# British Columbia Forest Health Update

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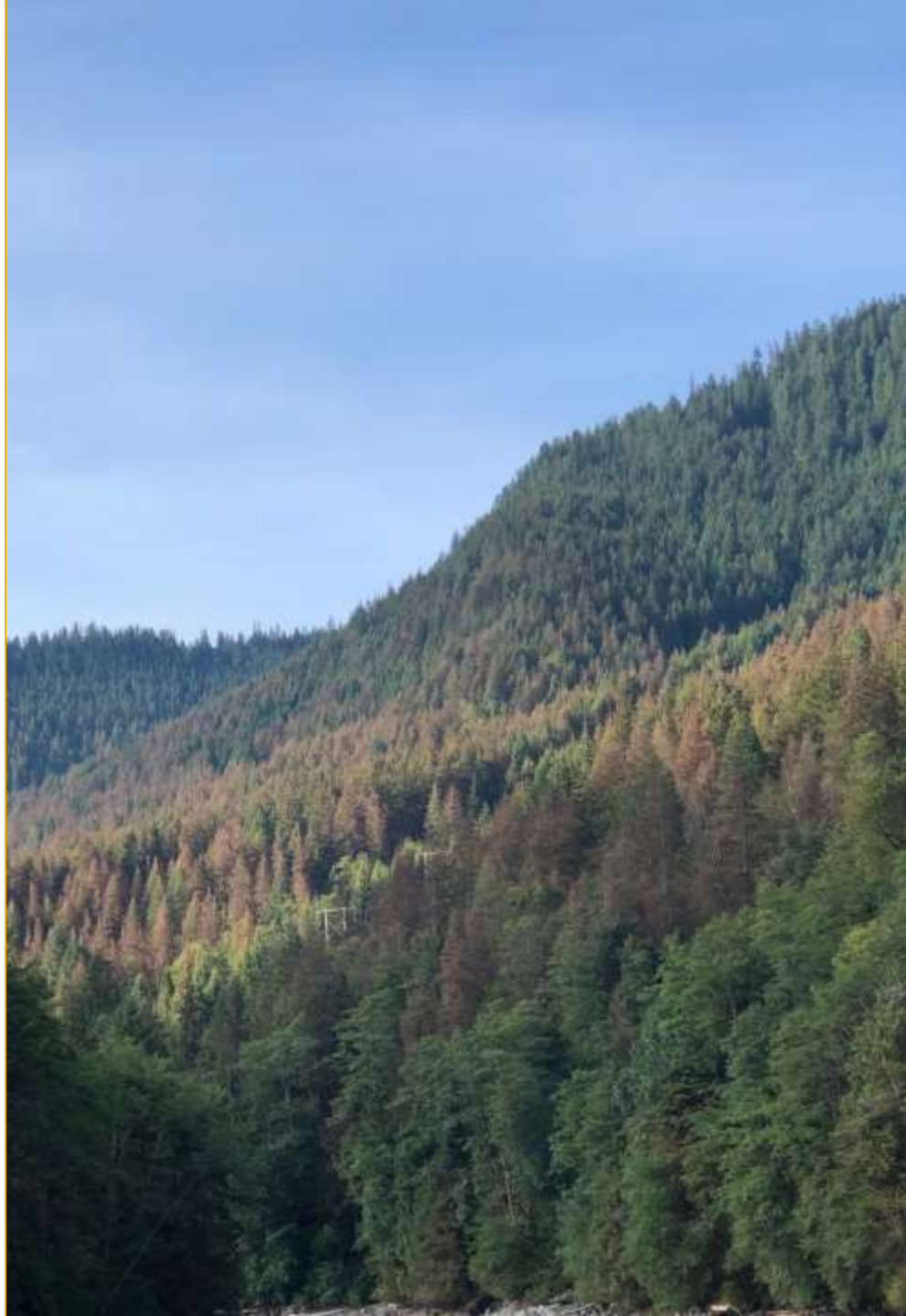


# Forest Health Program Objectives

- Detect & measure forest health impacts at the landscape level
- Develop/update guidance for managing priority insects and pathogens to mitigate damage and promote resilient forests

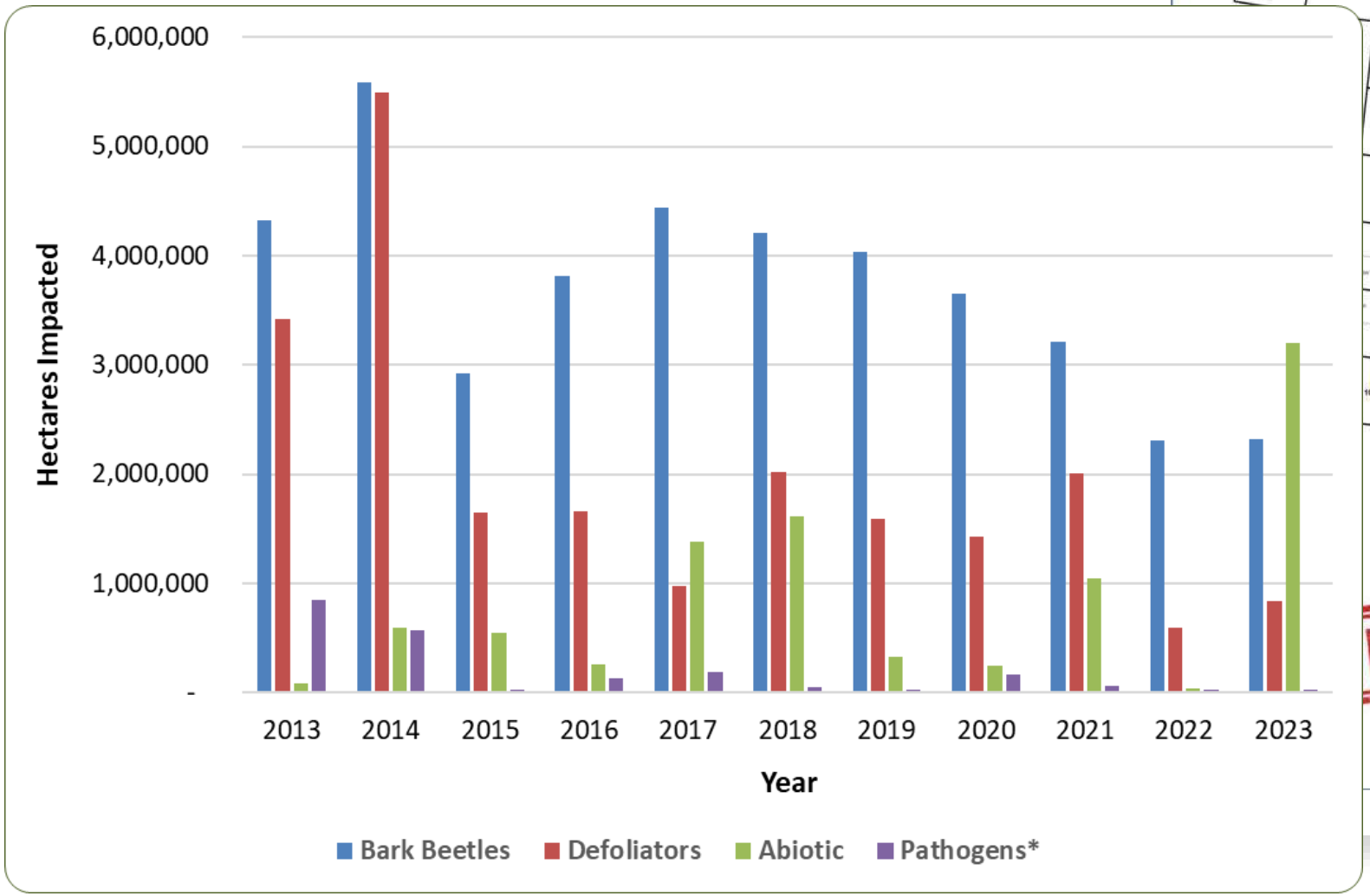
# Aerial Overview Survey

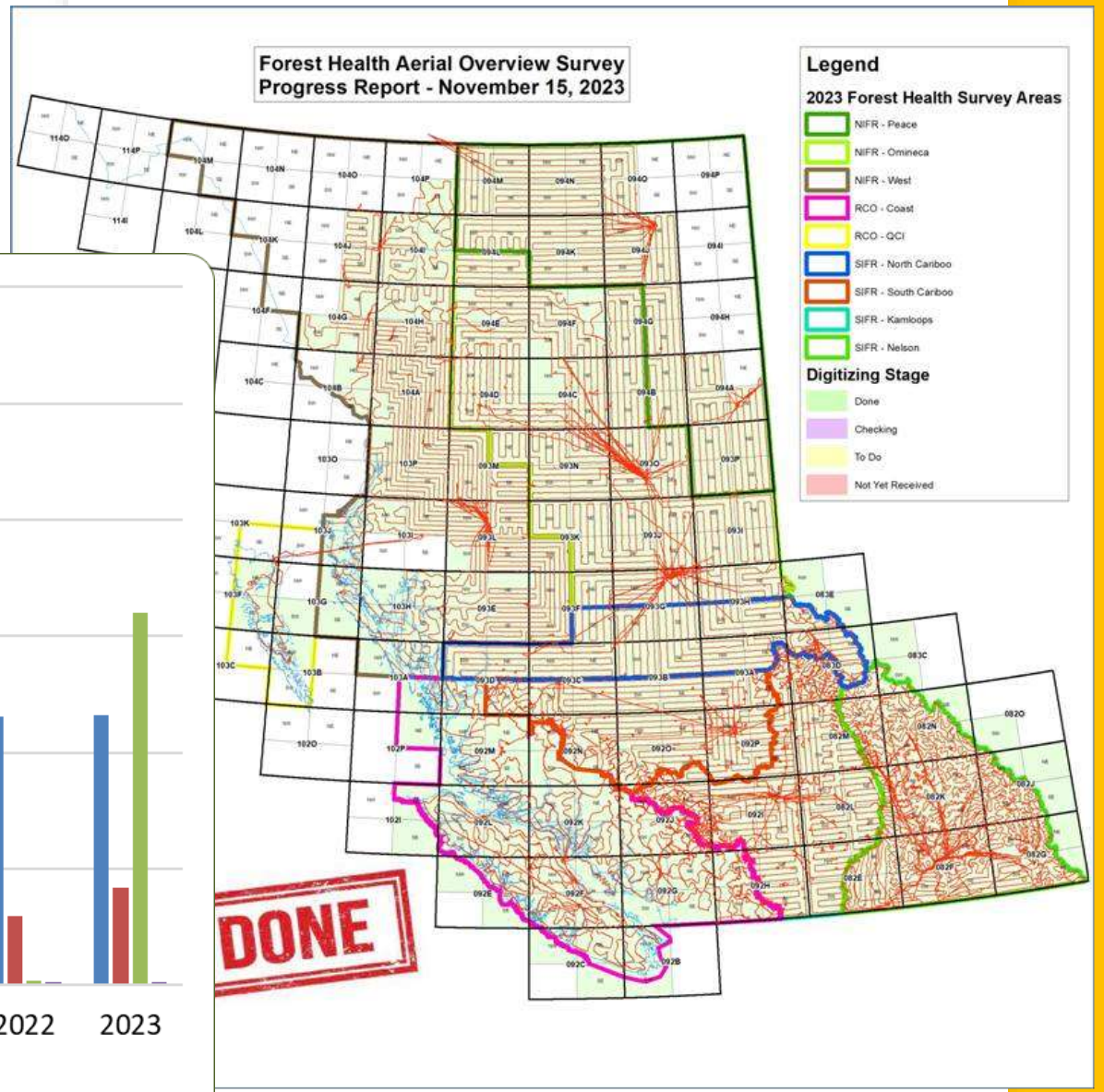
- Primary source of forest health information in B.C.
- Cornerstone of forest health monitoring in B.C.
- Provides current & historical records
  - Trends, range expansion, new damage

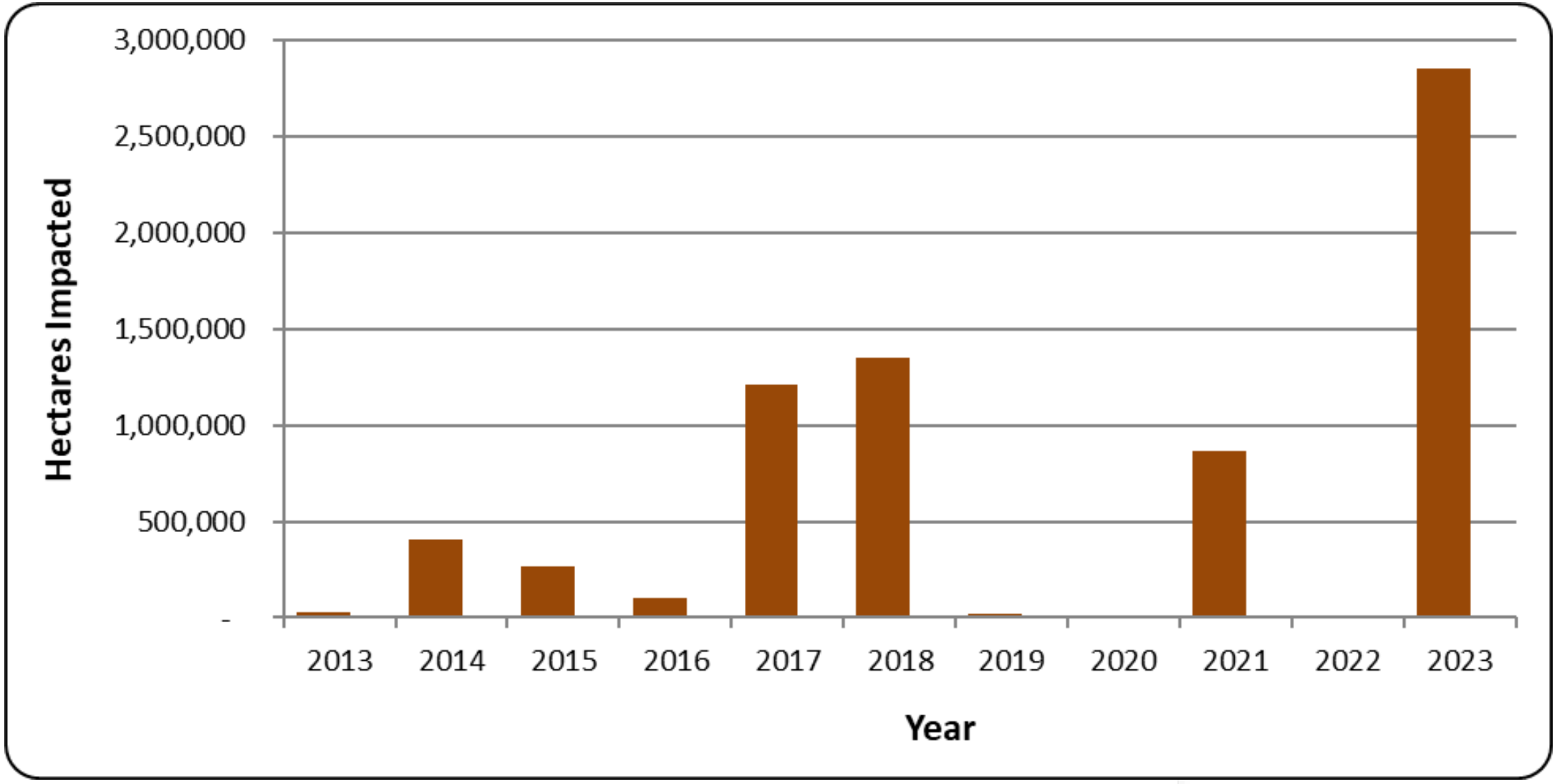
# Aerial Overview Survey

- Fixed-wing sketch mapping
  - Aerial signatures used for detection
  - Damage mapped as points or polygons
- Data is coarse (ha impacted ≠ mortality)
- Data & reports posted annually: Data Warehouse, FTP, Forest Health Website

# 2023 AOS Summary






# B.C. Wildfire Impacts

# Forest Health & Post-Fire

## Black Army Cutworm

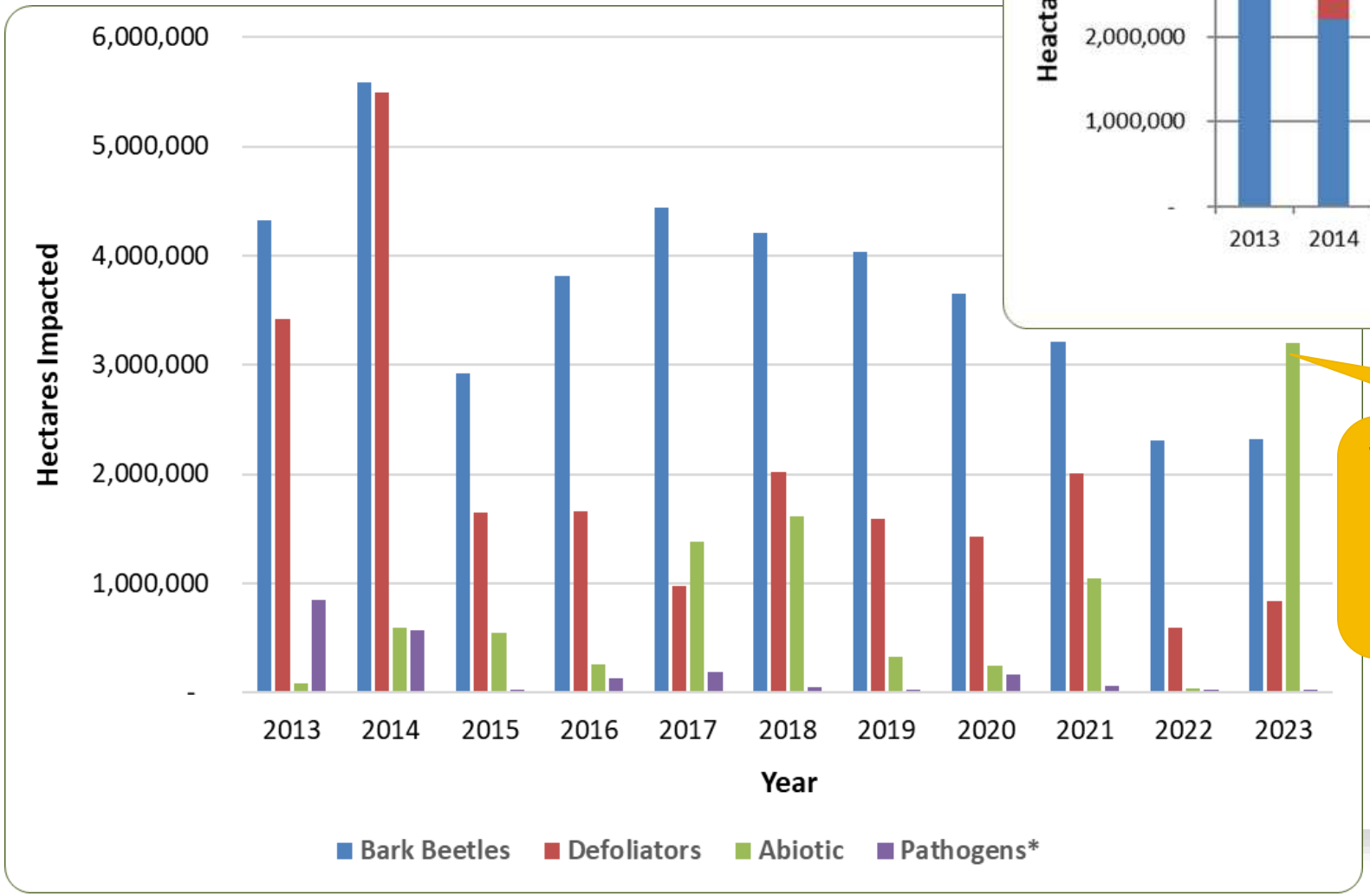
- Feed on conifer buds and/or foliage when there is no/limited herbaceous cover
- When >60% of a seedling is defoliated we typically see root growth impacted and mortality (~<10% but higher with other stressors)

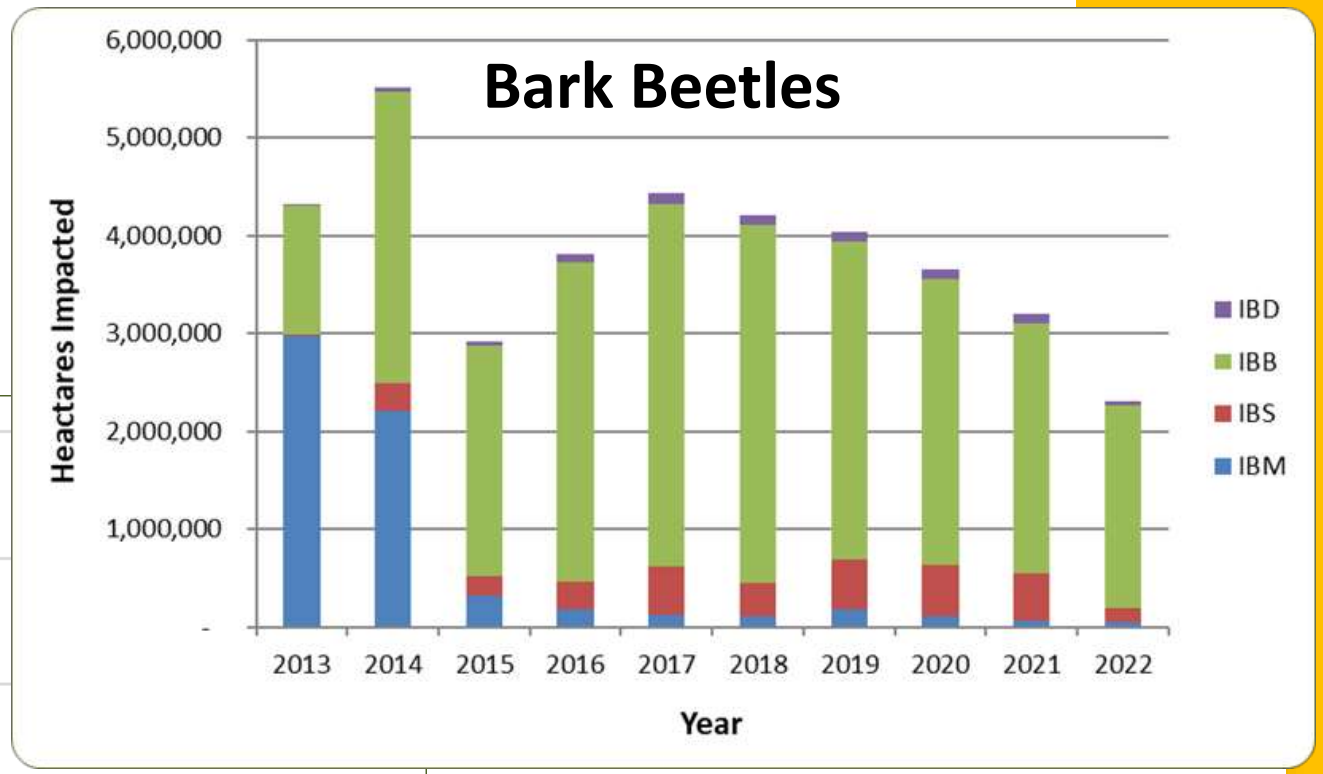
# Forest Health & Post-Fire

## Black Army Cutworm

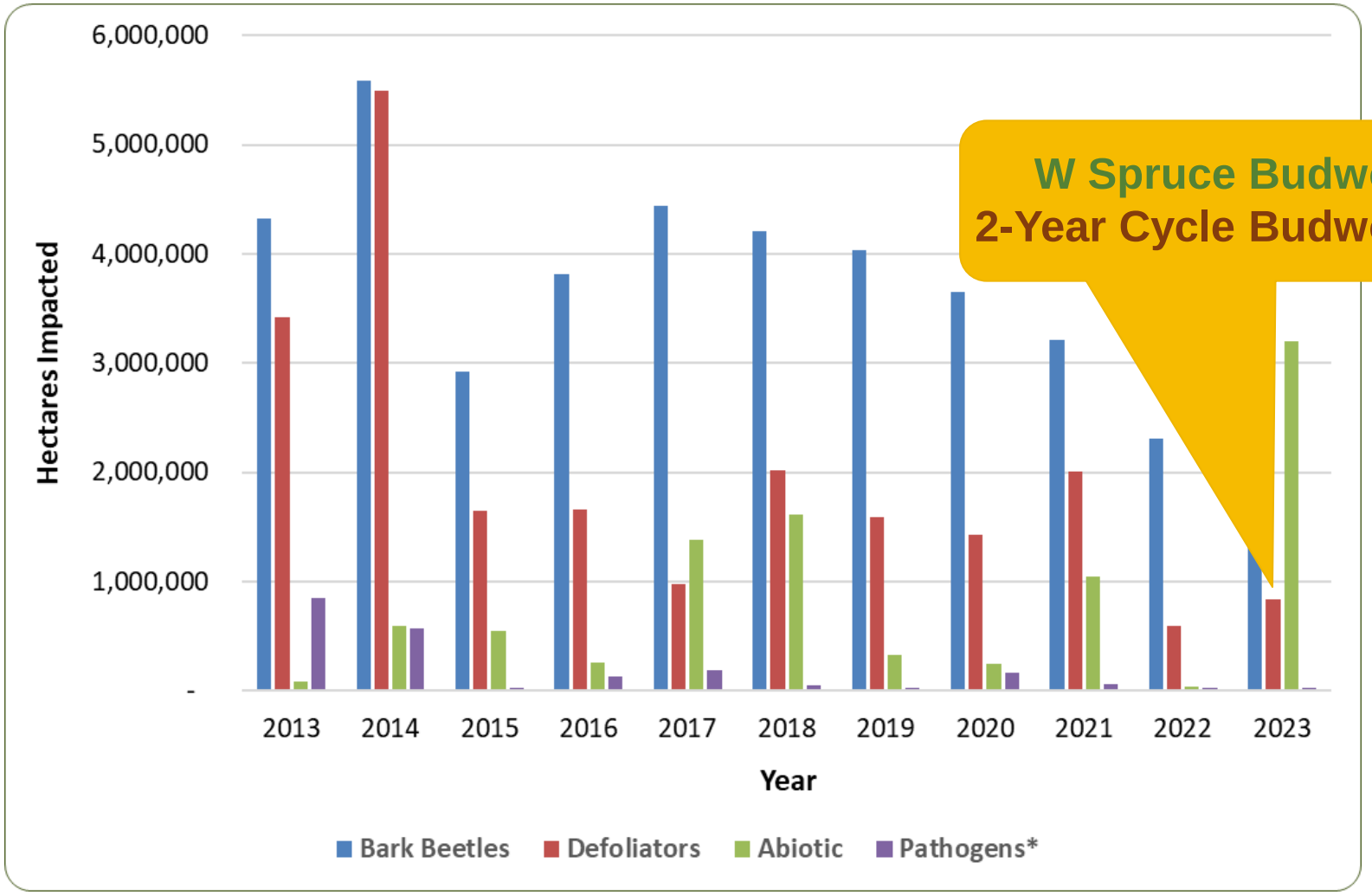
- Consult with Regional Entomologists
- Identify high risk areas
- Monitor blocks / Pheromone monitoring
- Weigh planting options/impacts

# 2023 AOS Summary




W Balsam Bark Beetle: 2.16M ha
Spruce Beetle: 95,650 ha
Mountain Pine Beetle: 42,850 ha
Douglas-fir Beetle: 18,950 ha




W Spruce Budworm: 319,398 ha
2-Year Cycle Budworm: 284,869 ha

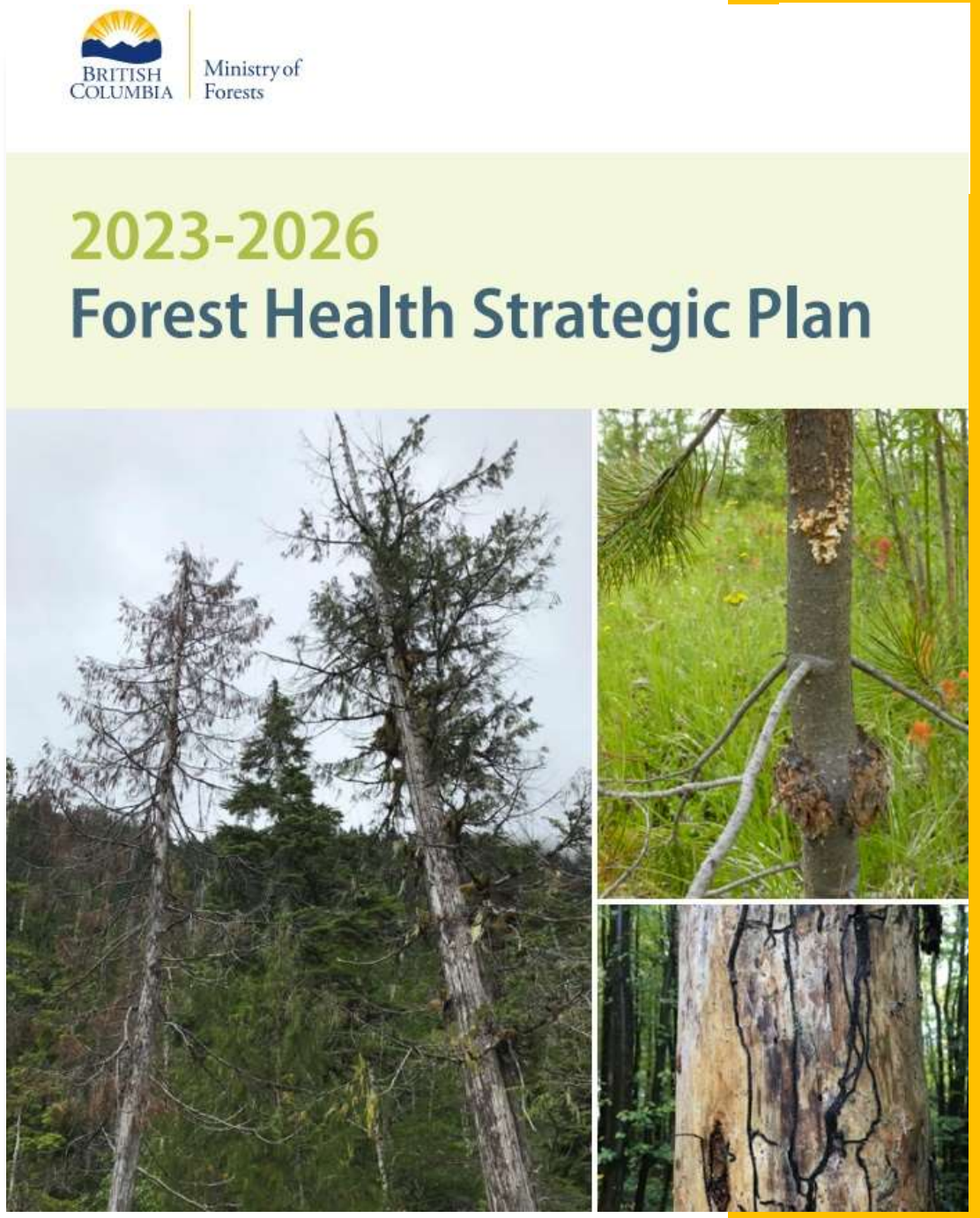
# 2023 AOS Summary

# 2024 Spray Programs

- Thompson Okanagan & Cariboo Regions:
  - Western spruce budworm (~45,000 ha of Crown lands)
- Spongy moth eradication
  - Non-native, invasive pest not established in B.C.
  - 13 areas across the province (~1,800 ha of private & municipal lands)

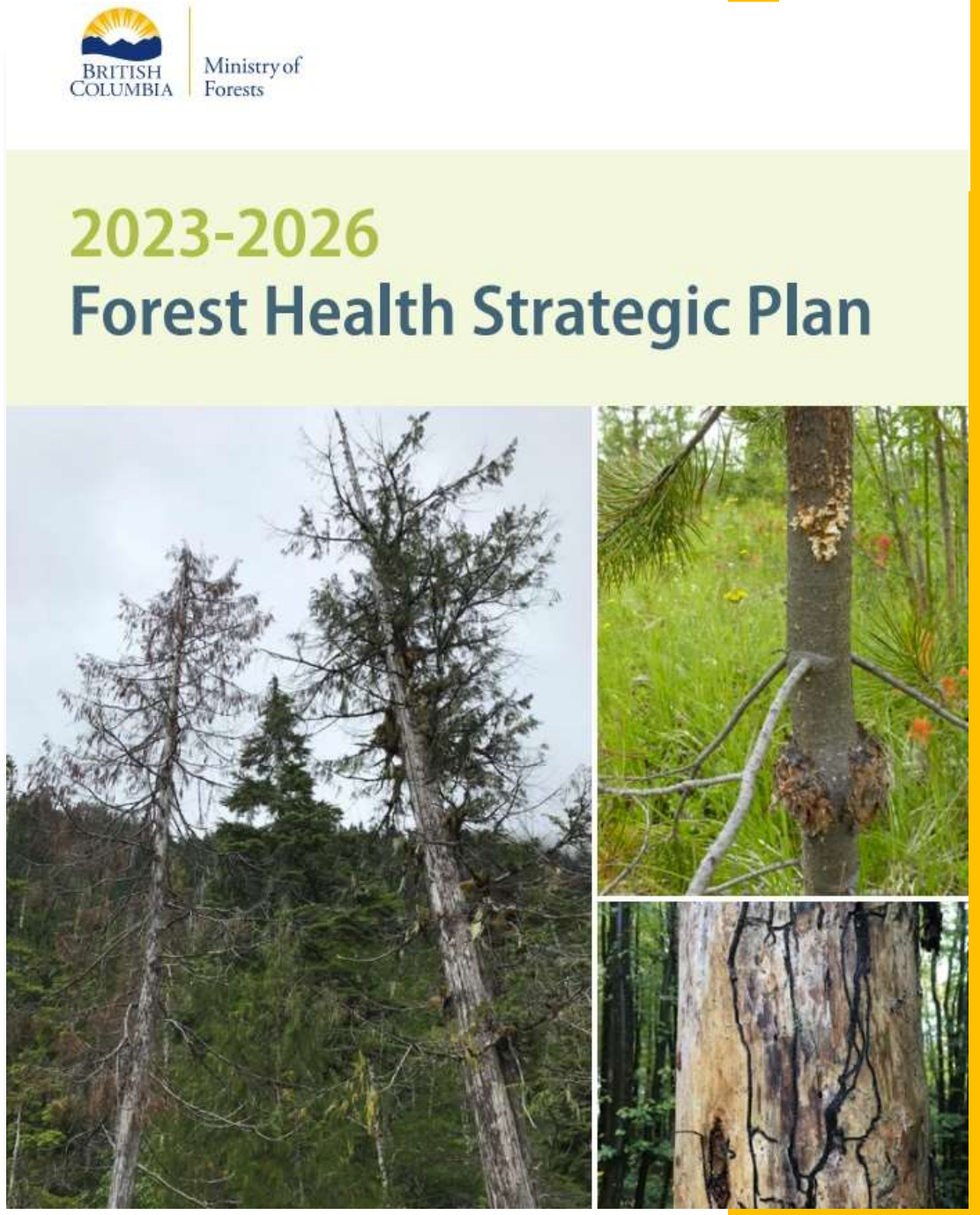
# Pathology update

- New role as of June 2023
- New strategic plan
- Focus areas
  - Aligning with the new strategic plan
  - Balancing and prioritizing ongoing workflows
  - Advancing guidance for inclusion of forest health in Forest Landscape Plans (FLPs)



# Aligning with the new strategic plan

- Example: Identify links to major initiatives across programs where FH is already a part of the process:
  - Wildfire
  - Cumulative effects – forest biodiversity
  - Old Growth
  - Carbon accounting and capture
  - Climate-Based Seed Transfer (CBST)



# Balancing and prioritizing ongoing workflows

- Continuing with baseline monitoring approaches and support improvements
- Upholding commitments
- Maintaining a research profile
- Fostering more collaboration across teams/Divisions informed by client-oriented gap assessment

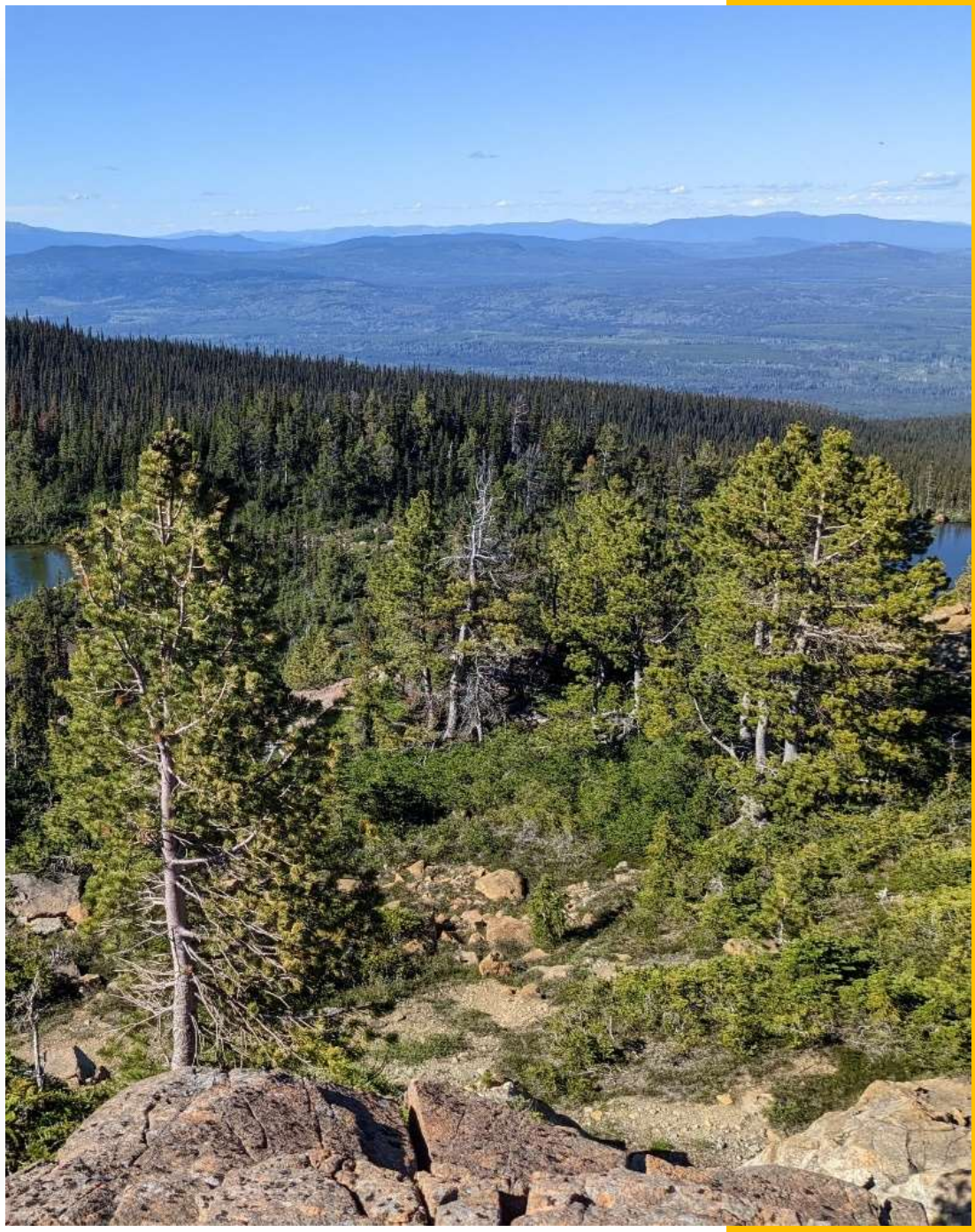
# Monitoring Approaches

- Aerial Overview Survey
- Helicopter surveys
- Ground surveys
- “In stand” Monitoring
- Research / long term experimental trials

# “In stand” Monitoring

Current programs: examples

- Young Stand Monitoring (YSM) – led by Forest Analysis and Inventory Branch (FAIB)
- Early YSM – collaboration with FAIB
- Long-term Health Monitoring of Whitebark pine
- Free Growing – Silviculture Surveys



# “In stand” Monitoring

New FH pilots underway (SHAGM/Omineca Pilot):

- Standardized protocols and clear reporting timelines
- Integrating multiple values
- Linkages across ecosystems and management units
- Cost:benefit assessment

# Ongoing Research

- Assessment of long term Comandra screening trial
  - Thompson, Endako and Holy Cross sites
  - Working towards 20-year assessment and analysis
- Assessing interactions between climate and rusts for Comandra Screening Trial
  - Working with Vanessa Foord
  - Linking weather parameters to rust incidence at stand and microsite scales
- Exploring temperature thesholds for pine rust spore viability and germination
  - Working with Jonathan Cale, University of Northern British Columbia

# Advancing guidance for inclusion of forest health in Forest Landscape Plans

- Developing guidance for evaluating inclusion of FH in FLPs
- Evaluating current sources of pest and pathogen incidence data
- Clarifying FLP terminology (i.e., significant disturbances)
- Developing hazard and risk rating systems for all major forest health factors
- Updating FPC Guidebooks
- Reviewing SEDAs
- + more

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