

EDGE ASSIGNMENT

A. Importance of Edge

1. Some definitions:

- edge :** contact zone between 2 different types of habitat
- ecotone:** transition zone between 2 diverse communities: area where adjacent communities blend gradually together forming a species rich zone.
- edge effect:** ecological result of increasing edge.. principally the increased diversity of species.
- induced edge:** edge that results from the meeting of 2 successional stages or vegetative conditions within a plant community; can be controlled by management
- inherent edge:** edge that results from the meeting of 2 successional stages or vegetative conditions within a plant community; that which occurs naturally w/o management.

B. LEOPOLD...

1. **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.
2. **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.

DATA YOU WILL NEED

Each UNIT (A,B,C,D) has the same dimensions	Unit A has 2500 meters of interior edge
<b>200 m x 300 m</b>	Unit B has 800 meters of interior edge
	Unit C has 1200 meters of interior edge
	Unit D has 400 meters of interior edge

The boundaries of each unit are a fence or INDUCED edge.

$$D.I. = \frac{\text{Total Edge}}{2 * \sqrt{\text{area} * \pi}}$$

QUESTIONS

1. Calculate the DI (Diversity Index) for units A,B,C,D separately. *Be sure to add the outer edges (boundaries) of each unit to your calculations of total edge.*
2. Which Unit has the most edge 'diversity' ? Is this 'diversity' a useful index of the value of this unit for wildlife ?
3. Calculate the DI for the entire mapped area (e.g. all units together). (Which edges should you include ?)
4. Describe how useful this measure would be if you were managing this area for white-tailed deer.
  - Some pertinent basic deer biology:
    - WT deer home ranges in this habitat are usually > 1.5 km<sup>2</sup>
    - WT deer use a mix of early successional habitats
    - WT deer travel these distances easily but do not use openings > 500 m from cover of trees or shrubs tall enough to hide in.
5. Describe how useful this measure would be if you were managing this area for eastern box turtles.
  - Some pertinent basic box turtle biology:
    - box turtle home ranges in this area are usually < 0.5 km<sup>2</sup>
    - box turtles use a mix of early successional habitats
    - box turtles do not travel > 50m /day and find many topographic or human features to be barriers to travel. Turtles find cover in vegetation to rocks and litter at ground level

