

## PROJECT SUMMARY

The proposed research program uses the restoration and conservation of biodiversity in woodlands and savannas of Chicago Wilderness as a model for investigating how the restoration and conservation planning process relates to biodiversity outcomes in complex metropolitan landscapes. Chicago Wilderness is a consortium of over 230 organizations that has as its primary goal the conservation, restoration and management of biodiversity on 360,000 acres of open space in the greater Chicago metropolitan area. The name “Chicago Wilderness” has evolved to represent the consortium itself, the managed openlands, and the entire metropolitan region that contains these managed lands. The proposed research has the following specific objectives:

- To generate iterative Agent-Based Models based upon the behaviors of constituency groups in order to explore how their interactions may lead to different biodiversity outcomes.
- To investigate the human components of the management action arena, including both the participants and the planning process itself.
- To document the range of biodiversity outcomes in woodlands and savannas undergoing restoration in Chicago Wilderness.
- To test hypotheses about the relationship between distinct models of the restoration planning process and biodiversity outcomes.
- To investigate the potential impact of differences in biodiversity outcomes and different planning processes on the broader human communities, in particular, increased (or decreased) support for, and involvement in, restoration and conservation of biodiversity by constituents not directly involved with restoration.

**Intellectual Merits:** The intellectual merits of the proposed research derive from modeling the woodlands and savannas of Chicago Wilderness as linked social-ecological systems. The research draws upon important bodies of social science theory related to resource governance and transdisciplinary knowledge production in order to frame research questions critical to the management of biodiversity in large metropolitan regions. In addition, the research incorporates a large-scale natural experiment in which a wide range of biodiversity metrics and ecosystem process will be related to different models of the conservation planning process. The research will generate results relevant to the conservation management of habitats of global conservation significance while simultaneously contributing to general understanding of institutional responses to the challenges of balancing multiple objectives, and how information derived from heterogeneous sources is incorporated into the planning process. Because the model system of the research project is Chicago Wilderness, the research findings will be broadly applicable to other complex metropolitan landscapes throughout the USA and the world.

**Broader Impacts:** The proposed research program will strengthen the infrastructure of science by integrating research groups consisting of ecologists, urban planners and social scientists in several universities, a research museum, and a federal agency. The proposed research will have a major impact on interdisciplinary education in the social and natural sciences, involving interdisciplinary graduate training programs across the breadth of Chicago Wilderness. This research project will also afford excellent opportunities for undergraduate minority students from a large metropolitan region to learn first-hand about ecological research that is directly relevant to their urban lives, which will lead to recruiting more minorities into the fields of ecology and conservation biology.