Issues, Challenges and Opportunities at the Wildland-Urban Interface

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Outline

- What is the WUI?
- Historical Perspectives
- WUI Issues
- Challenges to Natural Resource Management
- The Toolbox
- Needs in the WUI
- Final Considerations
Areas or zones where increasing human influence and land use conversion are changing natural resource benefits, services, and management.

Source: Southern Wildland-Urban Interface Assessment
More specifically:

- geographical
  - classic interface
  - Intermix
  - isolated interface
- fire
- socio-political
Geographical

1. “Classic Interface”
Defining the WUI

Geographical

2. “Intermix”
Defining the WUI

Geographical

3. “Isolated Interface”
Defining the WUI

Fire

A zone where man-made infrastructures are in and adjacent to areas prone to wildfire.
Defining the WUI

Socio-Political

Interaction of different political forces and potentially competing interests
Characteristics

- Encroaching urban developments
- Loss of natural areas
- Fragmentation
Characteristics

- Increasing number of land owners
- Decreasing parcel size
- Loss of connectivity
- Changes in biodiversity
- Alteration of forest structure and composition
Encroachment of invasive species
67% of invasions in FL originate from ornamental horticulture plants
More impervious surfaces
Alteration of natural waterways
Characteristics

Urban Wildlife
Florida Mileposts of the Next Millennium...
Wetland Memorial Mall opens its doors to successfully link the east and west coast of Florida under one roof.

Generic development
Loss of “feeling of place”
Contrast of land uses
Historical Perspectives
I. Land ownership and use in the U.S.

- Offshoot of the British land tenure system (fee tail vs. fee simple)

Early Savannah, GA
Source: Kundell et al., 1989
“Takings issue” – societal rights vs. individual rights

- Takings clause (5th Amendment)
- Kohler vs. Pennsylvania
- Environmental regulations

Source: Kundell et al., 1989
II. Settlement Patterns

- rural ⇒ urban ⇒ rural

- In 1690 – only 1/10th population was urban, with clear line where cities ended and countryside began
- In 1860 – 100 cities with populations exceeding 10,000
- In 1910 – over 50 cities with 100,000+ people

Source: Cullingworth 1997
Development of the train, street cars, and automobile

Construction of roads, interstate highways

Creation of the suburbs; dispersed settlement patterns
Human Influences on Forest Ecosystems:

Assessing the Southern Wildland-Urban Interface

✔ Scope
✔ Objectives
✔ Products
✔ Focus Groups
13 Southeastern states
1. Describe the WUI in terms of its scale and dynamics.

2. Examine factors driving change at the interface and resulting effects.

3. Involve and promote dialogue about interface issues.
4. Identify past and current interface research, programs, and technology transfer.

5. Identify critical interface research, management options, and technology transfer that will meet future needs in the South.
Six locations across the South
(AL, VA, TX, MS, GA, FL)

Planners, developers, foresters, policy makers, fire fighters, local government officials….

Identification of challenges, opportunities, and needs.
✓ Assessment Publication
  • Focus group reports
✓ Project Summary
✓ Brochures
✓ Website:

www.interfacesouth.org
Wildland-Urban Interface Issues
Issues

➢ Population growth

Trends in Human Population

Source: USDA Forest Service, Southern Forest Resource Assessment
Diverse cultural backgrounds, values, perceptions and attitudes

Source: Kundell et al., 1989
Issues

- Urban Sprawl – low density development

Source: American Forests

Atlanta, GA

1972

1993
Taxation

$ Estate taxes

$ Property taxes
Issues

➢ Private Property Rights

Source: Kundell et al., 1989
Multiplicity of jurisdictions

• e.g. Metropolitan Pittsburgh – 2.3 million people, 330 local govt.'s:
  • 5 counties
  • 184 municipalities
  • 141 townships
  • sewer and water authorities
  • dozens of school districts

Source: Daniels, 1999
Lack of vision at community, county or regional level
Issues

➢ Transportation/Mobility
  • Road development
  • Increasingly mobile population
  • Commute time (+/-)
- Water Quality and Quantity
- Air Quality
Issues

- Forest Fragmentation/Parcelization
Issues

➢ Fire Management and Mitigation
Challenges to Natural Resources Management
Challenges

- Managing fragmented forests
- Managing urban wildlife
- Maintaining healthy forests
- Managing watersheds
- Managing fire in a mixed urban/rural setting
- Providing for nature-based recreation
- Education
Managing Fragmented Forests

- Need to manage smaller parcels sustainably
  - commodity
  - non-commodity

- Different owners with a diversity of goals
Managing Fragmented Forests

- Alternative management to accommodate landowners’ objectives
Challenges

Managing Fragmented Forests

Conflicts between forest management practices and “new” neighbors
Proposed Tree Protection Ordinance in Alachua County, FL

- 10 days notice prior to any timber harvesting, site preparation or land clearing
- Clear-cuts limited to 40 acres with buffer strips
- All forestry operations not to take place within 50 feet of property boundaries, 100 feet from public roads nor 400 feet from publicly owned parks
Managing Fragmented Forests

- Conserving/providing connected natural areas for wildlife and plant species
Managing Urban Wildlife

- Incorporating wildlife habitat requirements into land management activities
Managing Urban Wildlife

- Encouraging greater public tolerance to living with wildlife:
  - free-roaming cats and dogs
  - deer
Managing Urban Wildlife

- Providing a diversity of recreational opportunities:
  - fishing
  - hunting
  - birdwatching
Maintaining Healthy Forests

Challenges:

- Higher Temperatures
- Fire
- Pollutants
- Invasives
- Human activities
Maintaining Healthy Forests

- Maintaining forest structure, composition and function
  - Preventing encroachment of invasive species
  - Preventing and managing insect problems
  - Minimizing stress factors
Maintaining Healthy Forests

Taking an ecosystem approach to managing forests

- protecting, managing and restoring natural areas
- developing lands in an environmentally sound way
Managing Watersheds

- Maintaining the chemical, physical and biological integrity of water:
  - point source pollution
  - non-point source pollution

- Developing a management framework based on the “downstream effect”
Managing Watersheds

- Obtaining cooperation/coordination of neighboring political entities within a watershed
  - Metro initiative in Portland, OR

- Educating:
  - the public
  - managing on a watershed scale
Managing Fire in a Mixed Urban/Rural Setting

- Saving forests and man-made infrastructure
- Collaboration among fire fighting agencies
Managing Fire in a Mixed Urban/Rural Setting

- Managing prescribed fires with increased regulations and development in and near forests

Benefits
- Prevents wildfires
- Mimics natural fire
- Fertilizes soil
- Improves habitat

Concerns
- Causes smokes
- Escapes to other areas
- Stresses and kills trees
- Scorches landscapes
Managing Fire in a Mixed Urban/Rural Setting

- Educating about fire wise landscaping
- Educating about fireproofing communities
Providing for Nature-Based Recreation

2.7 million Floridians participated in wildlife recreational activities within a mile from their homes in 1996.
Providing Nature-Based Recreation

- Providing recreational opportunities for:
  - inexperienced users with an urban orientation
  - a variety of cultural and ethnic backgrounds
  - differing social and recreational values
  - different age groups
Providing Nature-Based Recreation

- Educating recreation users
- Educating managers about what the user wants and effective ways to communicate
- Managing overused recreational facilities
Education

- **Informing:**
  - **public** - urban sprawl, growth management issues
  - **developers** - benefits and importance of natural resources
  - **homeowners** - challenges at the interface (fire, invasives, wildlife)
  - **elected officials** - science-based information
Education

- Working with the media to help educate about:
  - benefits of prescribed fire
  - invasive plants
  - natural landscaping
Not only Challenges but Opportunities too!

- More people experiencing outdoor recreational activities:
  - opportunities to make urbanites more aware about their natural surroundings and the importance of natural resources
  - opportunities for managers to integrate social knowledge and natural resource management
The Toolbox
Planning
- Zoning ordinances
- Comprehensive planning

Establishment of growth boundaries/ In-fill incentives

Smart Growth initiatives

Collaborative planning and processes
Toolbox

- Acquisition of open space
- Conservation easements
- Forest Legacy Program (USFS)
- Land Trusts
- Universities/Cooperative Extension Service
- State Forestry Agencies
Technology – GIS, Internet, City Green©

Firewise landscaping
Needs in the Wildland-Urban Interface
- More comprehensive land use planning
- Coordination of long range transportation planning with natural resource planning
- More incentive based tools
Natural resource information packaged for local policy makers

University and continuing education training for natural resource professionals about interface issues

Better dissemination and exchange of information about interface issues
Alternative silvicultural options for small woodlot management
Methods of developing land environmentally
What Does It Mean for Natural Resource Professionals?
Final Considerations

- Improve awareness and understanding of conditions, processes, problems, and laws unique to the interface

- Learn more about ordinances, regulations and growth management tools that affect natural resource management and conservation
  - conservation easements
  - urban growth boundaries
  - purchase of development rights
Final Considerations

- Identify, establish positive relationships and be actively involved with:
  - planning agencies
  - conservation groups
  - decision makers
  - opinion leaders

- Serve as a resource for:
  - local planning and zoning authorities
  - development of regulations
  - helping organize concerned citizens
Final Considerations

- Build communication skills for working with the public
  - conflict resolution
  - public relations
- Identify, involve and respond to the needs of an increasingly diverse audience
- Increase emphasis on non-commodity benefits
  - recreation
  - watershed management
  - aesthetics
  - conservation of wildlife