

## Large-Scale Natural Resource Assessment

Over the span of 20+ years, Applied Ecological Services has conducted hundreds of natural area assessments, or natural resource inventories, for many different purposes and differing types of organizations. However, in every case involving land-use decisions, the first question to be answered is, “What are the existing conditions?” Now, this is a question best answered by a qualified ecologist. For an ecologist, on a small plot involving only a few acres, it is not difficult to assess existing conditions within a reasonable budget.

The difficulty in natural resource assessment lies in the attempt to inventory large tracts of land which cannot be comprehensively field-investigated on a cost-effective basis for land use planning purposes.

AES has developed a specialized expertise in the assessment of large, township-sized areas of land. The process, as applied on projects such as the 36 square mile assessment of Lino Lakes, Minnesota, or the 50 square mile assessment of Liberty, Missouri, begins with aerial photo interpretation and the application of GIS (Geographic Information Systems) technologies.

In conjunction with photo interpretation, AES conducts ecological field investigations which serve several purposes. These include verification or “ground-truthing” of photo interpretations, assessment of ecological health of various plant/animal communities present, identification of high quality natural areas with potential for preservation or restoration, etc.

Additional existing data is also collected and analyzed to augment the photo and field investigations. These include topographic maps, soils data and maps, existing wetland maps, watershed studies, historical land uses, studies on threatened and endangered species, and others. The analysis of all these data is provided in both summary and detail in a technical report which identifies existing conditions and land uses, ecological health and restoration potential. The report also includes recommendations for preservation and restoration of ecological communities present.

Upon this foundation of accurate, scientific ecological data, land use plans can be built that sensitively address the development needs of a community while allowing for intelligent, intentional



preservation of open space, preservation of agricultural lands, restoration of high quality natural areas, etc.

One final note: land use planning is a discipline fraught with potential conflict due to divergent interests of stakeholders, conflicting economic and financial needs and deeply-held cultural traditions and beliefs. To reach planning objectives and avoid unnecessary acrimony on land planning projects, AES ascribes to a planning model that intrinsically links relationships between economy, culture and ecology. Our overarching planning objective is to achieve a high quality of life in the context of responsible land stewardship, economic viability and long-term sustainability.