

ENVIRONMENTAL POLICY ASSESSMENT

The Southern Corridor Through Eastern Ontario: SARA and UNESCO Biosphere Reserve Implications

Federal Species at Risk Act and UNESCO Biosphere Reserve Implications for the Alto High-Speed Rail Project

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KEY FINDING

The southern corridor through Eastern Ontario presents a significant concentration of environmental regulatory risk that has not been adequately addressed in public consultation materials. The convergence of SARA-listed species, identified critical habitat, and UNESCO Biosphere designation makes this alignment subject to binding federal obligations that require thorough assessment before any corridor selection is finalised.

ALTO's CEO confirms on public record: absolute fencing, species surveys just beginning, SARA s.79 obligations unmet

On CBC Ottawa Morning on March 25, 2026 — one day before the consultation closed — ALTO's CEO Martin Imbleau made two admissions directly relevant to this assessment's SARA analysis.

First, on fencing: "Nothing can cross it. If at 330 kilometres you cross a deer, it's a huge incident... overpass and underpass will have to be strategically positioned." This directly confirms that the ALTO corridor will function as a complete barrier to wildlife movement, including the movement of SARA-listed species such as grey ratsnake, Blanding's turtle, and wood turtle, at all points between the strategically placed crossings. Under SARA s. 58, destruction of critical habitat is prohibited. A corridor that eliminates movement between habitat patches effectively destroys the ecological function of that habitat, regardless of whether the physical substrate is intact.

Second, on species surveys: "We intend to file the initiation of the [environmental assessment] process later this year. So we need to look at and to have some sampling in dangerous species. Are there any concerns on the wildlife that we're not aware of?" He confirmed field surveys were commencing "this week." SARA s. 79 requires that any project undergoing impact assessment must identify all adverse effects on listed species and their critical habitat before the project proceeds, and must ensure measures are taken to avoid or lessen those effects. The CEO's public confirmation that ALTO was still asking whether SARA-listed species concerns exist as the consultation closed establishes that this assessment has not been conducted. The obligation is mandatory and applies regardless of any ministerial exemption under Bill C-15 or Bill C-5.

Source: CBC Ottawa Morning, March 25, 2026. cbc.ca/listen/live-radio/1-100-ottawa-morning/clip/16205093

Introduction

ALTO, the federal Crown corporation responsible for delivering high-speed rail between Toronto and Quebec City, has proposed two corridor options for the segment between Ottawa and Peterborough. The southern corridor swings through Perth, Smiths Falls, Rideau Lakes, and South Frontenac before reaching Peterborough, passing through or adjacent to the Frontenac Arch Biosphere Reserve.

This policy assessment examines the legal, environmental, and diplomatic implications of the southern corridor choice, focusing on two intersecting regulatory frameworks that create binding obligations for any federal infrastructure project in this region: the federal Species at Risk Act (SARA) and Canada's commitments under the UNESCO Man and the Biosphere Programme.

Bill C-15, part of the 2025 federal budget, grants ALTO enhanced expropriation powers and development holds along proposed corridors. Bill C-5 allows the Minister of Transport to exempt the project from certain environmental review processes. However, as addressed in detail below, SARA's prohibitions and impact assessment obligations operate independently of these instruments and cannot be overridden by ministerial exemption.

The Southern Corridor's Environmental Footprint

The total maintained infrastructure corridor (track, fencing, access roads, cleared safety margins, and maintenance strips) is approximately 60 metres wide. The fenced track right-of-way itself is approximately 30 metres. The southern corridor would traverse or border:

- The Frontenac Arch UNESCO Biosphere Reserve (approximately 2,700 km², designated 2002)
- Confirmed regulated habitat or critical habitat for many endangered and threatened species under the Species Conservation Act, 2025 (SCA) and SARA Schedule 1, including Red-headed Woodpecker, Cerulean Warbler, American Ginseng, Blunt-lobed Woodsia, Toothcup, Loggerhead Shrike, Western Chorus Frog, Spotted Turtle, Blanding's Turtle, and Grey Ratsnake
- Thousand Islands National Park buffer zones and associated protected areas
- Frontenac Provincial Park and Charleston Lake Provincial Park ecosystems
- Thousands of hectares protected under the International Biodiversity Framework Target 3 (30x30) including Queen's University Biological Station, Nature Conservancy of Canada lands, Rideau Canal parklands, and local land trusts

Part I — Species at Risk Act (SARA) Implications

SARA-Listed Species in the Southern Corridor

The southern corridor intersects with confirmed or probable habitat for the following species listed on Schedule 1 of SARA. Each listing carries automatic legal prohibitions and triggers mandatory recovery planning obligations. The SCA column reflects updated status under Ontario's Species Conservation Act, 2025 (enacted June 5, 2025; not yet proclaimed), which replaces the Endangered Species Act, 2007. Under the SCA, Ontario is removing provincial protections for SARA-listed aquatic species and migratory birds, making federal SARA the operative protection for several species in this corridor.

Species	SARA Status	SCA/ESA Status	Relevance to Southern Corridor	Key Threat
Spotted Turtle (Clemmys guttata)	Endangered	Endangered	Inhabits bogs, fens, and shallow wetlands throughout eastern Ontario. Recovery strategy identifies critical habitat in the southern corridor area. Population declining significantly.	Habitat loss; illegal pet trade; linear barriers
Blanding's Turtle (Emydoidea blandingii)	Threatened	Threatened	Inhabits wetlands and open water. Makes the largest overland movements of any Ontario turtle. Extremely vulnerable to linear barriers. Delayed maturity means adult mortality has severe population impacts.	Habitat fragmentation; road/rail mortality
Grey Ratsnake (Pantherophis spiloides) Frontenac Arch population	Threatened	Threatened	Canada's largest snake; one of only two Ontario populations. Individuals travel up to 4 km between hibernation and summer habitat. Strong site fidelity. Over 30% population decline in three generations. A fenced rail line would permanently sever movement corridors.	Habitat loss; road mortality; persecution
Red-headed Woodpecker	Endangered	Endangered	Inhabits woodlands and forests. Largest threats include loss of nesting sites and collisions with vehicles, buildings, utility towers, and power lines.	Habitat loss; collision mortality
Cerulean Warbler	Endangered	Endangered	Inhabits deciduous forests with open understory. Requires large tracts of forest found in the Frontenac Arch. Largest threats are habitat loss and forest fragmentation.	Habitat fragmentation
Loggerhead Shrike (Eastern subspecies)	Endangered	Endangered	Alvar grassland specialist. Total wild Canadian population ~40 individuals (WPC 2023); 22 breeding pairs confirmed in Ontario (2022) — below the Recovery Strategy's short-term Ontario target of 35 pairs. Napanee Plain holds one of only two remaining Canadian breeding areas.	Habitat loss; linear barriers; vehicle strike
Least Bittern	Threatened	Threatened	Wetland specialist. Does not tolerate human disturbance (including loud noises) and will leave marshes if habitat alteration becomes too great. Habitat fragmentation is the largest threat.	Noise/disturbance; habitat fragmentation

Western Chorus Frog	Not assessed provincially — SARA is operative protection	Threatened	Small wetland frog. Low mobility and high site fidelity mean it does not tolerate habitat fragmentation. Linear features are among the highest identified threats.	Habitat loss; linear barriers
Additional species at risk (various)	Various	Various	The Frontenac Arch region also supports Eastern Whip-poor-will (Threatened), Eastern Musk Turtle (Special Concern), all 8 bat species (7 Endangered), Bobolink (Threatened federally; Special Concern provincially following 2021 COSSARO re-assessment — federal SARA is operative protection under the SCA), Eastern Meadowlark (Threatened), and numerous plant species.	Various

Table 1. SARA Schedule 1 species with confirmed or probable habitat in the southern corridor. SCA status reflects Ontario's Species Conservation Act, 2025.

SARA Legal Framework and Obligations

Automatic Prohibitions (Sections 32, 33, 58)

SARA's prohibitions attach automatically when a species is listed on Schedule 1. Under Sections 32 and 33, it is an offence to kill, harm, harass, capture, or take an individual of any species listed as extirpated, endangered, or threatened. Section 58 prohibits the destruction of any part of the critical habitat of a listed endangered or threatened species where the critical habitat is on federal land, the species is aquatic, or the species is a migratory bird protected under the Migratory Birds Convention Act, 1994. For any Endangered or Threatened species, any construction activity in or adjacent to their critical habitat that results in harm to individuals or destruction of critical habitat would constitute a federal offence.

Critical Habitat Protection and the Safety Net

SARA contains a 'safety net' provision for critical habitat located on non-federal lands. If the competent minister forms the opinion that critical habitat is not effectively protected under provincial laws, SARA requires the minister to recommend that the Governor in Council make an order prohibiting its destruction. This provision means that even on private land through which the southern corridor would pass, federal critical habitat protection can be triggered.

This safety net provision is of particular importance given Ontario's Bill 5 reforms. As the Species Conservation Act, 2025 removes provincial protections for SARA-listed migratory birds and certain other species, SARA's safety net becomes the primary backstop for species including the Loggerhead Shrike, Bobolink, and Eastern Meadowlark. The federal government cannot simultaneously withdraw provincial protection through regulatory inaction and advance federal infrastructure through the critical habitat those protections were meant to secure.

Impact Assessment Obligations (Section 79)

Section 79 of SARA imposes additional requirements on any project undergoing an impact assessment where Schedule 1 species may be affected. The proponent must identify all adverse effects the project could have on listed species and their critical habitat, and if the project proceeds, must ensure that measures are taken to avoid or lessen those effects and to monitor them. This is not optional and applies regardless of any exemptions under Bill C-15 or Bill C-5, as SARA's Section 79 obligations operate independently of the Impact Assessment Act.

Permitting Requirements and the Three-Part Test

Any activity that would otherwise contravene SARA's prohibitions requires a permit from the competent minister. The minister may only issue such a permit if three conditions are all met: all reasonable alternatives to the activity that would reduce the impact on the species have been considered; all feasible measures will be taken to minimise the impact on the species, its critical habitat, or residences; and the activity will not jeopardise the survival or recovery of the species — the 'no jeopardy' test.

For species with very small Canadian populations — the Spotted Turtle (population declining significantly), the Grey Ratsnake (Frontenac Arch population being one of only two in Canada), and the Loggerhead Shrike (approximately 40 wild individuals nationally) — demonstrating that a permanently fenced high-speed rail corridor would not jeopardise survival or recovery would be extremely challenging. The 'no jeopardy' condition is not a formality; it is an evidentiary threshold that requires demonstrable scientific support.

REGULATORY IMPLICATION: THE 'ALL REASONABLE ALTERNATIVES' TEST

The 'all reasonable alternatives' condition under SARA permitting creates a direct obligation to evaluate whether alternative alignments could avoid or reduce impacts to these species. This legal test requires the proponent to demonstrate that all reasonable alternatives have been considered and that feasible measures to minimise impact have been taken before any permit can be issued.

Interaction with Ontario's Species Conservation Act, 2025

Ontario's 2025 Bill 5 (Protect Ontario by Unleashing our Economy Act) enacted the Species Conservation Act, 2025, replacing the Endangered Species Act, 2007. Under the SCA, Ontario is proposing to cease regulating aquatic species and migratory birds already protected under federal SARA, to reduce duplication. This reform has the paradoxical effect of making SARA the primary, rather than supplementary, layer of protection for several species in the southern corridor. Where previously a proponent might have dealt primarily with provincial regulators, SARA now becomes the binding framework for species like the Cerulean Warbler, Red-headed Woodpecker, and Loggerhead Shrike. Federal regulatory exposure has correspondingly increased.

Bill C-15 and Fast-Tracking: The Legal Tension

Bill C-15 grants the Minister of Transport authority to exempt ALTO from certain environmental review requirements and provides enhanced expropriation powers. However, SARA's prohibitions under Sections 32, 33, and 58, and the Section 79 impact assessment obligations, are not provisions that can be overridden by the Minister of Transport. They are standalone federal offences and obligations that persist regardless of project exemptions. If Bill C-15 is used to fast-track the project through the southern corridor while SARA obligations remain unmet, the project would face legal challenge. Environmental organisations have standing to bring SARA-related judicial review applications, and precedent exists for courts halting or modifying federal projects that fail to comply with SARA requirements.

Part II — UNESCO Biosphere Reserve Implications

The Frontenac Arch Biosphere Reserve

The Frontenac Arch Biosphere Reserve was designated by UNESCO in 2002 under the Man and the Biosphere (MAB) Programme. It is one of only 19 UNESCO Biosphere Reserves in Canada and part

of a global network of over 700 sites in more than 130 countries. The reserve encompasses approximately 2,700 km², from Brockville to Kingston, extending north to Verona and Perth.

The Frontenac Arch itself is an ancient granite ridge connecting the Canadian Shield to the Adirondack Mountains in New York State. Where this ridge intersects with the St. Lawrence River, it forms the Thousand Islands. The Arch is recognised as the last remaining intact forest corridor in eastern North America and the most biodiverse region in Canada, where five separate forest regions converge. The area is structured in three concentric zones: a core area of 5,073 hectares; buffer zones of 15,900 hectares; and transition areas of approximately 200,000 hectares.

UNESCO Designation Criteria and Periodic Review

Under Article 4 of the Statutory Framework of the World Network of Biosphere Reserves, a site must encompass a mosaic of ecological systems representative of major biogeographic regions; be of significance for biological diversity conservation; provide an opportunity to demonstrate approaches to sustainable development; be of appropriate size to serve the three core functions; and include these functions through appropriate zonation. Article 9 requires periodic review every ten years. If a biosphere reserve no longer satisfies the Article 4 criteria, the MAB International Coordinating Council may recommend corrective measures or removal from the World Network. A total of 61 sites have been withdrawn from the World Network by 14 countries.

How the Southern Corridor Threatens the Designation

Severing the Ecological Corridor Function

The fundamental basis for the Frontenac Arch's international significance is its role as a continental-scale ecological corridor, a land bridge connecting habitats between the Canadian Shield and the Adirondack Mountains. A permanently fenced, grade-separated high-speed rail line bisecting this corridor would divide it into two fragments. Habitat fragmentation and linear features are listed as two of the highest threats identified for the Frontenac Arch. The Arch would no longer function as an intact corridor, directly undermining the ecological rationale that justified the UNESCO designation.

Degrading the Zonation System

UNESCO requires a functioning system of core, buffer, and transition zones. A rail corridor cutting through any of these zones (particularly buffer zones that insulate core protected areas from disturbance) would compromise the zonation framework. High-speed rail infrastructure (including tracks, fencing, access roads, maintenance facilities, and cleared safety zones) is not compatible with the ecological practices required within buffer zones under the MAB Programme.

Contradicting the Three Core Functions

The Frontenac Arch Biosphere Reserve integrates three mandated functions: conservation of biodiversity and cultural diversity; economically and environmentally sustainable development; and logistic support through research, monitoring, education, and training. A federally imposed infrastructure project that fragments habitat for SARA-listed species directly contradicts the conservation function. The absence of a local station means no sustainable development benefit to biosphere communities. The potential loss of the Biosphere Reserve's integrity would undermine ongoing research and monitoring programmes that depend on its designation.

Undermining Stakeholder Participation

The UNESCO framework requires meaningful local participation in biosphere reserve governance. The following municipalities have passed formal council motions opposing the southern corridor:

¹ The 2,700 km² figure is the operational region within which the Frontenac Arch Biosphere Network works, as cited on the Network's own website and in general-audience sources. The official UNESCO MAB Programme designated reserve area (terrestrial and marine) is 220,973 hectares (853 sq mi), comprising a core area of 5,073 ha, buffer zones of 15,900 ha, and transition areas of approximately 200,000 ha. Source: UNESCO MAB Programme, frontenac-arch profile; Wikipedia, Frontenac Arch Biosphere Reserve (confirmed February 2026). Both figures are accurate and refer to different extents of the same designation.

South Frontenac Township (unanimous), Rideau Lakes Township (unanimous), the City of Belleville (unanimous, specifically citing the Moira watershed), Tyendinaga Township, and Stone Mills Township (Lennox and Addington). The City of Kingston has passed a motion opposing the project without a Kingston-area stop. If the project proceeds through Bill C-15's fast-tracking provisions over this level of local opposition, it would directly contradict UNESCO's requirement for participatory governance of biosphere reserves.

Economic Value at Risk

A February 2026 white paper by the Canadian Parks and Wilderness Society (CPAWS), peer-reviewed by the C.D. Howe Institute and Simon Fraser University, found that in 2023–24, visitor-driven economic activity in Canada's protected and conserved areas contributed \$10.9 billion to GDP, supported 150,000 jobs, generated \$6.6 billion in labour income, and returned \$1.4 billion in tax revenue, every dollar spent by governments and non-profits generated \$3.62 in visitor spending.

South Eastern Ontario recorded \$1.8 billion in tourism spending in the first nine months of 2024, with domestic growth of 11% and international growth of 15%. Kingston alone welcomed 2.6 million visitors who spent \$512 million in 2024. The UNESCO Biosphere designation functions as an internationally recognised quality mark for nature-based tourism. Loss of that designation would not only diminish the region's marketing position but signal a degradation of the ecological values that attract visitors.

KEY FINDING

At the next periodic review, Canada would need to demonstrate that the Biosphere Reserve continues to meet Article 4 criteria. A rail corridor bisecting the reserve would make it very difficult to argue that the site still provides an intact mosaic of ecological systems, effectively conserves biodiversity through its zonation, and demonstrates sustainable development rather than imposed industrial infrastructure. The most likely outcomes would be a UNESCO recommendation for corrective action, or voluntary withdrawal. Losing a UNESCO Biosphere designation would be internationally damaging to Canada's credibility in conservation commitments, including obligations under the Kunming-Montreal Global Biodiversity Framework.

Part III — Compounding Risks: The Intersection of SARA and UNESCO Obligations

Mutually Reinforcing Legal and Diplomatic Obligations

The species that trigger SARA's most stringent protections are the same species that underpin the Frontenac Arch's UNESCO significance. The Grey Ratsnake is specifically cited by UNESCO as a characteristic species of the Biosphere Reserve. The Spotted Turtle's bog and wetland habitats are part of the mosaic of ecological systems that justify the designation. Impacts to these species under SARA therefore simultaneously degrade the ecological values that sustain the UNESCO designation. Conversely, loss or degradation of the UNESCO designation would signal internationally that Canada is failing to protect the biodiversity it has committed to conserve.

The Carbon Paradox

ALTO is promoted partly on its environmental credentials: electrified rail reducing transportation carbon emissions. Routing through the Frontenac Arch creates a profound paradox. The Biosphere Reserve's intact ecosystems, including peatlands and wetlands, function as significant nature-based climate solutions, sequestering or storing large amounts of carbon. Fragmenting these systems would convert carbon storage into carbon release, while simultaneously destroying habitat for species whose protection is part of Canada's international biodiversity commitments. The project's climate

narrative cannot withstand the contradiction of destroying one of the most ecologically significant landscapes in eastern Canada to build 'green' infrastructure.

Cumulative Effects with Provincial Regulatory Changes

Ontario's Bill 5 reforms to species-at-risk protection are creating a period of regulatory transition and uncertainty. The Species Conservation Act, 2025 narrows habitat definitions, removes the 'harass' prohibition, and defers to federal SARA for aquatic and migratory bird species. In this context, any weakening of federal environmental review through Bill C-15 creates a compounding gap in protection. The southern corridor would pass through this regulatory gap at precisely the moment when oversight is most needed and least robust.

Litigation and Delay Risk

Environmental organisations in Canada have demonstrated willingness and capacity to bring SARA-related judicial review applications against major infrastructure projects. The convergence of an endangered species (Spotted Turtle), a UNESCO-designated landscape, strong municipal opposition, and potential procedural shortcomings through fast-tracking creates favourable conditions for legal challenge. Even if such challenges do not ultimately succeed in court, they would introduce significant delay and uncertainty into the project timeline.

Part IV – Recommendations

<p>For ALTO and Transport Canada</p>	<p>Conduct a full comparative risk assessment of all corridor options, accounting for the full regulatory, legal, and reputational costs of each alignment — not only construction costs. All corridor options should be evaluated against SARA obligations with equal rigour, and the results must be made public before the consultation deadline.</p>
<p>Publish SARA species inventory</p>	<p>Publish a comprehensive SARA species inventory for the corridor under assessment. ALTO has not yet publicly released a full inventory of SARA-listed species and identified critical habitat. This information is essential for informed public consultation.</p>
<p>Commission independent Biosphere assessment</p>	<p>Commission an independent assessment of impacts to the Frontenac Arch Biosphere Reserve, conducted in consultation with the Frontenac Arch Biosphere Network, specifically addressing how the project would affect the reserve's ability to meet Article 4 criteria at its next periodic review.</p>
<p>Engage UNESCO MAB Secretariat</p>	<p>Before any southern corridor decision, ALTO and Transport Canada should formally consult with UNESCO regarding the potential implications for the Frontenac Arch designation. Early engagement is preferable to a reactive response after construction begins.</p>

Conclusion

The southern corridor through eastern Ontario would cut through the heart of one of only 19 UNESCO Biosphere Reserves in Canada, fragment confirmed habitat for federally protected species including an endangered turtle found in only 6% of its global range within Canada, trigger a dense web of federal legal obligations that cannot be overridden by fast-tracking legislation, risk the loss of an internationally recognised conservation designation, and contradict the environmental narrative on which the entire ALTO project is premised.

These are not trade-offs to be managed through mitigation measures. A permanently fenced, grade-separated high-speed rail line is a permanent barrier. Its impacts to ecological connectivity, species movement, and landscape integrity are irreversible. The Frontenac Arch has been a continental-scale ecological corridor for millennia. The decision to sever it should not be taken without full understanding of the legal, ecological, economic, and diplomatic consequences documented in this assessment.

References and Legal Authorities

Federal Legislation

Species at Risk Act, S.C. 2002, c. 29 (SARA)
Impact Assessment Act, S.C. 2019, c. 28, s. 1
Migratory Birds Convention Act, 1994, S.C. 1994, c. 22
Fisheries Act, R.S.C. 1985, c. F-14
Bill C-15, Fall Economic Statement Implementation Act, 2025

Provincial Legislation

Endangered Species Act, 2007, S.O. 2007, c. 6 (as amended by Bill 5, 2025)
Species Conservation Act, 2025 (enacted June 5, 2025; not yet proclaimed into force)

International Framework

UNESCO Statutory Framework of the World Network of Biosphere Reserves (1995)
Seville Strategy for Biosphere Reserves (1995)
UNESCO MAB Technical Guidelines for Biosphere Reserves (2021)
Kunming-Montreal Global Biodiversity Framework (2022)

Recovery Strategies (SARA Public Registry)

Recovery Strategy for the Spotted Turtle (*Clemmys guttata*) in Canada, 2018.
Recovery Strategy for the Blanding's Turtle, Great Lakes/St. Lawrence population, 2018.
Recovery Strategy for the Grey Ratsnake, Carolinian and Great Lakes/St. Lawrence populations, 2020.
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Economic and Tourism Sources

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