Spruce Beetle Sanitation Harvesting

Planning & Considerations

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Table 1. Preliminary Info. from detailed aerial mapping

Aerial Mapping Classification	Percent "Discoloured" Spruce*	Suggested Priorities for Walkthroughs
Light	0 - 5	2nd or 3rd
Moderate	6 - 15	1st
Heavy	16 +	2nd or 3rd

* based on total stems

** at each District's discretion

Table 2. Options After General Walkthroughs

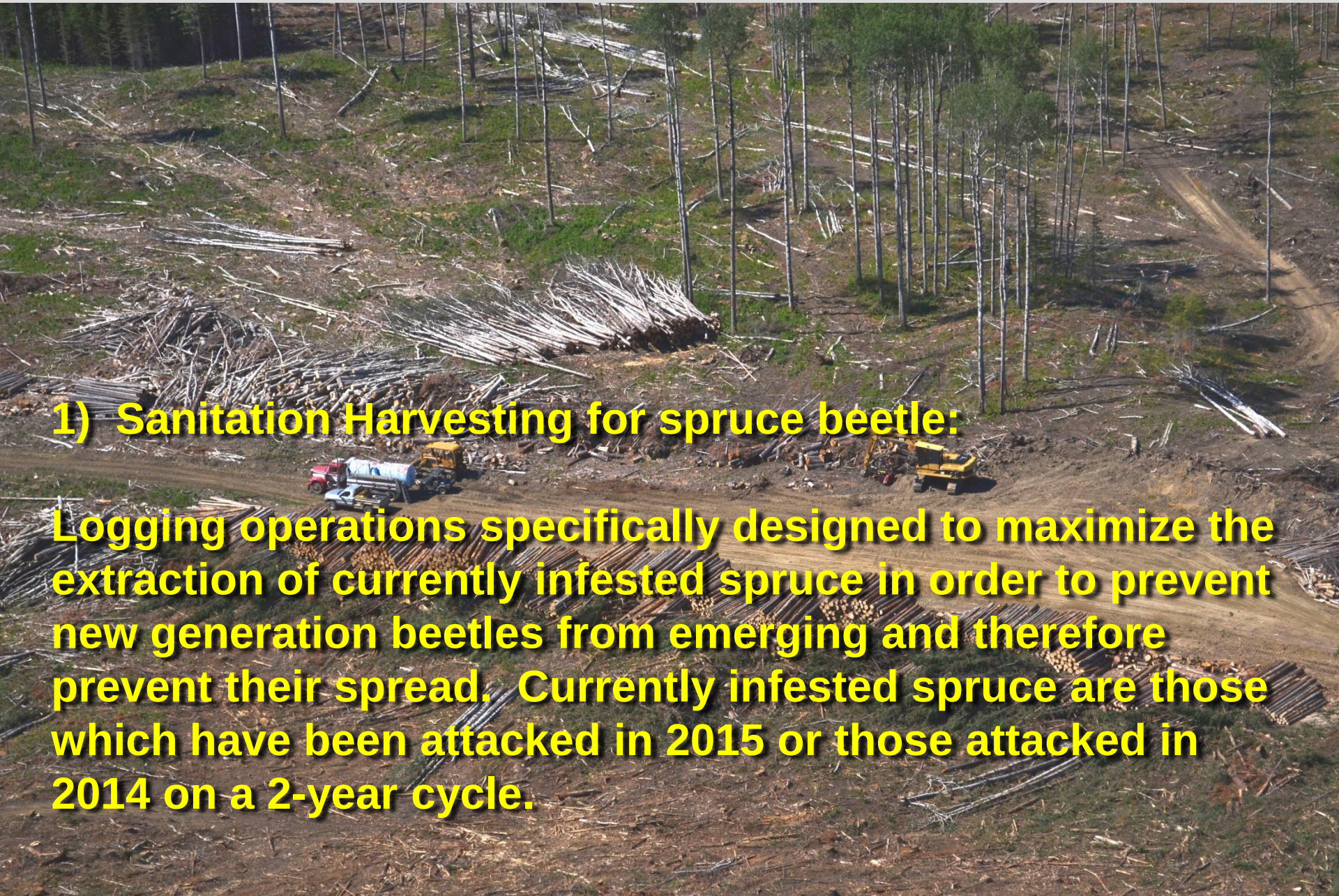
Walkthrough Classification of Stand	Percent of Stand Attacked*	Beetle Management Recommendations **
Light	0 - 5%	Leave (monitor, trap trees, pheromone baits)
Moderate	6 - 9%	Probe (to obtain further information) for appropriate block layout & trap trees
Heavy	10% +	Recommend operational cruising (prior to expeditious sanitation/salvage logging) ***

- In 2015 and, to a lesser extent, 2014 (2013- or older attacks are a minor consideration).

** All recommendations must consider integrated resource mg't issues. Thresholds may vary by District or operating area.

*** Assuming road access exists or could be in the near future.

Important Definitions



1) Sanitation Harvesting for spruce beetle:

Logging operations specifically designed to maximize the extraction of currently infested spruce in order to prevent new generation beetles from emerging and therefore prevent their spread. Currently infested spruce are those which have been attacked in 2015 or those attacked in 2014 on a 2-year cycle.

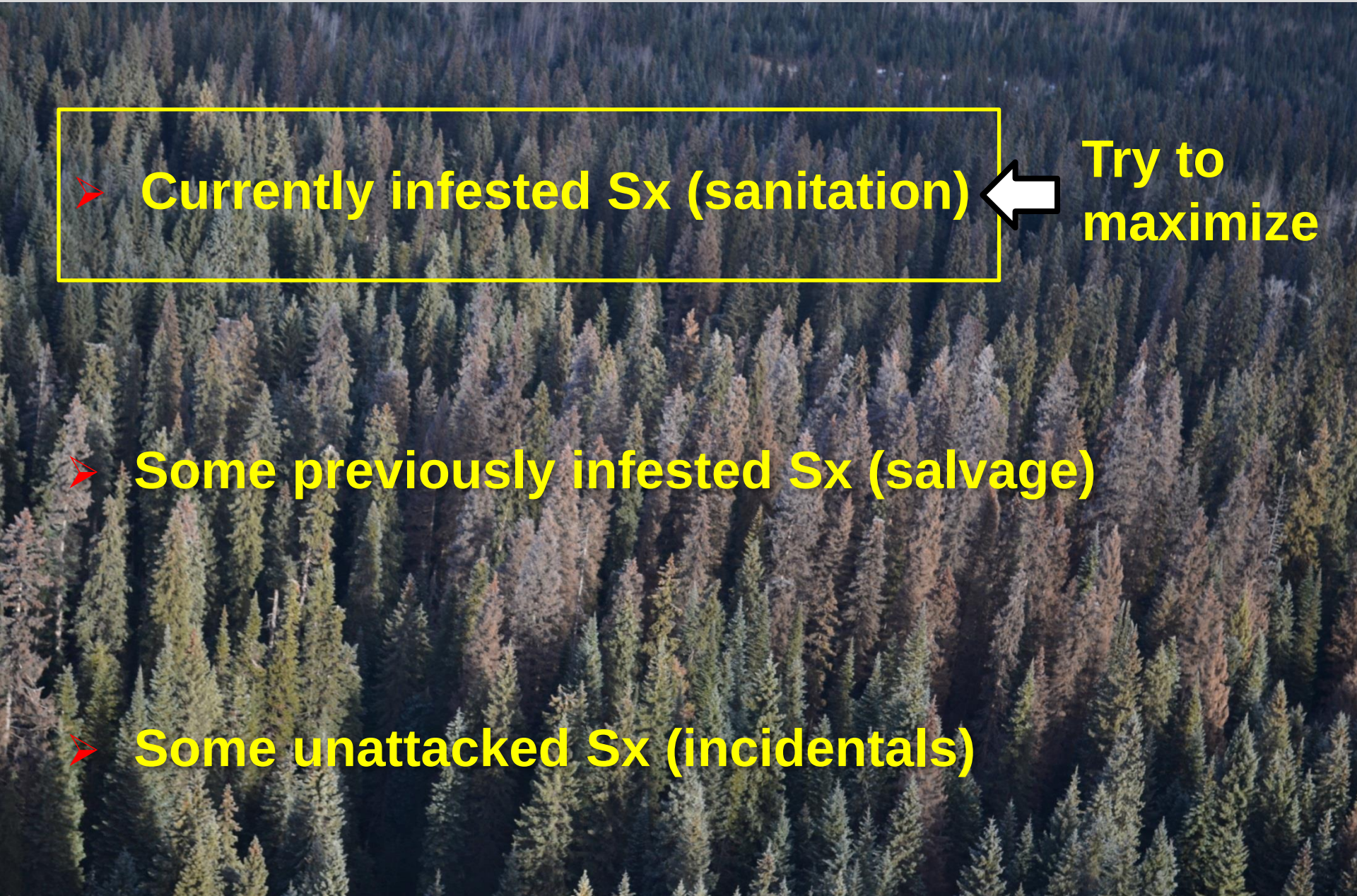
2) Salvage Harvesting for spruce beetle

Logging operations primarily designed to recover timber killed by spruce beetle before the wood becomes unmerchantable. Control of the beetle is not possible because all the new generation beetles have flown, e.g., from trees attacked in 2013 or previously.

Old Sanitation Logging

New Sanitation Logging

Sanitation Harvesting is always a “mixed bag”

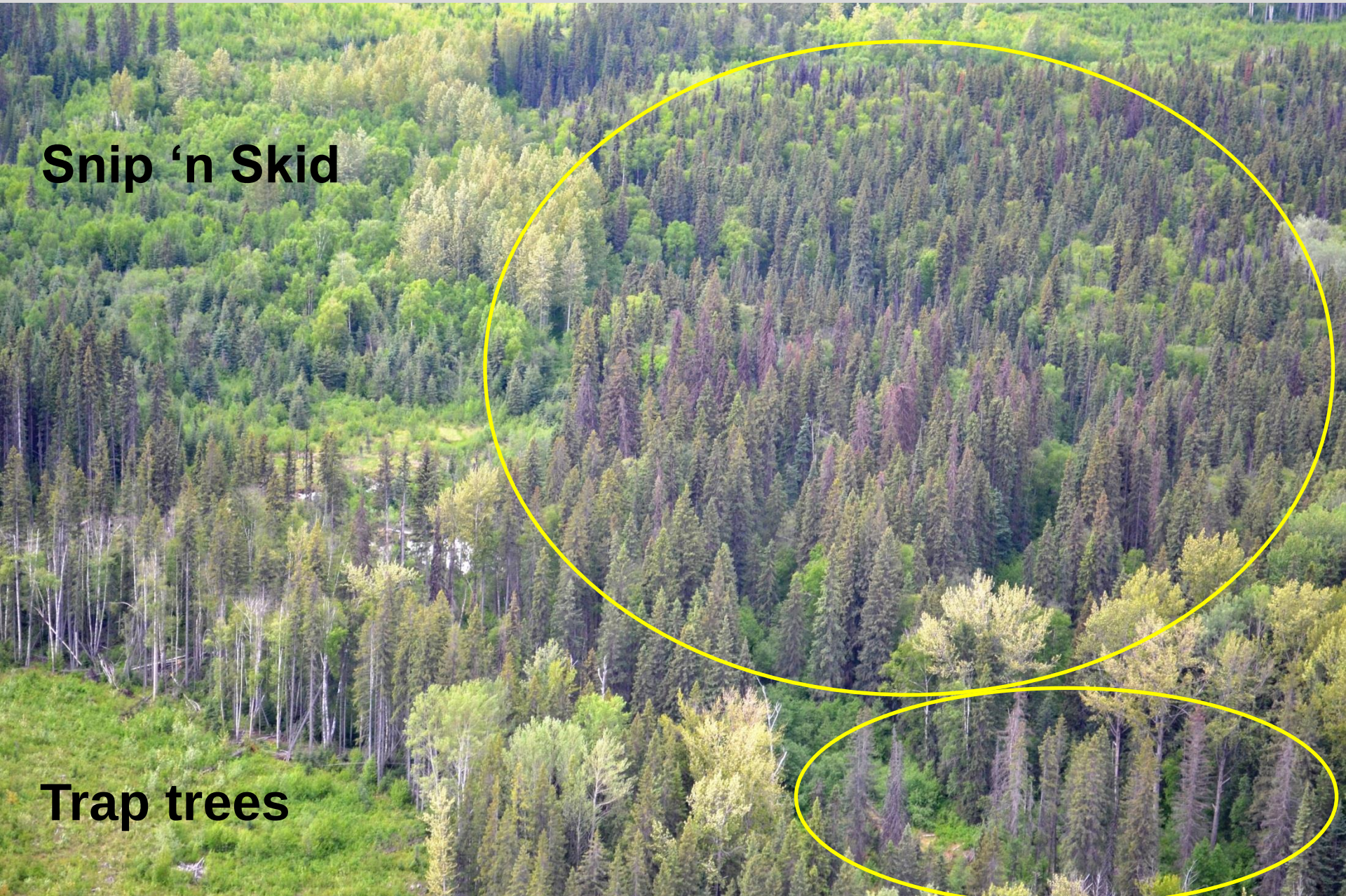


- Currently infested Sx (sanitation) ← Try to maximize
- Some previously infested Sx (salvage)
- Some unattacked Sx (incidentals)

Beetle Management Strategies:

- Suppression/Prevention: Address 80% + of current attack in year 1 & 100% in year 2
- Holding: Address 50-79% of current attack or close to the rate of expansion
- Salvage: Address < 50% of current attack in areas where the above tactics are not possible
- Monitor: No action required beyond recording & monitoring

Spruce beetle patch management options



Larger Block

Mostly Salvage Harvesting

Stumps from logging were cut as low as possible

Infested Logs Being Loaded onto Logging Truck

Spruce Conventional Trap Trees

A Trap Tree Strip Created
with a Feller-Buncher

Trap Tree Strip Left Amid Temporary Retention

Trap trees are effective against light infestations over a larger area or against more moderate infestations over a smaller area.

They are not effective against heavier infestations over larger areas

FPPR: Sect. 41- Modification of Insect Behaviour

An agreement holder or a timber sales manager who uses trap trees or pheromones to concentrate insect populations must ensure that the insect brood is destroyed before the insects emerge.

Felling spruce that were attacked the previous year by spruce beetle (on a 2-year cycle) in the second summer, can reduce emergence for hibernation behavior by 69 - 88%.

Therefore that many more beetles are removed during subsequent winter sanitation harvesting.

Hodgkinson *et al.* (2015)

Previous vs. Existing MOF Legislative Oversight

Sect. 10 of the *Forest Practices Code Act* once specified that when licensees were submitting a FDP and they were contending with a beetle problem, they had to specify cutblock:

- **size**
- **shape**
- **location**
- **timing of harvesting**
- **other measures to protect forest resources**

The above has been replaced with:

- **Professional accountability**
- **Reactive Ministerial declaration of an emergency**

In summary,
the vital question to ask is:

Ya . . . . but are there beetles in this tree?

Thank You!

Any questions?