



## **Modelling the stock structure and responses to fishing in the European flat Oyster (*O.edulis*) (HOME/EU FEES COVERED)**

**Start date October 2018**

### **Background**

With the initiative to leave open the opportunity to have an active fishery for European native oyster in the future, while presently undertaking active conservation for the species due to recent declines, this project will develop a population model for European Oysters (*Ostrea edulis*). The model will be built to capture the basic features of the oyster population in an Essex Marine Conservation Zone such as total stock and age/size distributions. The model can be parameterized using data from existing projects on individual survival and growth probabilities. The objective of the project is to examine the sensitivity of population growth to variation in interannual recruitment and size-selective predation from either the fishery or natural predators.



Figure 1: The native European flay oyster *Ostrea edulis* (left) and an Oyster survey in the Essex Marine Conservation Zone (right). Photos A.Lown & T.cameron.

### **Methods**

There are a number of tools available for a successful candidate to use from Physiologically structured biomass models (sensu De Roos & Persson, Oikos, 2001) to Matrix population models (Caswell, 2001) or Integral Projection Models (Merow, Methods in Ecology & Evolution, 2014).

There is adequate scope for the successful candidate to explore new questions, methods and approaches during their study. Training in approached to take will be provided.

### **Candidate**

We are looking for candidate with a good degree in maths, computing, mathematical or theoretical biology or related disciplines. An active interest in working in the environmental sciences would be beneficial.

## **School of Biological Sciences @ Essex and the Supervisor team**

The student will join an exciting Ecology and Environmental Microbiology Sciences research group at the University of Essex and have access to PGT/PGR training courses offered both in the School of Biological Sciences and across campus. The project is supervised by Dr Tom Cameron (Biology @ Essex) and Rebecca Korda (Natural England) with co-supervision from Professor Edd Codling (Maths @ Essex), Dr Tobias van Kooten (IMARES, Netherlands) and Rob Dyer (Kent & Essex IFCA) where necessary. The successful candidate will join a dynamic PGR research environment including NERC EnvEast PhD students working on marine ecology, oyster ecology and fisheries modelling.

## **Funding**

This MSD opportunity comes with a Fee Waiver up to the value of Home/EU fees (£4700) funded by Natural England. In addition the student will receive funding to cover the costs of computing needs (e.g. a new laptop), travel for training and stakeholder meetings and a £1000 one off contribution to living costs (funded by Natural England and Kent & Essex IFCA). As a registered Masters candidate from the UK or EU you would be eligible for a postgraduate loan to cover your living costs.

See this link here <https://www1.essex.ac.uk/fees-and-funding/masters/loans/default.aspx>

**Please note:** International students need to have additional funding to cover the difference in tuition fees which is £11,815.00, evidence will be requested that you have these additional funds.

## **Entry requirements and application procedures**

Applications should be submitted electronically by the 30<sup>th</sup> June see here for details <https://www.essex.ac.uk/pgapply/enter.aspx>

Additional questions and queries about the studentship can be addressed to Dr Tom Cameron ([tcameron@essex.ac.uk](mailto:tcameron@essex.ac.uk); [www.ecoevoenviro.wordpress.com](http://www.ecoevoenviro.wordpress.com)). For general information about the School of Biological Sciences at the University please visit our webpages <http://www.essex.ac.uk/bs/>.

## **The University of Essex**

In the recent Research Excellence Framework 77% of research at the University of Essex research is 'world leading' or 'internationally excellent' (REF 2014). We offer world-class supervision and training opportunities and our research students work at the heart of an internationally-acknowledged and well-connected research community. In the 2013 Postgraduate Research Experience Survey, 84% of respondents said that they were satisfied with the quality of their research degree. At Essex we win awards for our pioneering student support schemes. We are the most recent winners of the prestigious *Times Higher Education* award for Outstanding Support for Students. Essex is a genuine global community. With more than 130 countries represented within our student body, and 40% of our students from overseas, we are one of the most internationally-diverse universities in the UK.