

WATER MONITORING TESTING & STUDIES TIMELINE



Water Quality Monitoring Program | *Polk County Conservation*

Project Development, Data Collection & Analysis



Fourmile & Walnut Creek Whole Stream Health Study | *Drake University*

Project Development



Data Collection & Annual Interpretation



Multi-Species Monitoring Study | *Drake University*

Project Development



Data Collection, Analysis, & Interpretation



E.coli & Turbidity for Public Recreational Safety Testing | *University of Iowa IHR - Hydrosience & Engineering*

Project Development



Sensors & Samplers Installation



Active Sampling



Data Analysis/Report Generation



Potential Health Risk Evaluation from Exposure to Human Pathogens | *US Department of Agricultural Research - Agricultural Research Service Laboratory for Infectious Diseases*

Project Development



Active Monitoring



Active Monitoring



Data Analysis, Risk Assessment Development, & Reporting



Water Quality Monitoring Program - Polk County Conservation

Twice per month, staff and volunteers trained in IOWATER monitoring procedures from Polk County Conservation, and the cities of Altoona, Ankeny, Des Moines, Johnston, and West Des Moines test 70 sites across Polk County. Field monitors record water transparency and temperature, pH, dissolved oxygen, nitrates/nitrites, chloride, and phosphates. Observations such as water odor and color, and the presence of animals, tile lines and piping are noted. Regular monitoring should be able to detect changes to water quality in the future. The data collected will be used to determine overall health of the watershed and identify areas of concern.

Fourmile & Walnut Creek Whole Stream Health Study - Drake University

This three-year study will determine the overall stream health of Fourmile and Walnut Creeks. Monitoring sensors have been placed at three locations along each creek; rural, suburban, and heavily urban. Data will be compared to develop trends and determine ecological stream health as it moves through each of these vastly different landscapes. The gathered information will be used in the future to determine effectiveness of planned restoration activities.

Multi-Species Monitoring Study - Drake University

This study involves establishing one test area at eight different parks owned and managed by Polk County Conservation. Within each test area, three years of sampling will take place on mammals, birds, butterflies, reptiles, amphibians, dragonflies, and damselflies. Data will be used to determine how restoration activities, surrounding land use, and site disturbances effect wildlife species over time.

E.coli & Turbidity for Public Recreational Safety Testing - University of Iowa IHR - Hydroscience & Engineering

Through the Greater Des Moines Water Trails Plan, over 85 water access points are planned for waterways throughout the metro. Currently, measuring for E.coli is the method used to determine public safety of a waterbody for beaches along lakes and ponds. This type of measurement is difficult in running streams and rivers because the E.coli testing takes 24 hours to get results, in which time the water tested is far downstream. In order to gain more instantaneous knowledge, previous studies have shown that it is possible that high turbidity levels (cloudiness of the water) may correlate to high E.coli levels. Unlike direct E.coli testing, turbidity can be measured onsite with instant results. If this correlation exists, we can use this tool to communicate to the public the safety of recreating in the water.

Potential Health Risk Evaluation from Exposure to Human Pathogens US Department of Agricultural Research - Agricultural Research Service Laboratory for Infectious Diseases

E.coli testing is used most widely when determining whether there is a potential presence of pathogens that may cause illness to humans recreating in our waterways. However, strength of the correlation between E.coli and these pathogens has been shown to vary significantly. This study will test the strength of this relationship, determining if E.coli is really the best indicator of the safety of water for recreating. Along with testing this association, samples will be taken to determine what dangerous pathogens, if any, are within our waterways and where these pathogens may be coming from. This study will complement the turbidity vs E.coli study (above) as part of the Greater Des Moines Water Trails Plan and determine the overall health risk for the public as we implement this plan.



For more information, contact:

Amanda Brown, Conservation Ecologist
amanda.brown@polkcountyiowa.gov