

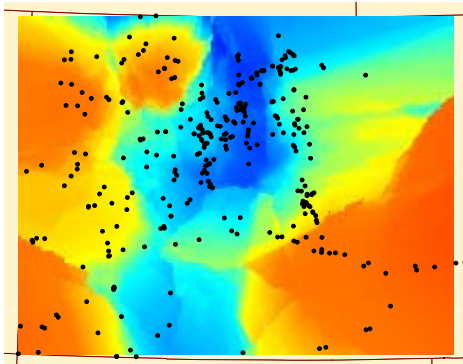
Capabilities

Statistics

Biostatistics

GIS Spatial Statistics

Modeling and Simulations



Clients

U.S. EPA

Michigan DEQ

Municipal Wastewater Dischargers

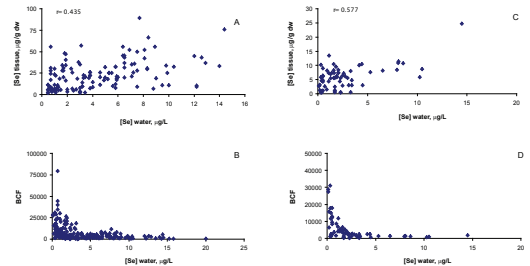
Lake Associations

GLEC researchers are expert at addressing complex environmental problems through applied statistics, biostatistics, and GIS based spatial statistics.

Examples of applied statistics include:

- Identifying relevant patterns, such as the decline in maximum abundance of a species associated with increasing concentrations of a pollutant
- Testing hypotheses, such as contamination effects on species reproduction compared to reference sites
- Developing predictive models, such as the formula for projecting bioaccumulation of a metal in animal tissues

Rigorous statistical methods are used in toxicity assays, environmental surveys, and modeling exercises. Statistical expertise includes:



- Design and analysis of laboratory toxicity assays, including probit, logistic, and nonlinear regression, survival analysis, ANOVA, and mixed-effects models
- Design and analysis of environmental surveys - sampling design and estimation methods
- Estimates of adequate sample sizes - power analyses
- GIS based geostatistical analysis and interpolation
- Monte Carlo simulations to address variability and uncertainty

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