



NERC Centre for Doctoral Training in Oil & Gas (2017 start)

Project Title: The social-ecological impacts of decommissioning – exploring pathways through multi-disciplinary geo-spatial modelling, visualisation and stakeholder engagement.

Host institution: University of Aberdeen

Supervisor 1: Dr Tavis Potts; School of Geosciences

Supervisor 2: Dr David Green, School of Geosciences

Additional Supervisor (s):

Project description:

The objective of this PhD is to improve understanding of the social-ecological impacts of decommissioning and contribute to informing management pathways for selected case studies. It will develop and test innovative spatial modelling, visualisation and engagement techniques that navigate multiple interests relating to the environmental impact and stakeholder response to decommissioning of infrastructure. The project will develop scenarios to inform spatial modelling of sites before and after infrastructure removal (e.g. different gradations of removal) and assess impacts on social-ecological variables and user groups. A secondary objective is to test accessible and low cost innovative visual technologies and social methods to support public engagement over decommissioning. Objectives include:

1. Development of participatory geo-spatial modelling tools to inform site based decommissioning (wells, rigs, and pipelines) across environmental (e.g. habitat integrity; species biodiversity) and socio-economic variables (e.g. fisheries, marine transport, renewables, recreation) in selected sites (e.g. Beatrice, Moray Firth).
2. Test geospatial models across scenarios and decommissioning options (e.g. complete vs partial removal; impacts on designations; stakeholder response) using innovative engagement and visualisation techniques.
3. Develop and test novel low cost social engagement tools such as digital touch table technology to improve stakeholder participation; inform strategic assessments and improve public awareness.
4. Explore how geospatial decision tools can inform marine spatial planning processes and marine protection designations in respect to decommissioning.

CDT Research theme(s):

Environmental Impact and Regulation – Decommissioning

Research context:

As the decommissioning process moves forward in the UK a range of scenarios and debates are emerging with respect to decommissioning strategy and influence on environmental impacts and marine stakeholders (e.g. fisheries, transport, ports, renewables energy, recreation). The regulatory climate is changing with the delivery of marine spatial planning and development of marine protected areas yet there is limited understanding of the impact of decommissioning on these processes and designations particularly from a multi-disciplinary approach. Recent advances in visualisation and social engagement techniques both in terms of the technical (e.g. GIS data & modelling; digital touch tables) and social (systems approach frameworks; participatory mapping; ecosystem approach) provide the theoretical and practical frame for the project.

Research costs:

Infrastructure costs: Two high end digital touch tables (e.g. 58") (£8k); GIS and modelling software (£2k); data purchase (£1k); regional travel in Scotland (£2k) and support for stakeholder workshops (£1k) through the PhD.

Career routes:

The PhD will develop critical and 'in demand' skills in GIS, modelling and stakeholder engagement. Career routes in the oil and gas industry, government (e.g. policy, marine planning) and academia would be relevant pathways for employment.