

Ecological interpretation of the link between thyroid hormones level and the migrating behavior in *Anguilla anguilla* glass eels

Eric Edeline^{1,3}, Sylvie Dufour² & Pierre Elie¹



1: Cemagref, Unité Ressources Aquatiques Continentales, 50 av de Verdun, 33612 Cestas, France.

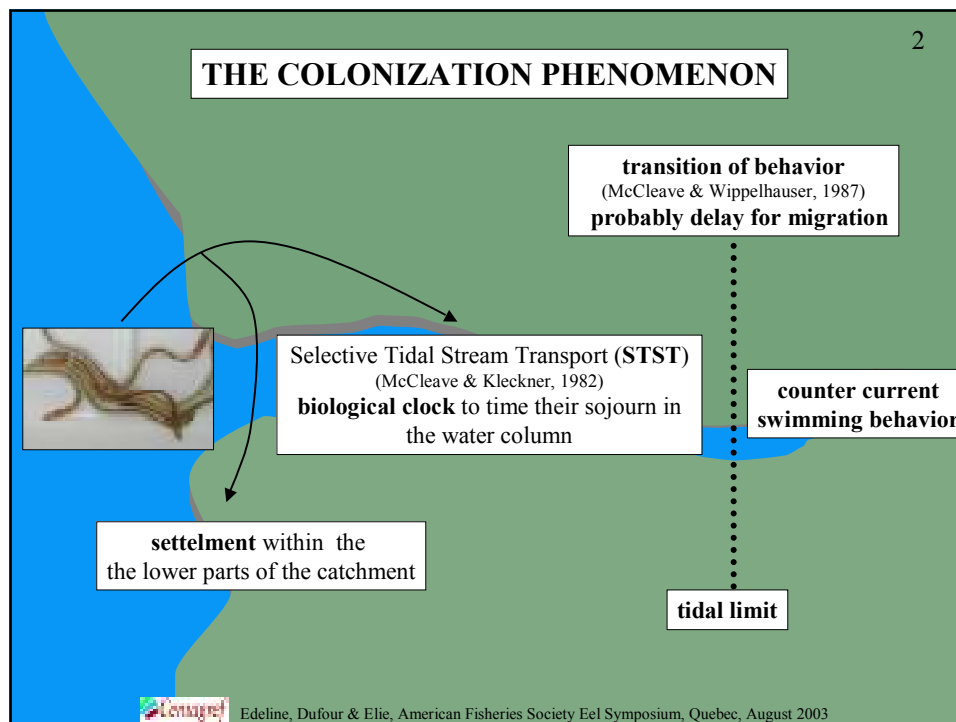
2: Muséum National d'Histoire Naturelle, UMR 5178 CNRS/MNHN/UPMC, 7 rue Cuvier, 75014 Paris, France.

³eric.edeline@bordeaux.cemagref.fr



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POSSIBLE CAUSES OF THE ESTUARY COLONIZATION

- ➔ Shift from STST behavior toward a bottom dwelling behavior
- ➔ STST behavior not in phase with the flood tide
- ➔ Incapacity to get over the tidal limit

The **internal mechanisms** determining **migrating behavior** and its **stoppage** in glass eel are **not understood**



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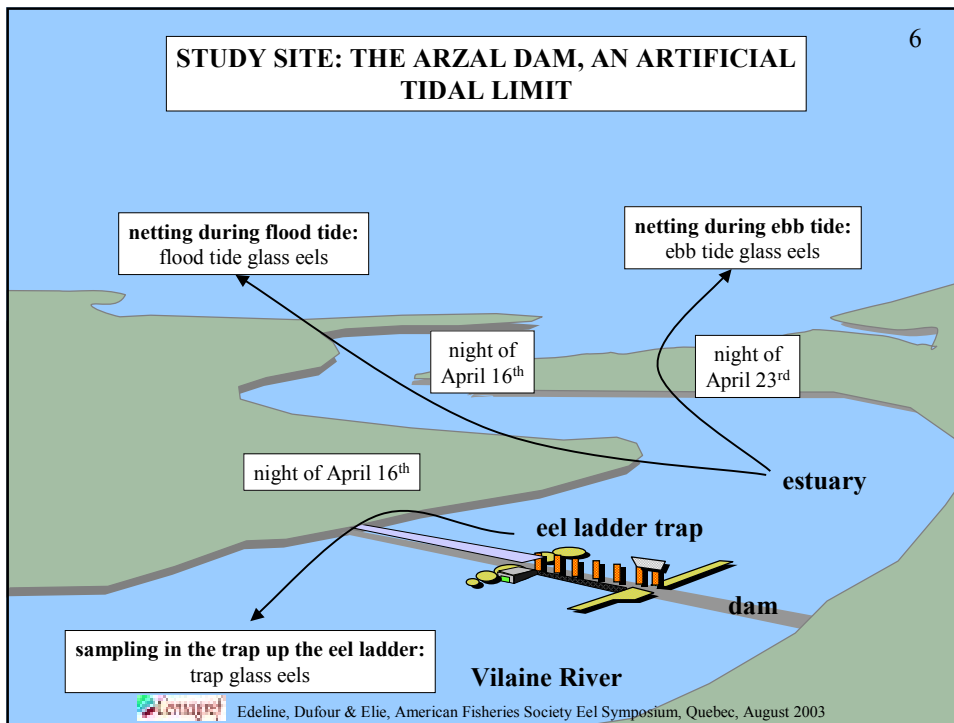
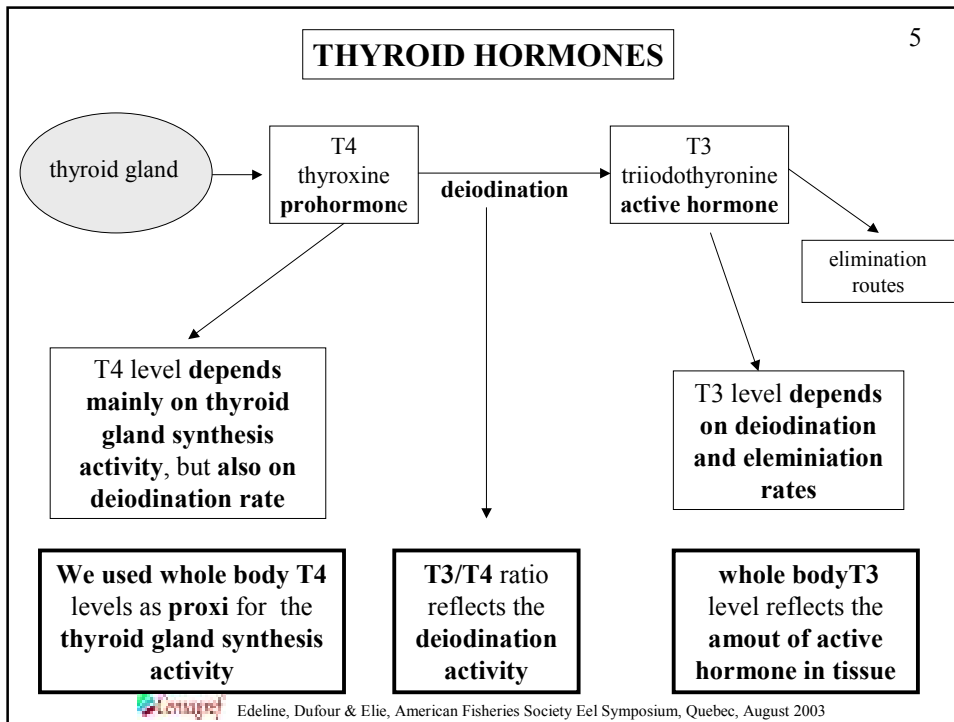
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Our hypothesis : the thyroid hormones (THs)

- ➔ THs are implicated in many biological functions such as **metabolism**, osmoregulation, growth, reproduction... (Eales, 1979)
- ➔ T4 plasma level is linked to the **climbing behavior** of *A. rostrata* yellow eel (Castonguay *et al.*, 1990)
- ➔ THs control the **migrating behavior** in salmonids (Eales, 1979; Iwata, 1995)
- ➔ THs are supposed to play a role in the **rheotactic behavior** in glass eels and elvers (Fontaine, 1975)




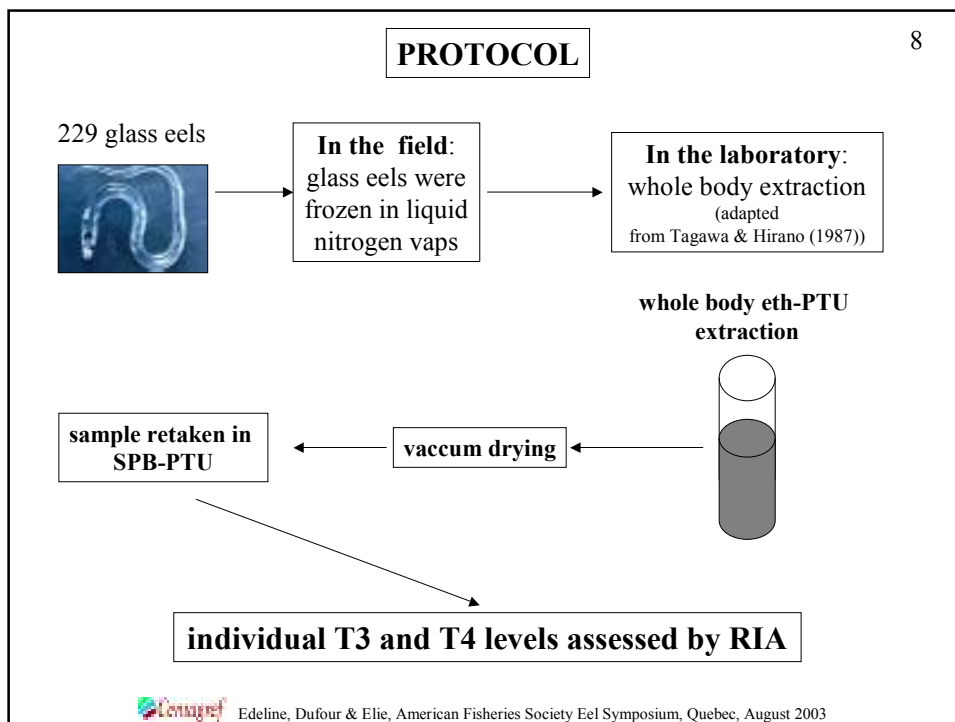
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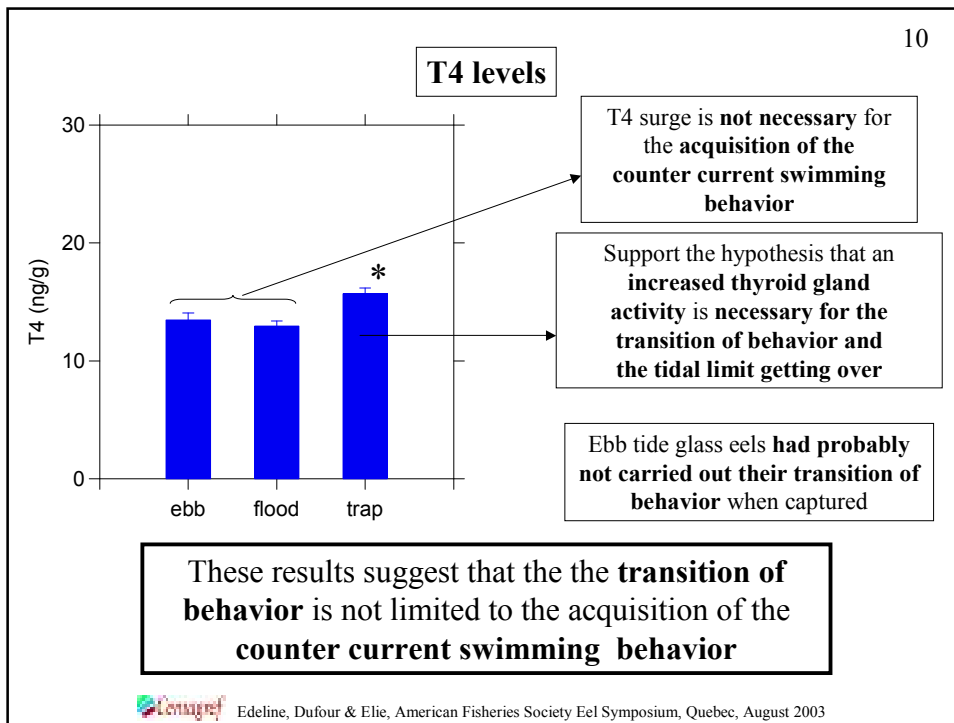
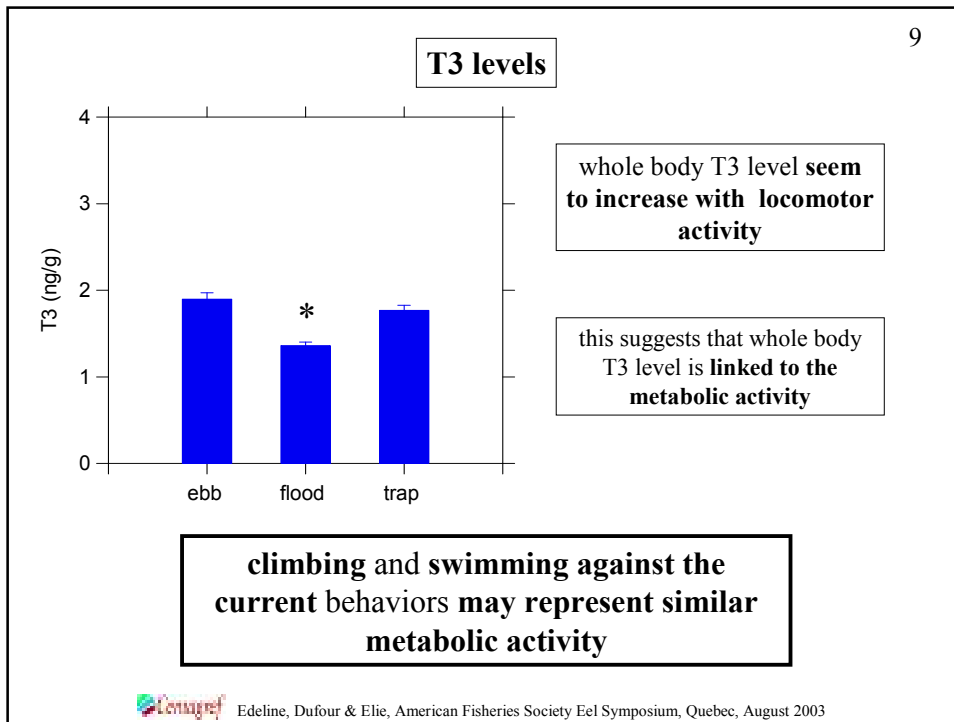


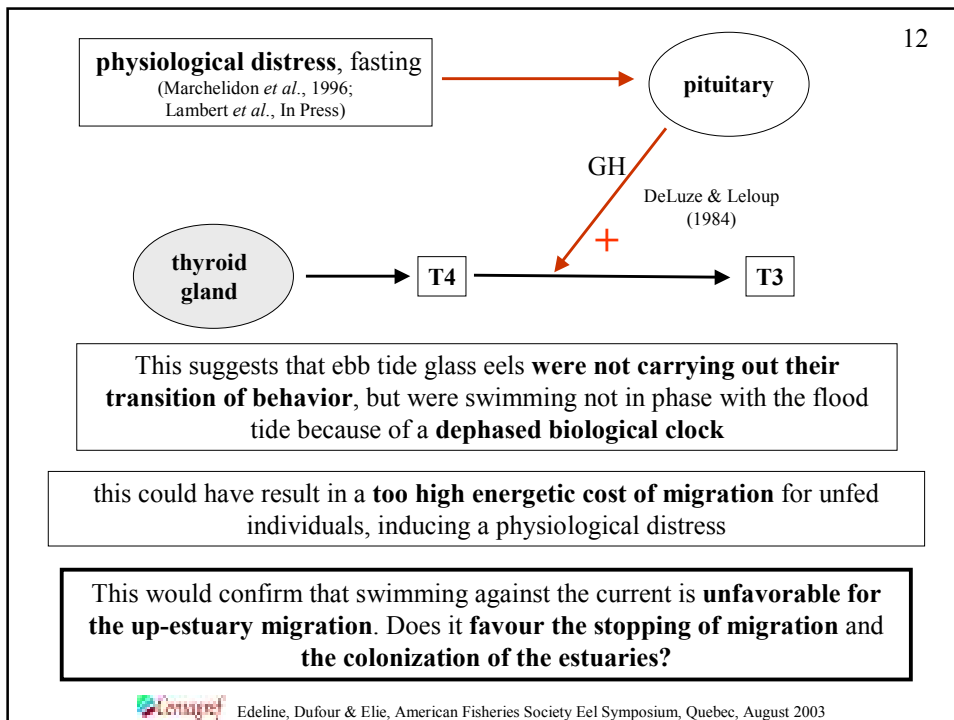
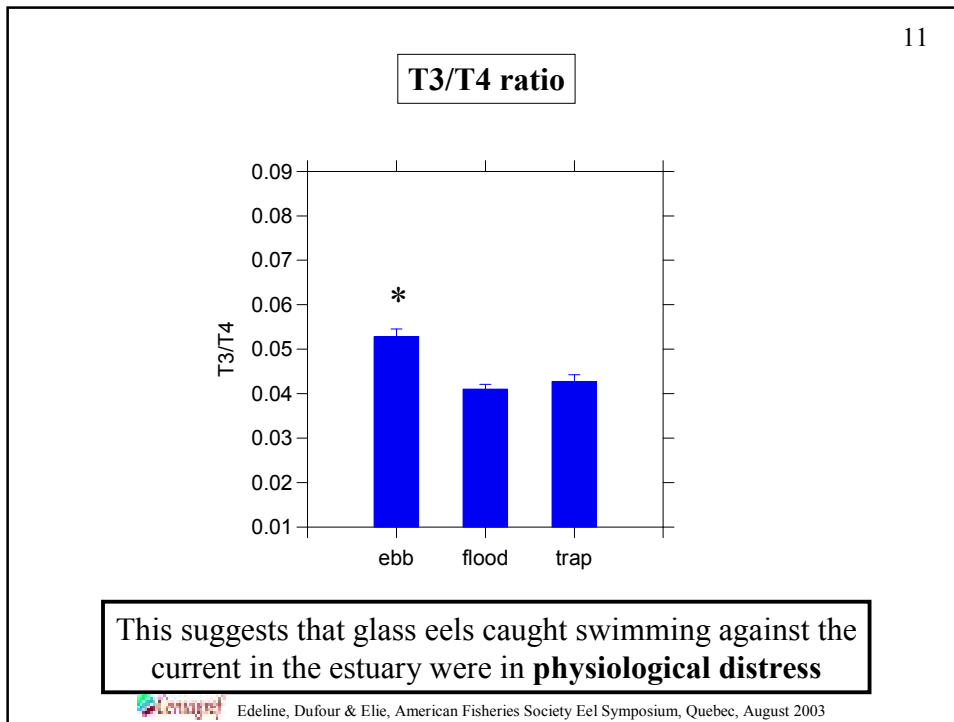
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ECOLOGICAL SIGNIFICANCE OF THE CATCHING MODE				
Catching mode	behavior	Locomotor activity	Getting over of the tidal limit	Transition of behavior
trap	climbing	high	yes	yes
Flood tide netting	Swimming with the current	low	no	no
Ebb tide netting	Swimming against the current	high	no	?

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GENERAL CONCLUSION

- ➔ **THs are implicated in the migrating behavior in *A. anguilla* glass eels and thus may play a role in the colonization of the estuaries by glass eels**

PROSPECTS

- ➔ Study the **getting over of the tidal limit in natural conditions**, with no need for climbing for individuals
- ➔ Study **THs levels in glass eels which had stopped their migration**
- ➔ We will soon work to **specify if T4 surge induces or is a consequence of the increased locomotor activity**
- ➔ We will also **study the effect of T4 on rheotactic behavior** of glass eel in order to specify their role in the transition of behavior

