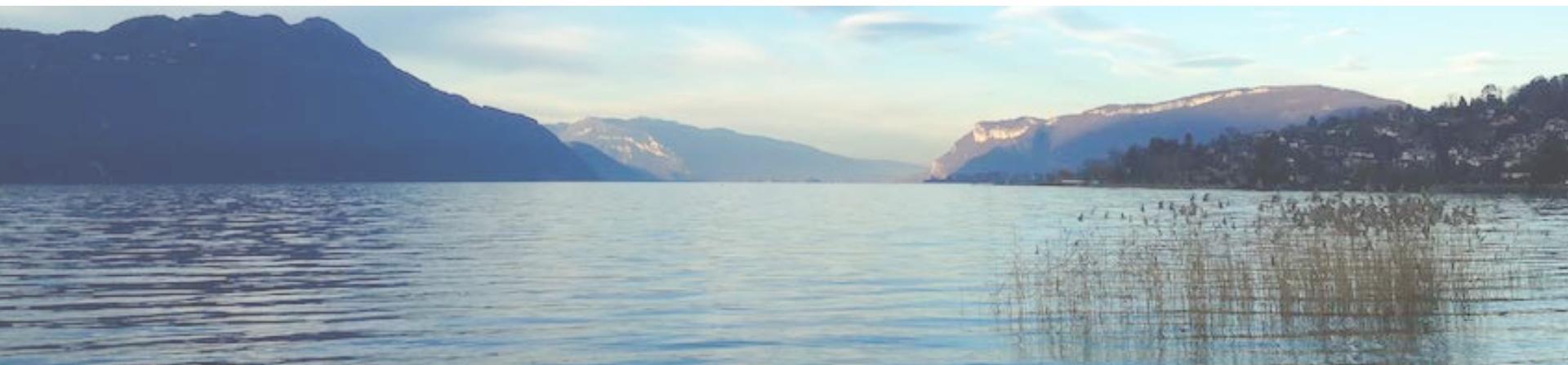


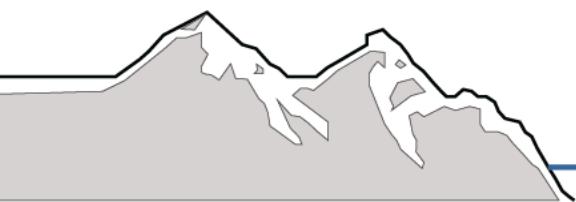
# Une double approche chimique et biologique pour l'évaluation du risque écologique de la contamination des sédiments littoraux du Lac du Bourget

N. Lécrivain, V. Frossard, B. Clément

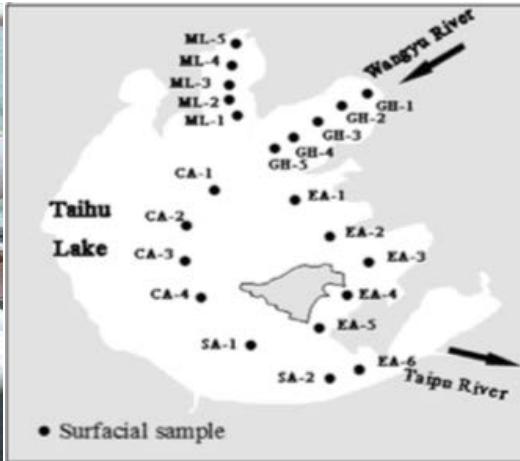
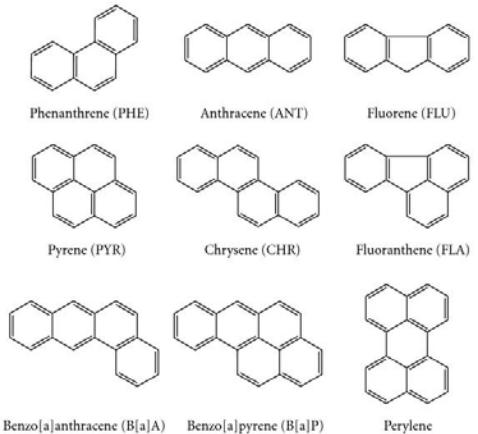
4 juin 2018 - Journée Technique Faune Benthique lacustre



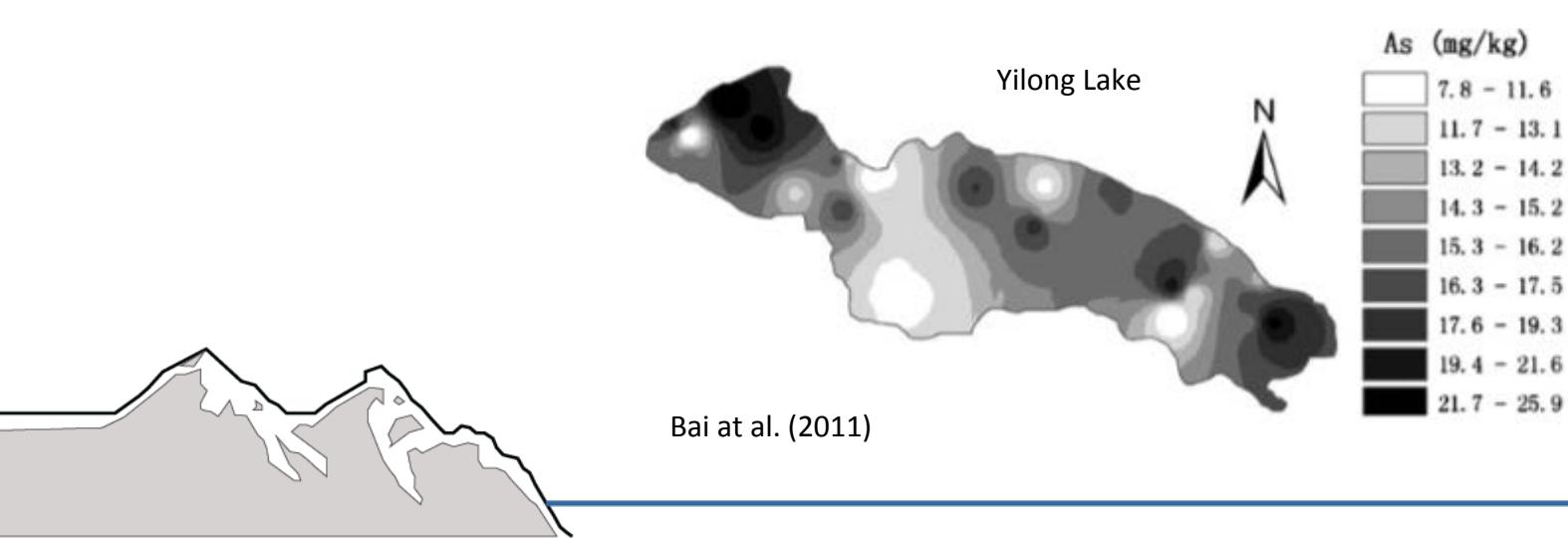
# Etude de la pollution des lacs - Pourquoi ?



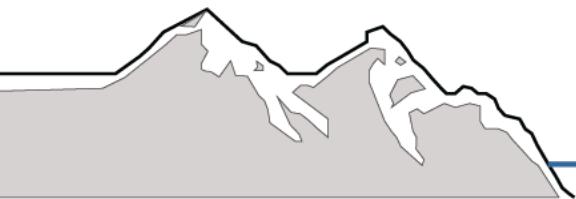
# Etude de la pollution des lacs - Comment ?



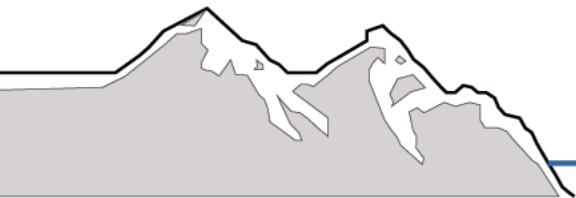
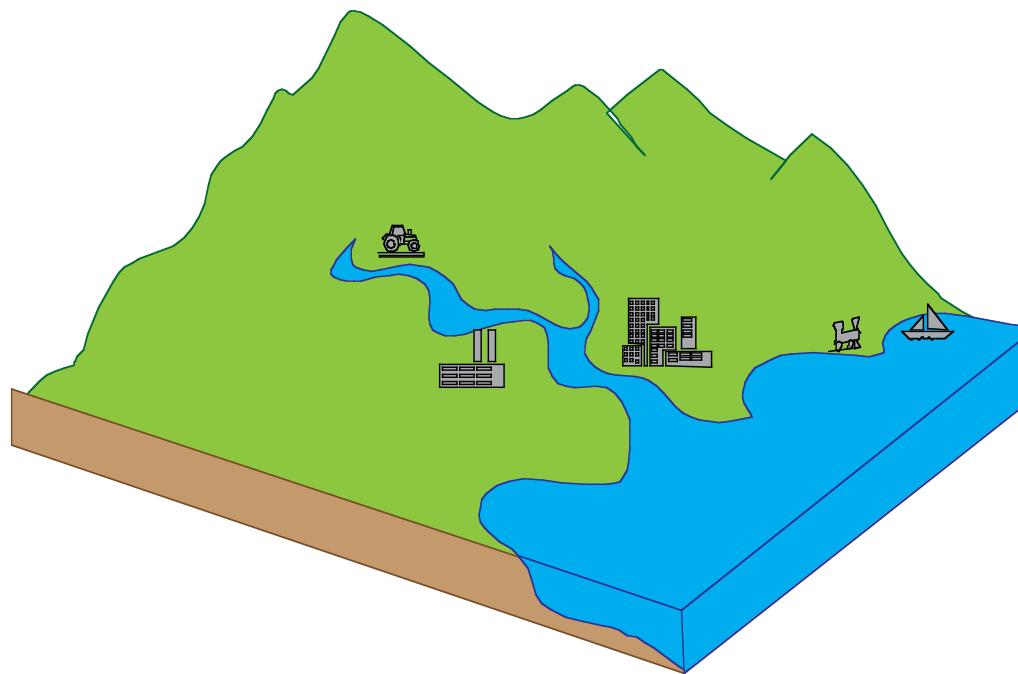
Liu at al. (2016)



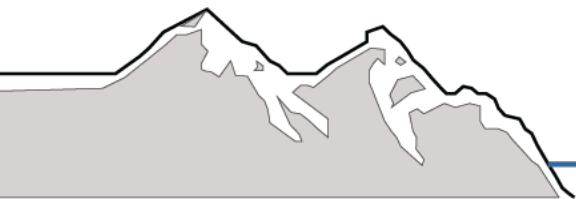
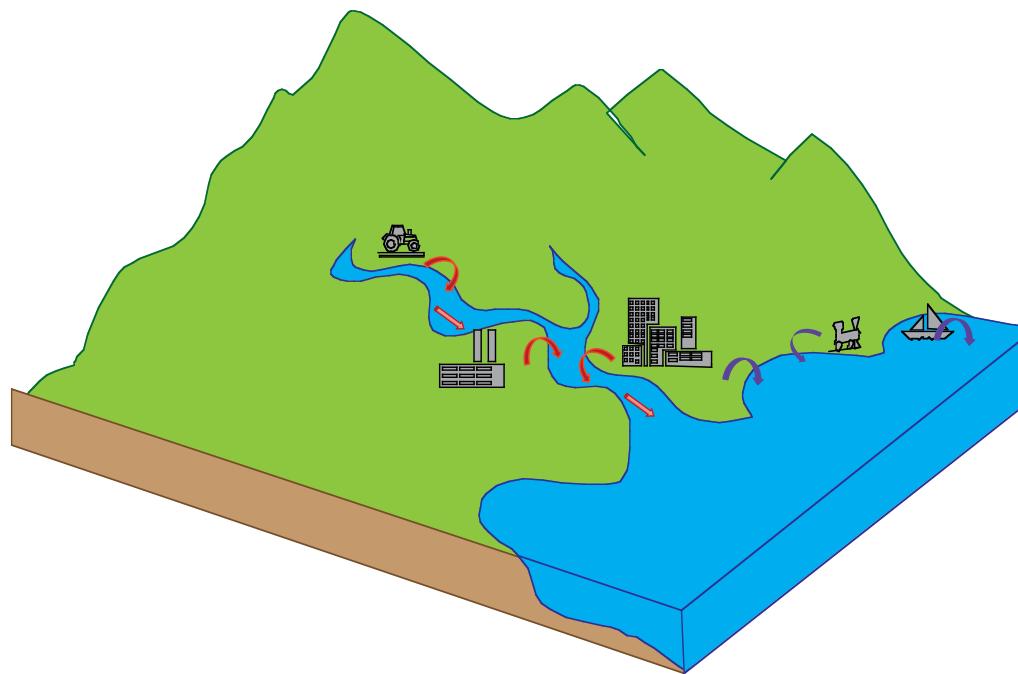
# Etude de la pollution des lacs - Et la zone littorale ?



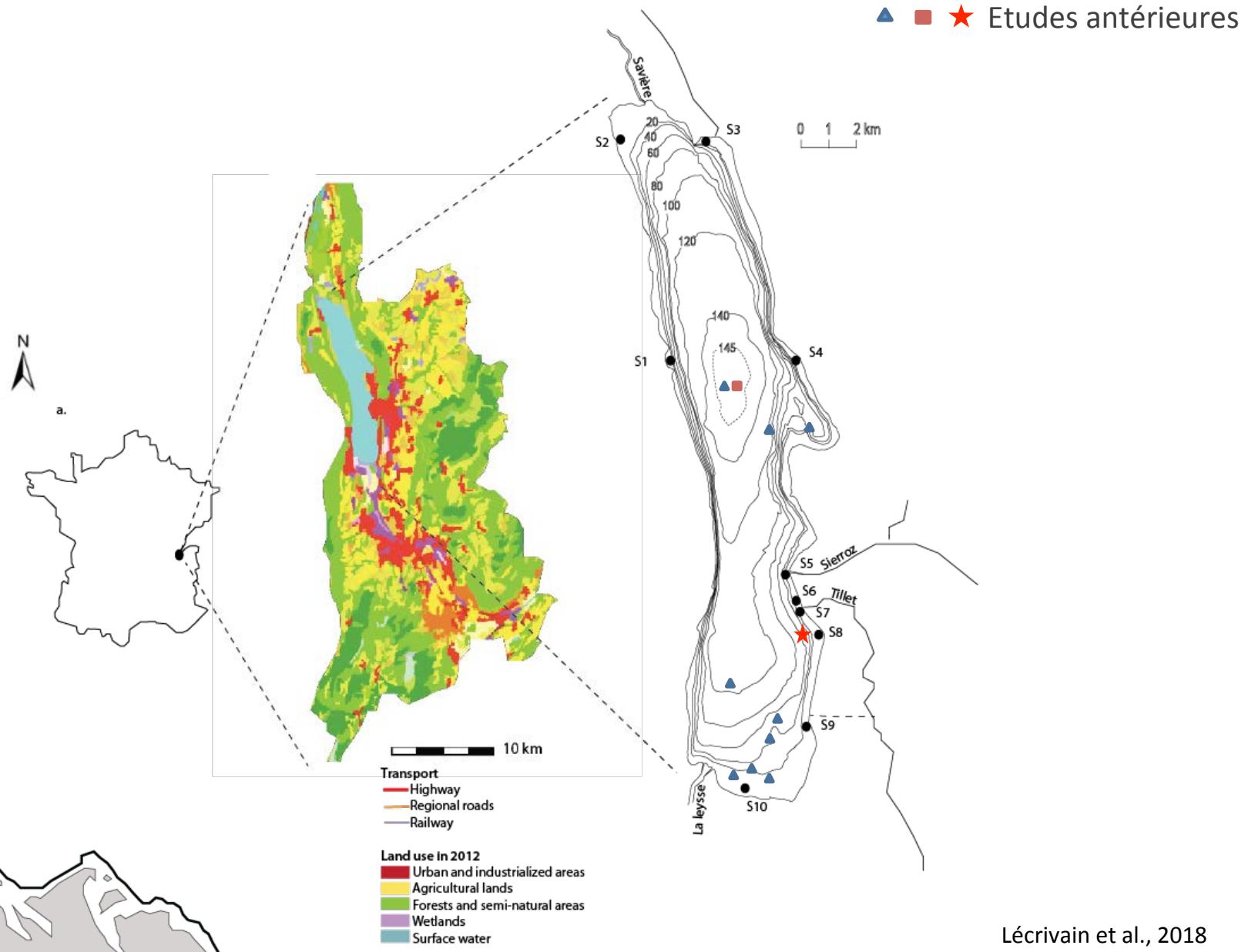
# Etude de la pollution des lacs - Et la zone littorale ?



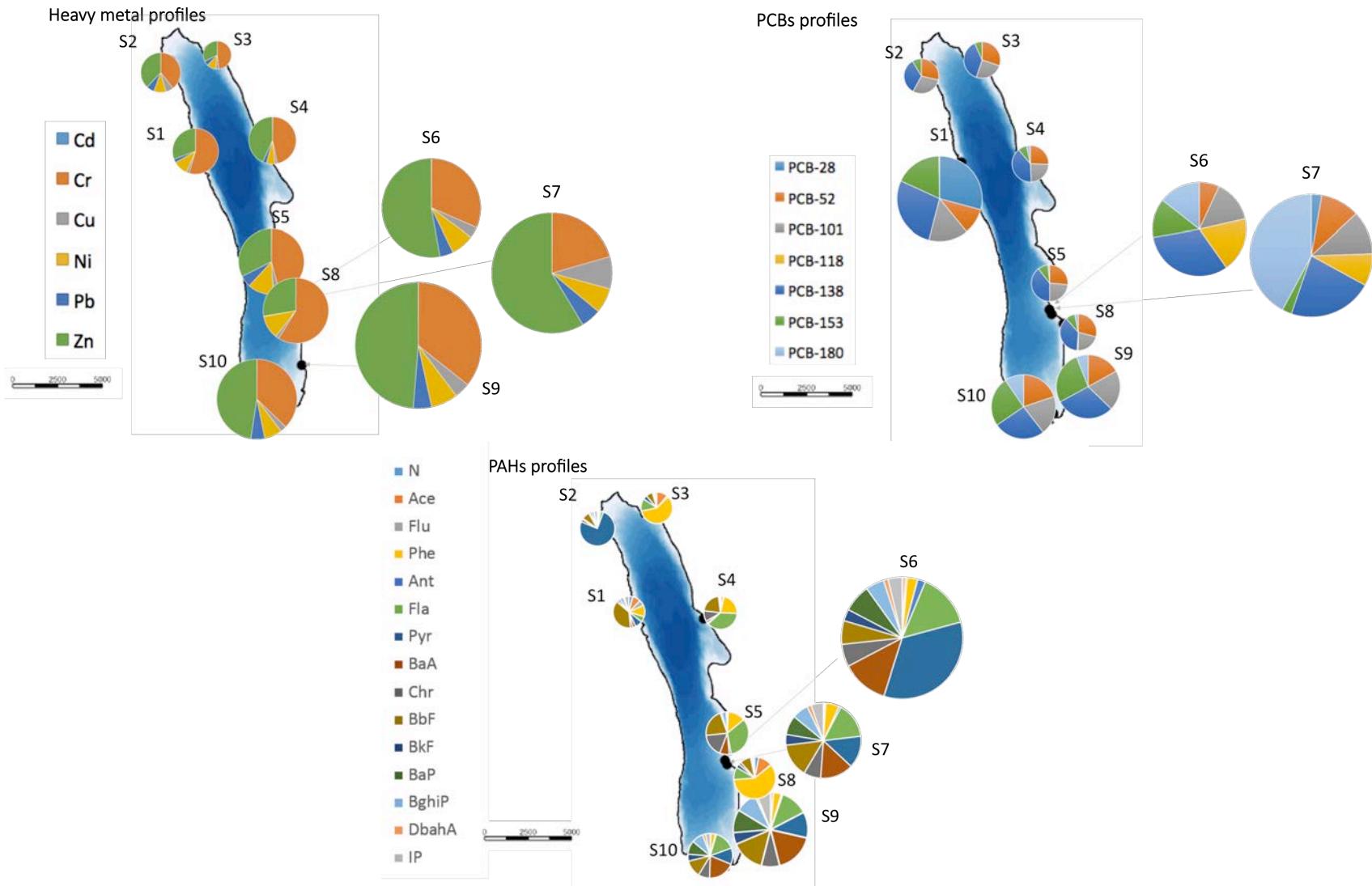
# Etude de la pollution des lacs - Et la zone littorale ?



# Etude de la pollution des lacs - Le lac du Bourget



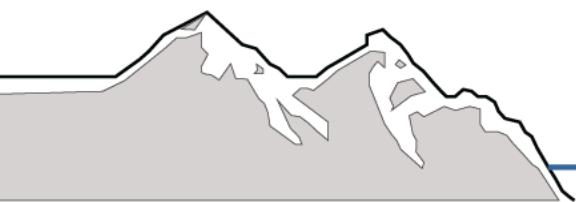
# Etude de la pollution des lacs - La contamination littorale



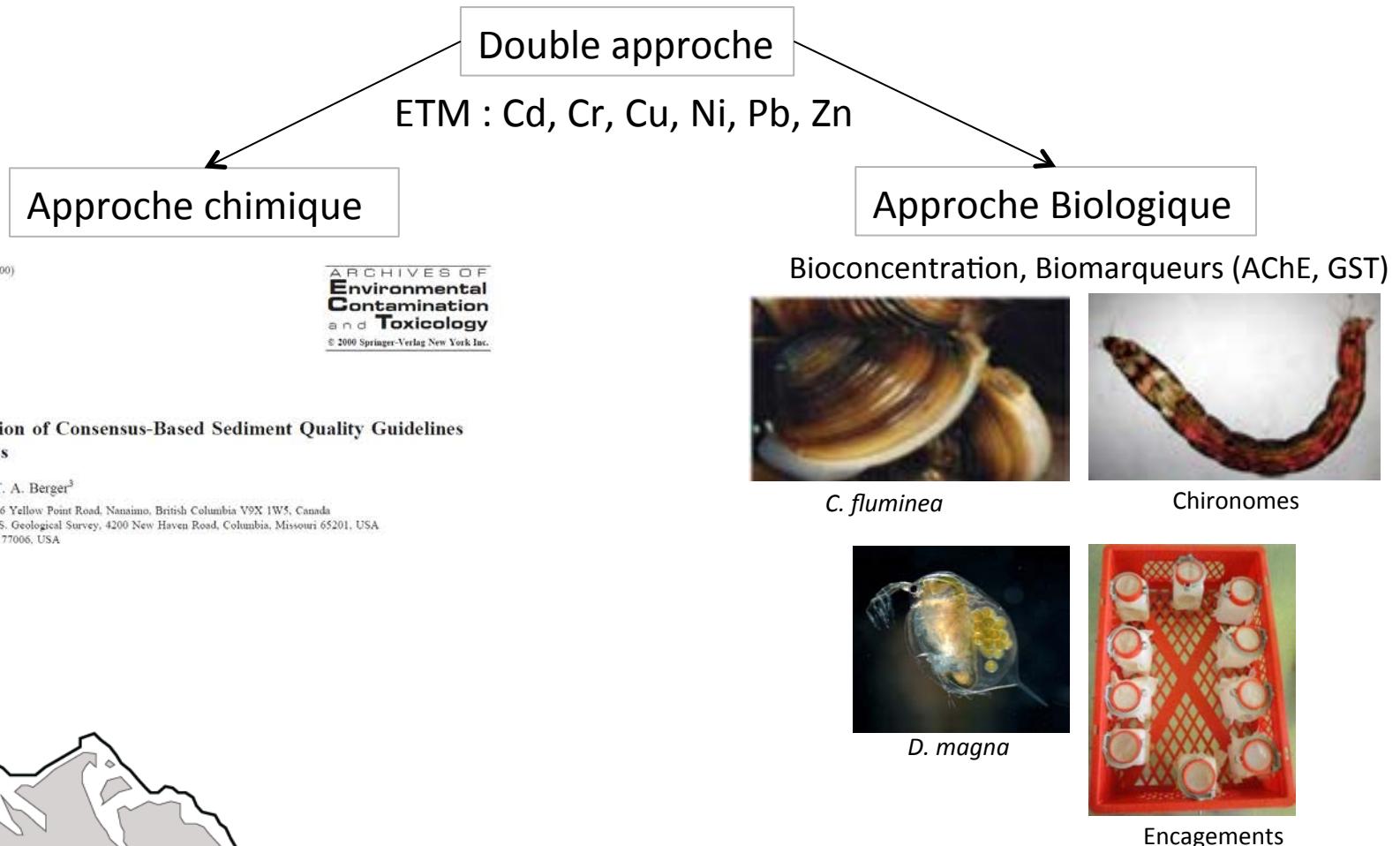
## Question et démarche

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Est-ce que ces sédiments présentent un risque écologique et ce risque varie t-il le long du littoral ?

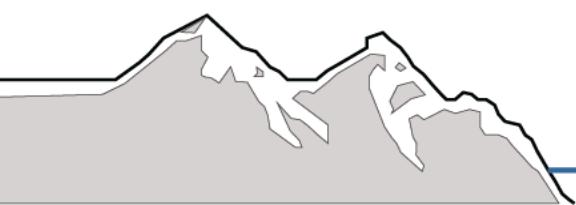
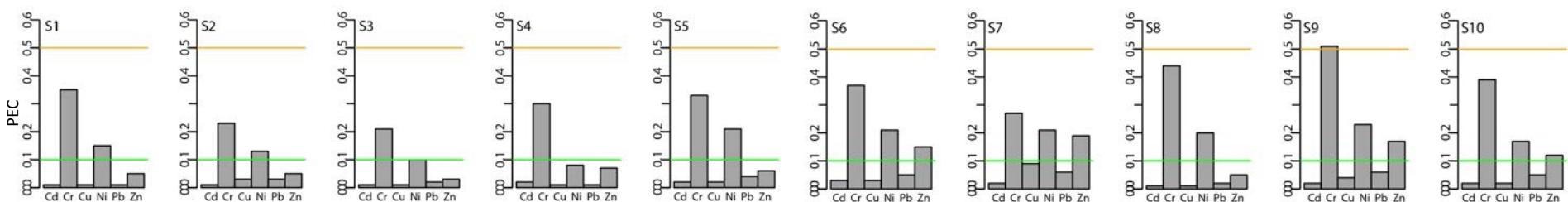
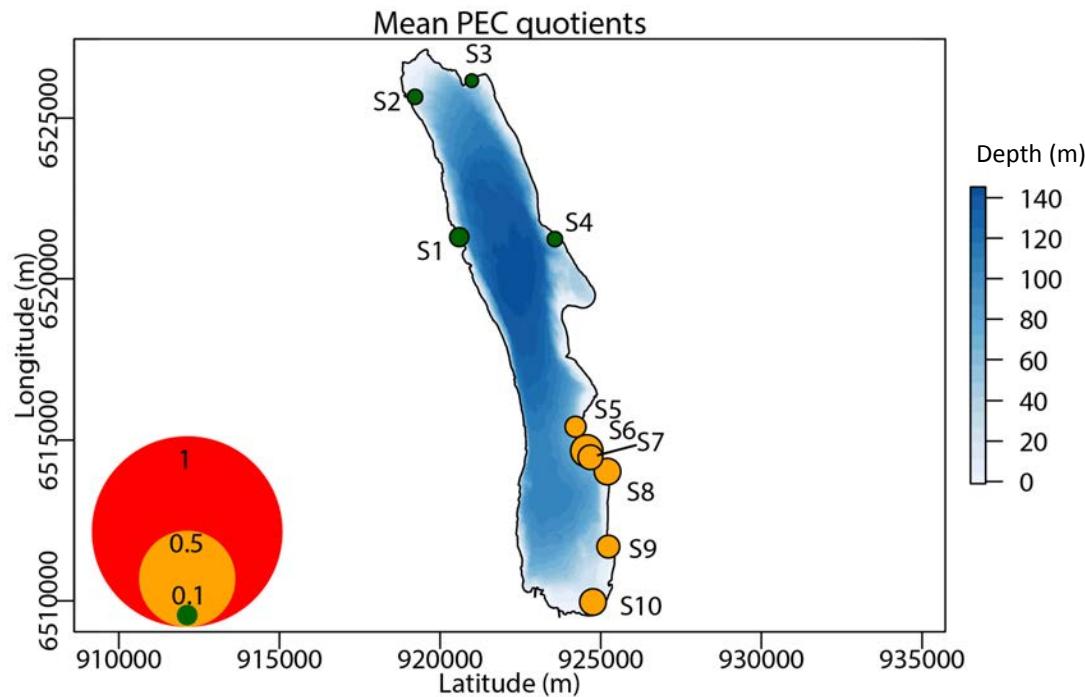


Est-ce que ces sédiments présentent un risque écologique et ce risque varie t-il le long du littoral ?



# Approche chimique

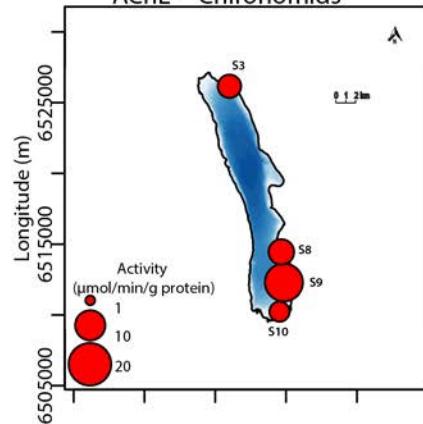
$$\text{Quotient moyen PEC}_{site} = \text{moyenne}\left(\frac{[contaminant]}{PEC_{contaminant}}\right)$$



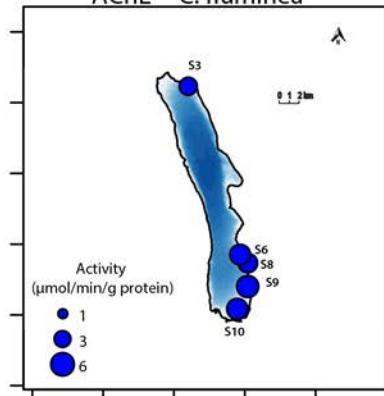
# Approche biologique



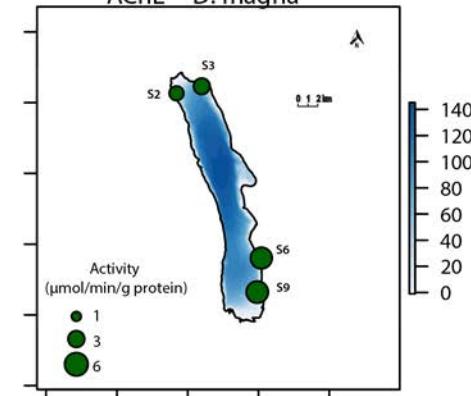
AChE – Chironomids



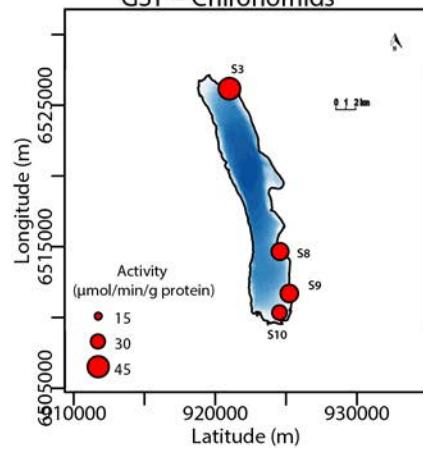
AChE – *C. fluminea*



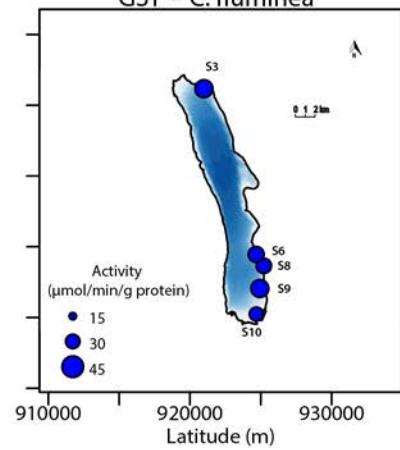
AChE – *D. magna*



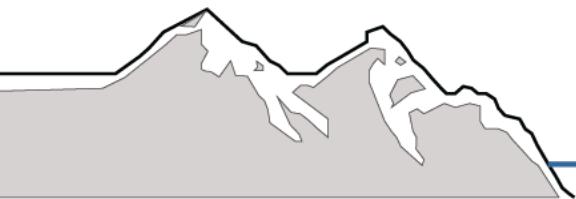
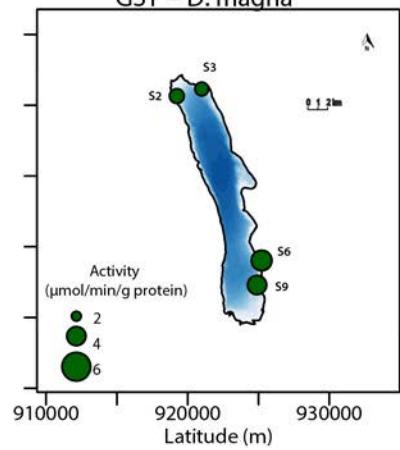
GST – Chironomids



GST – *C. fluminea*



GST – *D. magna*



# Lien approches chimique-biologique



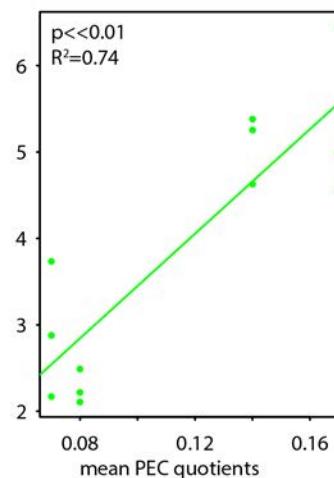
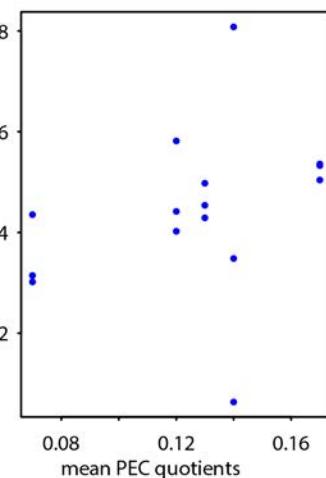
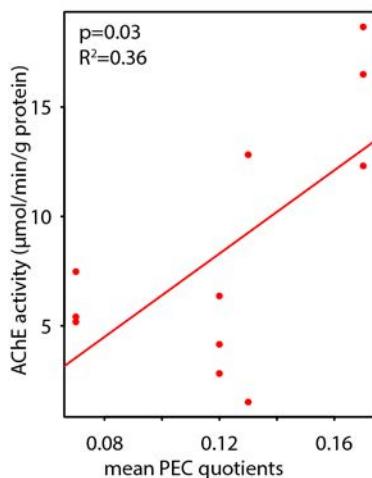
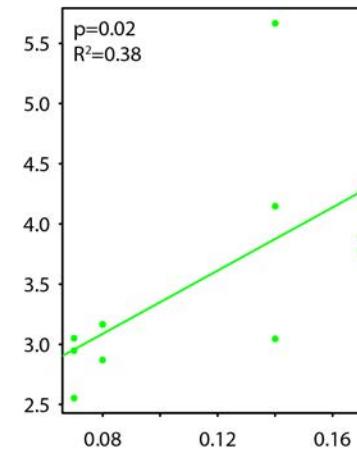
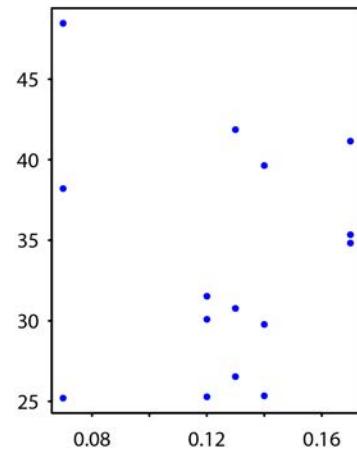
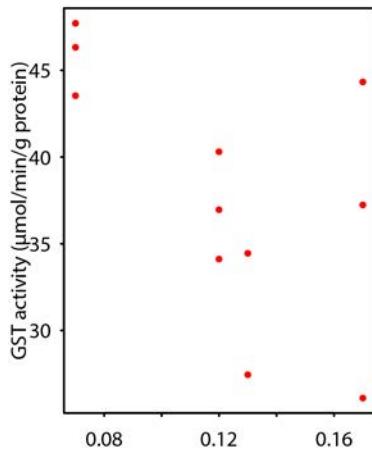
Chironomids



C. fluminea



D. magna



# Lien approches chimique-biologique



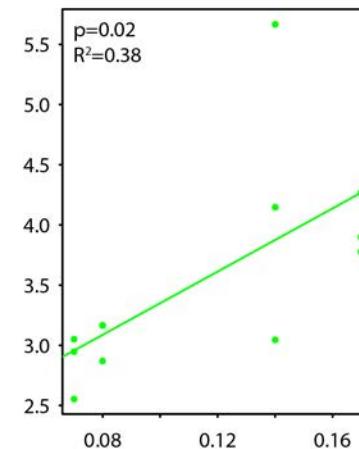
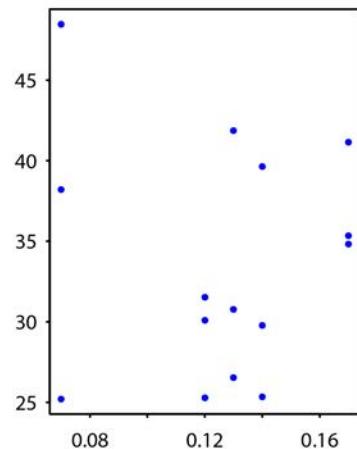
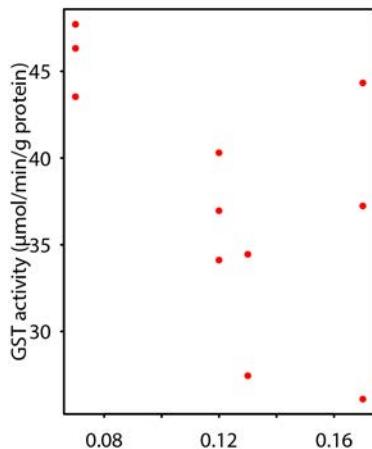
Chironomids



C. fluminea

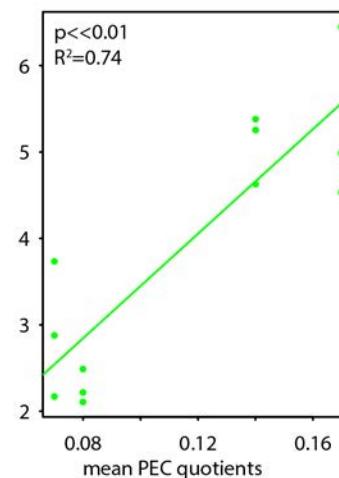
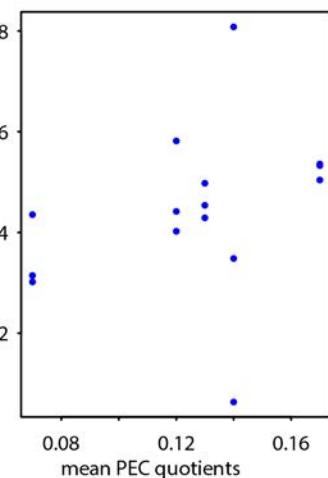
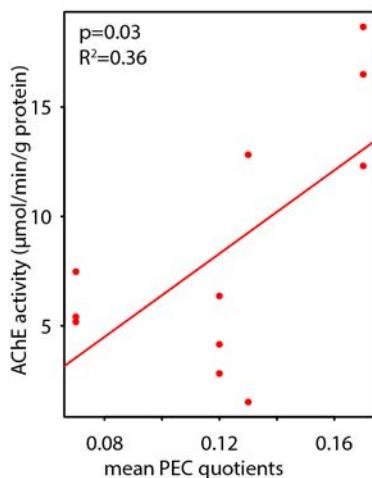


D. magna



## GST

- Acclimatation des organismes autochtones ?
- Sensibilité différente entre ces espèces ? Entre benthique/ pélagique ?



## AChE

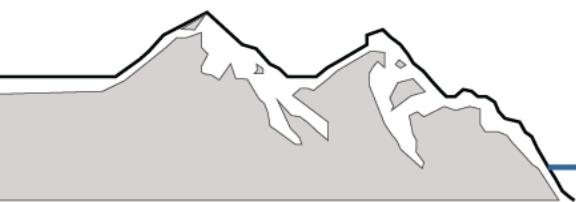
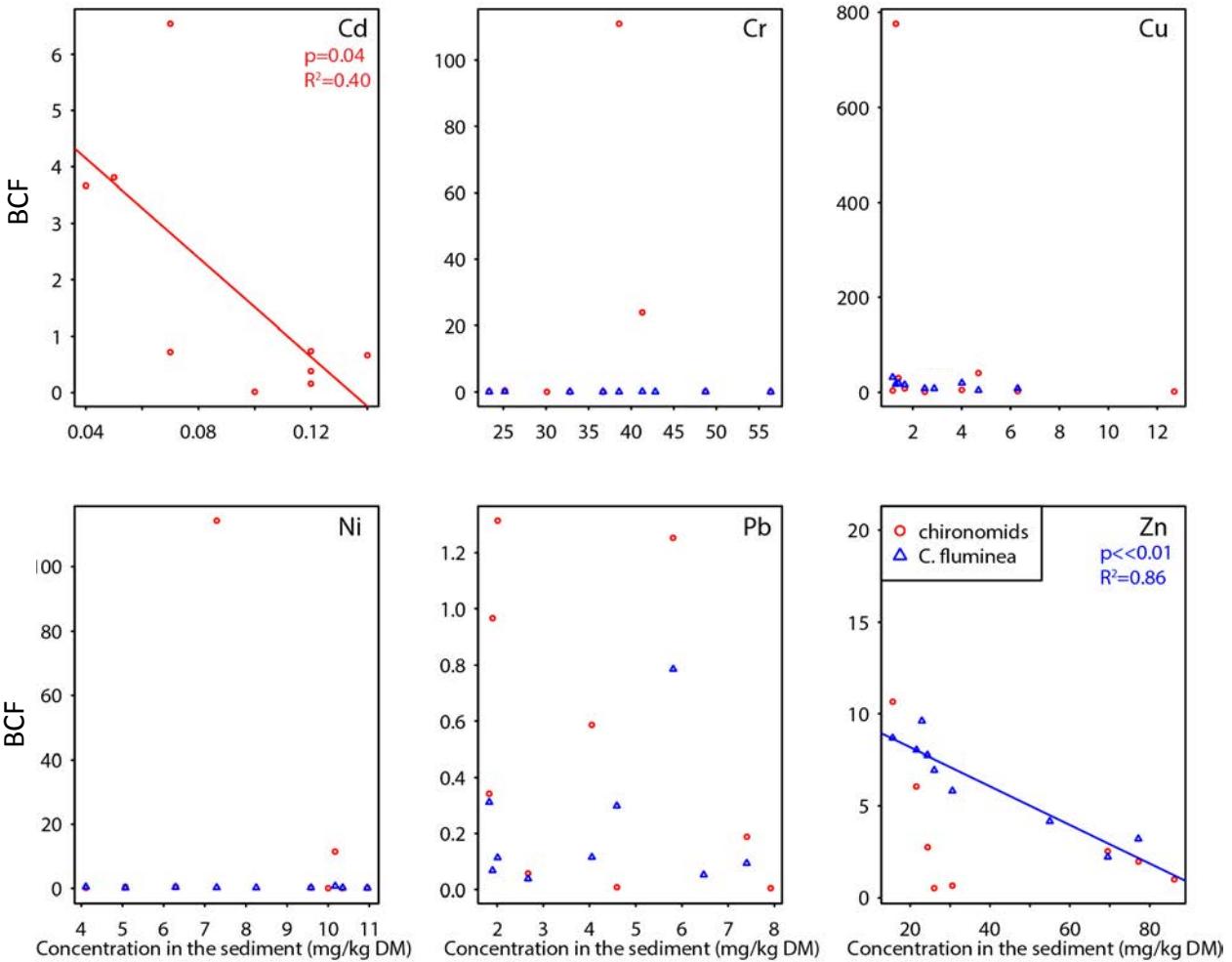
- Exposition à d'autres contaminants ?
- Augmentation de l'activité enzymatique à faible doses d'ETM (Bainy et al., 2006; Jemec et al., 2007)

# Lien approches chimique-biologique



Facteur de bioconcentration :

$$BCF = \frac{[\text{concentration dans l'organisme}]}{[\text{concentration dans le sédiment}]}$$

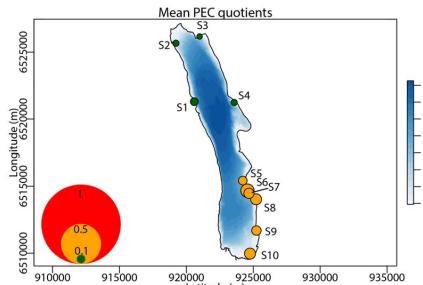
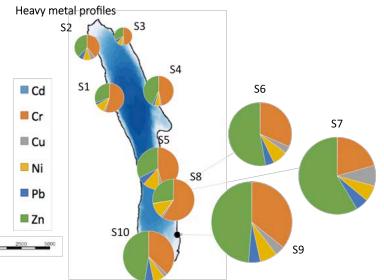


(Adam et al., 2000; McGeer et al., 2003)

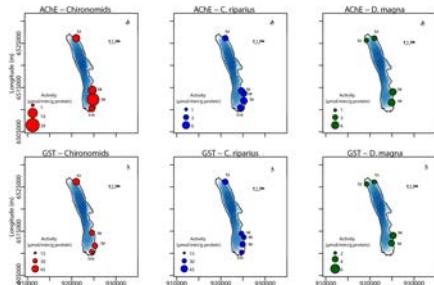
# Conclusions

Double approche

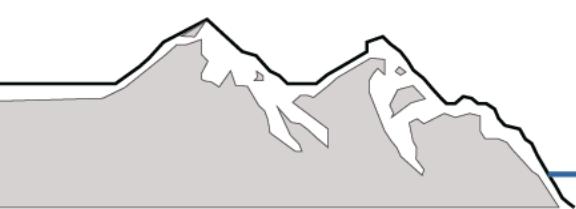
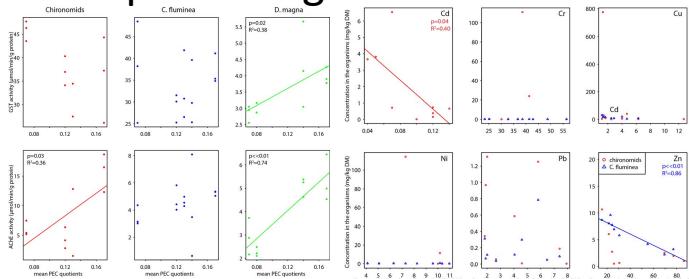
Approche chimique



Approche Biologique



Risque écologique variable



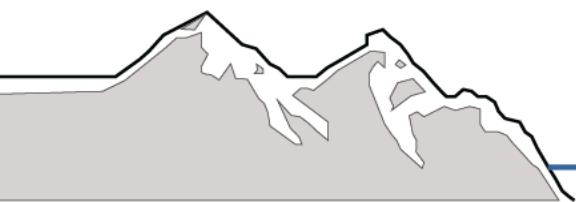
Nathalie LECRIVAIN  
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[nathalie.lecrivain@entpe.fr](mailto:nathalie.lecrivain@entpe.fr)  
04.72.04.72.90



## Littérature

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# Approche biologique de laboratoire

