regeneration and conservation of exceptional forest in Québec (Canada)

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In the Eastern Townships, a Southern region of Quebec, most of the forests are of private tenure. Composed mainly of hardwood species, these private forests are generally located close to urban centers and submitted to a strong pressure from agriculture, leisure and woodcutting. Consequently, the landscape is very fragmented, the residual forests are small, scarce and often surrounded by agricultural land. More than 88% of the private forests cover less than 50 hectares each. To protect the residual forests we have to maintain their ecosystem processes including the dynamic of their main tree species. Design, area and conservation regulations have to take into account the requirements of these species to provide an appropriate environment to maintain them in the landscape. The species that regenerate themselves in gaps or with fire or who are growing in open areas could regenerate better with edge effect or could need some human interventions to maintain themselves. We are evaluating the regeneration of butternut (Juglans cinerea), who is an intolerant native species, in residuals forests fragments. This species could disappear with the natural evolution toward late successional state in absence of perturbations. We are determining the regeneration pattern in relation to the edge effect. Their data also include time sequence of regeneration related to the size of the fragments, spatial pattern related to location of adults trees and height diameter ratio as a measure of the vigor of young trees. Historical data related to the origin of the wood lot are also searched for.