

Introduction



Woodland caribou decline is largely due to increased predation pressure induced by timber harvesting and dense road networks (Gouvernement du Québec 2022).

Quebec's caribou habitat restoration efforts have raised concerns about wood supply (Moreau and Guénette 2015).

The Caribou Habitat Index (CHI) and a new modeling framework that estimates the Annual Allowable Cut (AAC) could be valuable tools for rapidly evaluating various management practices.

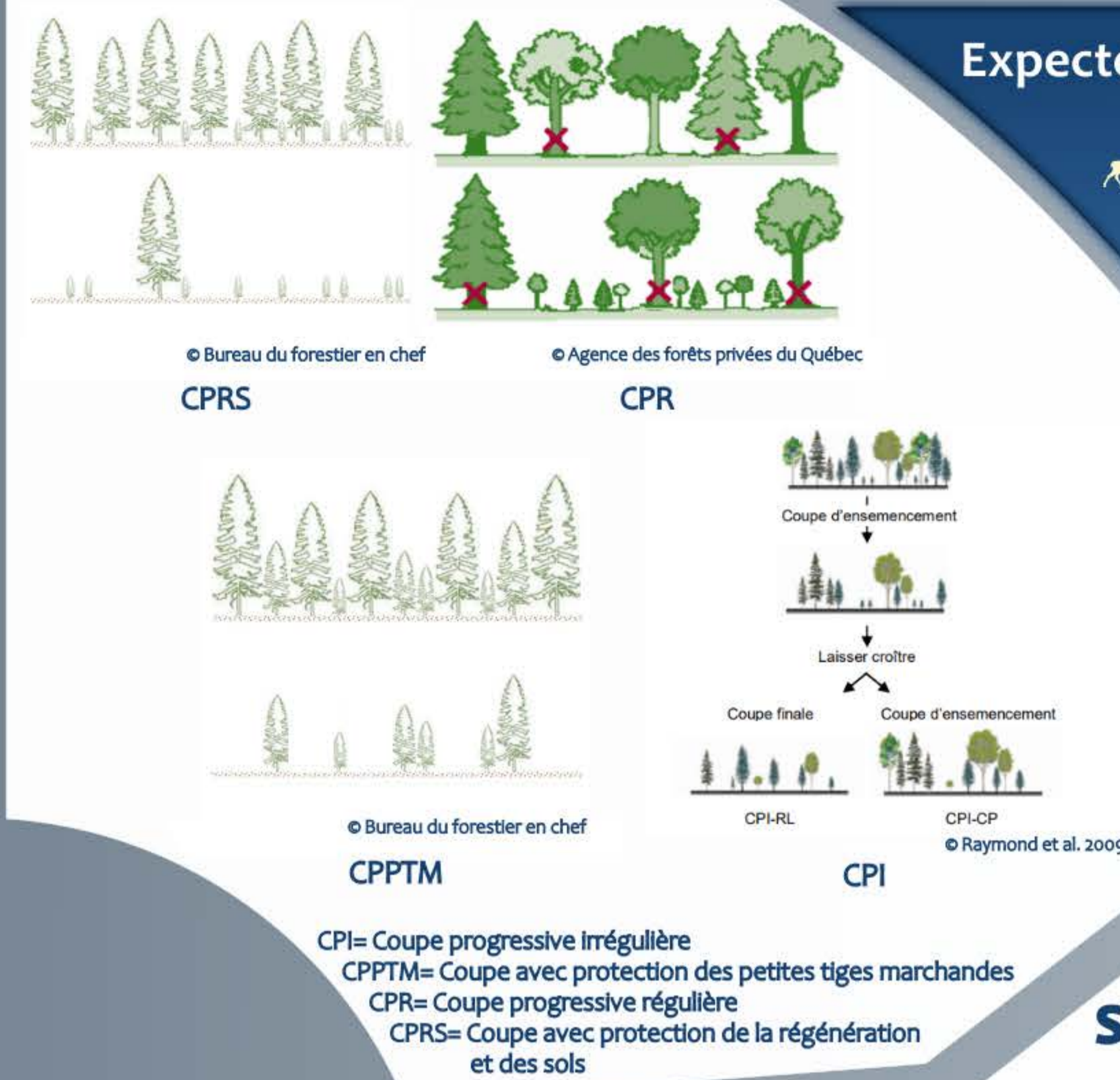
Simulation Framework

The simulation framework developed by Fortin et al. (2022) estimates the Annual Allowable Cut (AAC).

It accounts for the sources of uncertainty of the ARTEMIS model and sampling design.

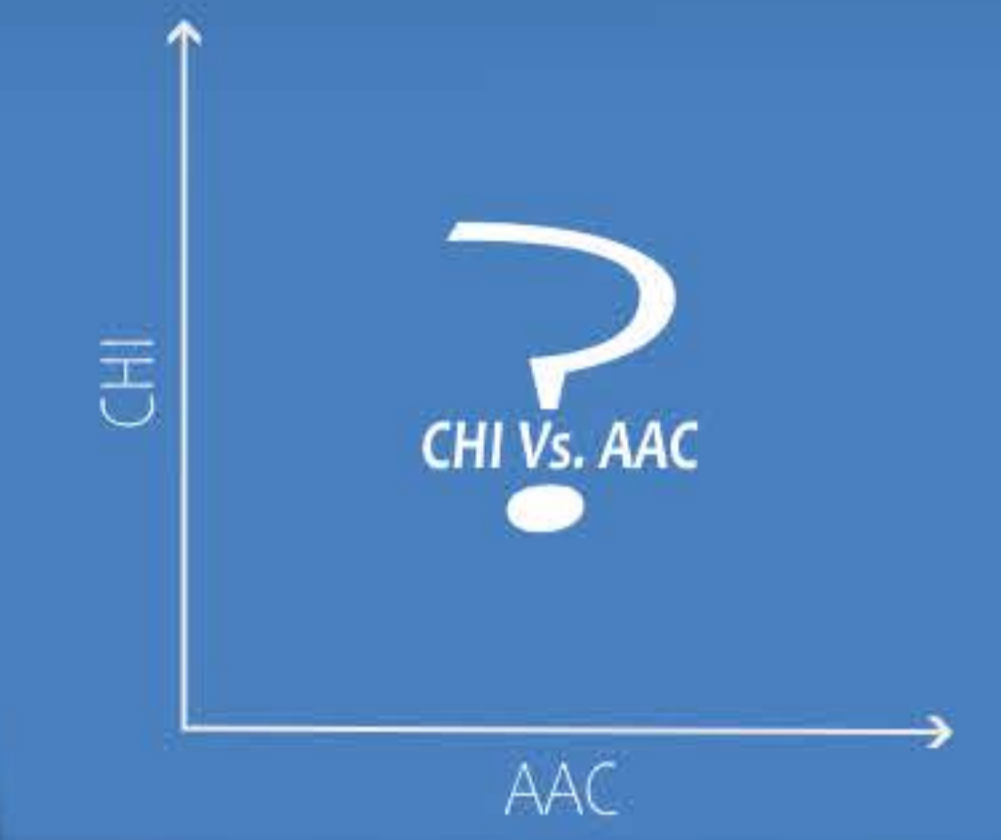


Silvicultural Scenarios



Expected Outcomes

- Estimate AAC and CHI simultaneously.
- Implications of preserving caribou habitat in relation to wood supply.
- Determine the percentage decrease in wood supply necessary to maintain a specific level of caribou habitat in terms of CHI.

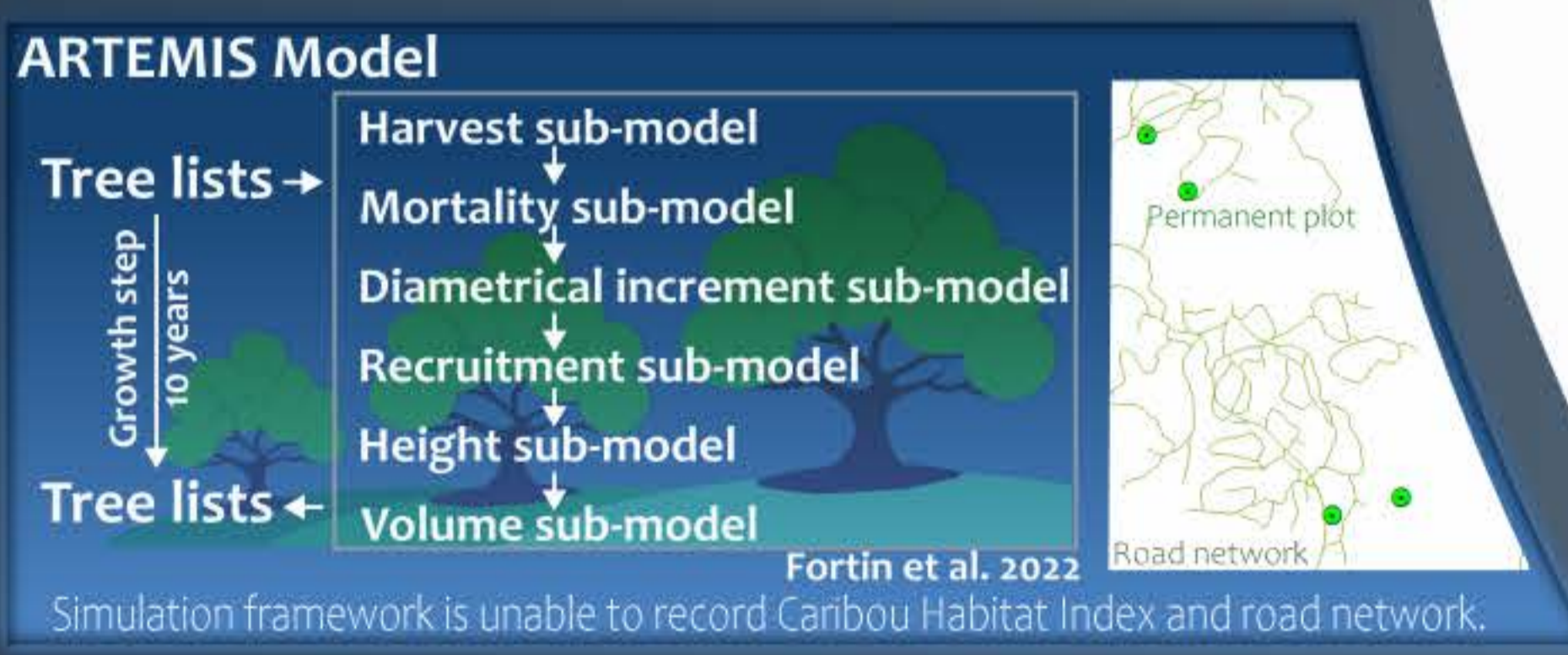
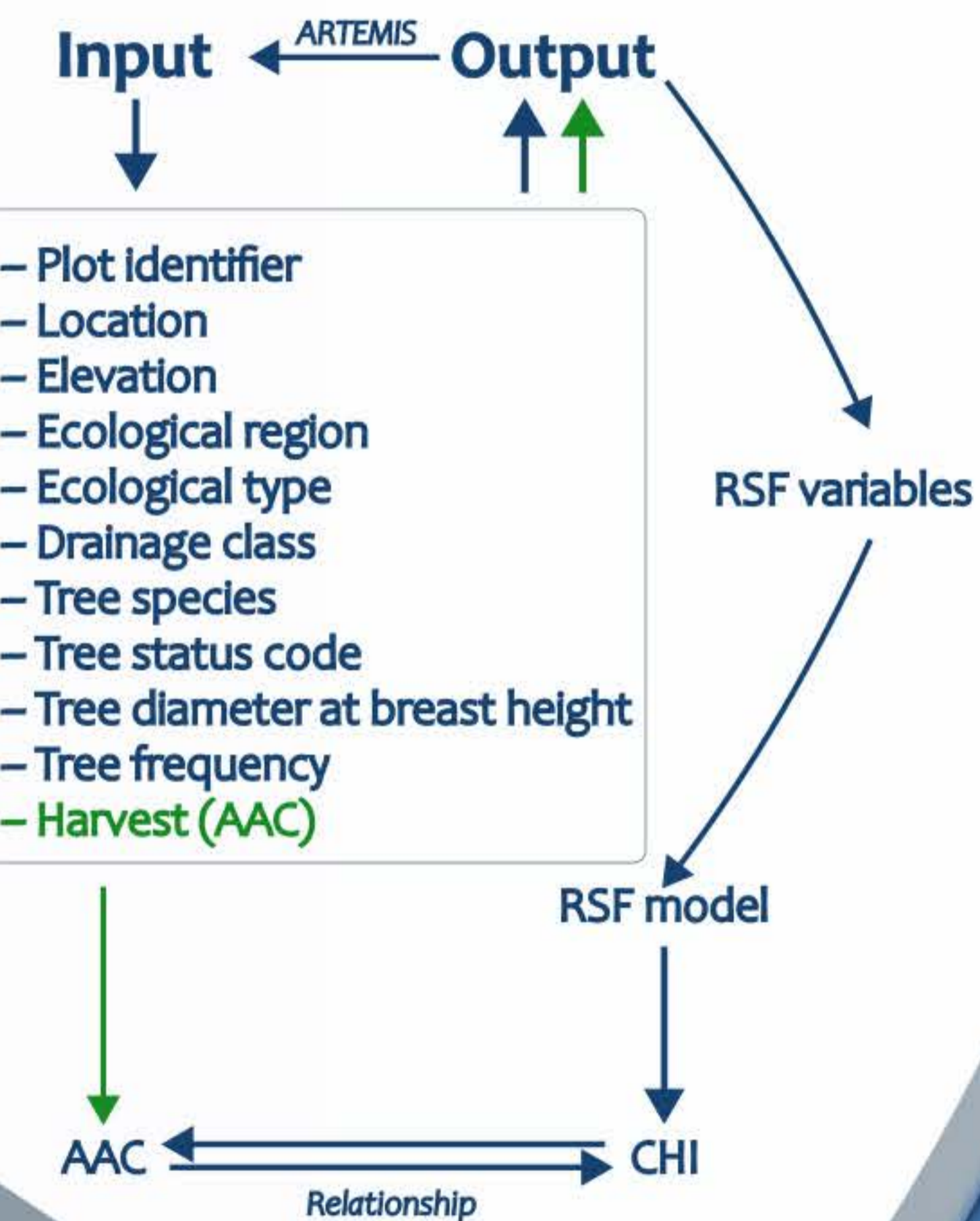


Evaluating the impact of protecting caribou (*Rangifer tarandus caribou*) on wood supply

Dipesh Kumar Sharma¹, Mathieu Fortin², Martin-Hugues St-Laurent¹, Robert Schneider¹

¹ Département de Biologie, Chimie et Géographie, Centre d'étude de la forêt, Université du Québec à Rimouski (UQAR), Québec, Canada
² Canadian Wood Fibre Centre, Canadian Forest Service, Natural Resources Canada, Ottawa, Canada

Objective
 Evaluating the efficiency of different forest management strategies on Caribou Habitat Index (CHI).



Study Area

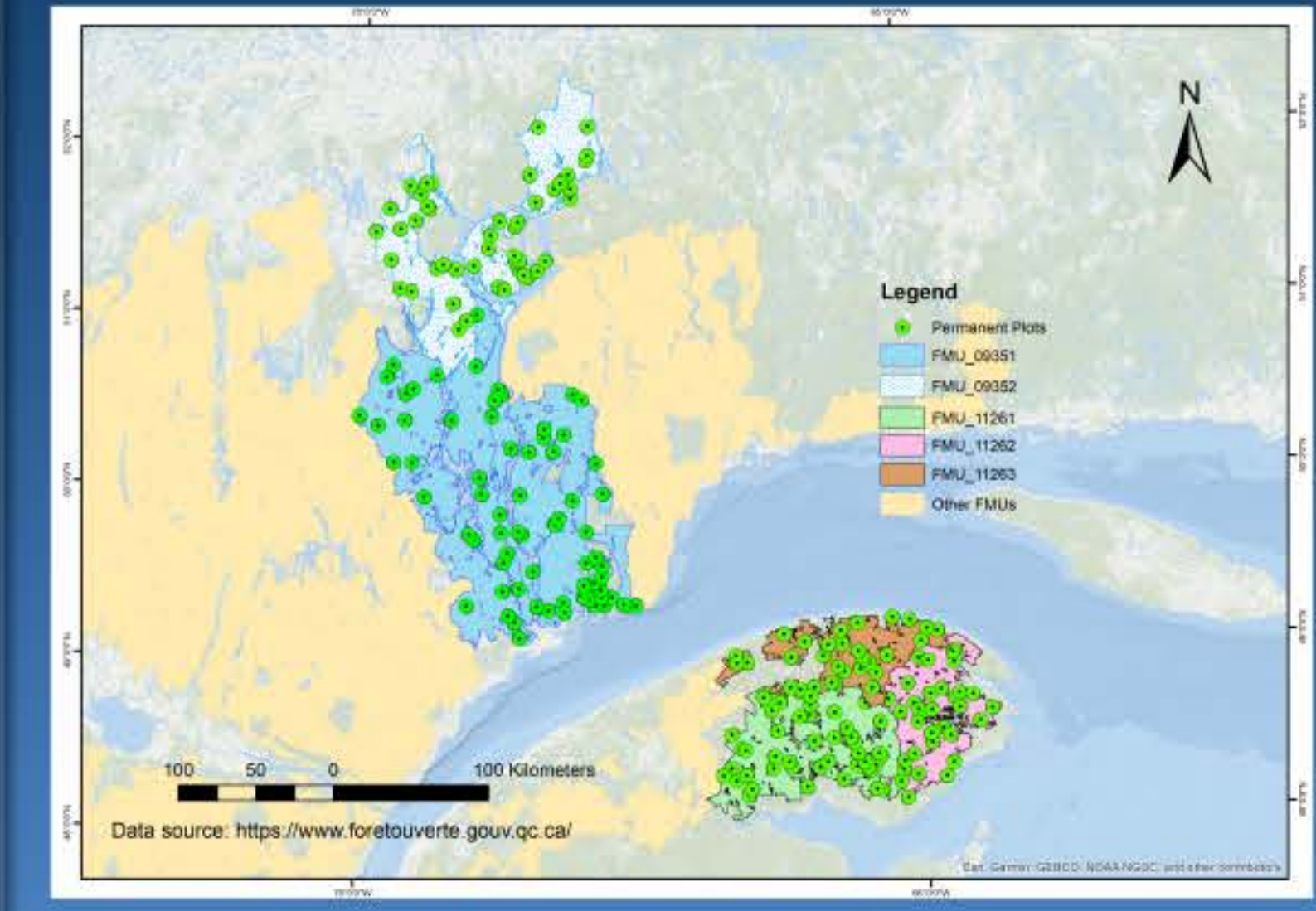
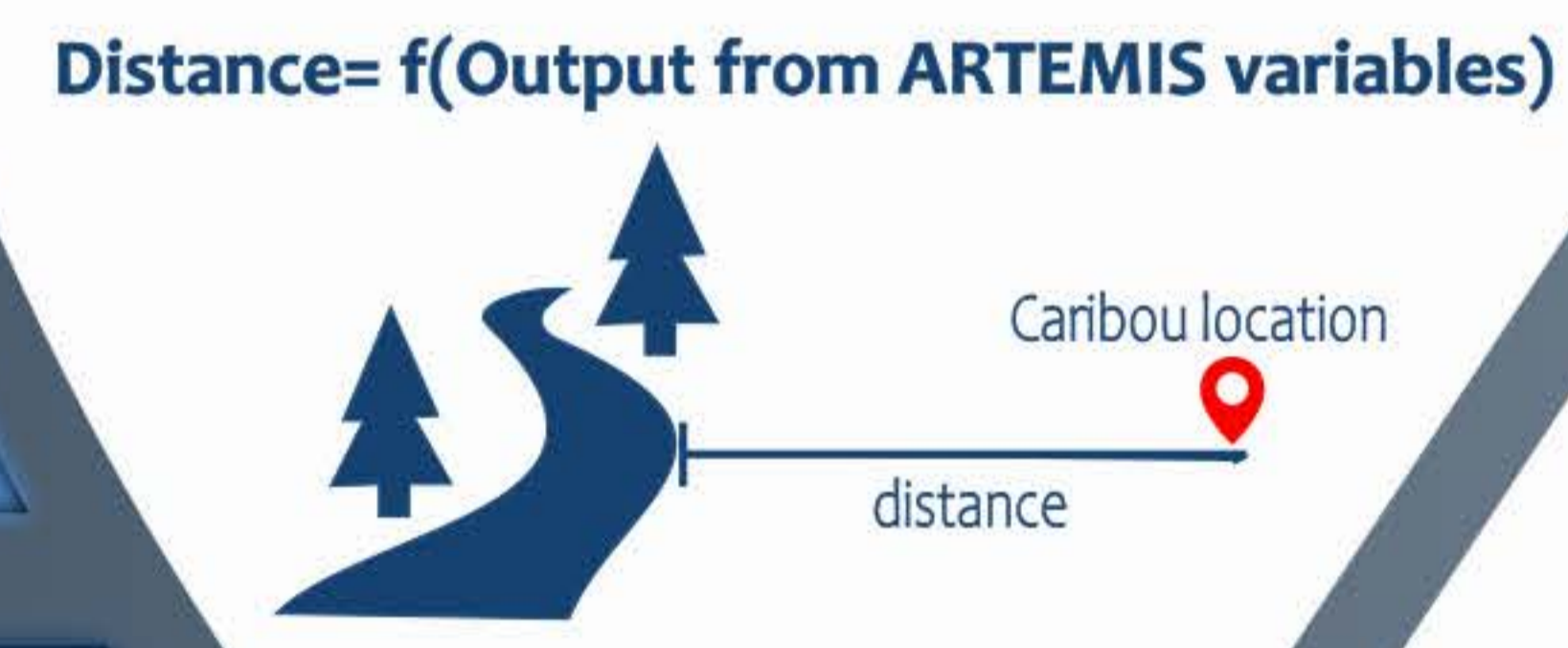


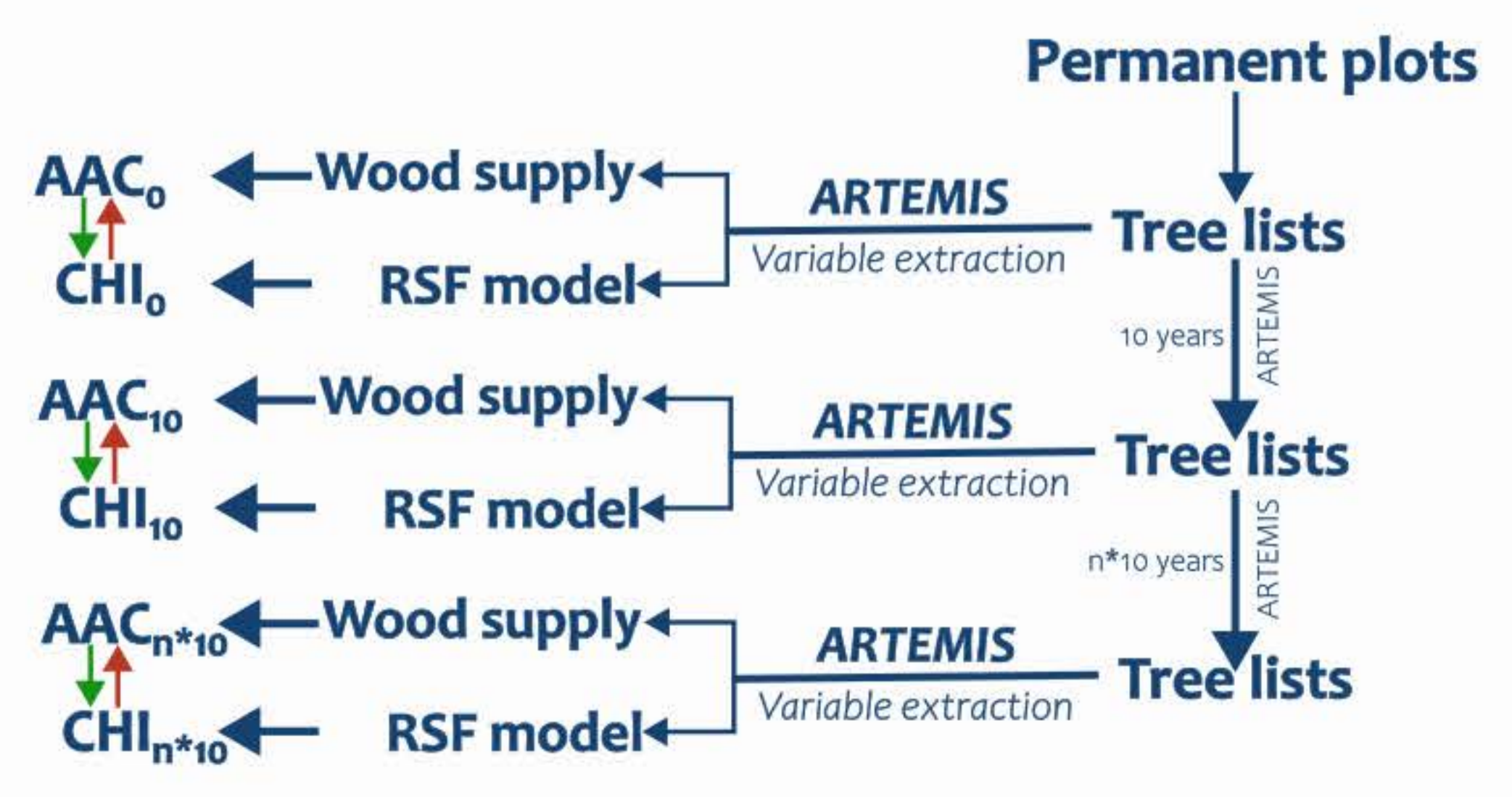
Table: Number of plots in proposed FMUs in Gaspésie and North shore region

FMU	No. of plots	Area (km ²)
Gaspésie		
FMU 11261	94	6469
FMU 11262	65	4060
FMU 11263	65	3644
North shore		
FMU 09351	140	19215
FMU 09352	95	8393

Distance to the nearest road



CHI Vs. Wood Supply



References

Fortin M., Sattler, D. & Schneider, R. 2022. An alternative simulation framework to evaluate the sustainability of annual harvest on large forest estates. *Canadian Journal of Forest Research*, 52, 704-715.

Gouvernement du Québec. 2022. Commission indépendante sur les caribous forestiers et montagnards. Document de consultation, Printemps.

Moreau, A. and Guénette, J., 2015. The economic costs of the boreal caribou recovery plan. *Montreal Economic Institute*.

Raymond, P., Bédard, S., Roy, V., Larouche, C. and Tremblay, S., 2009. The irregular shelterwood system: review, classification, and potential application to forests affected by partial disturbances *Journal of Forestry*, 107(8), pp.405-413.

SARA. 2002. Species at Risk Act. Minister of Justice. Retrieved from <https://laws.justice.gc.ca/eng/acts/S-15.3/page-10.html#h-435647>.

St-Laurent, M.H., Boulanger, Y., Cyr, D., Manka, F., Drapeau, P. and Gauthier, S. 2022. Lowering the rate of timber harvesting to mitigate impacts of climate change on boreal caribou habitat quality in eastern Canada. *Science of The Total Environment*, 838, 156244.

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