



STAGE DE RECHERCHE M2 ECOLOGIE EVOLUTION GENOMIQUE

Rentrée 2020

Reconstruction of sea trout kelts migration in the English Channel using a Hidden Markov Model

Context

The European Interreg SAMARCH project, started in 2017, aims to collect new information on salmonids during their marine migration to implement the regulations of the salmonid's populations in the English Channel area (<https://samarch.org/>).

Very little knowledge exists on the marine migration phase of sea trout in the English Channel. To improve understanding on their migration, as part of the SAMARCH project, adult sea trout have been tagged with data storage tags (DST) in 2017, 2018 and 2019 in three rivers: Tamar, Frome (UK) and Bresle (France). <https://samarch.org/project-information/fish-tracking/>

The DST recorded the pressure and the temperature, parameters that can be used to reconstruct the migration path of the fish with a Hidden Markov Model (HMM).

The model has been largely developed. However, it will be now necessary to adjust the parameters and check that it is working correctly to be able to understand marine migration of the tagged individuals.

Internship

The Game and Wildlife Conservation Trust (East Stoke, Wareham, UK) in collaboration with the Institute of Marine Research (Tromsø, Norway) offer a six-month internship to a Master student to study the marine migration of adult sea trout in the English Channel.

The student will have to work on the HMM and find the best parameters adjustment to fit the migrations simulations. Once the model is finalised, the student will analyse the migration path and horizontal behaviour of the tagged fish.

The student will be based in England at the fisheries department of the Game and Wildlife Conservation Trust (East Stoke, Dorset) with Céline Artero, leader of the SAMARCH tracking project. Online supervision will be considered in case of travel restriction due to the sanitary situation. John F. Strøm, that developed the HMM model will co-supervise the student at distance from Norway.

Pre-requisite

- English speaking

Skills

- Good level of R software
- Modelling experience
- Good written skills
- Autonomous

To apply, please send a resume and a cover letter to Céline Artero (cartero@gwct.org.uk) before the 31st of October 2020. Selected students will be interviewed by video conference.