Landscape Ecology

- Concepts of Landscape Ecology
- Mosaic and Patches
- Edge and Edge Effect

Landscape Ecology

- Study of structure, function and change in a heterogeneous landscape composed of interacting ecosystems.

Mosaic

- Patchwork of different land cover types.
Patch
- An area of habitat that differs from its surroundings and has sufficient resources to allow a population to persist.

Creation of Mosaic and Patches
- Environmental processes and human activity.
  - Geology, topography, soils and climate.
  - Agriculture, grazing and fire.

Patch Size and Shape
- Vary in size and may be elongated, round or convoluted.

- Habitat suitability determined by patch area, size, shape and orientation.

- Patches affect ecological processes.
  - Wind flow, seed dispersal and animal movement.
Edge

- Contact zone between 2 different types of habitat.

Ecotone

- Transition zone between 2 diverse communities.
- Area where adjacent communities blend gradually, forming species-rich zone.

Types of edge

- Inherent edge
  - Stable, permanent edge determined by long-term natural features and conditions.
  - Occurs naturally without management.
- Induced edge
  - Results from disturbance; adjoining vegetation types are successional.
  - Controlled by management.
**Edge Species**
- Species restricted exclusively to edge or border environment.
  - Edge or border provide wildlife with two or more habitats.

**Interior Species**
- Species not able to live in border or transition areas which are subject to abrupt changes.

**Edge Effect (Leopold)**
- Ecological result of increasing edge
  - Increased numbers of animals
  - Increased diversity of animals
  - Primarily for game species
**Leopold’s Interspersion (Dispersion)**
- A species density is proportional to the sum of the type of peripheries (amount of edge).

**End of Lesson**
- Concepts of Landscape Ecology
- Mosaic and Patches
- Edge and Edge Effect