

## Artificial sky glow impacts on the chronobiology of marine organisms

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### Project Description

The ecological impact of artificial light at night has been a rapidly growing field of global change science in recent years. While understanding of direct lighting impacts (for example street lights) has improved dramatically, the effect of artificial sky glow (light that is scattered in the atmosphere and reflected back to the ground) on species behaviours and distributions is lacking. Sky glow extends the geographical influence of artificial lighting from metres to kilometres. It interferes with the detectability of natural light cycles associated with the passage of the moon, which enable many organisms to time important biological events, and orientate themselves in space using the celestial compass. 22% of the world's coastal regions are now exposed to artificial sky glow, the ecological consequences of which are largely unknown.

In this project, based at Bangor University and in collaboration with Aberystwyth and Plymouth Universities, the student will use a combination of experimental, observational and remote sensing approaches to explore the impacts of artificial sky glow on the chronobiology of intertidal macro-invertebrates from gene expression, to individual and population level effects. The research will focus on two common UK taxa known to utilise lunar light cycles to inform their movement and reproductive biology, the sandhopper *Talitrus saltator*, and the sand midge *Clunio* spp.

The project offers a wealth of opportunities for the student to gain knowledge of, and experience in, molecular biology; chronobiology; animal husbandry; marine fieldwork and science communication. The studentship will be based within the Molecular Ecology and Fisheries Genetics Laboratory (<http://mefgl.bangor.ac.uk/>), a world leader in the analyses of molecular data from aquatic biota.

### For further details, and to apply, visit:

<http://www.envision-dtp.org/2019/artificial-skyglow-impacts-on-the-chronobiology-of-marine-organisms/>

\*This studentship is in competition for funding with other studentships. The projects with the best applicants will be successful.



NOTE: several other competition funded PhD projects are available in the Molecular Ecology and Fisheries Genetics Lab (MEFGL) at Bangor University: [www.envision-dtp.org/projects](http://www.envision-dtp.org/projects)



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