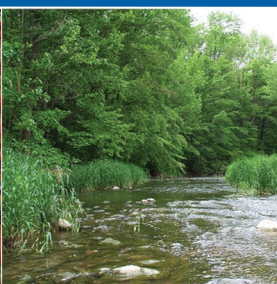


# KiECO | Biological Monitoring



Fish Counts



Habitat Surveys



Bird Counts



Fish Passage



Benthic Sampling



Algal Blooms

## reviewing **ecological observations** with water chemistry & hydrology for **holistic water quality monitoring**

Environmental agencies now have an innovative approach to collecting, managing and analyzing biological assessments. Surveys are an important tool to assess ecosystem health, but complexity and a wide variety of formats have made data difficult to integrate with water quality monitoring programs.

KISTERS' Ecological Data Software (KiECO) offers the capability and flexibility to track different sampling methodologies, properties related to an individual or group of organisms, and abundance codes or indices related to a specific sampling area, catchment, region or county.

Extensive meta data recordkeeping also ensures auditability of findings from biological samplings as analytical tools help to explain observed interactions among organisms, human activities and the shared environment.

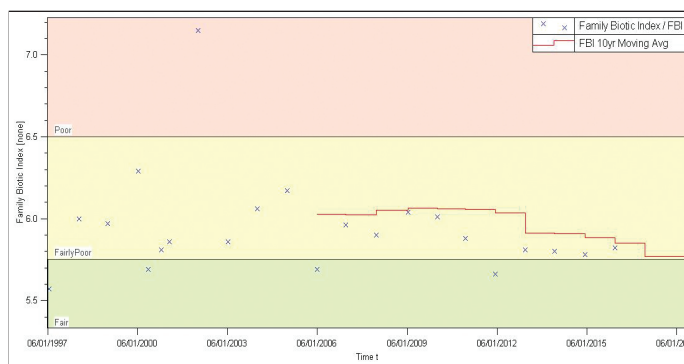
*"We're evaluating diversity and richness by calculating biotic indices based on 10-year moving averages, more reliably assessing survey results & ecosystem report cards."*

*-- Laura Flynn, Data Management Specialist  
Western Ontario Conservation Authority HUB*



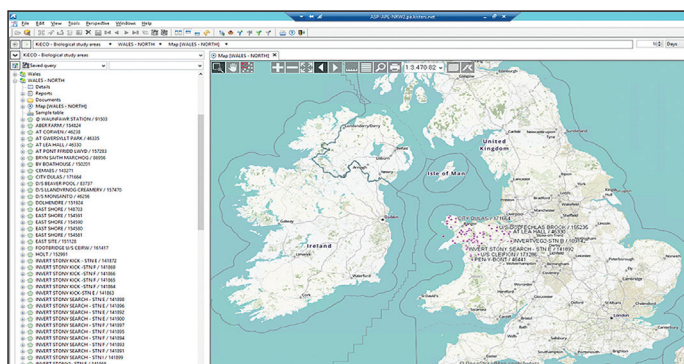
water data management software

## Advantages



## Visualization

Quickly display biological sampling results from discrete monitoring events as time series. Customize graphs with colors, symbology and more options to show conditions.

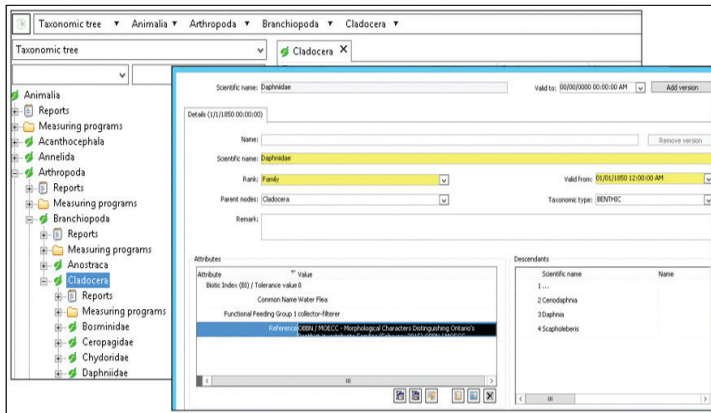


## Esri ArcGIS Integration

Identify trends over time and space to study correlations. Open mapping files in KISTERS' software, or ArcMAP users can retrieve the ecological data and work with layers.

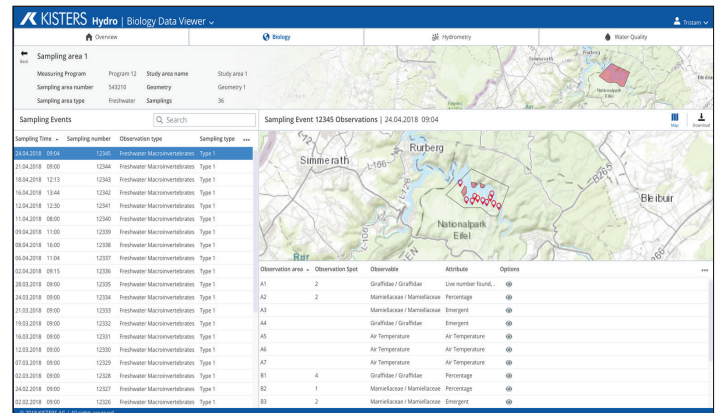
# KiECO | Biological Monitoring

## Advantages



### Taxonomic Tracking

Associate all taxonomic identification to biological sampling data. Report using historical and current nomenclature as well as custom-defined or Linnean classification system.



### Data Sharing

Enrich communication and education about ecosystem health to stakeholders and the public with an engaging data portal or multiple tools for online publishing.

## Use Case

### growing number of conservation authorities track ecological flow

Throughout the Canadian province of Ontario, local watershed management agencies are responsible for protecting and managing the impacts on water and other natural resources. Conservation authorities including Quinte, Lake Simcoe Region, Lower Trent Region, and Cataraqui Region are monitoring water flows, levels, and their effect on communities and ecosystems.

Likewise, Upper Thames River Conservation Authority has implemented KiECO to manage aquatic monitoring of benthic macroinvertebrates, fish and mussels. Most data are no longer stored in Excel spreadsheets or Access databases since the software helps to show discrete data points as time series, calculate indices and moving averages, as well as further analyze trends. Agricultural land use data has since been integrated. Expansion of the taxonomic tree to include vegetation and more wildlife is planned.



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