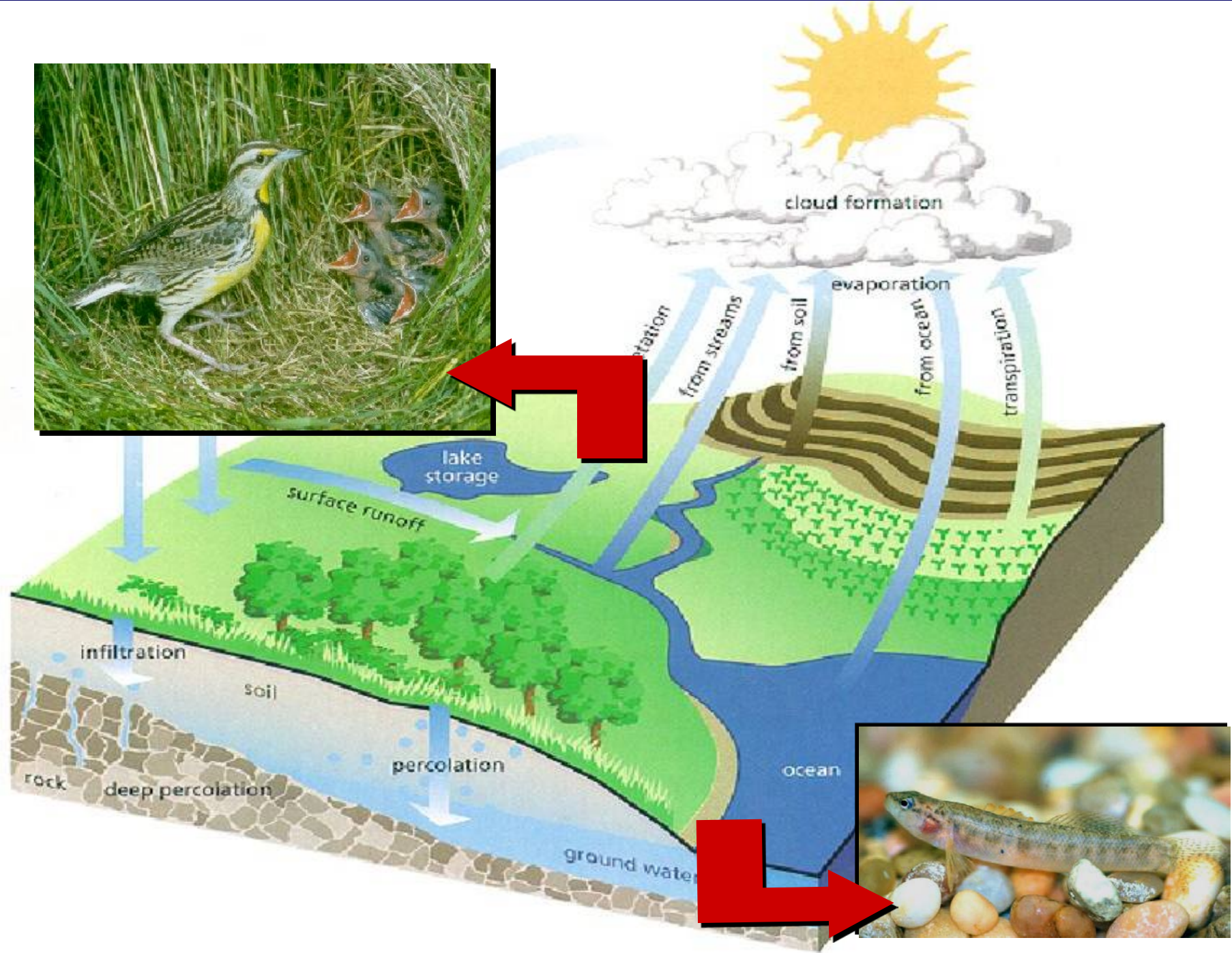


Habitat and Ecological Processes







**Fish and wildlife
survival
depends on:**

HABITAT

**Species-specific
requirements for
survival and
reproduction**



Habitat Basics

Food



Cover



Water



Juxtaposition

**By
Space**



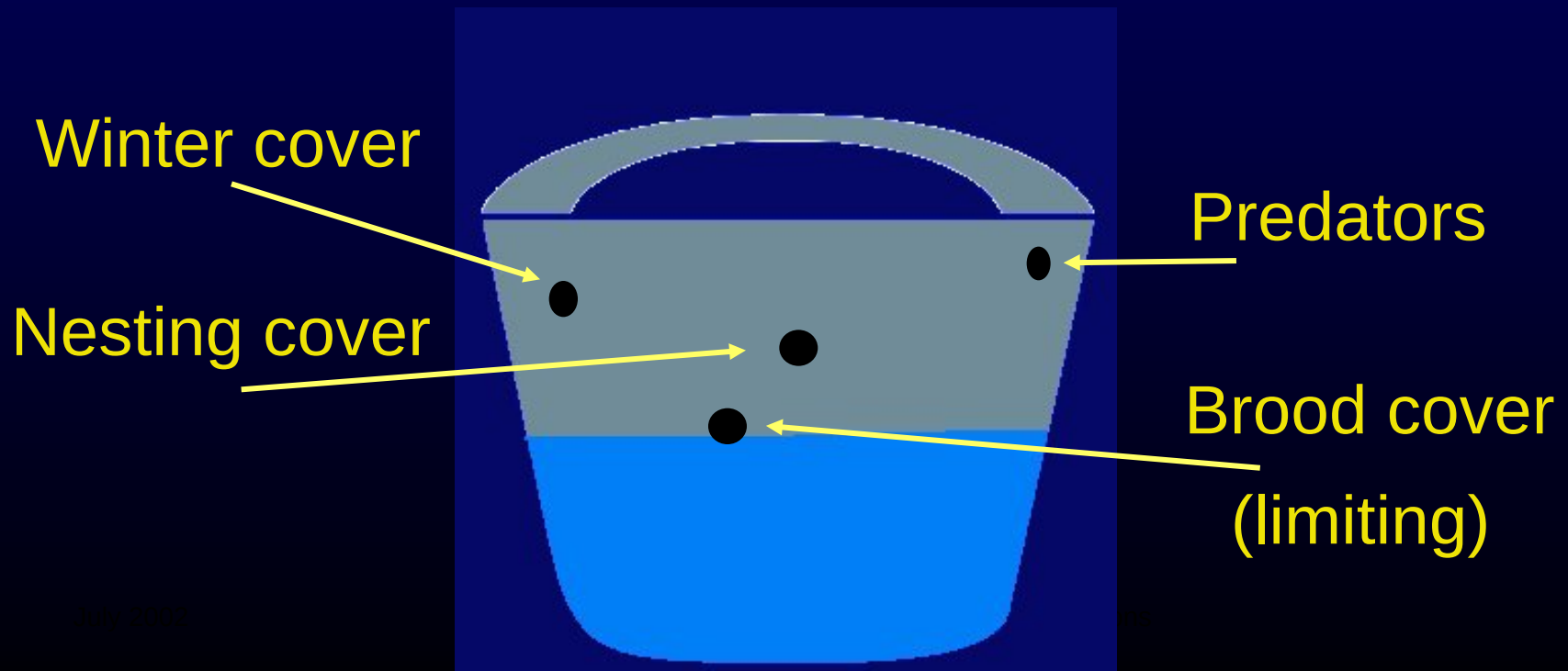
**By
Season**

**All spatial and temporal habitat needs
of an individual must be met within its
*home range***



Limiting factors - Conditions that establish the population or range of a specific animal or species.

The lowest hole in the side of a bucket controls the amount of water the bucket can hold.



Habitat structure

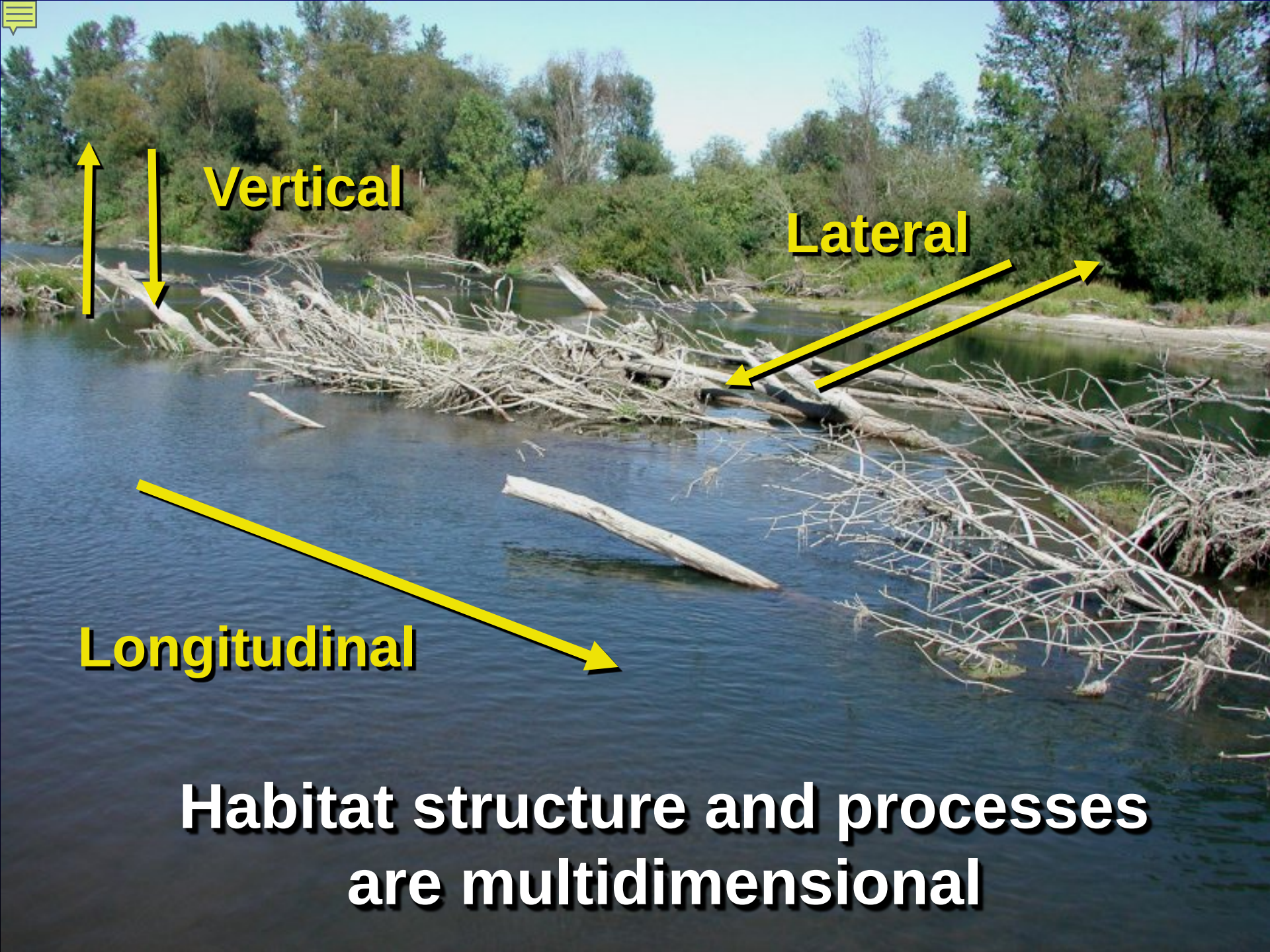
Horizontal - the arrangement of different habitat types as seen from above



Habitat structure

Vertical - the “layers” of different plant forms and sizes in the plant community





Vertical

Lateral

Longitudinal

**Habitat structure and processes
are multidimensional**



ONSITE Concerns

OFFSITE Concerns

BOTH

Watershed
Land-use
& Physical
Characteristics

Terrestrial
amphibian
populations

connectivity

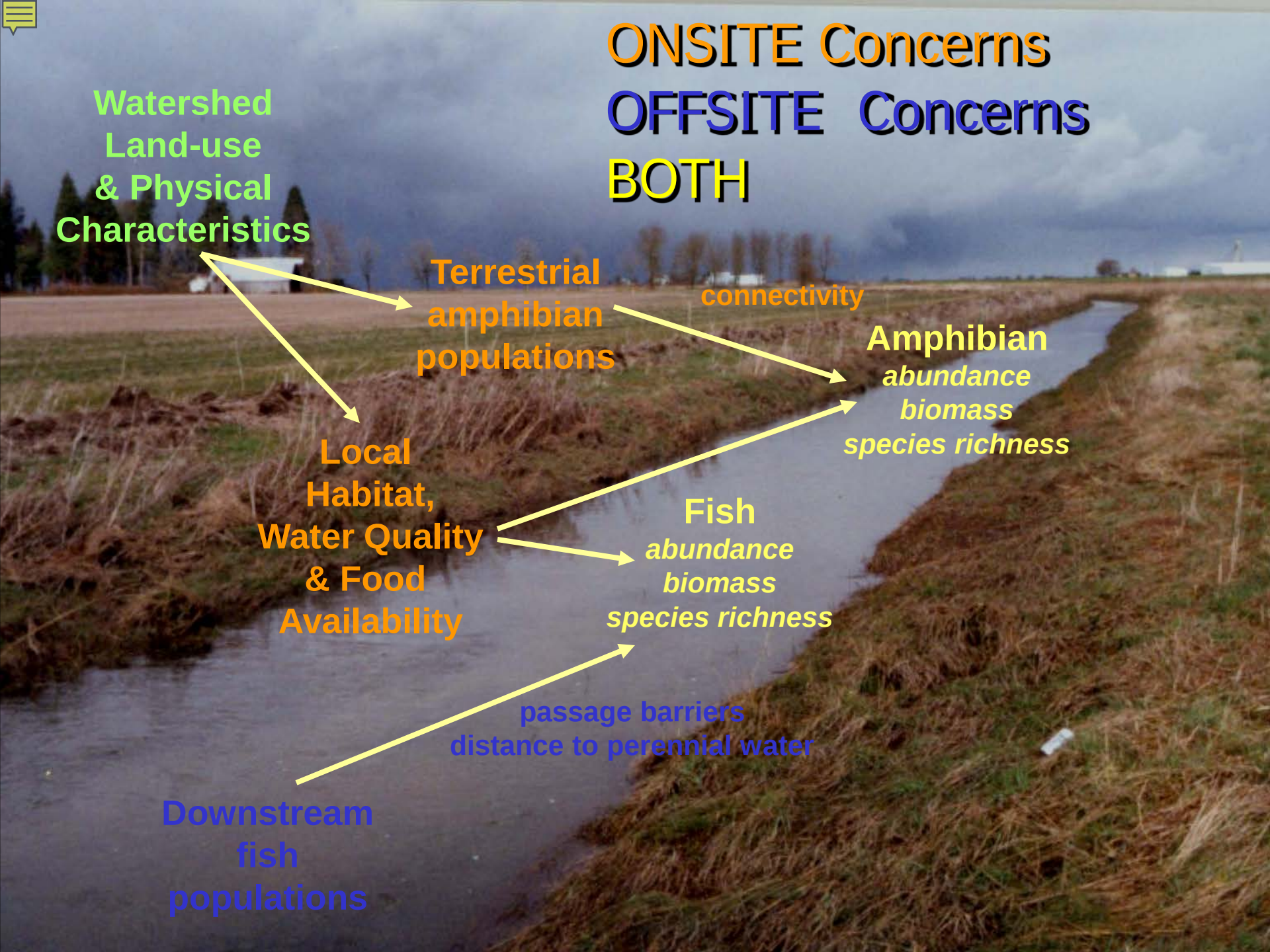
Amphibian
abundance
biomass
species richness

Local
Habitat,
Water Quality
& Food
Availability

Fish
abundance
biomass
species richness

passage barriers
distance to perennial water

Downstream
fish
populations



connectivity -

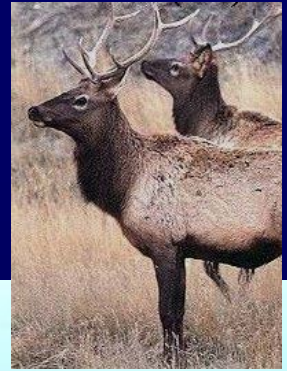
Connection of specific landscape features or habitat types across landscapes or along river networks.



habitat fragmentation - The process by which a natural landscape is broken up into small parcels of natural ecosystems, isolated from one another in a matrix of lands dominated by human activities.



Effects of Habitat Fragmentation:

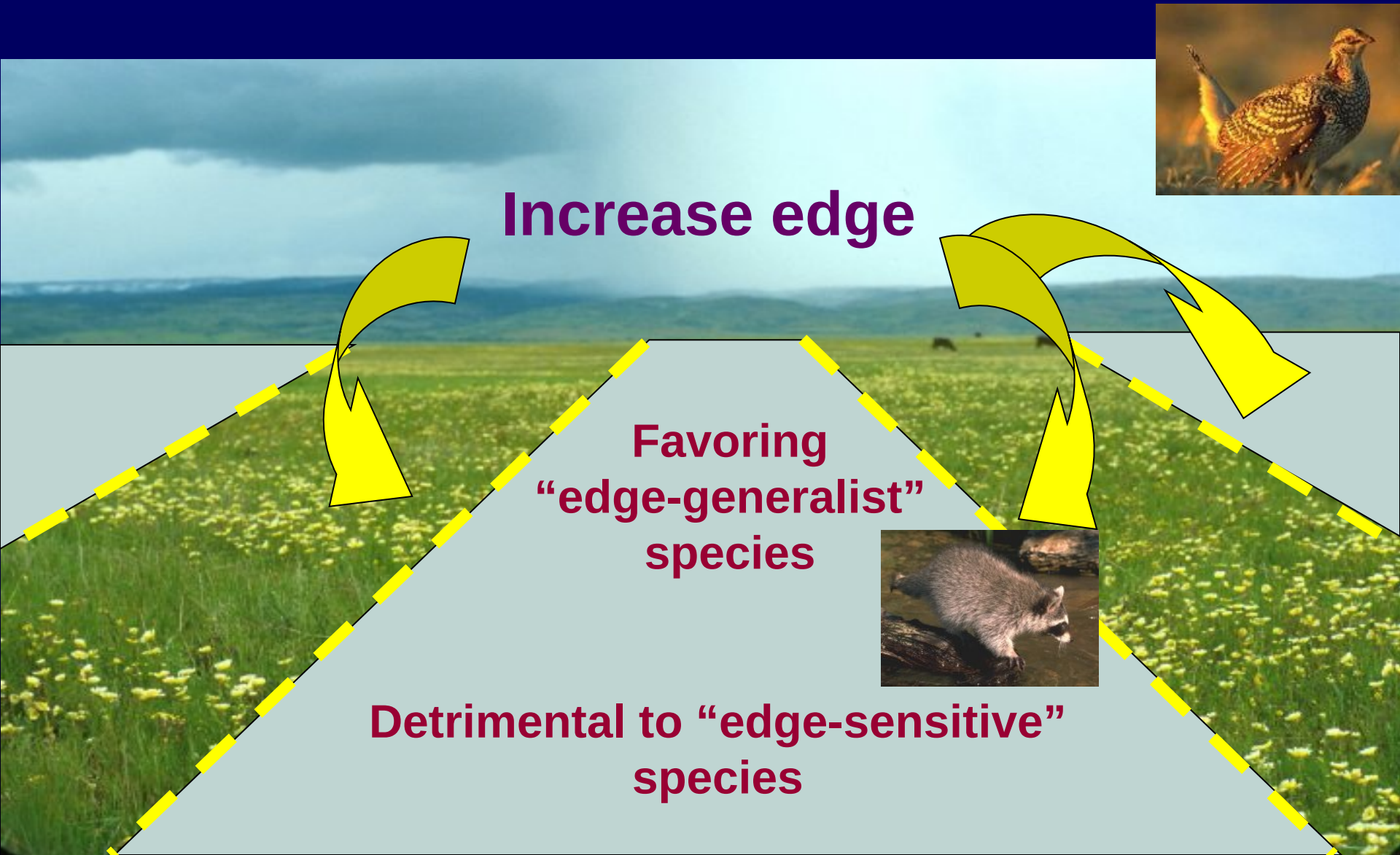


Detrimental to “Area-sensitive” species

**Reduced
patch
size**

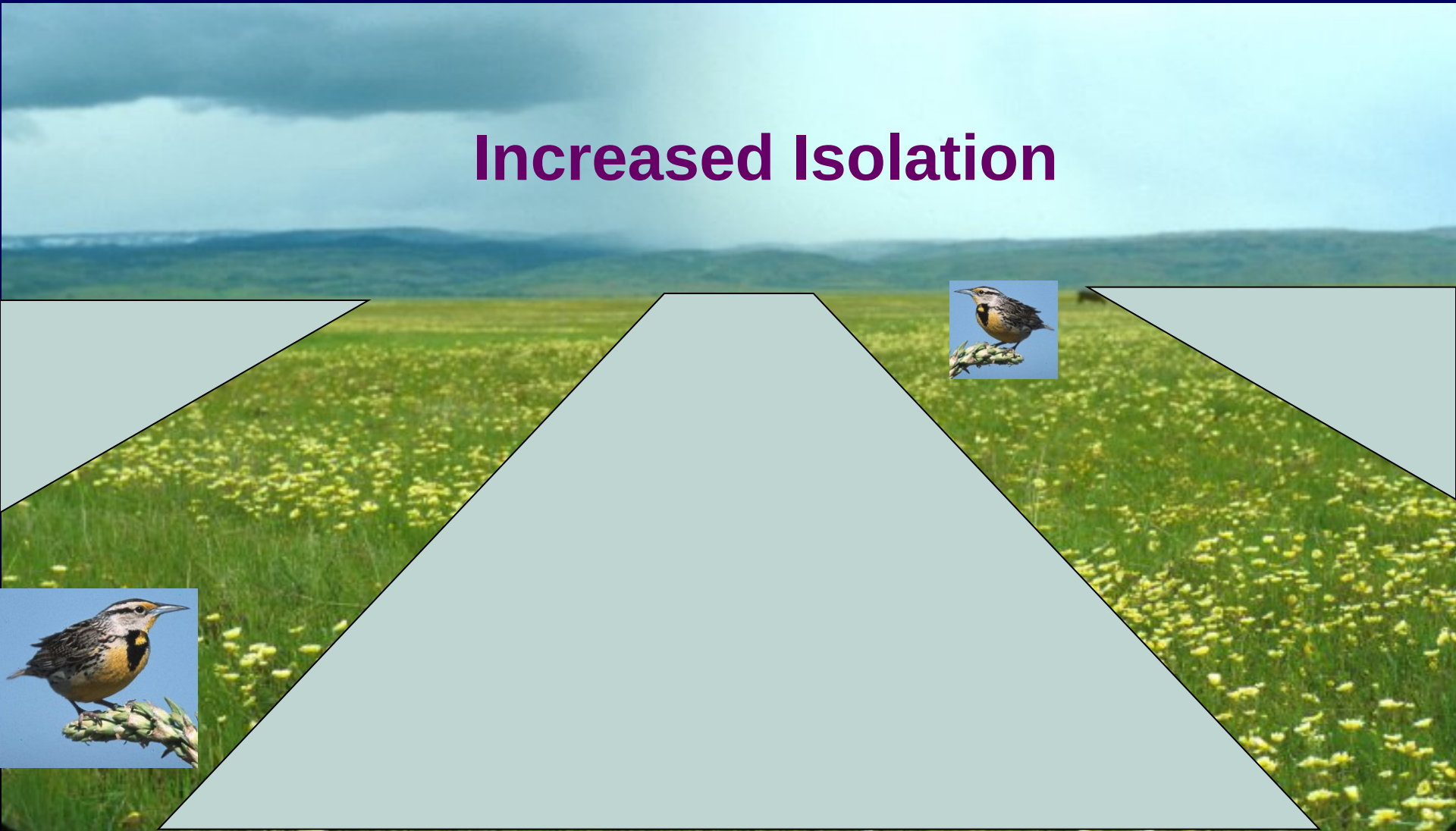
Loss of original habitat

Effects of Habitat Fragmentation:

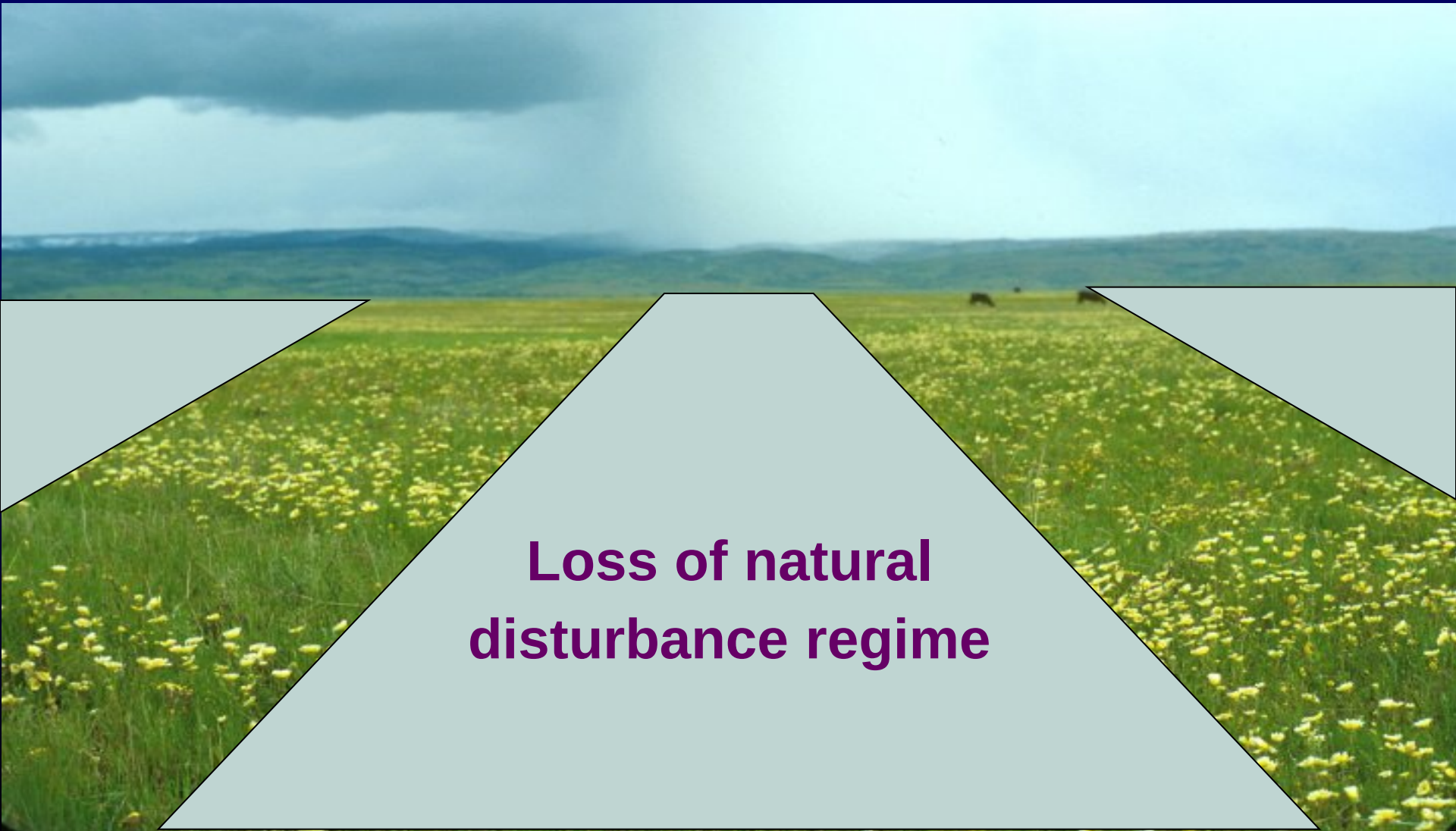


Effects of Habitat Fragmentation:

Increased Isolation



Effects of Habitat Fragmentation:



**Loss of natural
disturbance regime**

Fragmented landscape with isolated forest patches



Cropland matrix

Corridors provide linkages between habitat patches



Natural *disturbance* is a critical component of ecosystem processes and important in maintaining habitat quality



Human-induced *perturbations* have altered ecosystem processes and natural disturbance patterns.



Habitats can be managed to mimic natural disturbance with:

The Match



The Plow



The Axe



The Cow



An aerial photograph of a rural landscape. A light-colored, unpaved road or path winds through green fields. In the background, there are some trees and a distant horizon under a clear sky. The image is used as a background for the text.

Disturbance as a management tool

Consider landowner objectives

Time disturbance to local climate

**Consider how disturbance affects
other resource objectives**

NRCS fish and wildlife-specific practices

Practice (code)	Definition
Upland Wildlife Habitat Management (645)	Creating, restoring, maintaining or enhancing areas for food, cover, and water for upland wildlife and species which use upland habitat for a portion of their life cycle.
Wetland Wildlife Habitat Management (644)	Retaining, developing, or managing habitat for wetland wildlife.
Fishpond Management (399)	Managing impounded water for the production of fish or other aquatic organisms (non-commercial use).
Wetland Restoration (657)	The rehabilitation or reestablishment of a degraded wetland where the soil hydrology, vegetative community, and biological habitat are returned to a close approximation of the natural, original condition that existed prior to modification.
Wetland Creation (658)	A wetland that has been created on a site which historically was not a wetland.
Wetland Enhancement (659)	The modification of an existing wetland where specific attributes are targeted by management objectives, possibly at the expense of other attributes; and/or the rehabilitation of a degraded wetland where the result is a wetland that is different than what previously existed on the site
Shallow Water Development and Management (644)	Intentional inundation of lands to provide habitat for fish and/or wildlife.
Restoration and Management of Declining Habitats (643)	Restoring and conserving rare or declining native vegetation communities and associated wildlife species.



Other practices that affect fish & wildlife

Potentially, all of them!

Agronomic practices:

Conservation tillage, buffers (Field Border, Grassed Waterway, Riparian Forest Buffer, etc.), Pest Management, etc.

Engineering practices:

Pond, Terrace, Spring Development, Fish Passage, Irrigation systems, drainage practices, waterways, etc.

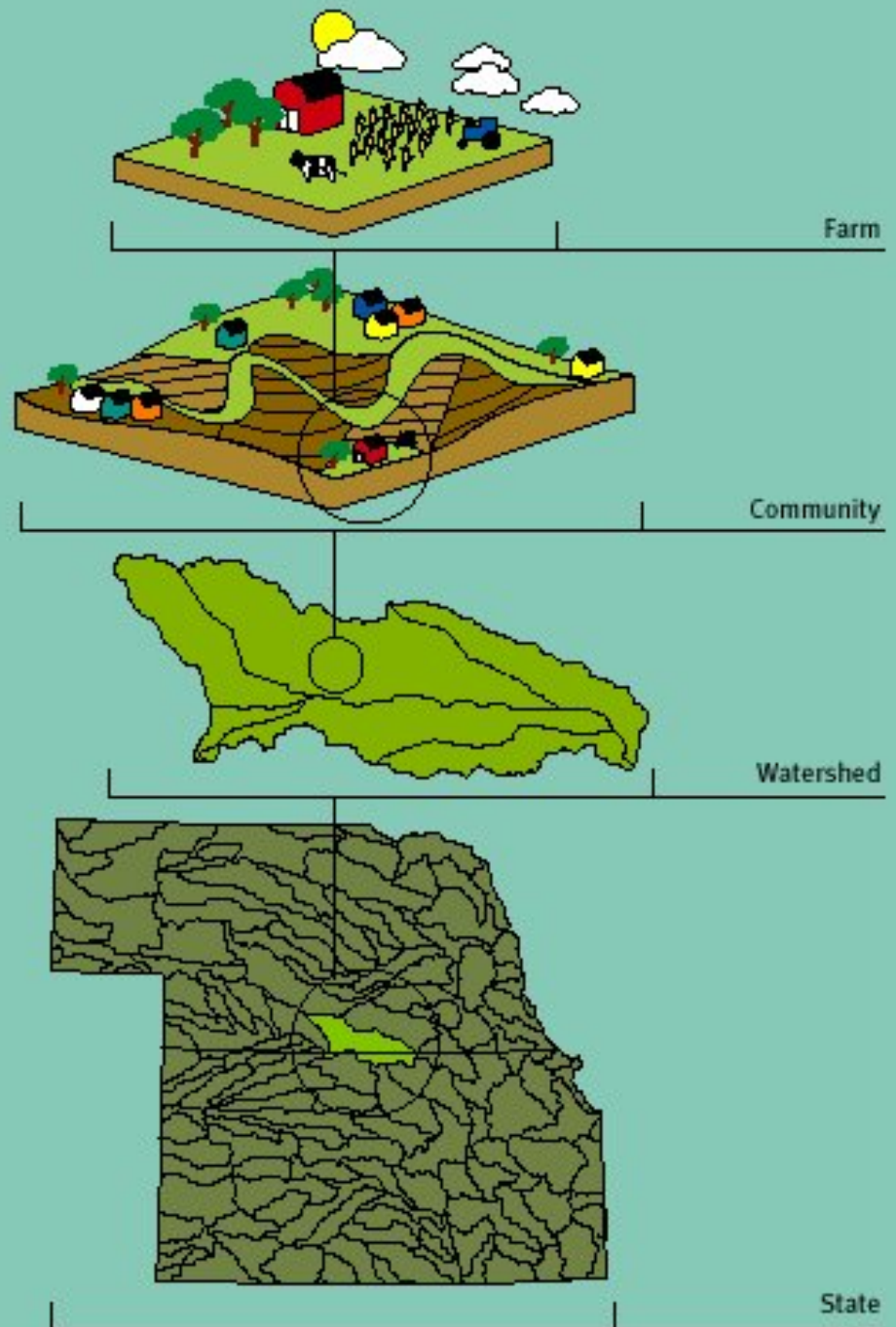
Forestry practices:

Tree Planting, Forest Harvest Management, Forest Stand Improvement, Forest Site Preparation, etc.

Range and pasture practices:

Range Seeding, Prescribed Burning, Prescribed Grazing, Brush Management, Pasture and Hay Planting, etc.

Practices should
be planned from a
landscape
perspective



**Everything we do on the land
affects Fish and Wildlife!**

