The purpose of this project is to document and quantify the influence of golf courses on people, other biological organisms, and environmental factors. The studies include research pertaining to the influence of golf courses on:

1. Local soil and climate regarding gaseous and particulate pollutants that affect air quality; temperature, humidity, and wind modification; soil stabilization and watershed management; and noise modification;

2. Biological diversity of flora and fauna in urban, urbanizing, and urban-agriculture fringe areas;

3. Psychological and physical well-being of people, and the importance of landscape aesthetics to humans due to the interaction between people and plants.

Spectrum Research, Inc.

Golf Course Management and Construction: Environmental Issues

The final manuscript for the book *Golf Course Management and Construction: Environmental Issues* was submitted to Lewis Publishers, Inc. on October 4, 1991. The book is a summary and assessment of the technical and scientific research on the environmental effects of turfgrass management and, to a smaller extent, golf course construction. The book is intended as an introduction to the concepts of the non-point source environmental impacts of turfgrass management for turfgrass scientists and specialists, landscape and golf course architects, developers of turfgrass systems and golf courses, golf course superintendents, environmental scientists, and land use regulators.

The manuscript is organized into eight chapters. The introduction provides an overview and historical perspective regarding turfgrass management and environmental quality. The second chapter discusses the relationship of turfgrass management to the critical issues of water resources. This chapter focuses on the issues of water use, water quality, soil and water conservation, and movement within the water cycle. Chapters three and four provide a state-of-the-art scientific review and assessment of the literature regarding the environmental effects of nutrient and pest management practices. The fifth chapter provides an introduction to concepts necessary for development of integrated management systems for turfgrass. Chapter six covers the direct and indirect effects of golf course management and construction on wildlife and aquatic organisms. The seventh chapter is an introduction to the critical issues of conservation and protection of wetlands which is emerging as a critical environmental concern of the 1990's. Chapter eight contains tables of toxicity tests related to the effect of chemicals used for turfgrass management. Each of the chapters includes a section on research and information needed to resolve the issues surrounding the positive and potentially adverse effects of turfgrass management.

Dr. James Balogh

Texas A&M University

Quantification and Validation of the Beneficial Contributions of Golf Course Turfgrasses

This progress report represents a summary of the ongoing research activities for the first nine months of a project entitled "Quantification and Validation of the Beneficial Contributions of Golf Course Turfgrasses." The objectives of this project were to: 1) conduct a detailed assessment of the literature to obtain and validate scientifically based sources of information supporting the benefits of turfgrass to our environment via golf courses, and 2) conclude with a manuscript that will be submitted to a major, peer-reviewed, scientific journal as a seminal article on the environmental benefits of golf courses. Also, there would be the opportunity to publish a Texas Agriculture Experiment Station bulletin or report which could be in press sooner than the scientific paper.

Considerable time and effort has been spent toward achieving our objectives since fall 1990. Over 282 papers have been collected, organized, and assessed (many are not useful for our needs). Over 84 personal inquiries have been made for specific information concerning the benefits of golf course and turfgrass. These numbers will be increased substantially before our objectives are