

What we will cover

Edge

- Definitions
- Types of Edge
- Edge effect
- Importance of Edge

Definitions

- **Edge:** contact zone between _____

Definitions

- **Ecotone:** transition zone between 2 diverse communities
 - area where adjacent communities _____ forming a species rich zone.

Types of edge

- **inherent edge:** edge that results from the natural meeting of 2 or more successional stages or vegetative conditions within a plant community; inherent edge _____.
- **induced edge:** edge that results from management activities creating 2 or more successional stages or vegetative conditions within a plant community; induced edge _____.

Leopold's view of edge

- **Law of Dispersion:** the potential density of wildlife species with small home ranges, requiring 2 or more habitat types, is a function of the sum of the peripheries of those types.
- **Law of Interspersion:** the number of species found in an area that require 2 or more habitat types depends on the degree of interspersion of those habitat types

Edge Effect

- **Edge Effect: (Leopold)**

- **Edge Effect: (Modern)**

Edge - negatives

Edges are zones of high diversity - not necessarily ideal wildlife habitat.

Examples:

- In Michigan, songbirds nesting near an edge suffered higher rates of predation than in forest interior, and more likely to have nests parasitized by cowbirds.
- In Wisconsin, 67% of nests within 100 m. of edge were parasitized compared to 18% for those beyond 300 m.
- African buffalo more likely to be killed by lions near an edge.
- Herbivores browsing on plants is greater near edges.

What we will cover

Diversity

- Definitions
- Kinds of diversity
- Stability and diversity
- Diversity as a management objective

Some definitions (pick one you like)

- _____

Biodiversity

- Biodiversity (slang) is usually considered at 3 levels:
 - genetic diversity

-
- species diversity

-
- ecosystem diversity

Kinds of diversity

How did this diversity happen?

Patterns of Diversity

Threats to biodiversity

- habitat alteration
-

- over-harvesting
-

- pollution
-

- climatic change
-

- introduced spp.
-

- increase in human population
-

What 'pre-disposes' species to be likely to become extinct

- narrow, _____
- large size, _____
- endemic, _____
- _____
- economic value, _____

How big a problem is it ?

Diversity: Management goal

- Several Federal Agencies mandated to maintain diversity
 - USFS, BLM etc.
- Why? Diversity correlated w/stability
 - Long standing ecological concept
 - Dispute over evidence and models

Stability & Complexity

- What makes a community stable?
- What is stability?
 - Resistance: _____?
 - Resilience: _____?

Stability & Complexity

- Species richness: "redundancy" - more species means more ways to do the same things. If one is lost, another will fill its niche.
- Complexity: "connectedness" - more links between members of the community means it's less likely any of them are vital to the survival of the network.
- Composition: "functional groups" - species can be grouped by their role in the ecosystem. As long as each function is performed, the community will last.

Stability & Complexity

- The debate is heated and ongoing, but the "functional groups" argument is gaining popularity; the "redundancy" argument is fading.

Management for Diversity

- 'Ecosystem Management' buzzword
 - What is it?
 - Entails managing for more complete systems
- Why should diversity be a goal for private landowners?