URBAN FORESTRY PROJECTS

Stanley Park Updates

Regular Board Meeting

Monday, January 16, 2023

VANCOUVER BOARD OF PARKS AND RECREATION

Purpose of Presentation

- The purpose of the presentation is to provide an update on recent and upcoming Urban Forestry projects in Stanley Park including:
  - 2022 Stanley Park fall planting and restoration
  - Hemlock Looper assessment & mitigation
  - Wildfire Risk assessment & mitigation

2022 Stanley Park Fall Planting & Restoration

- Stanley Park Management Team
- Focus on restoration, tree and groundcover planting of degraded sites
- 3 pilot planting sites (totaling ~188m^2)

2022 Stanley Park Fall Planting Restoration

- Invasive species mapped and removed
- Over 250 plantings (trees and perennials)
- On-going monitoring (Park Board & SPES)

2023 Stanley Park – Forest Health

- Stanley Park forest health has declined in recent years due to multiple environmental challenges such as:
  - Drought
  - Elevated temperatures
  - Windstorms
  - Insect outbreaks

2023 Stanley Park – Hemlock Looper

Background

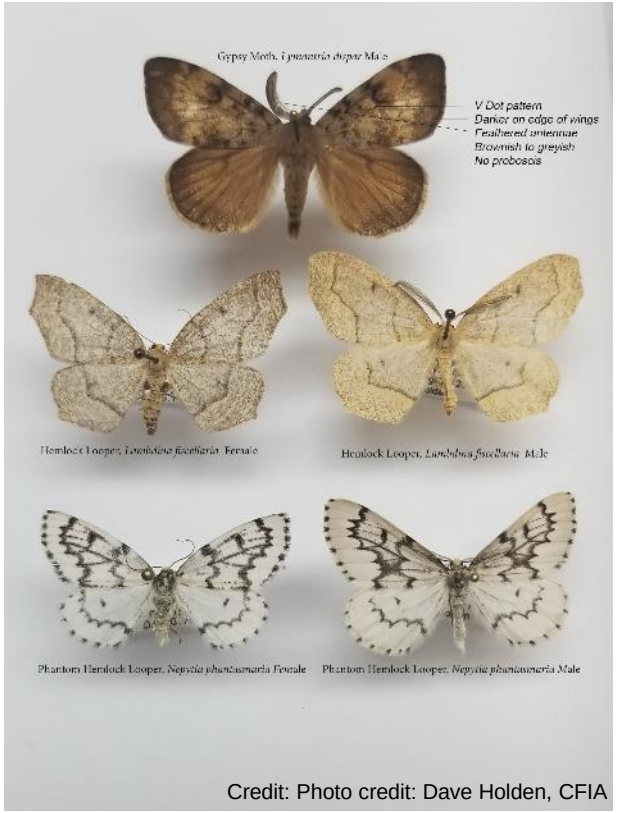
- Stanley Park is currently experiencing an outbreak of the hemlock looper insect
- The looper is a defoliating pest causing significant impacts to trees leading to stress-induced mortality
- The current outbreak was initially on the North Shore and jumped over Burrard Inlet in 2019/2020
- 2022 was the 3rd year of the current outbreak in Stanley Park

Dieback at the Capilano Watershed - July 6, 2021

2023 Stanley Park – Hemlock Looper

Looper Biology

- 2 native species active in Stanley Park and North Shore:
  - Hemlock looper (*Lambdina fiscellaria*)
  - Phantom hemlock looper (*Nepytia phantasmaria)*
- Outbreaks are cyclical, occurring every 11-15 years and lasting for 3-4 years
- Outbreaks are brought under control naturally by parasitoids (i.e. parasitic wasps), viruses, pathogens, and rain during moth flight



Credit: Photo credit: Dave Holden, CFIA

LOOPER LIFE CYCLE

Eggs laid in August - October

Larvae emerge in spring and feed until they pupate

They pupate during summer

Adults emerge summer to early fall

Credit: nrcan.gc.ca

Parasitoid wasp emerging from looper larva

2023 Stanley Park – Hemlock Looper Impacts

- Chemical and biological treatments are not feasible as broadcast applications will impact non-target beneficial insects
- Defoliated trees are predisposed to pests / pathogens, drought stress, wind damage, and other environmental stressors
- Tree mortality may continue for several years after the infestation and lead to:
  - Unacceptable levels of risk to public safety, infrastructure and transportation routes
  - Undesirable ecological impacts (i.e. erosion which impacts water quality)
  - Increased risk of landslides & debris flows on steep slopes
  - Excess fuel-loading that increases wildfire risk

Dieback in Stanley Park - 2021

Dieback in Stanley Park - August 2022

2023 Stanley Park – Wildfire Risk

Fuel-loading refers to combustible material originating from trees and includes ground fuels, ladder fuels and canopy fuels

Extreme summer droughts coupled with increased fuel loads will lead to increased wildfire risk in Stanley Park that may result in:

- Public safety concerns
- Transportation & service disruption
- Air-Quality impacts
- Damage to wildlife habitat
- Economic losses

2023 Stanley Park – Current Actions

- Urban Forestry will be assessing and developing a mitigation plan for Hemlock looper and Wildfire risks in Stanley Park
- Hazard mitigation options will be put forth to address an optimum balance between public safety and ecological health
- The response plan will be a multi-year effort engaging MST
- Urban Forestry have engaged Registered Professional Foresters, B.A. Blackwell & Associates, to inform the work

2023 Stanley Park – Project Goals

- Risk management and mitigation
- Improve forest health to foster a resilient ecosystem
- Steward an optimal and sustainable balance between social, ecological and economic forest management objectives
- Ensure management decisions are monitored and Park Board can respond with appropriate adaptive management decisions

Project Timeline

PHASE 1 (2023 Q1-Q2) (we are here)

- On-going communication and outreach
- Hemlock Looper & Wildfire Risk Inventory and Assessment
- Developing mitigation plans and strategies
- Final Report (with order of magnitude costing and actions)

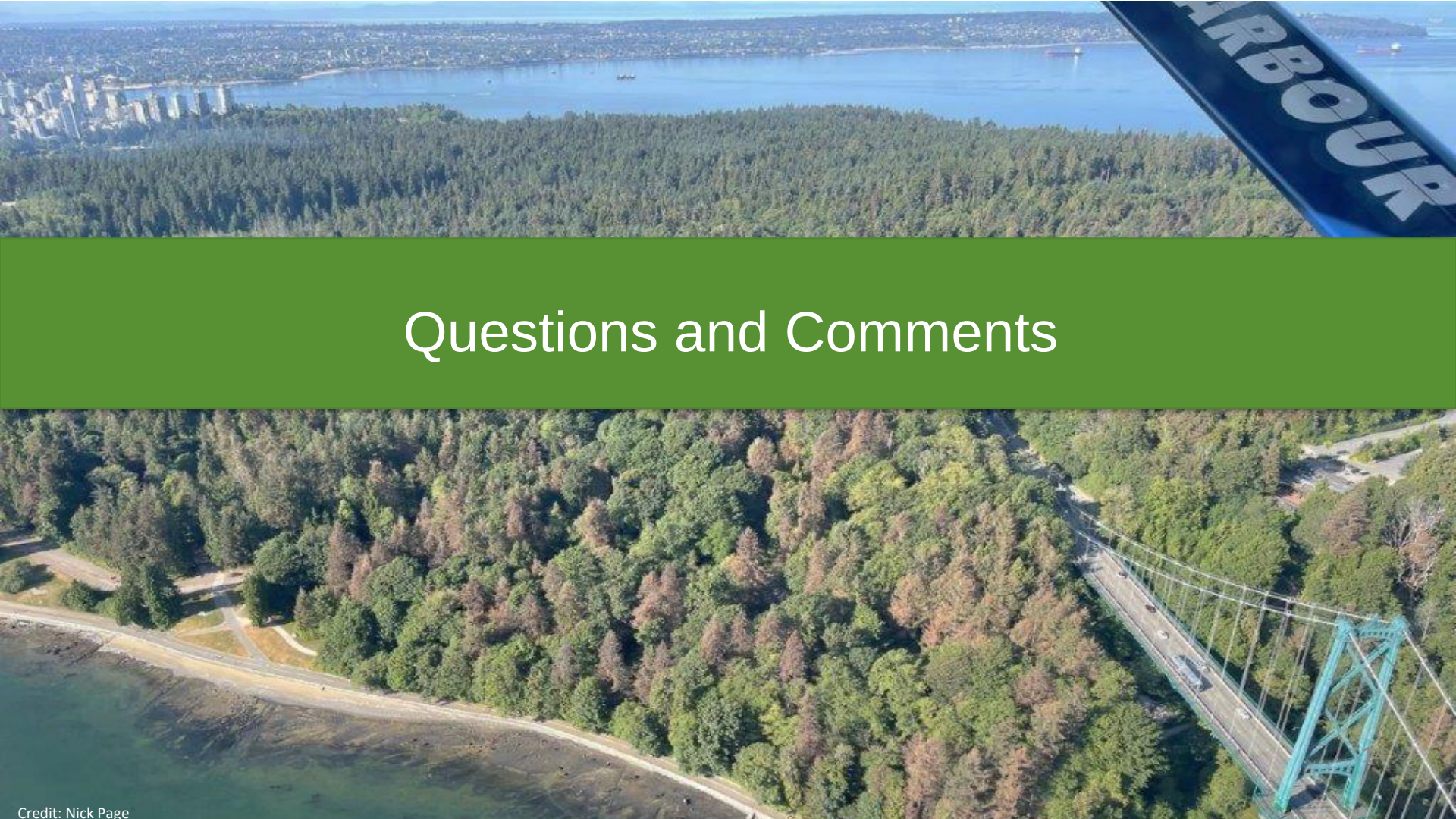
PHASE 2 (2023 Q2 – 2024 Q1)

- Prescriptions & Year 1 priority treatments & interventions (including tree planting)

PHASE 3 (2024 to 2026 and beyond)

- Additional treatments & interventions (including tree planting)
- Residual treatment prescriptions

Questions and Comments



Credit: Nick Page