings were planted throughout the watershed in 2019 with an additional 2,300 seedlings sold through the Greening Communities program.

In partnership with the Ministry of Transportation and the Municipality of Central Elgin, KCCA planted over 5,000 trees along Central Elgin roadsides and Highway 3.

KCCA led a number of community tree planting events throughout the year with groups including the Aylmer District Trapper's Council, the Rotary Club of St. Thomas, the YWCA Youth Newcomer Group, Central Elgin Collegiate Institute, and the Thames Valley District School Board's ECO Classes. In addition, KCCA supported a TD Tree Days event at Pinafore Park in St. Thomas by leading over 60 volunteers in the planting of 300 trees and shrubs.

Invasive Species

With the financial support of the Kettle Creek Environmental Trust, KCCA hired a forest and lands technician. The position initiated an invasive plant management program to mitigate the negative impacts of and control the spread of invasive plant species on Authority lands and throughout the Kettle Creek Watershed. Staff developed a spatial database and created workflows for recording the presence of infestations, work completed, and herbicide used. Approximately 500 acres of KCCA land was surveyed and inventoried, and 46.7 acres of invasive species hotspots were recorded using Qfield GPS technology.

Among the most prolific invasive species found were phragmites, buckthorn, olive, honeysuckle, knapweed, and sweet clover. Staff used these findings to formulate treatment priorities and strategies, and initiated implementation of a multifaceted management plan on chosen sites that resulted in the initial treatment of approximately 3.3 acres. Staff will continue to survey, treat and monitor infested areas in 2020.

Campgrounds

In April, the watershed received 136 percent of the rain it would typically receive in a month. The excess rain resulted in Authority staff delaying the opening of Dalewood and Lake Whittaker Conservation Areas to June causing the loss of the May long weekend. Even with the delay, the 2019 camping season was still considered a success. Seasonal campers increased by 4 percent, for a total of 175 seasonal campsites between the two campgrounds. While overall revenue was down due to wet start, Dalewood and Lake Whittaker saw a combined total of 8,578 booked transient campsites in the 2019 season with every long weekend fully booked.

A number of infrastructure upgrades were completed in 2019. The Lake Whittaker pool was resurfaced.

At Dalewood, the entire loop of the Reservoir Trail was re-opened after the City of St. Thomas finished constructing the Dalewood Bridge in July 2019. The new bridge provides for safe pedestrian access over the Reservoir, completing the Reservoir trail loop. Additional improvements to the Dalewood Reservoir trail include new trailhead signs, a new parking lot, privy, access to a new trail extension with a viewing platform and a new public canoe/boat access.

Outdoor Smoking Policy

Effective May 1, 2019 smoking was limited to individual campsites and designated parking areas at Dalewood and Lake Whittaker Conservation Areas. The majority of seasonal and transient campers as well as day-use visitors surveyed throughout the season were supportive of the new policy.

22 KM OF HIKING TRAILS

11,500 VISITORS IN 2019

228 CANOE & KAYAK RENTALS IN 2019

2,650 DAY-USE PERMITS

CONSERVATION LANDS

ReWild the Family

With support from the Kettle Creek Environmental Trust and Cabela's Canada, KCCA offered four deserving families the opportunity to experience camping for the first time at Dalewood Conservation Area. Each family received a free campsite, camping gear, free watercraft rentals and a mentor for the weekend. Families were grateful for the opportunity to connect with nature, and with each other. Many planned to use their new camping gear for future trips on their own.

Visitor Services

Throughout the 2019 season, KCCA staff planned and organized 22 events at Dalewood and Lake Whittaker Conservation Area for visitors. Of those events, 16 were free with the purchase of a permit including two Learn to Fish programs hosted by the Ministry of Natural Resources and Forestry. Both campgrounds hosted fireworks and reptile shows, and Lake Whittaker held its first Archaeology Day and Music Night.

Dan Patterson Conservation Area

Dan Patterson Conservation Area is a host site for a variety of events during KCCA's operating season. In 2019, 30 events were held at Dan Patterson Conservation Area, including the London Canine Association's annual dog show, the 12th annual Drumfest hosted by the Drum Studio and the Elgin Historical Show. Pavilion rentals are available from May to September and welcome a variety of different groups and events including family reunions, church picnics and corporate events.

2019 BOARD OF DIRECTORS

Stephen Harvey, Chair
Municipality of Middlesex Centre

Grant Jones, Vice-chair
Township of Southwold

Dennis Crevits
Municipality of Central Elgin

Dominique Giguère
Township of Malahide

Bill Mackie
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Elizabeth Peloza
City of London

Joe Preston
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Linda Stevenson
City of St. Thomas

Alison Warwick
Municipality of Thames Centre

Ralph Winfield
City of London

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OUR PARTNERS/ DONORS LIST

Thank you to the following for their financial and in-kind donations to Kettle Creek Conservation Authority in 2019.

Avon Automotive • Cabela's Canada • Canadian National Sportfishing Foundation • Carolinian Canada • City of London • City of St. Thomas • Ducks Unlimited • Elgin County • Elgin-St. Thomas Community Foundation • Elgin Stewardship Council • Environment & Climate Change Canada • Ferguson RV World • Forests Ontario • Forever Legacy Foundation • Graham Scott Enns • Green Lane Community Trust Fund • Huron Tractor St. Thomas • Kettle Creek Environmental Trust • Kettle Valley Pioneers • Larry and Barbara Godelie • MacMillian Construction Belmont • Ministry of Transportation • Municipality of Central Elgin • Municipality of Middlesex Centre • Municipality of Thames Centre • New Era Grafix • Northern Casket • Ontario Power Generation • Police Association of Ontario • RBC Foundation • Riggs Engineering • Ron's Auto • Southwestern Public Health • St. Thomas Field Naturalist Club Inc. • TD Friends of the Environment Foundation • Thames Valley District School Board • The Drum Studio • Tom Spicer • Township of Malahide • Township of Southwold • Trillium Mutual Insurance Company • United Way of Canada

Please notify our office of any errors or omissions.

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