

Wildlife Links Program

Golf courses offer excellent opportunities to provide important wildlife habitat in urban areas. With more than 15,000 golf courses in the United States comprising in excess of 1.5 million acres, great potential exists for golf courses to become an important part of the conservation landscape.

Wildlife Links is a cooperative program with the National Fish and Wildlife Foundation that funds innovative research, management, and education projects that will help golf courses become an important part of the conservation landscape. The United States Golf Association is providing \$200,000 annually to fund the grants through the *Wildlife Links* program. Since the program began in 1996, eight projects committing over \$430,000, were funded to enhance wildlife conservation on golf courses. The objectives of *Wildlife Links* are to:

1. Facilitate research on wildlife issues of importance to the golf industry;
2. Provide scientifically-credible information on wildlife management to the golf industry;
3. Develop wildlife conservation education materials for the golf industry and golfers;
4. Implement wildlife monitoring programs that will improve management on golf courses

Wildlife Links Highlights

Wildlife Links Advisory Committee. The *Wildlife Links* Advisory Committee is responsible for the selection and monitoring of grants funded under the *Wildlife Links* Program. Committee members are experts in fields of wildlife biology and management, pesticide management, habitat management and conservation, education, and the game of golf.

Peter Stangel, Director; *Katie Distler*, Coordinator,
Neotropical Migratory Bird Conservation Initiative,
National Fish and Wildlife Foundation, Washington,
DC

Mike Lennartz, U.S. Forest Service, Forest
Environmental Research, Washington, DC

Ron Dodson, President Audubon International, Inc.
Selkirk, NY

Dan Petit, U.S. Fish and Wildlife Service, Office of
Migratory Bird Management, Arlington, VA

Jim Snow, National Director; *Kimberly Erusha*, Director
of Education, Green Section, United States Golf
Association, Far Hills, NJ

Paul Engman, Fairfax County Park Authority, Fairfax,
VA

Tom Franklin, The Wildlife Society, Bethesda, Maryland

Wildlife Links Technical Committee. The *Wildlife Links* Technical Committee gives input on technical issues that arise during the project selection process. They review proposals and comment on materials produced by the grantees when needed.

Dr. John Atwood, Manomet Observatory, Inc.

Melody Allen, The Xerces Society

Dr. John Fitzpatrick, Cornell Lab of Ornithology

Dr. Gregory Butcher, American Birding Association

Dr. Steve Sherrod, G.M. Sutton Avian Research Center

David Stubbs, European Golf Association, Ecology Unit

For additional information about *Wildlife Links* and other NFWF programs, please contact:

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Golf Courses and Bird Conservation: A Management Manual

Colorado Bird Observatory

Scott Gillihan

Start Date: 1996

Number of Years: 3

Total Funding: \$48,760

The Colorado Bird Observatory has published a practical guide for golf course architects and superintendents to improve golf course habitat for bird species. Bird

Conservation on Golf Courses is available for purchase through USGA and Sleeping Bear Press. It is the first book that brings together the latest information on bird and bird habitat management as it applies to golf courses and similar settings.

The hands-on manual covers everything from general concepts, to specific techniques, and vital information on:

- Design and management for habitat conservation
- Management techniques for specific bird species
- Artificial nest structures
- Plants beneficial to bird populations
- Birds and golf course maintenance
- Dealing with problem birds

Wetlands Management Manual for Golf Courses

MACED

Don Harker
Gary Libby

Start Date: 1996
Number of Years: 3
Total Funding: \$35,000

Objectives:

Develop an illustrated wetlands management manual for golf courses that uses a general narrative overview, drawings, case studies, key restoration techniques and indicator species to walk managers through a process of understanding wetlands.

This project will create an illustrated booklet of key wetlands restoration techniques and case studies for golf course superintendents. A final revision of Wetlands Management Manual for Golf Courses is expected during the winter of 2000. The booklet should be available for purchase through USGA in early 2001.

The approach is to use a general narrative overview, drawings, case studies, key restoration techniques and indicator species to walk managers through a process of understanding wetlands, leading to the ability to conserve, create/restore, and manage wetlands. The booklet will be as brief as possible and still cover the necessary material.

A reference method for the golf course manager to follow when working to conserve, restore, or construct a wetland was designed for the booklet. That method combines drawings with a plant species matrix. The drawing depicts (in aerial cross-section) different wetland conditions for the wetland types. A matrix contains the key species for that type and gives information about where in the wetland to plant a particular species, what restoration techniques to use, some wildlife value, flower color and size, and bloom period

information. This easy reference approach is new and should prove to be a useful approach for land managers.

Developing Methods to Enhance Amphibian Diversity on Golf Courses: Effects of Golf Course Construction on Amphibian Movements and Population Size

University of Rhode Island

Peter Paton

Start Date: 1998
Number of Years: 3
Total Funding: \$72,000

Objectives:

1. Determine the pre-construction population size for amphibians breeding at ponds within the boundaries of a proposed golf course.
2. Determine pre-construction travel corridors and movement patterns for amphibians at this same site.
3. Quantify population size and movement patterns following construction on the golf course.

Amphibian movement chronology and community structure has been monitored at two ponds and the surrounding landscape within the boundaries of a proposed golf course on the Univ. of Rhode Island campus since mid-February 1998. A total of 13,131 amphibian captures representing 11 species were documented, with six species of reptiles (61 capture events) and 8 species of mammals (1,475 captures) also detected.

In 1998, we found that the young of some species (Green Frog, Pickerel Frog, Spotted Salamander, and Red spotted Newt) dispersed in random directions across the landscape, while other species exhibited habitat selection and avoided edges between wooded habitat and a turf field (Wood Frog, Spring Peeper, Gray Tree Frog, American Toad). Movement data for metamorph amphibians (i.e., newly transformed young) gathered in 1999 generally supported the patterns observed in 1998. In addition, we did find that adults of some species readily moved across a 68 m wide turf field (Pickerel Frog, Green Frog), while adults from other species were rarely observed crossing this expanse of turf grass (Wood Frog, Spotted Salamander, Spring Peeper, Gray Tree Frog). Experiments conducted in 1998 showed that amphibians preferred to move through wooded habitats rather than turf, and grass height did not affect frog movement patterns. Data collected in 1998 and 1999 investigating movement patterns of amphibians across the landscape generally verified this relationship, as species richness and abundance was much greater in a contiguous forest patch, than near the ecotone between woods and a turf field.