tal Research Committee was to develop a scientifically based paper on the benefits of turfgrasses targeted for publication in a peer reviewed scientific journal. The paper was completed and reviewed by fourteen key world-respected scientists representing the broad range of technical subjects addressed. It also was reviewed by Texas Agricultural Experiment Station personnel, approved for publication and submitted to the Journal of Environmental Quality.

The topic areas include: (a) turfgrass evolution; (b) history of turf use; (c) turfgrass functional benefits including soil erosion control and dust stabilization, ground water recharge and surface water quality, organic chemical decomposition, carbon sink, heat dissipation, noise abatement, glare reduction, decreased noxious pests, allergy related problems, safety in vehicle operation, security for vital installations, and wildlife habitat; (d) turfgrass recreational benefits; (e) turfgrass aesthetic benefits including improved mental health via a positive therapeutic impact and contributions to social harmony and improved occupational productivity; (f) contemporary issues such as water conservation and ground surface water quality preservation as related to pesticide and fertilizer use.

This has been a rewarding and enlightening project and a new perspective has evolved concerning the environmental issues challenging the golf courses. This position paper, and other USGA projects, are needed first steps to address environmental issues. However, the lasting solution will be achieved from the golf course industry and environmental groups working together to achieve common goals and objectives.

The Earth Fund

On Course with Nature - Dr. Donald F. Harker

This project has adapted information on ecoregions across the United States for use in naturalizing landscapes around golf courses. The result of this effort will be the *Landscape Restoration Handbook* which will be published in June 1993. By increasing the natural areas around the golf course, it is hoped to increase or preserve wildlife habitat.

Earth Fund researchers look at golf courses as valuable green space within the urban environment. Golf courses, however, are not regularly cited in scientific literature concerning wildlife habitat, and more often receive negative attention in popular press. This project surveyed the literature on natural areas and established woodland size, vegetation structure, and other information to encourage wildlife usage of golf courses. The United States is already divided into natural ecoregions and the book developed from the project describes how to recreate or manage the natural vegetation on the site.

Lists of native plant species and nurseries in the United States that produce these materials was incorporated into the book. The landscape side of the problem, or the "how to do it" principles, are a major portion of the book. Careful attention to recommendations on adapted plant materials for a region was emphasized. A detailed map of the United States indicating the natural ecoregions and plant communities was developed and will be included in the book. Landscape architects and horticulturalists can use this map and then go to a nursery to select suggested plant species. Currently, native plant species do not have something similar to this approach, and the project will help a great deal to meet this need.

From an urban planning perspective, the book could help develop scenarios for natural corridors through urban areas by linking golf courses, parks, and larger tracts of land. The concept of 'sustainable development' and 'quality of life' also were covered. The *Landscape Restoration Handbook* will be available in June 1993.

The Institute of Wildlife and Environmental Toxicology

The Effects of Golf Course Activities on Wildlife - Dr. Ronald J. Kendall

The Institute of Wildlife and Environmental Toxicology (TIWET) at Clemson University has conducted numerous studies on the environmental effects of pesticides used on golf courses. TIWET, with USGA funding, initiated research in golf course management practices to institute environmentally sound approaches based on knowledge of chemical use, fate and effect. Resulting information will aid in the development golf course management practices that provide satisfactory playing surfaces, without damage to the environment.

The basic objective of the project was to understand the "golf course ecosystem." This includes an understanding of how birds, fish, and plants respond to golf course chemical inputs, as well as pesticide and nutrient behavior in water, soil, and