

Ecological Sciences

CEC provides a wide range of ecological and environmental assessment and permitting services. Experienced staff people have successfully filed for permits with various federal and state regulatory agencies.

CEC provides extensive ecological services to the manufacturing, mining, natural gas, power, real estate, and solid waste industries, as well as to the public sector.

Wetland and Stream Delineation and Permitting

Wetlands regulations significantly impact the overall feasibility, economics, and efficiency of new land development projects. CEC has extensive experience working with regulatory agencies to address and solve wetland issues for land development, producing positive and timely results.

- Wetland and Stream Delineations
- 401/404 Permitting for Wetland and Stream Encroachments
- Jurisdictional Determination (JD) Meetings with Regulators
- Wetland and Stream Functional Assessments
- Alternatives Analysis
- Cumulative Impact Assessments
- Mitigation Design, Construction Oversight, and Success Monitoring
- Mitigation Construction Bid Documents
- Design of Wetland Treatment Systems
- NEPA Environmental Impact Statements & Assessments

Terrestrial Ecology and Wildlife Services

CEC ecologists perform habitat assessments and flora and fauna surveys for environmental planning and impact studies, endangered species presence or absence surveys along with protection and enhancement plans, and baseline and post-restoration monitoring for ecosystem restoration and enhancement projects. CEC scientists monitor invasive plants, perform agronomic evaluations to restore fertility and vegetation to highly disturbed sites, and design phytoremediation systems for treating contaminated soils.



- Rare Plant Surveys and Agency Coordination
- Rare Plant Relocation and Mitigation
- Threatened and Endangered Species Surveys
- Habitat Assessments
- Conservation and Mitigation Plans
- Agronomy and Phytoremediation Services
- Invasive Plant Inventory and Control Strategies
- Revegetation of Disturbed Landscapes
- Ecological Risk Assessment
- Green Infrastructure Design and Performance Monitoring

Aquatic Ecology Services

CEC offers aquatic ecology monitoring services to help clients meet regulatory requirements pertaining to Clean Water Act Section 404 and 401 permits, functional assessments, stream and wetland mitigation, NPDES permits, cause and effect determinations, impact studies, and ecological risk assessments.

- Fisheries Surveys
- Benthic Macroinvertebrate Surveys
- In-House Benthic Laboratory for Benthic Processing and Identification
- Aquatic Functional Assessment
- Water and Sediment Sampling

PRACTICES

- Air Quality*
- Civil Engineering*
- Ecological Sciences*
- Environmental Engineering and Sciences*
- Survey/Geospatial*
- Waste Management*
- Water Resources*

MARKETS

- Manufacturing*
- Mining*
- Oil & Gas*
- Power*
- Public Sector*
- Real Estate*
- Solid Waste*

Ecological Sciences

- Bathymetric and Hydrographic Surveys
- Freshwater Mussel Surveys
- Rare Aquatic and Wetland Plant Surveys



Bat-Related Services

CEC's U.S. Fish & Wildlife Service-approved bat surveyors provide comprehensive bat-related services, conducting habitat assessments and mist-net surveys for Indiana bats, gray bats and northern long-eared bats.

- Bat Habitat Assessments
- Bat Mist-net and Harp-trap Surveys
- Mine/Cave Portal Surveys
- Radio Telemetry and Tracking
- Acoustic Detection and Analysis
- Federal and State Agency Consultation
- Indiana Bat Conservation Plans
- Habitat Mitigation
- Habitat Conservation Plans (Section 10)
- Biological Assessments (Section 7)

Ecosystem Restoration Services

Aquatic ecologists, geomorphologists, wetland scientists, botanists, agronomists, and engineers are familiar with the complex nature of ecosystems and work together to create functional, self-sustaining stream and wetland systems.

- Technical Assistance to Mitigation Bankers
- Site Selection and Evaluation
- Fluvial Geomorphic Assessments
- 3D Natural Channel Design
- Riparian and Wetland Planting Specifications
- Erosion Prevention and Sediment Control Specifications
- Geomorphic Restoration of Mined Land
- Design-Build Services
- Construction Specifications and Bid Packages
- Construction Management and Quality Assurance
- As-Built Drawings and Certification Reports