Item 13.1.1

Halifax's Hemlock Protection Program

September 4, 2025

Presented by:
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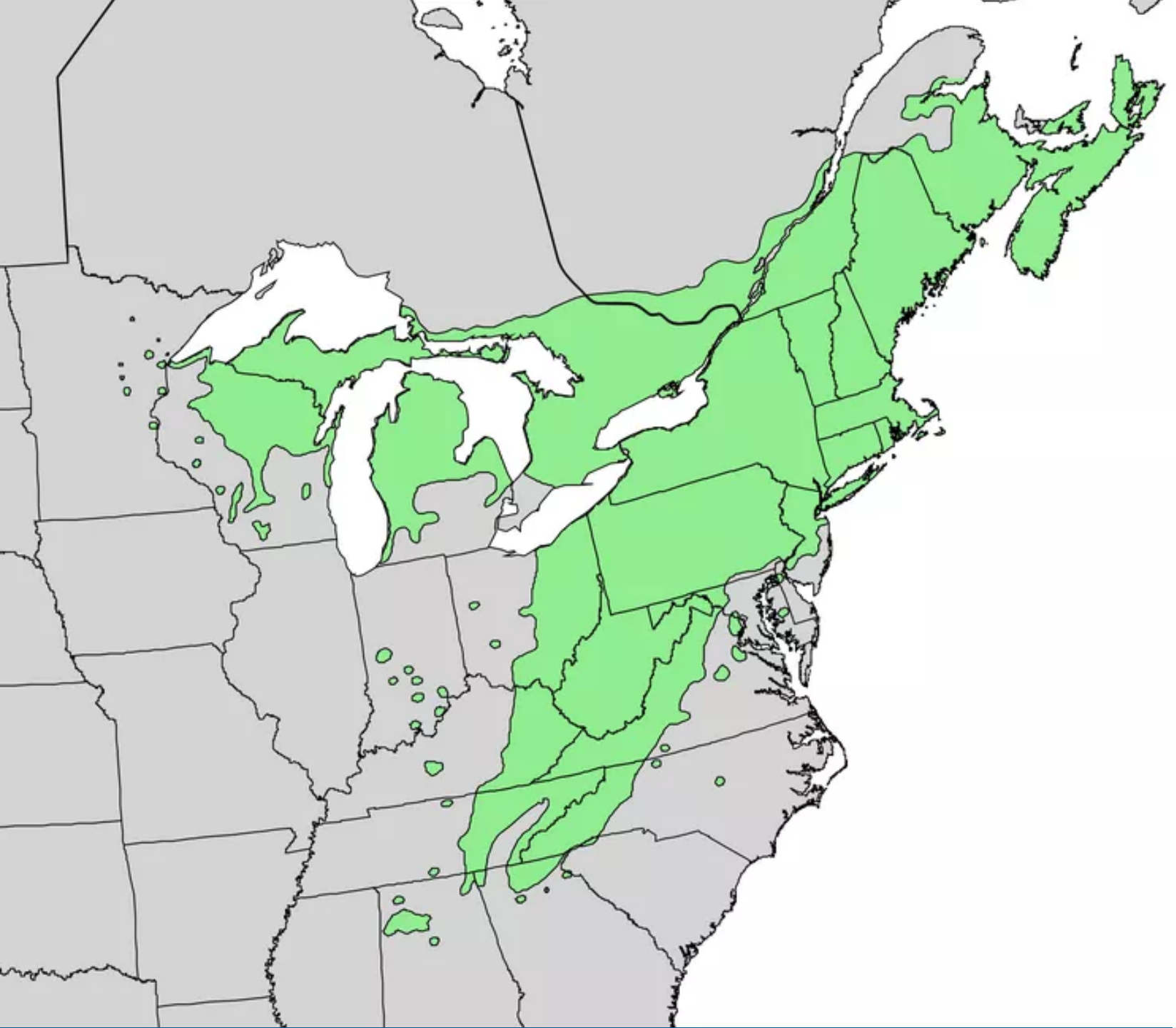


Ksu’sk

Tsuga canadensis or Eastern hemlock is an ecologically and culturally significant species.

Ecological significance

Ksu'sk are:

- Foundational to the Wabanaki-Acadian Forest Region
- Among the largest growing and longest-lived tree species in Wabanaki Forests
- Essential to the maintenance of local biodiversity

Black-throated green warbler. Photo by Paul Turbitt


HWA infestation. Photo by Shauna Doll

Hemlock woolly adelgid (HWA)

- A tiny insect from southern Japan
- Most easily detected by woolly egg sacs on undersides of hemlock branches
- Estimated to cause up to 95% mortality in some infested forests in as little as 4 years, but this level of loss can take up to 15 years to be fully realized.

HWA close-up. Photo by Jeff Ogden.

Reasons for HW's invasiveness

1. Asexual fecundity
2. Lack of predators
3. Climate change
4. Human-aided spread

Compounding consequences of HWA

FIRE

Growing hemlock mortality from HWA = increased wildfire risk

Warming temperatures + increasing length and severity of drought conditions = increased wildfire risk

WIND-THROW

Growing hemlock mortality from HWA = increased windthrow vulnerability

Increasing intensity and frequency of high wind events = increased likelihood of windthrow

FLOOD

Growing hemlock mortality from HWA = decreased streambank and slope stability especially in the riparian zone

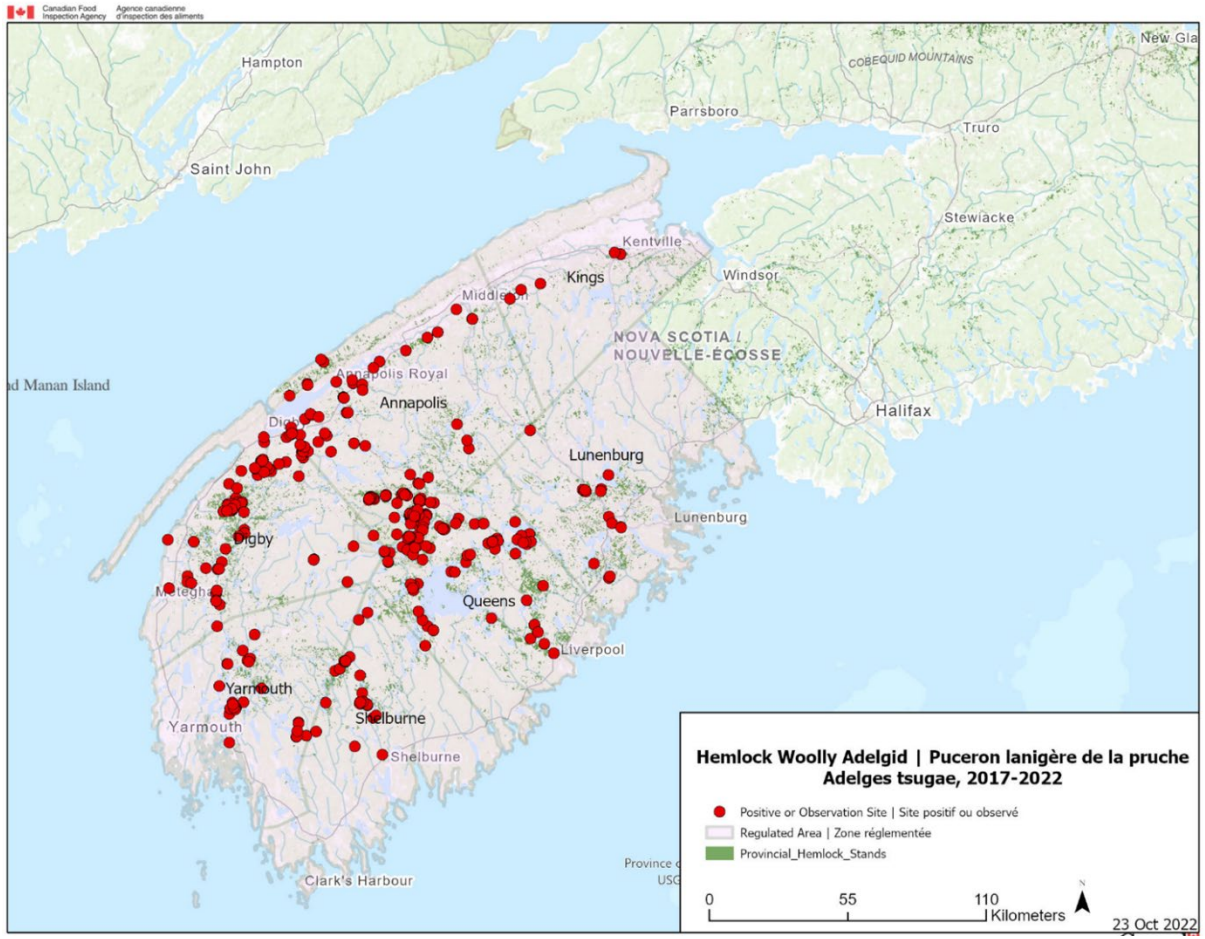
Increasing intensity and frequency of rain events = increased flood and erosion risk

INCREASED TREE STRESS

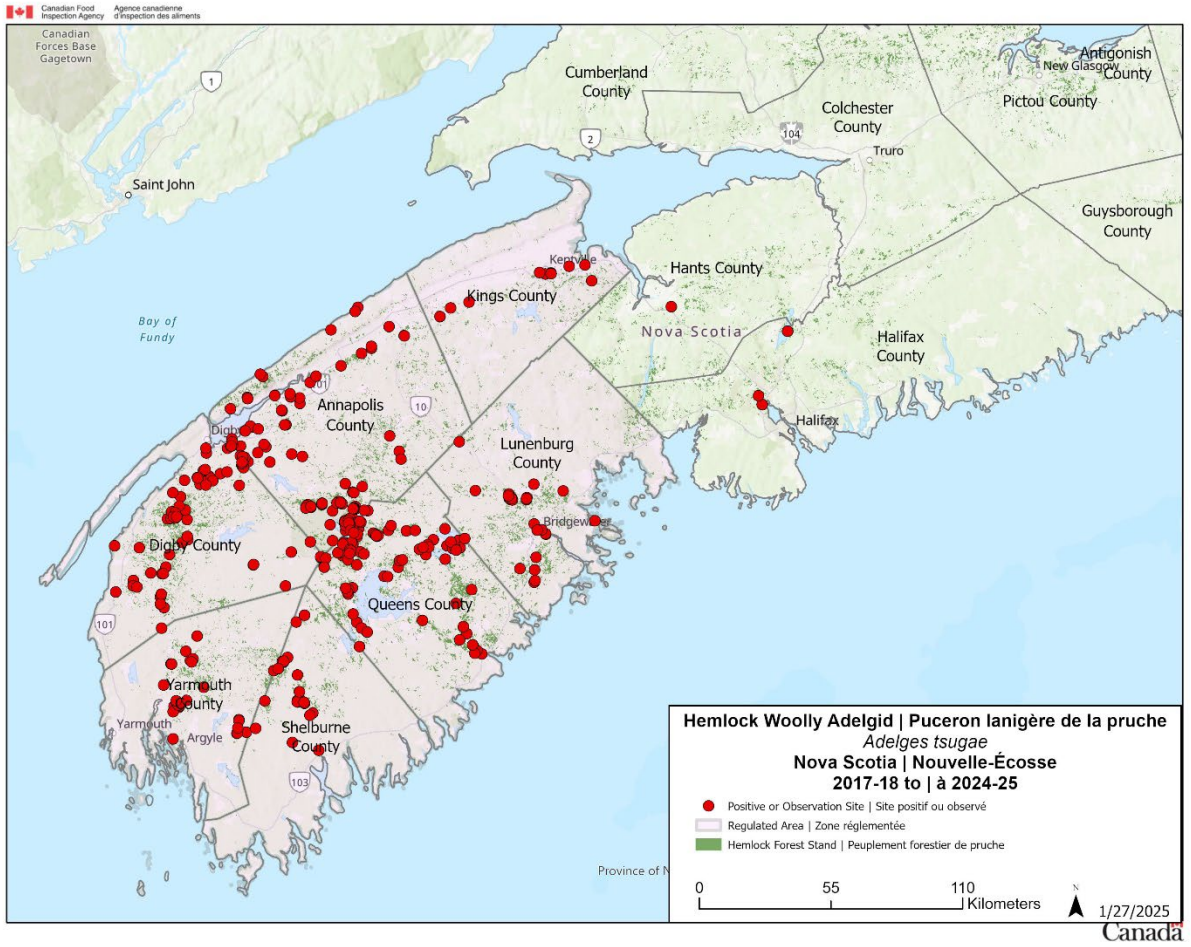
Growing hemlock decline and mortality from HWA

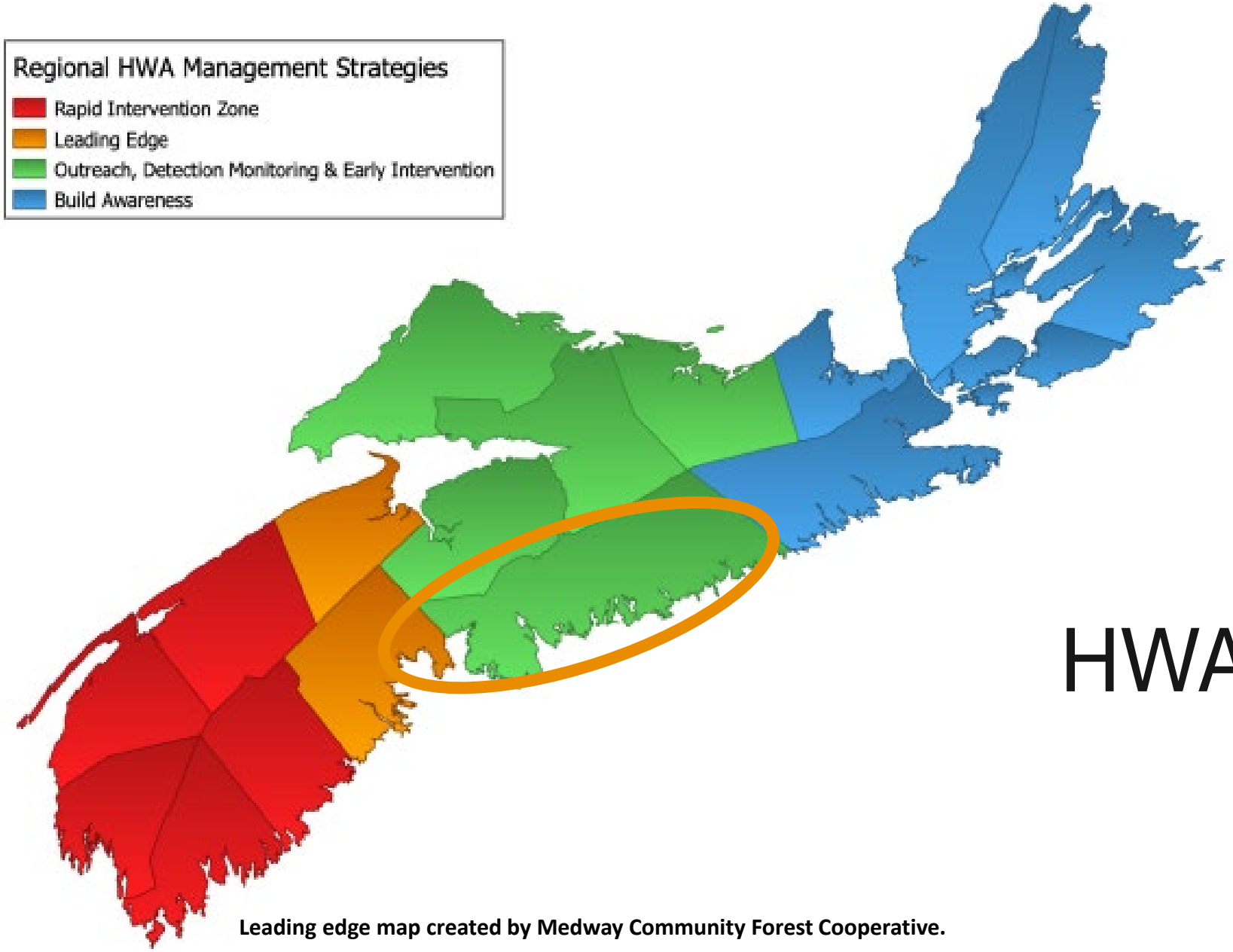
Increasing range of viability for HWA and other invasive species + improved success of normally non-lethal native pathogens and pests

HWA Spread 2017-2022



HWA Spread 2017-2025





HWA in Halifax

Leading edge map created by Medway Community Forest Cooperative.

Treatment options

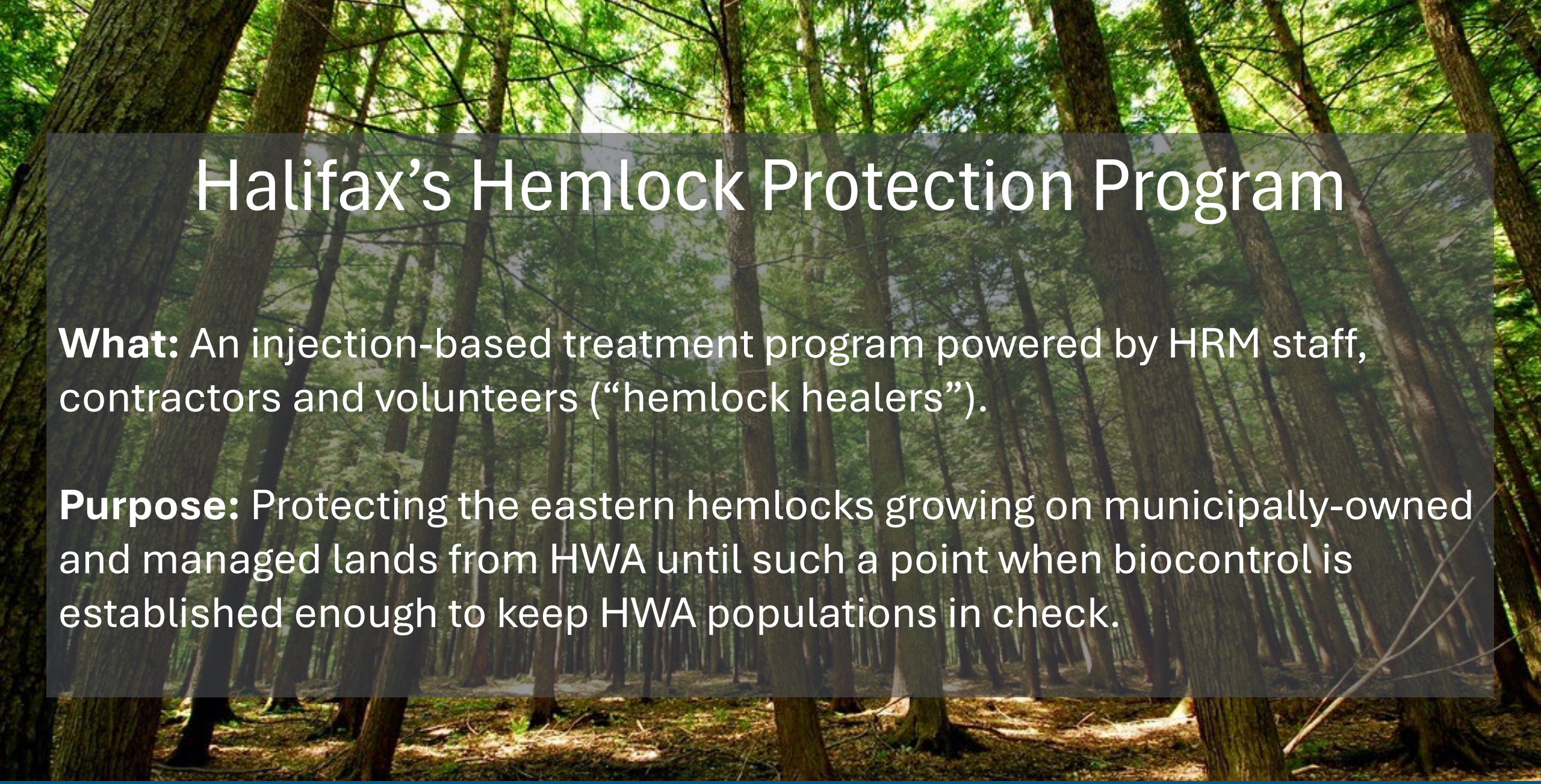
No treatment

Silviculture

Chemical/ medicinal control

Biocontrol

Method	Pro	Con
Basal bark spray	• No drilling = less tree damage over time • Relatively affordable (approx. $8.48 / avg-size tree) • Takes less time and people to treat individual trees	• Unsupported (or not well enough understood to be supported) by many Mi'kmaq Elders and Knowledge Holders • Application limits mean some sites will require repeated re-entry • Cannot be undertaken by volunteers. • Parks will need to be closed for treatment • Non-target environmental impacts are more likely compared to injections.
Injection	• Lower risk of non-target environmental impacts • No yearly limits/restrictions • Can be used near waterbodies, wet areas and ecologically sensitive sites • More flexibility with weather constraints • Less risk of heat-related illness by applicators • More volunteer friendly, offsetting the con of needing more people	• Cannot treat trees with a DBH ≤ 12.7cm • More expensive than basal bark spray (approx. $29.64-$32.50/ avg-size tree) • Each tree takes longer to treat compared to basal bark spray



Halifax's Hemlock Protection Program

What: An injection-based treatment program powered by HRM staff, contractors and volunteers ("hemlock healers").

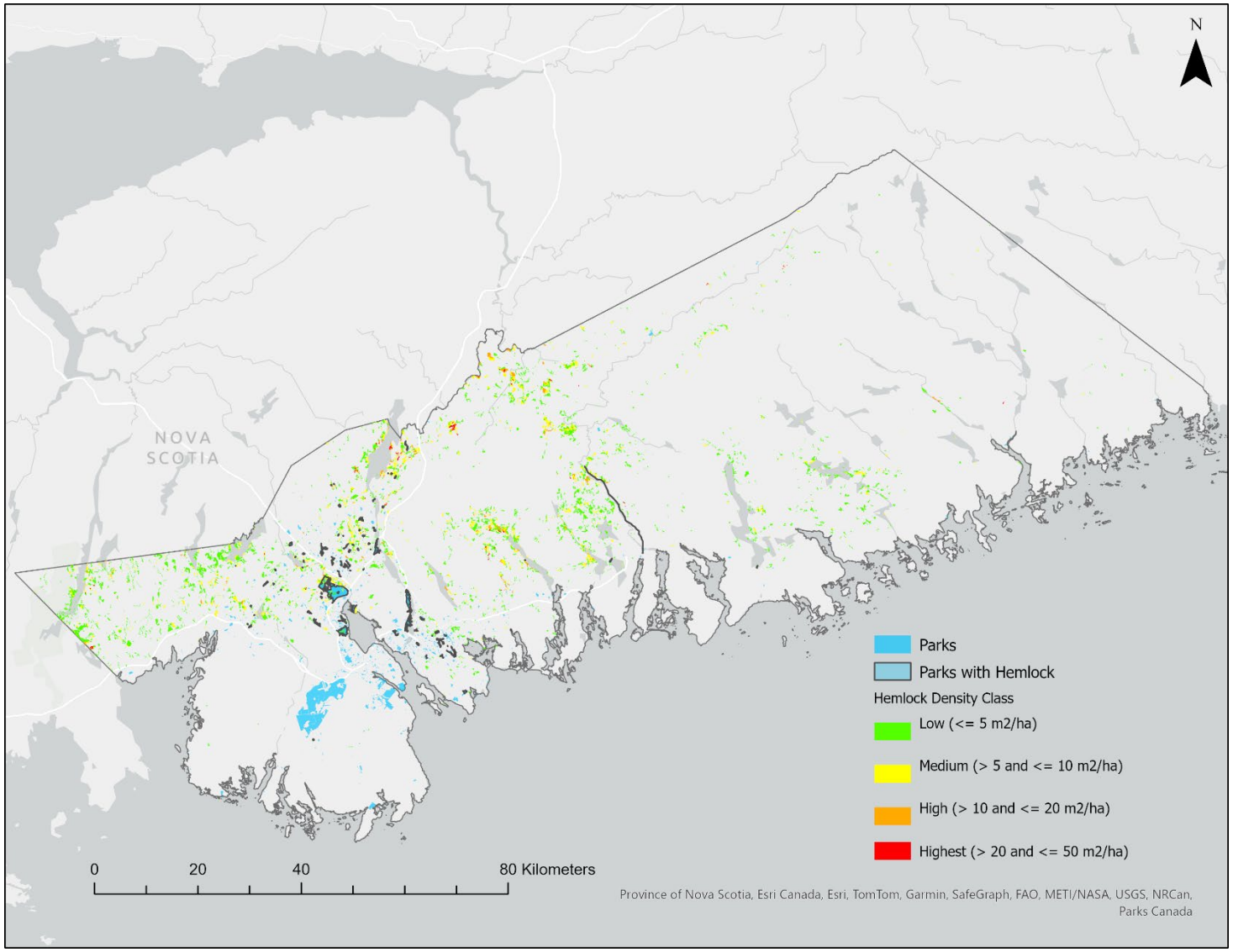
Purpose: Protecting the eastern hemlocks growing on municipally-owned and managed lands from HWA until such a point when biocontrol is established enough to keep HWA populations in check.

HWA Treatment

Treatment will target HRM owned lands, specifically hemlock dominated parkland

We also hope to:

- support the public with the protection of hemlock through outreach and volunteer opportunities.
- provide landowners with information on available options to manage HWA.



Alignment with HRM plans and policies

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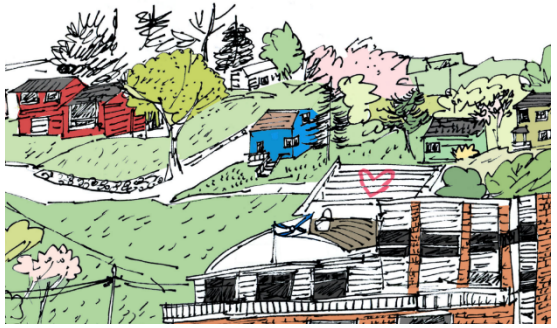
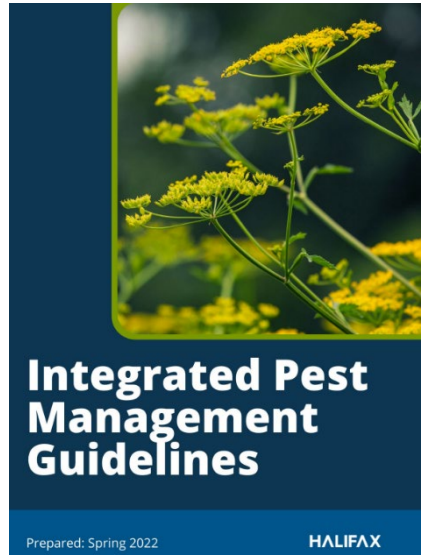


HALIFAX
GREEN NETWORK PLAN
JUNE 2018

Halifax's Hemlock Protection Program

HALIFAX 11-2024, V1.0
URBAN FOREST MANAGEMENT PLAN



Questions / Discussion?

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