

# Rapport - Article scientifique

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lépidoptères | communautés | variation temporelle | variation spatiale

## A. Nos questions de recherche.

**A.1. Question principale** : Quels sont les changements dans la biodiversité des espèces de lépidoptères dans le temps et dans l'espace au Québec ?

### Questions spécifiques (1 sur la variation temporelle et 2 sur la variation temporelle+spatiale) : ### **Variation temporelle** : Comment la diversité des espèces de lépidoptères a-t-elle évolué au fil des années?

### **Variation temporelle et spatiale** : -Comment la répartition des espèces de lépidoptères varie dans le temps? carte avec différentes couleurs pour chaque bloc de 25 ans ou 50 ans avec différentes textures (4 cartes dans une avec heat map) -Comment la répartition de *Papilio canadensis* change dans le temps et l'espace?

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*fig : frog*

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Fig. 1. Figure 2. Photo de Papilio canadensis observé dans son habitat naturel.

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$$\begin{aligned}(x+y)^3 &= (x+y)(x+y)^2 \\ &= (x+y)(x^2 + 2xy + y^2) \\ &= x^3 + 3x^2y + 3xy^2 + y^3.\end{aligned}$$

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