

ERTEC Environmental Systems

Protecting Global Lands and Waterways™

Case Study

E-Fence™

Wildlife Exclusion Fence



- > Lower Project Costs
- > Better Performance
- > ZERO Waste
 - ✓ Reusable
 - ✓ Recyclable



E-Fence HDPE Polymer Matrix



5 miles (8 km) of E-Fence™ was installed around the project and along roads to exclude several species at risk

Application:

Residential Construction Project

Product:

Wildlife Exclusion

ERTEC E-Fence 60" (152 cm), black installed with 8" (20 cm) climber barrier lip

Project:

Boblo Island Residential Development

Owner:

[Amico Infrastructures, Inc.](#)

Species at Risk:

[Eastern foxsnake \(*Pantherophis gloydi*\)](#)

ERTEC E-Fence is a highly reliable and low cost species exclusion and control barrier designed for projects in habitat where threatened small vertebrates are present. The fence is designed to exclude small vertebrate species from active construction areas, control movement within fragmented habitat and for survey perimeter control. E-Fence has the capability to serve more than one function in the same trench (fence-line): 1) Wildlife exclusion, 2) Hi-Viz construction safety and 3) Sediment control using ERTEC's revolutionary sediment control systems.

Benefits of Use: Typically cuts project costs significantly, is highly configurable for different species and habitat, and most important for permanent installations, E-Fence allows wind and water flow-through which significantly reduces knock-downs, and washouts, providing excellent functional longevity. [Link to E-Fence Brochure](#)

The Challenge: The current Best Management Practice recommends a very expensive two-meter-high fence which is lumber-framed, lumber-braced, wire-backed and geotextile-covered. Geotextile fences are fraught with very high total project costs and ongoing maintenance difficulty. Geotextiles tend to fail storm events or from longer-term (6 months) UV exposure. It is common to find these geotextile fences either riddled with holes or with locations along the base where it has been undermined by stormwater flows. Geotextile/Lumber fences are known to be highly unreliable. E-Fence does not suffer these same issues.

Project Background: Bois Blanc Island, commonly called Boblo Island, is an island in the Detroit River and is part of Amherstburg, Ontario. Bois Blanc is known regionally as the former home of the [Boblo Island Amusement Park](#), which began operation in 1898 and closed on September 30, 1993. The island is about 4.0 kilometres (2.5 mi) long, 0.80 km (0.5 mi) wide and 110 hectares (272 acres) in size. The island is served by a private ferry. The plan is to build a 32-hectare residential development (continued on back page)



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E-Fence features an 8" climber barrier lip directed towards the sensitive habitat.

Technical Support
Distributor for this Region



Several U.S. and Int'l patents apply

ERTEC Environmental Systems

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Case Study—E-Fence™

Boblo Island Residential Development — Ontario, Canada

Wildlife Barriers—page 1 of 2

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E-Fence installed along the shoreline to keep animals from entering the construction project where they could get isolated or killed.

on the south end of Boblo Island, with 125 single detached homes and 94 semi-detached units. Forty seven per cent of the development will be green space.

E-Fence Anti-Climb Features: In live tests at [Scales Nature Park](#) in Ontario, Canada, Eastern foxsnakes were not able to climb over E-Fence 40 (1.02m) with the 125mm (5") climber barrier in the live test. The snakes were observed to be unable to reach the height of the climber barrier. The surface of E-Fence has a very low friction coefficient by design. The snakes were not able to establish suitable contact with the fence in order to climb. They were observed to rise to a certain point but then collapse to the right or to the left. Unlike mesh fences (such as metal mesh or geotextile mesh) on which the snakes could apply their scales to the ladder structure of the mesh, E-Fence polymer matrix presents itself at sharp strand angles which tend to drive climbers to the right or to the left and down. The snakes could not find leverage to climb. The very high reliability (high functional longevity) of E-Fence (almost no stormwater washouts, or wind knock-downs) as compared to traditional systems leaves significantly less opportunity for a snake to find a gap in the perimeter barrier and migrate onto a construction site.

Configuration: E-Fence Black, 60" (1.54 m) width, trenched 6" (150 mm) and overhanging climber barrier top lip 8" (200 mm) as shown in Diagram 1.

High Wind and Storm Water Flows: The coefficient of drag (Cd) was evaluated for both E-Fence (which is at least 50% open area) and solid type exclusion fences (such as geotextile or solid plastic types). **E-Fence allows high wind and concentrated stormwater flow-through** [Link to wind study.](#) A very large difference in Cd was evident.

Drag forces on E-Fence are dramatically reduced (less than 10% of that found with solid fences). For this reason, we see that solid fences must withstand much greater wind-driven forces and pressure. The greater pressure and forces on solid fences dramatically reduce their reliability leading to premature failure.

Stormwater runoff causes geotextile or solid type barriers to fail in two modes: 1) if installed along contours, head-pressure from ponding against the barrier can penetrate weak points along the trench. Storm water flows will then concentrate and flow underneath causing unwanted and sometimes severe land erosion. Ponding upstream of the fence occurs because the barrier's Percentage Open Area (POA) is very low, causing it to block flow quickly, 2) if solid barriers are installed up and down contours (which is routinely required), runoff will collect and concentrate along the barrier as it flows downhill. Runoff will scour out the base of the barrier, creating loss of integrity. Weep holes drilled or formed into solid barriers will not allow enough water to flow through (POA is often less than 1%). Weep holes will plug and block flow very quickly in stormwater events. To control damage, E-Fence is designed with 50% POA, and with a flow rate greater than 600 gallons/ft²/min. [E-Fence Rigid Polymer Matrix™](#) allows stormwater to flow through. It provides high reliability without storm-water washouts nor wind knock-downs. This significantly reduces maintenance and monitoring costs and increases animal safety. [Link to Key Design Factors for Wildlife Exclusion Fence.](#)

Summary: "E-Fence™ is a much better solution than the other options we evaluated. It was easy to install, and is easy to monitor and keeps us in compliance. One of the very nice benefits of E-Fence is that we've been able to remove and reuse it as we progress through the project phases." - Noah Benko, Project Engineer, [Amico Infrastructures, Oldcastle, Ontario](#)

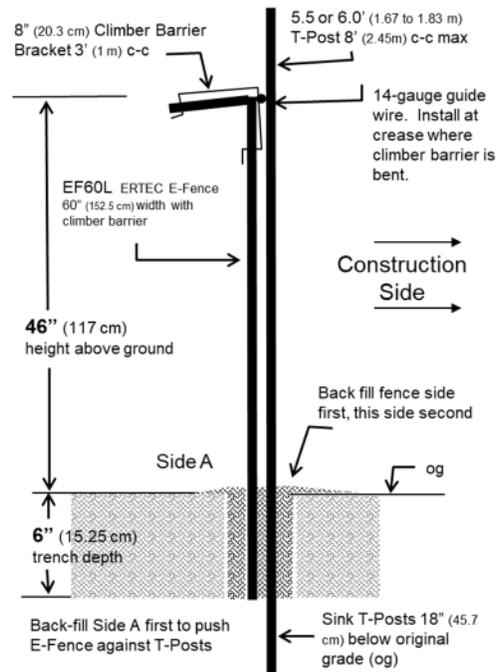


Diagram 1



E-Fence installed with an 8" climber barrier.

