

CONNECTING NATURE:

INTEGRATING ECOLOGICAL CORRIDORS INTO MUNICIPAL PLANNING

WHAT IS ECOLOGICAL CONNECTIVITY AND WHY IS IT AT RISK?

Ecological connectivity is the ability of wildlife and natural processes to move across the landscape. It is challenged by roads, development, and land-use change that fragment habitats into isolated patches.

Ecological corridors consist of natural or semi-natural connections that maintain connectivity. When corridors are lost or narrowed, wildlife can struggle to access habitat, disperse, and maintain healthy populations, while ecosystems become less resilient to disturbances like drought, fire, and flooding.



Why this matters at the local level

Municipal planning plays a critical role because local decisions about growth, transportation, and land use often determine whether key ecological corridors are maintained or severed.

Integrating connectivity into planning helps municipalities reduce human-wildlife conflict, protect biodiversity, and support climate adaptation while guiding development toward areas that minimize ecological impact.

It is important to remember that ecological corridors are fundamentally a human construct in their designation, planning, and management, and a municipality has the power to decide which ecological corridors to designate.



The challenge

A key challenge is the need for practical, locally relevant tools that help municipalities integrate ecological and wildlife movement data into everyday planning decisions. **Without clear, accessible mapping that identifies where priority corridors and pinch point occur, it's difficult to know what areas should be protected, restored, or avoided through development.** In short, if we can't see where connectivity matters most on the ground, we can't take meaningful action.

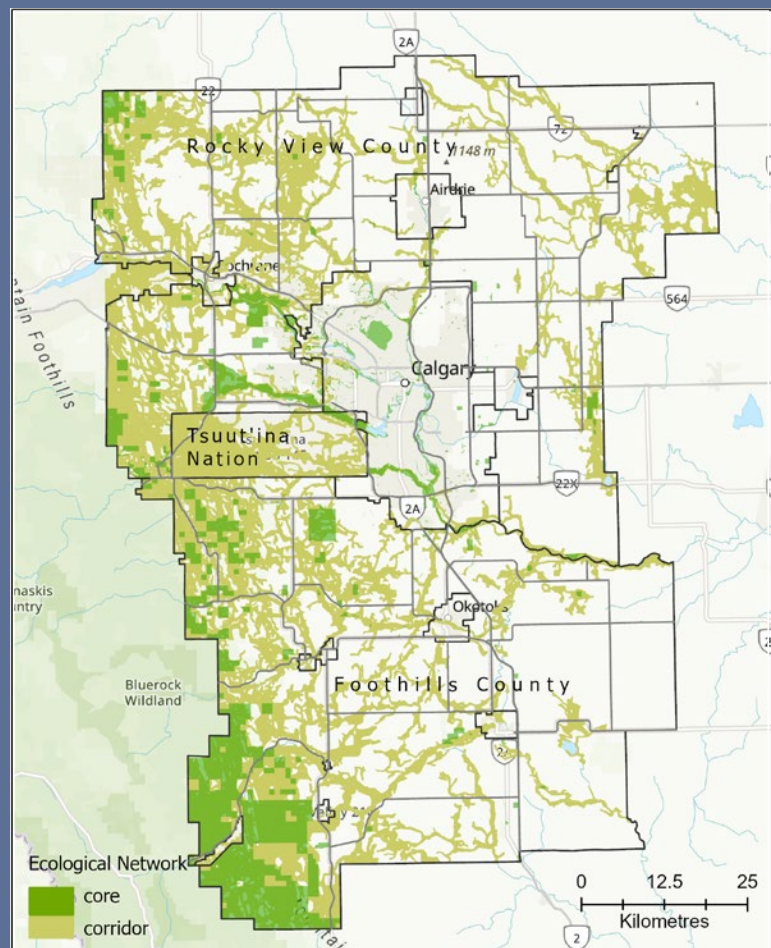




The solution

The Miistakis Institute is a leader in ecological connectivity research and implementation in Alberta. We have worked with municipalities, including the M.D. of Pincher Creek, Rocky View County, and Foothills County to:

- **Map ecological networks** using relevant and customized modeling techniques to identify key wildlife movement corridors and habitat, informed by available species data, local expertise, and practical municipal planning needs.
- **Integrate planning priorities into corridor mapping** by incorporating current municipal zoning, identifying target species based on community values and concerns, and incorporating feedback from municipal planning staff to produce a final, agreed-upon ecological corridor map.
- **Identify potential conflict and opportunity areas** by pinpointing animal-vehicle collision hotspots on provincial highways within the ecological network, highlighting locations where current zoning could create future risks to corridor function, and identifying where collaboration with neighboring jurisdictions would be beneficial.
- **Develop decision-support tools and implementation strategies** to embed connectivity into land-use decisions, such as tailored policy language and clear insertion points, and/or online tools to evaluate proposed developments within the agreed-upon ecological corridors.



An example of an ecological network map for the Rocky View County, Tsuut'ina Nation, and Foothills County regions, showing core habitat areas that have a lower chance of development (such as parks), and the corridors that facilitate wildlife movement.



The process

STEP	DESCRIPTION
1 Engage with council and planning staff	Miistakis will present to council and planning staff on how delineating an ecological network can help the municipality plan for growth, while preserving environment and heritage values . Multiple meetings with planning staff are required to identify target species and ecological network purpose (e.g., maintain species movement).
2 Secure funding	Based on municipality's needs, Miistakis will create a budget and project scope. The municipality may work to get funding approval, however, as a charitable not for profit, Miistakis can secure grants to support this work either wholly or partially . Note that securing charitable funding is not guaranteed and may delay project start.
3 Gather and analyze data	Municipal planning staff will provide Miistakis with relevant municipal spatial layers and will attend a meeting(s) to discuss local growth and zoning context. Miistakis will gather appropriate species data, develop and execute the modeling approach, and prepare draft spatial products.
4 Workshops with planning staff and local experts	A full day workshop attended by planning staff and local experts (land managers and wildlife specialists) to review draft spatial products, provide feedback for Miistakis to incorporate into the final ecological network, and review tools and strategies to implement. Additional follow-up meetings with planning staff may be required to reach an agreed-upon final ecological network map, and develop or adjust tools and strategies.
5 Final products, tools and strategies shared	Final tools and strategies developed and shared. Municipality may wish for Miistakis to present final products to council, and train planning staff on their use.
6 Municipality integrates ecological network into planning	Using the tools and strategies developed, the municipality incorporates the ecological network into relevant planning policy to inform development decisions.



Key planning and conservation outcomes

- **Growth that aligns with environmental resilience is supported** by encouraging development to occur outside of the ecological network.
- **Creation of practical tools to fit municipal planning workflows** that guide development proposal review and other land-use decisions. Examples include the [Wildlife Movement Tool, guidelines for appropriate development occurring within an ecological corridor](#), and an [ecological corridor overlay district zoning](#) that could be adapted to your municipality.
- **Informed and safe transportation planning**, helping identify where wildlife movement intersects with roads, informing mitigation priorities to improved motorist safety, and reduce future connectivity conflicts.
- **Commitment to stronger ecosystem resilience and biodiversity protection** through integrating ecological connectivity into municipal planning and policy.
- **Reinforcement of community heritage and scenic values**, by maintaining intact rural landscapes, viewsapes, and working lands that contribute to local identify while remaining conducive to wildlife movement. Our work helps communicate and strengthen this synergy.

