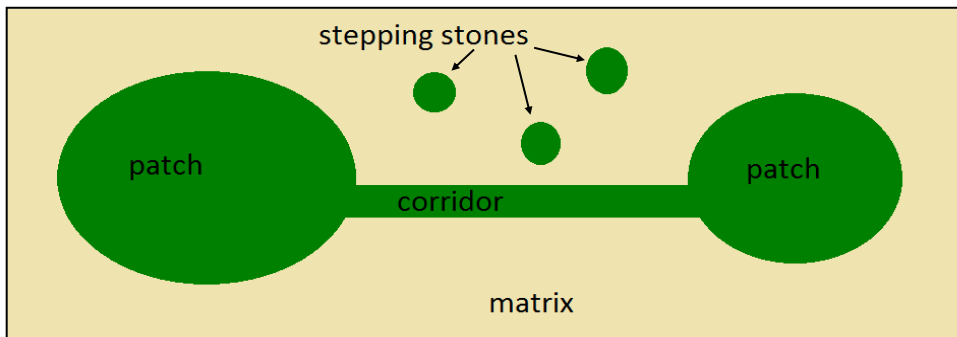


CONSERVATION IN A FRAGMENTED LANDSCAPE

LANDSCAPE ECOLOGY



Landscape ecology studies the structure of landscapes, how habitat is connected, and how wildlife move throughout a landscape in order to find food, shelter, and mates.

- **Patches** are relatively homogeneous areas that differ from their surroundings. They can be very small or very large. Usually, the larger the patch, the more wildlife it can support.
- **Stepping stones** are patches of suitable habitat between larger patches of suitable habitat at landscape, regional, and broader scales. They are useful to migratory wildlife for rest, shelter and food.
- **Corridors** are physical links between habitat patches within a landscape that may serve as a pathway by which organisms can migrate from one path to another.
- The **matrix** is the most extensive, most connected, or most influential landscape element of an area. In Alberta's Parkland Natural Region, most of the matrix is agricultural.

IMPACTS ON WILDLIFE

Habitat destruction (through loss, fragmentation and degradation) can negatively affect many wildlife species:

- Food resources and shelter become scarcer.

HABITAT DESTRUCTION

Habitat loss is the removal of wildlife habitat, most often the result of human activities, including agriculture, natural resource exploration, the building of infrastructure and water diversion.

Habitat fragmentation is the process where habitats are cut up into fragments by roads and development, or by water diversions and alterations in the case of aquatic habitat. These fragments of habitat may not be large or connected enough to support species.

Habitat degradation is the decline in quality of habitat, such as by encroachment of invasive species.



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- Terrestrial wildlife species are forced to migrate across human infrastructure, especially roads, and are at risk of being hit by vehicles, resulting in injury or death.
- Aquatic species might get stuck and die if an obstacle is built in their path.
- Migratory species may have a more difficult time finding places to rest and feed along their migration routes.

CONSERVATION IN A FRAGMENTED LANDSCAPE

A fragmented landscape is still very important for wildlife. Though habitat may have been destroyed, remaining fragments still provide critical refuge for wildlife.

Conserving these types of landscapes requires a multi-step approach.

- **Maintain:** sustain existing condition of habitats by removing and controlling threatening processes, and putting measures in place that ensure the land is conserved (such as through a land trust). It is generally much easier and cost efficient to avoid the effects of degradation than it is to reverse them.
- **Improve:** when habitat is already degraded, actions can be taken to improve conditions and remove threats. Modified habitats require active management to restore ecosystem processes, improve soil structure, encourage regeneration of plant species, or reintroduce flora or fauna species.
- **Restore:** when habitat is completely gone, sometimes it can be restored, such as by converting lands back to native vegetation, or reconstructing lost wetlands. In some cases, the restored habitat may not be as productive as the original habitats, but can still serve important ecosystem functions.

WHY SHOULD WE CONSERVE LAND?

Edmonton and much of the surrounding area lies within the Parkland Natural Region (an intersection between grasslands and forests). It is also the most populated, and the least protected Natural Region in Alberta. Only 5% of this regions natural vegetation remains, so it is vitally important that we protect what is left.

Because EALT operates close to urban areas in a region that has largely been converted to other land uses, the conservation lands that we conserve are generally small, but serve important ecological functions.



A willow planted on one of EALTs conservation lands