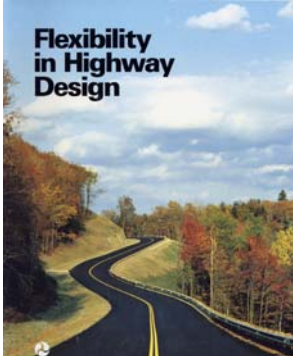


ECOLOGY OF GREENWAYS



Smith, Daniel S., and Paul Cawood Hellmund, eds. (1993). *Ecology of Greenways: Design and Function of Linear Conservation Areas*. University of Minnesota Press, Minneapolis, Minnesota.

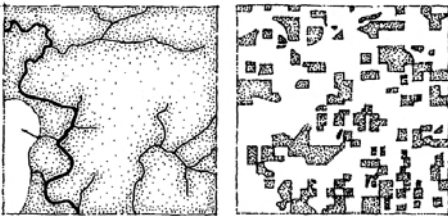
ABSTRACT

Ecology of Greenways highlights the increasing importance of naturally vegetated corridors in our country. As landscapes become fragmented by human development, greenways have become more important for human recreation needs, maintaining biological diversity, and improving water quality. This book contains a compilation of writings by experts in landscape ecology, conservation planning, ecological planning, and recreation design. Collectively they cover the essential elements of history, ecology, design, wildlife corridors, and riparian issues associated with greenways. The book provides a model for ecological greenway design and eight case studies of exemplary greenway projects from around the country. As linear corridors, many of the principles found in this book can be applied not only to the parkways as discussed in the the book, but also the typical rural and urban highways designed and operated by state and local transportation authorities.

Chapter 1: An Overview of Greenways begins by introducing the problem of fragmentation and loss of natural open spaces to human development. This chapter includes a brief history of greenways dating back to Frederick Law Olmsted's 1865 greenway designs for Berkeley and Oakland. Other important developments in greenway design are highlighted as well including the greenbelt concept developed by Ebenezer Howard in England and American; Benton MacKaye's proposal for an Appalachian National Scenic Trail; and Ian McHarg's ecologically-based planning and design. The overview includes a section on greenway definitions and types and an overview of greenway functions, both social and environmental.

Chapter 2: Landscape Ecology identifies how landscapes operate as ecological systems—how they are organized and change over time, with special attention paid to how corridors function within larger landscape contexts. The concepts of landscape ecology as they relate to greenways is highlighted in a case study from the Catskill Mountains in New York that deals with development in a sensitive watershed with key wildlife migration routes that required protection.





1831

1882



1902

1950



Chapter 3: Wildlife Corridors reviews the functions of wildlife corridors, discusses problems and design issues and provides recommendations for greenway planning. Corridors serve multiple functions including habitat, daily and seasonal movement, and dispersal capabilities. Design issues such as to corridor quality and width are important as are the threats to connectivity from roads that may bisect or edge a wildlife corridor.

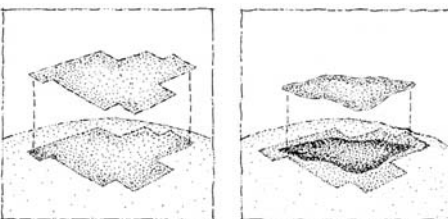
Chapter 4: Riparian Greenways and Water Resources discusses the importance of riparian greenways to maintaining quality water resources. It includes design, restoration and maintenance ideas for riparian greenways. Riparian corridors protect water quality, improve sediment and nutrient filtration, regulate water temperatures, and improve in-stream aquatic habitat. The effects of human activities are discussed in this chapter including agricultural and recreation, urbanization, and transportation impacts to riparian greenways.

Chapter 5: Minimizing Conflict between Recreation and Nature Conservation investigates ways to reduce conflicts between human recreation uses and natural conservation. The chapter begins with an overview of recreation impacts on natural areas. A case study from the Blue Ridge Parkway illustrates a range of solutions for managing recreational impacts. The chapter concludes with a list of design and management guidelines for greenways.

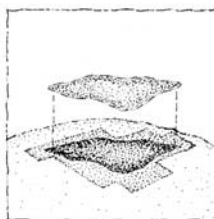
Chapter 6: A Method for Ecological Greenway Design presents a method for those who are interested in greenway design using ecological principles. There are four stages of greenway design included in this method. Stage one is understanding the regional context; Stage two is selecting project goals and a study swath; Stage three is defining greenway boundaries; Stage four is creating and implementing site designs and management schemes.

Chapter 7: Greenway Case Studies contains eight case studies from different parts of the United States. They include:

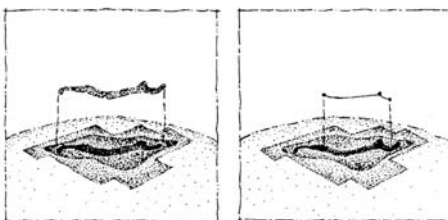
1. Southeastern Wisconsin Environmental Corridors
2. Florida Wildlife Corridors
3. Rio Grande Valley State Park (New Mexico)
4. Boulder Greenways (city and county of Boulder, Colorado)
5. Santa Monica to Santa Susana Mountains Wildlife Corridors (southern California)
6. South Platte River Greenway Design (Brighton, Colorado)
7. The Woodlands New Town (Texas)
8. Quabbin to Wachusett Wildlife Corridor Study (Massachusetts)



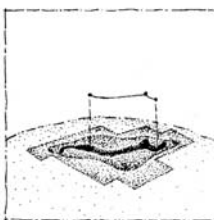
Stage 1



Stage 2



Stage 3



Stage 4

SUMMARY

Ecology of Greenways provides a model for ecological greenway design. It is a useful resource for highway planners and designers who want to integrate ecological principals into the linear landscapes of transportation corridors.

KEY WORDS

Applicable Project Delivery Stages: Administration, Scoping, Planning, Design, Construction

Applicable Transportation Professionals: Administrators, Planners, Landscaping Architects, Ecologists, Environmental Engineers, Water Resource Specialists, Wildlife Biologists, Hydrologists, Architects

Applicable Transportation Modes: Vehicular, Bicycle, Pedestrian

Transportation Topics: Buffer Zones, Corridor, Functions, Structure, Ecological Design, Ecological Health, Environmental Planning, Greenbelts, Greenways (Design Method, Riparian, Case Studies), Habitat (Configuration, Fragmentation, Loss, Protection, Sensitive), Landscape Ecology, Recreation (Impact, Design Strategies, Use), Riparian Corridors, Transportation and Utility Corridors, Wildlife Corridors