Native Biodiversity and Golf Courses in Midwestern Landscapes

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Objectives:

1. Determine what small- and large-scale landscape features within and around a golf course are important to particular species of birds
2. Determine what small- and large-scale landscape features within and around a golf course are important to partic ular species of butterflies
3. Compare and contrast these two taxa to see if design guidelines can be developed to increase the number of native species of both of these groups at golf courses
4. Compare and contrast the contribution of small-scale and large-scale landscape features in preserving native bio diversity
5. Develop guidelines for golf course design for both birds and butterflies at both small- and large-scale.

Start Date: 2000
Project Duration: 3 years
Total Funding: $62,600

This project examines the conservation value of golf courses in the Midwestern landscape by focusing on two indicator taxa: birds and butterflies. The Midwest has more land that is directly manipulated by humans than any other region of the country. This pattern of land use presents a challenge to conservation biologists because they cannot rely solely on public lands in the conservation efforts.

Dr. Robert Blair at the University of Miami, Ohio conducts bird counts on golf courses and adjacent woodland.

Golf courses have the potential to play a significant role in overall conservation plans. They may provide habitat for specific groups of organisms, as they are lush, green parcels of open space. They may also provide buffer zones between developed and natural areas.

However, golf courses also are accused of consuming an inordinate amount of freshwater, pesticides, fertilizers, and native habitat. Consequently, some people consider them a wonderful use of land while others consider them detrimental to the landscape. This difference in views often leads to conflict in the public arena that is based on opinion rather than on scientific evidence.

This project will identify the relative contribution of landscape features within and around golf courses that affect native birds and butterflies and provide some guidance to golf course designers and managers as to how much effort they should devote to working on features, within and outside of their course.
We are determining bird and butterfly distribution and abundance on six golf courses using scientifically established procedures. Detailed information on the small-scale landscape features within the golf courses, such as types of vegetation, is being collected.

We are also quantifying the proportion of the surrounding landscape occupied by different types of landscape, such as pavement, buildings, and trees. Collection of this data begun in May, 2000, and will be collected over the course of two years. We are analyzing the data to determine which landscape features are best predictors of bird and butterfly distribution and abundance.

The first year of field work -- surveying bird and butterfly species, and vegetation features -- is in process. The principle benefit to the golf course industry of this project will be the development of scientifically defensible, golf-course design guidelines that conserve native species.

These guidelines will be most useful for new golf-course construction but will also provide direction for golf-course managers who are trying to improve conditions on existing courses.

The approach taken will identify those features that golf course designers and managers can directly control - such as ponds within the golf course boundaries. It will also identify those features that need to be addressed in the context of the surrounding landscape, such as land use contiguous to the golf course.

Summary Points

- Researchers are determining bird and butterfly distribution and abundance on six golf courses using scientifically established procedures.
- Researchers are analyzing the data to determine which landscape features are best predictors of bird and butterfly distribution and abundance.
- The principle benefit to the golf course industry of this project will be the development of scientifically defensible, golf-course design guidelines that conserve native species.