

PROJECT DETAILS
Project Title
Enhancing the wildlife value of Brownsea by grazing management
Project Summary
<p>This MRes project aims to enhance understanding of how wild herbivores can be used in the conservation management of woodland-heathland- grasslands landscape mosaics. It uses Brownsea Island as its case study. Brownsea has exceptionally high value both as place for wildlife and human recreation and wellbeing and has been grazed for many decades solely by wild rabbits and sika deer. The goal of this study is to deliver key information to support the conservation management of Brownsea and well as to inform future and wider science and conservation management.</p> <p>The key questions that will be addressed and deliverables expected from the MSc project are:</p> <ol style="list-style-type: none"> 1) What are the density and distribution of deer and rabbits on Brownsea? This will be monitored through the year by a combination of fixed point camera traps, thermal imaging drone flights and standard indirect indices (faecal pellet counts and visual count surveys). It will also be useful if possible to use camera traps to assess deer population movement via migration points on/off the island. Deliverables: a baseline survey of deer and rabbit abundance and distribution. 2) What is the current and past habitat quality of woodlands, grasslands and heath on Brownsea in terms of i) floristic composition ii) structural composition iii) resources for animals ? How have these changed over time? Current habitat quality will be assessed by carrying out Phase 1, NVC, structural vegetation surveys and floral resource surveys. In addition the data base of past wildlife records collected by the national trust over the last few decades will be analysed to determine if species have been lost/gained. Deliverables: a baseline survey of habitat quality and how that has changed over the last few decades. A list of key species to target in recovery programmes. based on grazing management planning. 3) What is the impact of deer and rabbits on the grasslands, heath and woodland on Brownsea? Surveys will be carried out of current grazing/browsing impact both at fixed points where the cameras are located and also more generally across the island to give a broader, more comprehensive evaluation. Data collected on the density and distribution of deer and rabbits and on habitat quality will also be modelled using Bayesian belief network based approaches to explore ways of optimising wildlife quality by managing grazing levels Deliverables: a measurement of the grazing impact of deer and rabbits on different habitats; a basic decision support system for optimizing grazing pressures by rabbits and deer for Brownsea grassland, heaths and woodland.
Academic Impact
<p>This project will provide new research understanding of how grazing by two important wild herbivores, rabbits and deer, can be used as tools in wildlife conservation management. This is an important area of science to understand better as current conservation initiatives in the UK and Europe are moving strongly towards adopting a “re-wilding” approach to conservation that is based on management via natural processes such as wild herbivores. The results from this study will inform conservation management decisions both at Brownsea and more widely in other important high conservation value mosaics of woodlands – heathlands – grasslands. In addition it will provide a more generally and internationally applicable demonstration of how monitoring data from re-wilding approaches can be gathered and used in simple models to inform conservation management.</p>

Societal Impact
There is a great need for bringing together the societal needs and wildlife conservation needs when considering the management of seminatural habitat such as Brownsea that have both high wildlife conservation value and high human well-being value. Brownsea is a rare example of a seminatural habitat that is managed entirely through managing wild grazers and is therefore at the vanguard of a system that is likely to be deployed more widely across the UK and Europe (driven in part by more challenging economic climates) and which is likely to have high societal interest as a way of enhancing peoples opportunities to gain health benefits by feeling “closer to nature”.
Training Opportunities
This project offers excellent training opportunities in species identification and field survey techniques for anybody interested in a career in ecology and wildlife conservation or who wishes to progress to a PhD. It also offers an opportunity to work closely with the National Trust and gain understanding of the real interface between science and practice in wildlife conservation. There will also be full training and many opportunities to develop skills in data analysis and a range of statistical analysis techniques. Training will be given in how to communicate findings to different audiences and there will be opportunities to give talks and produce an interim end-of-first-year report for the National Trust as well as opportunities to communicate the science in more traditional ways within the MRes and to communicate science to the general public through the BU Festival of Learning.

SUPERVISORY TEAM	
First Supervisor	Anita Diaz
Additional Supervisors	Rick Stafford, Timothy Hartley
Recent publications by supervisors relevant to this project	<ul style="list-style-type: none"> Kragh, G., Stafford, R., Curtin, S. and Diaz, A., 2016. Environmental volunteer well-being: Managers' perception and actual well-being of volunteers. <i>F1000Research</i>, 5. Dean, C., Day, J., Gozlan, R.E. and Diaz, A., 2015. Grazing Vertebrates Promote Invasive Swamp Stonecrop (<i>Crassula helmsii</i>) Abundance. <i>Invasive Plant Science and Management</i>. Green, I.D., Boughey, K. and Diaz, A., 2014. Potentially toxic metals in historic landfill sites: Implications for grazing animals. <i>Water, Air, and Soil Pollution</i>, 225 (9). Diaz, A., Keith, S.A., Bullock, J.M., Hooftman, D.A.P. and Newton, A.C., 2013. Conservation implications of long-term changes detected in a lowland heath plant metacommunity. <i>Biological Conservation</i>, 167, 325-333. Uzal, A., Walls, S., Stillman, R.A. and Diaz, A., 2013. Sika deer distribution and habitat selection: The influence of the availability and distribution of food, cover, and threats. <i>European Journal of Wildlife Research</i>, 59 (4), 563-572. Newton, A.C., Walls, R.M., Golicher, D., Keith, S.A., Diaz, A. and Bullock, J.M., 2012. Structure, composition and dynamics of a calcareous grassland metacommunity over a 70-year interval. <i>Journal of Ecology</i>, 100 (1), 196-209. Diaz, A., Green, I.D. and Evans, D., 2011. Heathland Restoration Techniques: Ecological Consequences for Plant-Soil and Plant-Animal Interactions. <i>ISRN Ecology</i>, 2011. Rey Benayas, J.M., Newton, A., Diaz, A. and Bullock, J.M., 2009. Enhancement of Biodiversity and Ecosystem Services by Ecological Restoration: A Meta-Analysis. <i>Science</i>, 325, 1121-1124. Newton, A.C., Stewart, G.B., Myers, G., Diaz, A., Lake, S., Bullock, J.M. and Pullin, A.S., 2009. Impacts of grazing on lowland heathland in north-west Europe. <i>Biological Conservation</i>, 142 (5), 935-947. Diaz, A., Green, I.D. and Keith, S., 2009. Restoration in the face of climate change; a case study of the Dorset Heaths. <i>Ecological Restoration</i>, 27, 257-260. Carrington, L.P. and Diaz, A., 2009. An Investigation into the Effect of Soil

	and Vegetation on the Successful Creation of a Hay Meadow on a Clay-Capped Landfill. <i>Restoration Ecology</i> .
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INFORMAL ENQUIRIES	
To discuss this opportunity further, please contact Dr Anita Diaz - adiaz@bournemouth.ac.uk	
ELIGIBILITY CRITERIA	
<p>The successful applicant must have a proven previous academic excellence (first class honours or high 2.1 BSc) in an ecology-based field and be able to provide the names of two referees able to comment on their work in the field of ecology. An IELTS (Academic) score of 6.5 minimum (or equivalent) is essential for candidates for whom English is not their first language.</p> <p>In addition to satisfying the basic entry criteria, BU will look closely at the qualities, skills and background of each candidate and what they can bring to their chosen research project in order to ensure successful completion.</p>	
HOW TO APPLY	
Please complete the online application form by 20/11/17 .	