

Bird's Eye Monitoring and Analysis of Swan Lake Water

by Fred Peters and Dr. Ali Asgary

We now have a great perspective on the development of algae in Swan Lake throughout the summer months thanks to Dr. Ali Asgary, Director of CIFAL York and project leader of Swan Lake Citizen Science Lab (“SLCS Lab”) and his colleague, Mahbod Aarabi, Coordinator of drone operations for the SLCS Lab.

Over the summer, Friends of Swan Lake Park have worked to support these researchers from York University on monitoring the water quality in Swan Lake. Activities included hosting a workshop in the park for about 25 participants to learn about the use of drones, including a demonstration of the drones taking water samples.



Mahbod Aarabi (L) and Dr. Ali Asgary (R) explaining the technology supporting drone operations.



Workshop participants observing the drone lowering a bucket to bring up water samples from Swan Lake.

Two different types of drone capabilities have been used to monitor the water quality: Multispectral Mapping and Thermal Mapping.

Multispectral Mapping collects data invisible to human eye such as infrared. A combination of spectral bands can be used for:

1. Water Quality Monitoring (Detecting water clarity; chlorophyll-a and algal blooms; turbidity and suspended solids).
2. Aquatic Vegetation and Biodiversity Mapping.
3. Monitoring lake depths and features of the lake and surroundings.

Multispectral images showing the spread of the green algae throughout the lake over the summer.

June 2, 2025

August 31, 2025

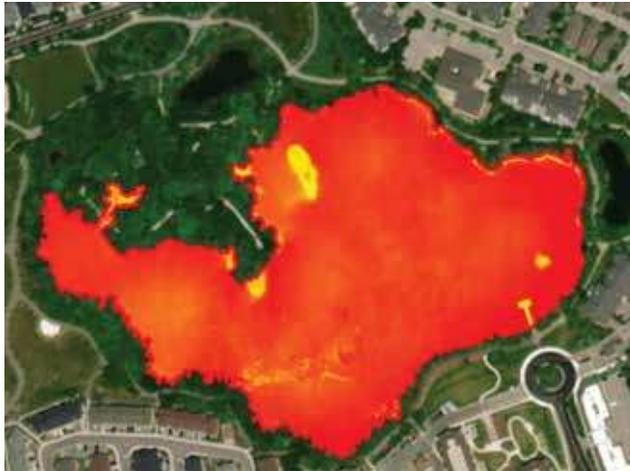


Thermal mapping collects surface temperature variation in time and space, and provides the following opportunities to:

1. Detect Thermal Anomalies and Discharge Points.
2. Map Surface Temperature Distribution and heatmap.
3. Support water sampling and algal bloom monitoring.
4. Assess Aquatic Habitat Conditions and Conservation.

Thermal Mapping Showing the increase in water temperature (yellow area)

August 23, 2025



September 16, 2025



This winter, Markham staff are undertaking a review of the current water quality plan and will develop an action plan for the next five years. The analysis of the SLCS Lab data collected this summer will be submitted to Markham as part of the review.

FOSLP has raised enough funds to support the hiring of two aquatic biologist groups to provide a professional perspective on what are attainable goals for a sustainable aquatic habitat in the lake and what are the most practical means of improving the conditions in the lake. We expect Markham Council to finalize the revised water quality plan in May 2026. □

Swan Lake Events Committee

by Elaine Kerys

The villagers of Swan Lake are the beneficiaries of the efforts of a cadre of volunteers who organize social and cultural happenings which are open to all our residents. These include, for example, such events as Oktoberfest, Chinese New Year, Rabbe Burns Night, New Year's Eve, and the 25th Anniversary of the founding of Swan Lake which we celebrated three years ago. In addition, the Swan Lake Events Committee (SLEC) also organizes toy, coat, toiletries and food bank drives which benefit its three sanctioned charities: the Salvation Army, the Markham Food Bank, and the Markham Stouffville Hospital Foundation.

In addition to championing events which entertain or educate residents, SLEC also supports and advises other groups who plan entertainment for the community at large. All village events are presented to SLEC to avoid scheduling conflicts.

The proceeds from events organized by SLEC are used for the improvement of the village and the community centres. The decorations which adorn the clubhouses during the holiday season are purchased and installed by the members of SLEC. The committee also funds projects for groups such as the Swan Lake Library and Archives, the Legacy Peace Garden, and the Butterfly Garden. Funds from SLEC events are also used to upgrade equipment in the clubhouses. SLEC members ensure that the kitchens are well stocked with essential supplies.

Our village has much to offer its residents in the form of social experiences. It is thanks to the hard work and dedication of the members of the Swan Lake Events Committee that we are able to partake in a wide variety of cultural and social events. □