

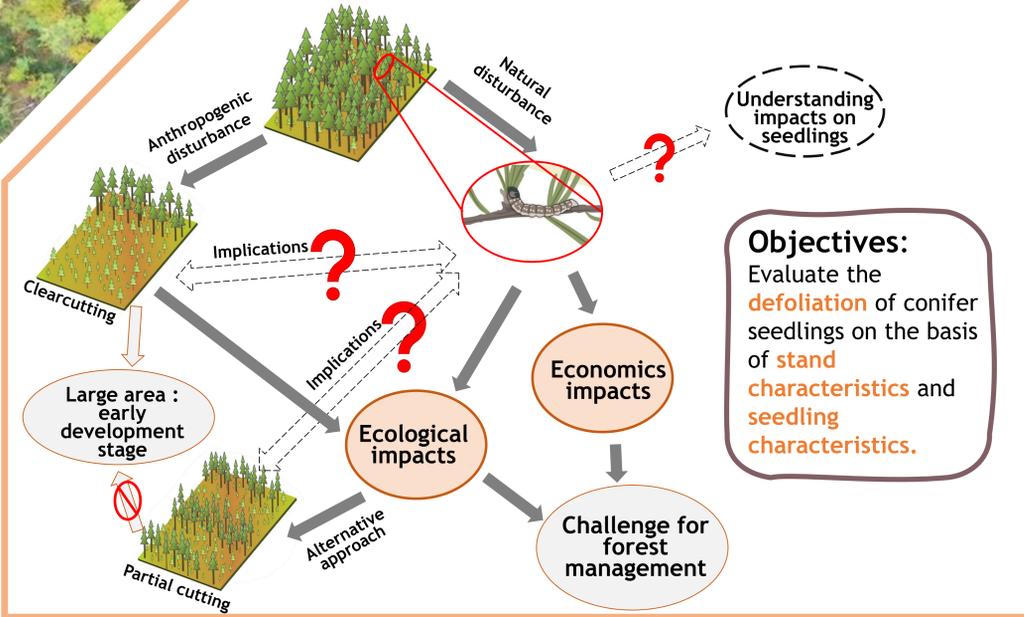
What happens with seedlings during spruce budworm outbreaks?

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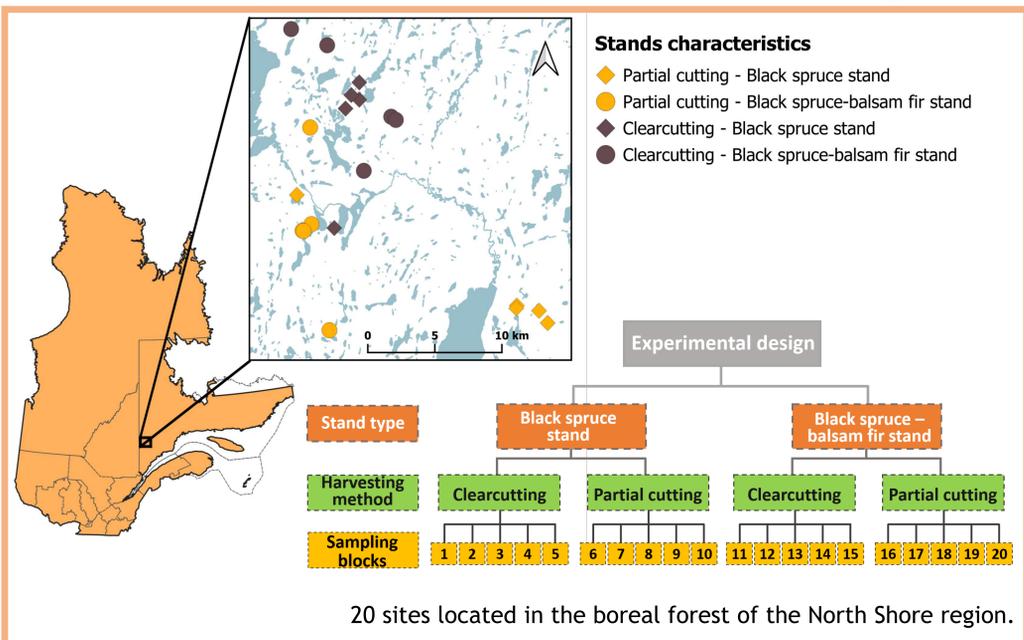
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1. Introduction

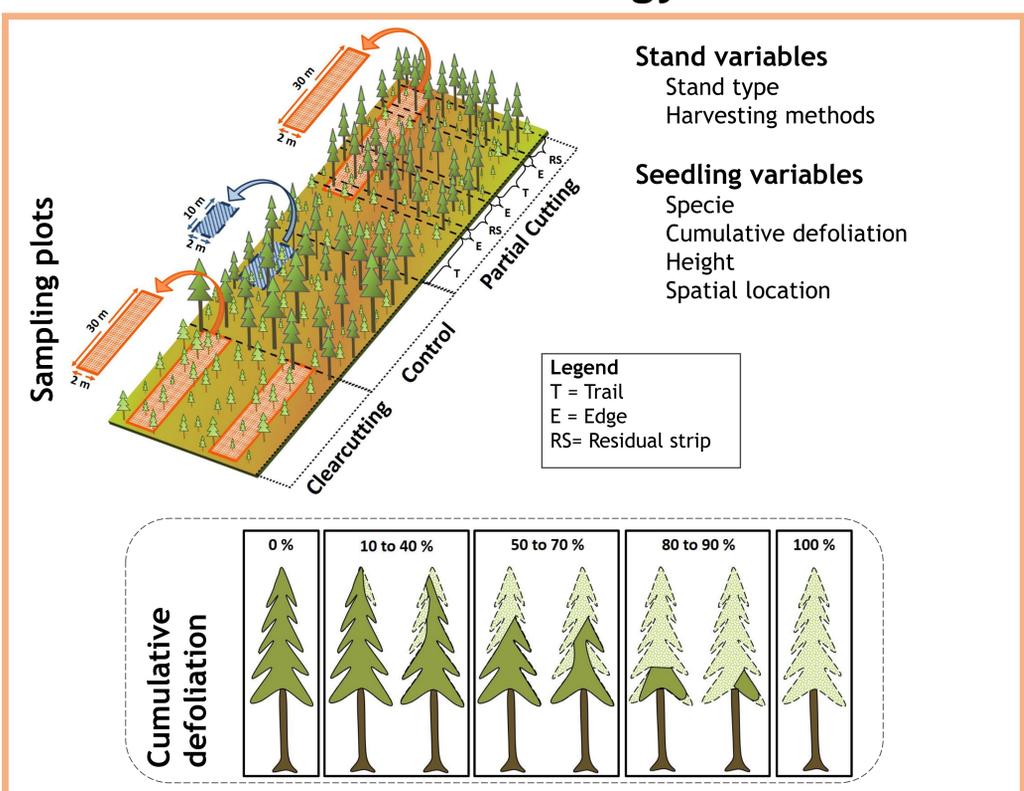
Spruce budworm outbreak and silvicultural practices are important drivers of forest ecosystem dynamics.



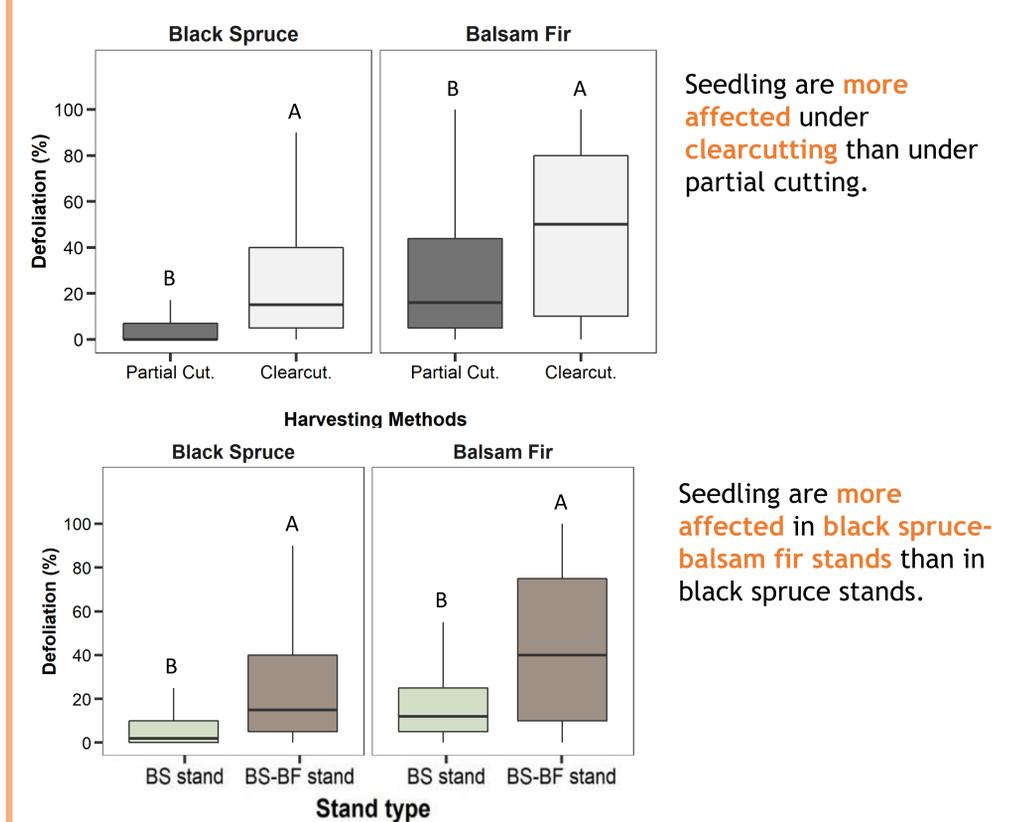
2. Study area and experimental design



3. Methodology



4. Results



Seedling are more affected under clearcutting than under partial cutting.

Seedling are more affected in black spruce-balsam fir stands than in black spruce stands.

Highlights

Balsam fir are more affected than black spruce.

Taller seedling are more affected than smaller seedling.

Under clearcutting, no significant role of the distance on seedling defoliation

Under partial cutting, seedlings are exposed to other constraints which may influence the defoliation severity.

5. Implications for forest management

We demonstrate an important role of harvesting methods and stands composition on the severity of defoliation for conifer regeneration. Those factors need to be considered in future forest management. We conclude that partial cutting offers a good substitute that protects conifer seedling from defoliation caused by spruce budworm on conifer regeneration.

References

Lavoie, J., M. Montoro Girona and H. Morin. 2019. Vulnerability of conifer regeneration to spruce budworm outbreaks in the eastern Canadian boreal forest. *Forests*, 10: 850; doi:10.3390/f10100850

Montoro Girona, M., J.-M. Lussier, H. Morin and N. Thiffault. 2018b. Conifer regeneration after experimental shelterwood and seed-tree treatments in boreal forests: Finding silvicultural alternatives. *Frontiers in Plant Science*, 9: 1145-1159

For more information

Lavoie, J., Montoro Girona, M., Grosbois, G. and Morin, H. Does the Type of Silvicultural Practice Influence Spruce Budworm Defoliation of Seedlings? *Ecosphere* 2021, 12 (4) DOI: 10.1002/ecs2.3506.

