

## **Eric Edeline**

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### RESEARCH INTERESTS

I have conducted integrative investigations on both the proximate (energetic, endocrine) and ultimate drivers (natural and human-induced selection) of individual behavior, somatic growth, and reproductive investment. My aim is now to study how life-history change affects the structure, functioning and dynamics of food-webs.

### PROFESSIONAL CAREER

**September 2008.** Assistant professor at University Paris 6.

**April 2008-September 2008.** Researcher at CEES<sup>1</sup>, University of Oslo, Norway.

**April 2006- March 2008.** Post doctoral fellow at CEES, University of Oslo, Norway.

### AWARDED GRANTS

**Researcher contract** from the Norwegian Research Council (NFR) in the NORKLIMA program. November 2007. Project title: "Modeling ecosystems under climate change: Windermere as a model lake system". A 3 years funding for 2 full-time researchers.

**Fellowship** from the French Academy of Sciences in the program "Initiative Post Doc" to help French researchers working abroad coming back to France. July 2007.

**Post doc contract** from the Norwegian Research Council (NFR) in the FRIMUF program. November 2005. Project title: "The control of fishery-induced changes in life-history traits of pike (*Esox lucius*): combining ultimate and proximate approaches". 2 years funding for 1 full time post doctor and for experimentations.

**PhD contrat** by CEMAGREF. 2001. Project title: "Understanding watershed colonization by the European eel *Anguilla anguilla*". A 3 years funding for half a PhD salary, complemented by Région Aquitaine.

### EDUCATION

2005. **PhD** in Ecology. University of Toulouse-III / Cemagref Bordeaux.

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<sup>1</sup> <http://www.cees.uio.no/>

2001. **Master thesis** in Aquatic Ecology. University of Toulouse-III / Cemagref Bordeaux.

2000. **Master's degree** in Biology of Populations and Ecosystems, University of Rennes-I.

1999. **Bachelor's degree** in Biology of Organisms and Populations, University of Rennes-I.

## SCIENTIFIC PUBLICATIONS

### Articles:

**E. Edeline**, T. Ben Ari, I. J. Winfield, J. M. Fletcher, J. B. James, L. A. Vøllestad, N. C. Stenseth. 2008. Antagonistic selection from predators and pathogens alters food-web structure. *Proceedings of the National Academy of Sciences of the USA* 105:19792-19796.

**E. Edeline**, S. M. Carlson, L. C. Stige, I. J. Winfield, J. M. Fletcher, J. B. James, T. O. Haugen, L. A. Vøllestad, N. C. Stenseth. 2007. Trait changes in a harvested population are driven by a dynamic tug-of-war between natural and harvest selection. *Proceedings of the National Academy of Sciences of the USA* 104:15799-15804. Article commented in *Nature* by David Conover<sup>2</sup>, in *Trends in Ecology and Evolution* by David Coltman<sup>3</sup>, and selected by *Nature* as one of the best scientific papers of 2007<sup>4</sup> across all disciplines.

**E. Edeline**, L. Beaulaton, R. Le Barh, P. Elie. 2007. Dispersal in metamorphosing *Anguilla anguilla* juvenile eel. *Marine Ecology Progress Series* 344:213-218

**E. Edeline**. 2007. Adaptive phenotypic plasticity of eel diadromy. *Marine Ecology Progress Series* 341:229-232

S. M. Carlson, **E. Edeline**, L. A. Vøllestad, T. O. Haugen, I. J. Winfield, J. M. Fletcher, J. B. James, N. C. Stenseth. 2007. Four decades of opposing natural and human-induced artificial selection acting on Windermere pike (*Esox lucius*). *Ecology Letters* 10:512-521

**E. Edeline**, P. Lambert, C. Rigaud, P. Elie. 2006. Effects of body condition and water temperature on *Anguilla anguilla* glass eel migratory behavior. *Journal of Experimental Marine Biology and Ecology* 331:217-225.

**E. Edeline**, S. Dufour, P. Elie. 2005. The role of glass eel salinity preference in the control of habitat selection and growth plasticity in *Anguilla anguilla*. *Marine Ecology Progress Series* 304:191-199.

**E. Edeline**, A. Bardonnnet, V. Bolliet, S. Dufour, P. Elie. 2005. Endocrine control of *Anguilla anguilla* glass eel dispersal: effect of thyroid hormones on locomotor activity and rheotactic behavior. *Hormones and Behavior* 48: 53-63.

**E. Edeline**, S. Dufour, C. Briand, D. Fatin, P. Elie. 2004. Thyroid status is related to migratory behavior in *Anguilla anguilla* glass eels. *Marine Ecology Progress Series* 282: 261-270.

<sup>2</sup> Conover, D. O. Fisheries: nets versus nature. *Nature* 450, 179-180 (2007)

<sup>3</sup> Coltman, D. W. Evolutionary rebound from selective harvesting. *Trends Evol Ecol* 23: 117-118 (2008)

<sup>4</sup> <http://www.nature.com/nature/journal/v450/n7173/full/4501130a.html>

**E. Edeline**, P. Elie. 2004. Is salinity choice related to growth in juvenile eel *Anguilla anguilla*? *Cybiurn* 28 (1) suppl.: 77-82.

**Book chapters**

J. D. McCleave, **E. Edeline**. In press. Diadromy as a conditional strategy: patterns and drivers of eel movements in continental habitats. *American Fisheries Society Symposium*.

**E. Edeline**, S. Dufour, P. Elie. 2008. Proximate and ultimate control of eel continental dispersal. In: Van Den Thillart G., Dufour S. Rankin, J. C (eds) Spawning migration of the European eel. Springer.

**Papers in preparation:**

**E. Edeline**, A. Le Rouzic, I. J. Winfield, J. M. Fletcher, J. B. James, N. C. Stenseth, L. A. Vøllestad. Increased phenotypic variability from disruptive fishing.

**E. Edeline**, T. O. Haugen, F. A. Weltzien, L. A. Vøllestad. Experimentally-induced interference competition affects somatic growth and metabolic hormones in a top predator.

**PhD thesis:**

E. Edeline. 2005. Factors controlling continental dispersal in the European eel. PhD Thesis. CEMAGREF / Toulouse-III University. Available online at [http://www.diadfish.org/doc/these\\_2005/edeline/these\\_edeline\\_2005\\_fr.pdf](http://www.diadfish.org/doc/these_2005/edeline/these_edeline_2005_fr.pdf). Introduction and discussion in French.

**Master thesis:**

E. Edeline. 2001. Etude du phénomène de colonisation des eaux continentales par l'anguille européenne (*Anguilla anguilla*). Première approche comportementale et typologique chez la civelle. Master Thesis. CEMAGREF / Toulouse-III University.

ORAL COMMUNICATIONS

**Seminars of the Center for Ecological and Evolutionary Synthesis (CEES)**, University of Oslo, Norway. February 2008. "Positive indirect feedback between predators and pathogens."

**Seminars of the CERES/ERTI**, Ecole Normale Supérieure, Paris, France. January 2008. "The Windermere pike-perch project: modeling dynamics of size-structured ecosystems under climate change".

**Seminars of the Institute for Marine Research (IMR)**, Austevoll, Norway, April 2007. "Ultimate and proximate control of migrations: insights from eel facultative diadromy".

**CEES summer school 2006**, Oslo, Norway, September 2006. "50 years of fishery-induced evolution in Windermere pike".

**International Symposium on Diadromous Fishes**, Bordeaux, France. April 2005. "Thyroid hormones are proximate mediators of diadromy in Teleosts".

**Seminars of the Center for Ecological and Evolutionary Synthesis (CEES)**, University of Oslo, Norway. January 2005. "The role of thyroid hormones in the control of the eel diadromy."

**Conference on Evolutionary Biology of Organisms**, Paris, France. December 2003. "Interprétation écologique du lien entre l'activité thyroïdienne et le comportement migrateur chez la civelle (*Anguilla anguilla*)."

**French Working Group on Eel**, St Pée sur Nivelle, France. September 2003. "Le choix de salinité est-il lié à la croissance chez le juvénile d'anguille (*Anguilla anguilla*)? Interprétation écologique."

**American Fisheries Society International Eel Symposium**, Quebec, Canada. August 2003. "Ecological interpretation of the link between thyroid hormones levels and the migratory behavior in *Anguilla anguilla* glass eels."

**French Ichthyological Society Meeting (RIF)**, Paris, France. March 2003. "Rôle de la salinité sur la croissance et le comportement colonisateur de l'anguille européenne (*Anguilla anguilla*)."

#### POSTER

**Conference of the European Society for Evolutionary Biology**, Uppsala, Sweden, August 2007. Poster communication. "Dynamic balance between opposing natural and fishery selection drives rapid life history evolution".