SUBMISSION TO PUBLIC CONSULTATION

Wildlife Connectivity, Hunting Heritage, and Game Species Habitat: Impacts of the Proposed ALTO High-Speed Rail Corridors

Submitted to the ALTO High-Speed Rail Public Consultation, April 24, 2026

Prepared by	ALTO HSR Citizens Research Initiative
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PURPOSE OF THIS SUBMISSION

This submission documents the impacts of the proposed ALTO High-Speed Rail corridors on wildlife connectivity, game species populations, and hunting heritage in Eastern Ontario. It identifies specific gaps in ALTO's published environmental assessment materials, presents evidence from peer-reviewed research and provincial wildlife management data, and makes formal requests for assessment actions that must be completed before any route selection is finalised. This submission is addressed to ALTO HSR and to federal decision-makers with oversight responsibility for the consultation process.

Section 1 — How High-Speed Rail Affects Wildlife and Game Species Populations

1.1 The permanent fencing barrier

A high-speed rail line at 300 km/h is not comparable to a conventional railway. It requires continuous exclusion fencing of approximately three metres in height along the full length of the right-of-way; this is international HSR standard practice and a direct consequence of operating speeds. No level crossings are possible at any point along the corridor. The right-of-way is fully enclosed. This creates a permanent, impermeable east-west barrier of a kind that has no precedent in this landscape: neither Highway 401 nor Highway 7 operates with continuous fencing that prevents wildlife movement entirely.

For game species, the consequences are direct and permanent. White-tailed deer, black bear, moose, and turkey all use seasonal north-south movement corridors between summer range and winter yarding, between feeding and bedding habitat, and for breeding dispersal. A fenced east-west barrier severs these movements, compressing animals into smaller effective ranges and, over time, producing genetic isolation between populations on either side. Peer-reviewed research (Barrientos and Borda-de-Água, 2017) documents that when a rail corridor bisects a population's territory, part of the habitat is lost and the remainder is degraded through cascade effects. De Santo and Smith (1993) established that wildlife migration corridors and dispersal orientation are altered or destroyed by rail infrastructure, and that prudent route selection should run parallel to, not through, natural areas.

1.2 Bear population fragmentation: the peer-reviewed evidence

The claim that bears have "adapted" to existing linear barriers is not supported by the peer-reviewed literature. Proctor et al. (2020) conducted a genetic pedigree study of black bears across two highway corridors in western Canada and found measurable population fragmentation alongside long-established roads, with reduced cross-corridor movement compared to expected rates. The more accurate framing is that adding a new impermeable HSR barrier has incremental effects on a landscape already partially fragmented by Highway 7 and Highway 401, and incremental is not the same as low risk. Ontario MNRF provincial monitoring data (2017–2024) identifies the area between Algonquin Park and Georgian Bay as among the highest black bear density areas in southern Ontario. This is the landscape through which the northern corridor near Highway 7 would pass. The cumulative effect of adding a second impermeable barrier in a high-density bear zone has not been assessed.

1.3 Construction-phase disruption

Construction of a high-speed rail corridor requires clearing, blasting through Shield rock, sustained heavy equipment operation, and access road construction over an estimated 8–10 years. Research shows significant disruption of deer movement patterns for multiple years during construction, often extending one kilometre or more on either side of the active work zone. The cumulative effect of construction-phase disruption on WMU-level deer populations in affected areas has not been assessed or disclosed by ALTO.

Section 2 — The Southern Corridor: Impacts on Core Wildlife Habitat

THE FRONTENAC ARCH BIOSPHERE RESERVE

The Frontenac Arch is the primary north-south wildlife movement corridor in eastern North America, the land bridge connecting Algonquin Provincial Park to the Adirondack Mountains in New York State. It is described by the Nature Conservancy of Canada as "one of the most important forest corridors east of the Rocky Mountains." It is home to deer, black bear, fisher, eastern wolf, and moose. The southern rail route runs directly across this corridor at its narrowest point, a permanently fenced east-west barrier cutting the primary north-south wildlife dispersal corridor.

2.1 WMU 62 and WMU 64A — Core Deer and Bear Country

The southern corridor passes through Wildlife Management Units 62 (Central Frontenac: Shield/limestone transition, known for deer, bear, and turkey) and 64A (Rideau Lakes area: strong deer populations on agricultural-forest edge). These are among the most productive deer hunting units in Eastern Ontario precisely because the habitat is intact and connected across the current landscape. A permanently fenced corridor bisecting these WMUs would reduce the effective habitat area available to deer populations on either side and sever the north-south movement that sustains their current density.

2.2 Frontenac Arch as a bear dispersal corridor

For black bears specifically, the Frontenac Arch functions as a dispersal corridor for Algonquin-origin bears undertaking seasonal forays beyond park boundaries. Research by Obbard et al. (2017) used GPS and VHF collar data on 72 black bears from Algonquin Provincial Park and documented that bears undertake seasonal forays beyond park boundaries, facing elevated mortality risk outside the park. The Frontenac Arch is one of the primary landscape features connecting Algonquin-origin bears to southern ranges. An impermeable east-west barrier across this corridor would compress bear ranges and interrupt the dispersal of young males that maintains genetic connectivity across the

regional population. The Frontenac Arch Biosphere Network is actively mapping wildlife linkages through this landscape for bear, fisher, eastern wolf, and at-risk species; a rail line in this location would sever exactly the corridors they are spending conservation resources to protect.

2.3 Severing the Cataraqui Trail corridor

The 104 km Cataraqui Trail, a segment of the Trans-Canada Trail through South Frontenac and Frontenac Counties, runs directly through the proposed southern corridor. This trail provides foot and ATV access to Crown land and remote woodlots through the Frontenac region. Conversion of this corridor to a fenced HSR right-of-way would permanently eliminate this access corridor, with no identified replacement route. Multi-generational landowners in South Frontenac and Rideau Lakes whose properties straddle the proposed alignment would be permanently divided by a barrier that cannot be crossed to retrieve downed game, access stands on the far side, or move between woodlots on either side of the line. There is currently no guarantee of compensation for lost hunting access in the ALTO consultation materials.

Section 3 — The Northern Corridor: Two Distinct Sub-Alignments

The northern corridor encompasses a wide study area with meaningfully different implications depending on whether a route would run near Highway 7 or further north into remote Shield country. These sub-alignments cannot be treated as equivalent for the purposes of wildlife impact assessment.

3.1 Near Highway 7 alignment — incrementally worse in high-density bear country

A route through Marmora, Madoc, and Perth would follow landscape already bisected by Highway 7 and hydro corridors. The incremental fragmentation impact of adding a second impermeable barrier is lower than placing a new barrier through intact wilderness, but the Ontario MNRF monitoring data identifies this region — Algonquin-adjacent mixed deciduous forest in WMUs 60, 73, and 74B — as among the highest black bear density areas in southern Ontario. The bear population in this zone is not low, and the impact of an additional impermeable barrier should not be assumed to be low simply because Highway 7 already exists.

3.2 Remote northern alignment — moose, wolf, and elk draw country

A more northerly alignment would enter WMU 61 (Tudor-Cashel), moose, bear, wolf, and elk-draw country with minimal existing infrastructure. WMU 61 is one of the limited Ontario Wildlife Management Units eligible for the elk draw. Elk require large, connected, undisturbed ranges and are particularly sensitive to linear infrastructure disturbance during calving and rutting periods. Research shows that rail corridors open access routes for predators into previously isolated habitat, depressing ungulate populations for decades. The impact of any northern alignment on the WMU 61 elk herd has not been assessed or disclosed.

Section 4 — Comparative Assessment of Corridors

Factor	Southern Corridor (S. Frontenac / Rideau Lakes)	Northern — Near Hwy 7 (Marmora / Madoc)	Northern — Remote (Tudor-Cashel)
Primary game species	Deer, bear, turkey, waterfowl	Deer, bear, turkey	Moose, bear, elk (draw unit)
Frontenac Arch severed?	YES — at narrowest point	No	No
Existing fragmentation	Low — intact through the Frontenac Arch	Moderate — Hwy 7 present	Low — remote and intact
Bear population context (MNRF)	Fragmented southern ON landscape	HIGH — Algonquin-adjacent; highest densities in southern ON	Moderate — remote Shield
Deer population impact	Severe — severs core connected habitat in WMUs 62 and 64A	Moderate	Lower — less deer country
Bear connectivity impact	Severe — severs Frontenac Arch dispersal corridor for Algonquin-origin bears	Serious — new barrier in high-density bear zone	Serious — remote bear country
Moose / elk impact	Limited moose; some turkey	Moderate moose; turkey	Severe — primary elk draw unit
WMU impact	High — WMUs 62, 64A core habitat severed	Moderate — WMUs 60, 73, 74B affected	Severe — WMU 61 (elk draw)
Wildlife crossing feasibility	Poor — Shield terrain limits crossing effectiveness	Better — some infrastructure present	Difficult and costly — remote

Section 5 — Gaps in ALTO's Assessment Materials

The following substantive gaps in environmental assessment materials have been identified. These represent the minimum information required for a lawful and complete assessment of the proposed corridors' impacts on wildlife populations. None of this information has been publicly disclosed by ALTO to date. This assessment is independently corroborated by the Ontario Federation of Anglers and Hunters (OFAH), which in a formal submission dated March 24, 2026 confirmed that "no field studies or baseline environmental data have been made available to the public or stakeholder groups, and very little has been shared regarding mitigation strategies."

- No assessment of impacts on Wildlife Management Units in the affected corridors has been published. WMU-level deer, moose, and bear population data maintained by the Ontario MNRF is publicly available and should have been used as a baseline.
- No consultation with the Ontario Ministry of Natural Resources and Forestry on deer or moose population effects has been documented in ALTO's public materials.
- No WMU-level black bear harvest and density analysis using MNRF's publicly available harvest data (data.ontario.ca) has been conducted or published.
- No engagement with the Frontenac Arch Biosphere Network's ecological corridor mapping has been documented, despite the southern corridor running directly through the area FABN has designated as its priority conservation focus.
- No wildlife corridor connectivity assessment for either route has been published.
- No assessment of the impacts on the WMU 61 elk herd has been published.

- No assessment of wildlife crossing feasibility — including who bears the cost of installing and maintaining crossings — has been published for either corridor.
- No assessment of compensation mechanisms for landowners who lose hunting access through property severance has been published.

Section 6 — Formal Requests

1	**Commission and publish a WMU-level wildlife impact assessment before route selection** Using MNRF black bear population density data (2017–2024), WMU-level harvest records (data.ontario.ca), and deer and moose population data for all WMUs intersected by either corridor. This assessment must be publicly released as part of the consultation record before April 24, 2026, or before any route selection decision is made.
2	**Consult formally with the Ontario MNRF on game species population effects** The Ontario Ministry of Natural Resources and Forestry is the statutory manager of white-tailed deer, black bear, moose, elk, and wild turkey populations in Ontario. ALTO has not documented any formal consultation with MNRF on the WMU-level population consequences of either corridor. This consultation must be conducted and the results publicly disclosed.
3	**Engage the Frontenac Arch Biosphere Network's ecological corridor mapping** FABN has designated the Charleston Lake to Thousand Islands linkage as its priority conservation focus and is actively mapping wildlife corridors through the Frontenac Arch for bear, fisher, eastern wolf, and at-risk species. This mapping must be reviewed and integrated into any corridor assessment for the southern option.
4	**Conduct a wildlife connectivity assessment addressing the Frontenac Neck bottleneck** Any southern corridor route assessment must include a formal wildlife connectivity assessment specifically addressing the Frontenac Arch bottleneck geometry, the feasibility of wildlife crossing structures that can maintain bear and deer corridor function, and an evaluation of whether this bottleneck can be mitigated. For the purposes of hunting heritage and game species populations, this assessment must address WMU 62 and 64A specifically.
5	**Assess and cost wildlife crossing infrastructure for both corridors** ALTO must publish a wildlife crossing feasibility assessment for both corridors, including proposed locations, design specifications adequate for large mammals including bear and moose, and the full lifecycle cost including construction and maintenance. It must be clearly stated whether these costs are borne by the project or by landowners, WMU managers, or municipalities.
6	**Assess the WMU 61 elk herd impact for any remote northern alignment** WMU 61 is one of Ontario's limited elk draw units. Any northern alignment passing through or adjacent to WMU 61 must include a specific assessment of impacts on the elk herd, developed in consultation with MNRF's elk management program.
7	**Publish a compensation framework for hunting access loss** Landowners and Crown land users who lose hunting access through property severance by the HSR right-of-way require a clear compensation and access-guarantee framework before route selection. This framework must address: guaranteed wildlife crossing

locations and dimensions; compensation for lost access to stands and woodlots severed by the corridor; and access rights for retrieval of game across the right-of-way boundary.

Conclusion

The proposed ALTO HSR corridors traverse some of Eastern Ontario's most productive hunting country, and in the case of the southern corridor, directly bisect the primary north-south wildlife movement corridor in eastern North America at its most geographically constrained point. The peer-reviewed literature on wildlife fragmentation from linear infrastructure is unambiguous: impermeable barriers reduce population viability, interrupt dispersal, and cause genetic isolation over time. None of the baseline wildlife assessment information required to evaluate these consequences has been published by ALTO.

The ALTO HSR Citizens Research Initiative respectfully requests that ALTO commission and publicly release the seven assessments identified in Section 6 before any route selection decision is finalised. Route decisions made without this information will be legally vulnerable, scientifically indefensible, and irreversible in their consequences for wildlife populations and hunting heritage across eastern Ontario.

The concerns documented in this submission are independently corroborated by the Ontario Federation of Anglers and Hunters. In a formal submission dated March 24, 2026, OFAH, Ontario's largest non-profit fish and wildlife conservation organization, representing 100,000 members and 675 clubs, stated it cannot support the proposed high-speed rail project. OFAH's Fish & Wildlife Biologist independently confirmed that the continuous fenced corridor will function as a complete ecological barrier that cannot be addressed through conventional mitigation methods; that no field studies or baseline environmental data have been made available to stakeholder groups; that Alto representatives have explicitly stated crossings will be minimized; and that the proposed $60–90 billion budget is likely insufficient to achieve even standard mitigation practices. OFAH further assessed that adequate mitigation would require crossing densities approaching ≤1 km in natural landscapes, a standard the current project design explicitly rejects. This submission asks for the same thing: the evidence base that responsible decision-making requires before routes are locked in.

Key References

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