

Planning for Species Conservation: Connectivity and Land-Use Planning



Oregon State
UNIVERSITY

Cascades

Discussion Points

- What is connectivity and why it matters.
- Brief review of literature on connectivity.
- Oregon State Land Use Planning Goal 5, Mule Deer Initiative and OCS.
- Current and future approaches in Central Oregon

What is Habitat Connectivity and Why Does it Matter?

- Connectivity-the degree to which habitat(s) used by species allow for movement of individuals between habitat patches.
 - Physical connections
 - Functional connections (determined by species dispersal characteristics)
- Connectivity varies by
 - Species
 - Habitat type
 - Land-use context

Physical and Functional Connectivity

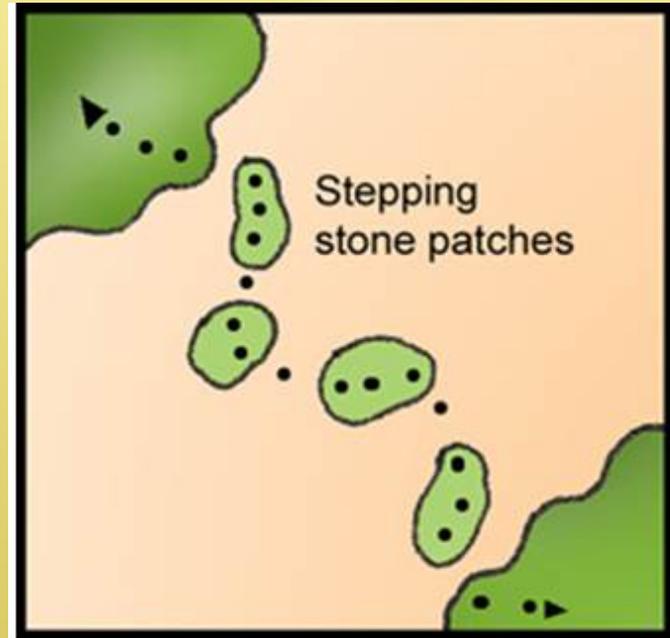
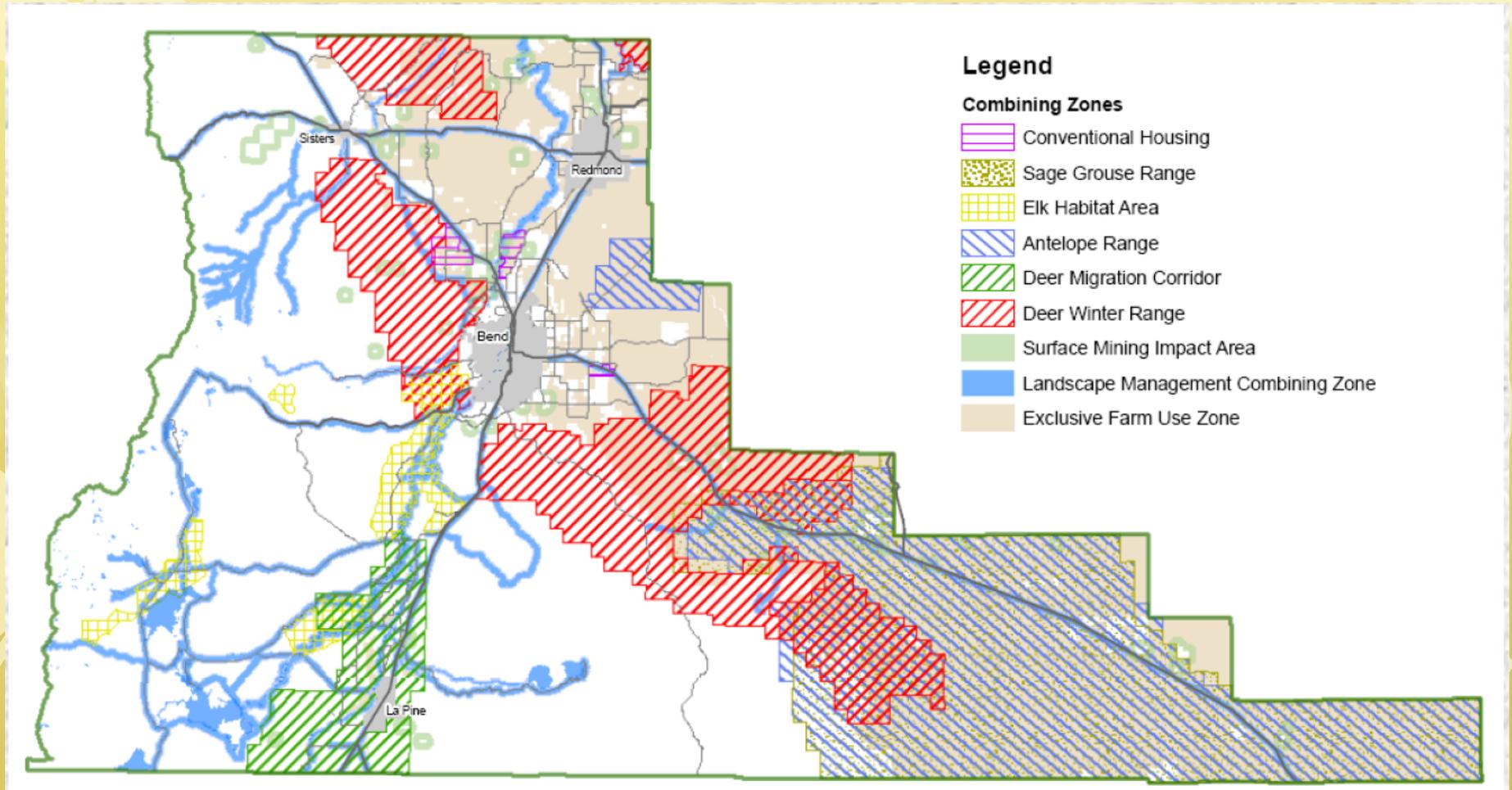


Diagram of stepping stones connecting larger habitat patches as a guideline for managing biodiversity. USDA National Agroforestry Center.

Wildlife Area Combining Zones— Deschutes County

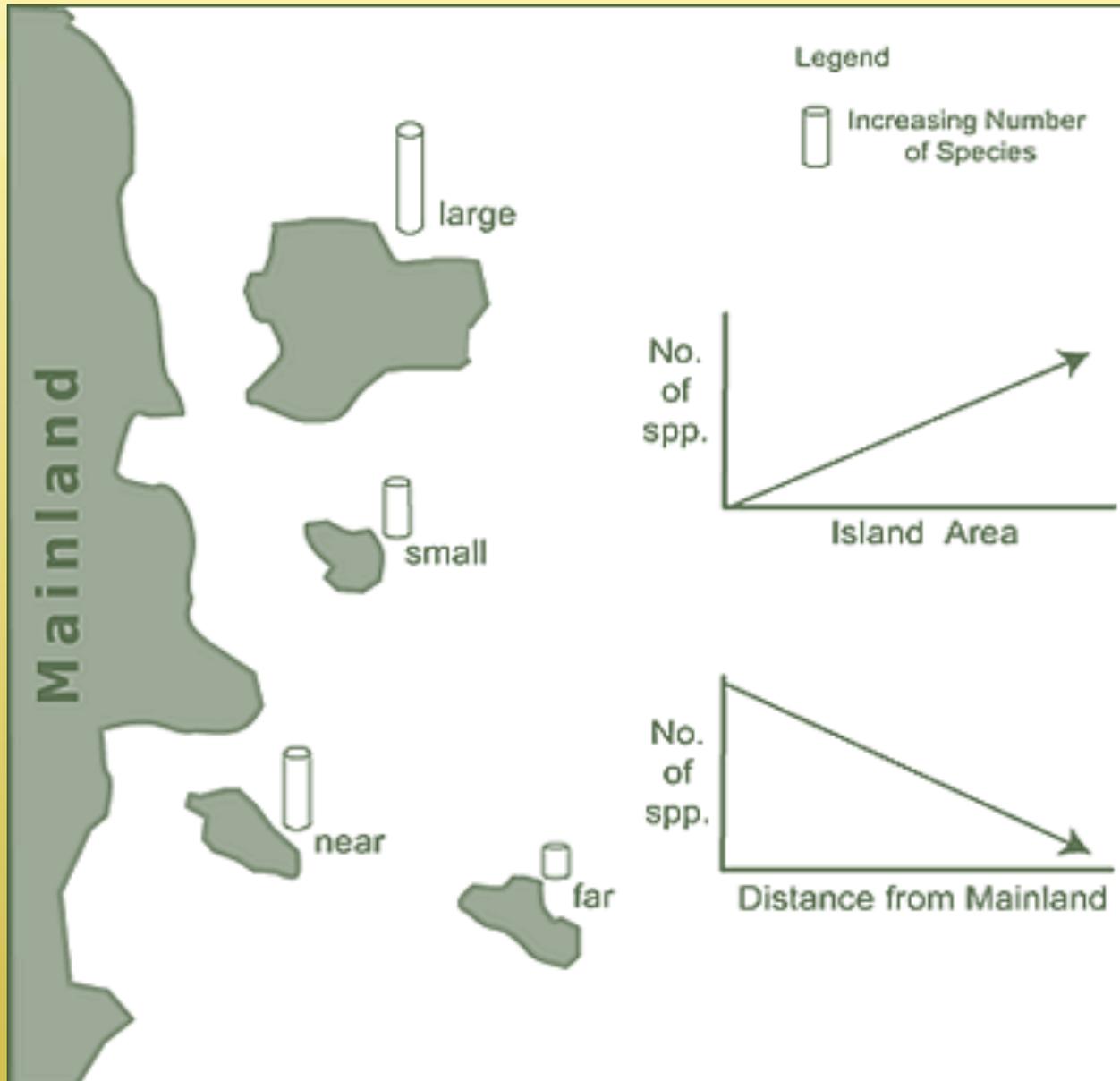


What's So Important About Connectivity?

- Habitat connectivity influences
 - Movement patterns
 - Local and regional biodiversity
 - Population, community and ecosystem health
 - Gene flow and genetic diversity
 - Resilience and resistance

A Few General Trends

- Larger habitat patches tend to support a greater number of species than smaller patches
- Larger patches tend to support more specialist species
- Patches in close proximity to larger habitat areas tend to support more species diversity than patches farther away



<http://science.kennesaw.edu/~jdirnber/ecology/>



Google earth

So What?

- Habitat patches and patch connectivity are important for sustainability of wildlife populations
- Planning efforts have largely assumed that public lands on the periphery would suffice
- Land-use within (recreation, resource extraction) and outside (residential, urban, exurban development) public land boundaries continues to isolate and fragment habitat

Translation to Land-Use and Planning

Oregon's Statewide Planning Goals & Guidelines

GOAL 5: NATURAL RESOURCES, SCENIC AND HISTORIC AREAS, AND OPEN SPACES

OAR 660-015-0000(5)

(Please Note: Amendments Effective 08/30/96)

To protect natural resources and conserve scenic and historic areas and open spaces.

Local governments shall adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. These resources promote a healthy environment and natural landscape that contributes to Oregon's livability.

The following resources shall be inventoried:

- a. Riparian corridors, including water and riparian areas and fish habitat;
- b. Wetlands;
- c. Wildlife Habitat;
- d. Federal Wild and Scenic

current inventories of the following resources:

- a. Historic Resources;
- b. Open Space;
- c. Scenic Views and Sites.

Following procedures, standards, and definitions contained in commission rules, local governments shall determine significant sites for inventoried resources and develop programs to achieve the goal.

GUIDELINES FOR GOAL 5

A. PLANNING

1. The need for open space in the planning area should be determined, and standards developed for the amount, distribution, and type of

City of Bend Goal 5 Inventory (2000)

ODFW Summary Points Pertaining to Big Game

- No Goal 5 habitats within UGB that need protecting
- County has developed ordinances to protect neighboring Goal 5 habitats outside the UGB
- City should adopt ordinances to support County ordinances
 - Housing densities
 - Open space
- Connectivity is not mentioned

Where Do We Go From Here?

- Opportunity to identify connectivity and buffer opportunities in current UGB process
- Support research on urban mule deer populations to identify critical mechanisms for long-term survival
- Support incorporation of habitat connectivity into regional recreation planning efforts