

## South Downs National Park Research Priorities 2016-17

Listed below and overleaf are the South Downs National Park Research Priorities for 2016-17. If you are interested in one of these projects or you have an idea for your own research project in the South Downs National Park, then please get in touch with Tanya Rowan and Adam Brown at [research@southdowns.gov.uk](mailto:research@southdowns.gov.uk) or download the Research project application form from our website: [www.southdowns.gov.uk/research](http://www.southdowns.gov.uk/research).

### Broad project area

#### Catchment management 'success' monitoring

Monitor the success of 'on the ground schemes' driven by the NIA nitrate modelling (e.g. Brighton CHAMP, Landscapes for Groundwater).

Research topics could include:

- Analysis of long term compositional trends from monitoring data
- Chemical source tracking of nitrate in the aquifer
- Contaminant loading from soakaways in the chalk
- Fate of nitrate in the chalk aquifer
- Land use and diffuse inputs to the aquifer
- Pesticides or oestrogen inputs to the aquifer and natural attenuation processes
- Turbidity in the aquifer – its sources and characteristics etc
- Urban drainage and inputs to the chalk
- Water quality of SUDS outputs and the impact of flood alleviation on water quality

#### Effects of species (e.g. deer, squirrel etc) on the carbon storage potential of woodland

#### Estimation of the economic value of the South Downs Way

Research topics could include:

- Evaluation of all National Trails in England. Which are of more or less economic value? Why? What methodology have you used to calculate value? – e.g. overnight visitors? – to ensure that this can be replicated in future
- What are the evidence gaps preventing us from making an accurate economic assessment of the value of the South Downs Way?

*This project is of huge importance to the South Downs National Park Authority as we need to gather data on the contribution to the local economy of areas within the South Downs National Park such as the South Downs Way.*

**Evaluate best practice methodology for estimating carbon storage**

- Apply it to the South Downs National Park and if possible other UK National Parks

**Examination of the impact of the food & drink industry on the local economy and sustainable tourism**

Review of the growth of food and drink production within the South Downs National Park. Research topics could include:

- Assess current and longer term issues and opportunities and the impact on a sustainable local economy and rural tourism
- Evaluation of the development of artisan foods, micro-breweries, breweries and vineyards (for example gin, beer, ale and wine production) and innovations in distillery, fermentation and food production across the South Downs
- Food and drink tourism visitor profile appraisal.

**Assessing Grayling Butterfly distribution on the South Downs**

The Grayling occupies a small area in the eastern downs near Deep Dean. Previous attempts to naturally disperse to other sites in the past have not been successful. The SDNPA is undertaking habitat management in the local area to provide better connectivity and habitat opportunities. However, great clarification on habitat requirements of the species is required. As such research questions could be along the lines of the following:

- 'Investigating the factors limiting distribution of the Grayling butterfly on the chalk downs'
- 'Identifying the habitat requirements of the Grayling on the chalk downs'

Broad project area
<p><b>Impact of ageing infrastructure on communities</b></p> <ul style="list-style-type: none"> <li>An audit of what infrastructure currently exists in each of the Parishes in the South Downs National Park and what should ideally be there.</li> </ul> <p><i>The SDNPA has had one MSc student undertake an assessment of Lavant Parish which was extremely useful. We would like to extend this methodology to other Parishes in the South Downs National Park.</i></p>
<p><b>Impact of climate change on archaeological sites</b></p> <ul style="list-style-type: none"> <li>Variety of potential projects looking at different impacts on archaeology of climate change - e.g. various soil types covering archaeological sites; coastal change etc</li> </ul>
<p><b>Impacts of dogs off lead on ground nesting birds</b></p> <ul style="list-style-type: none"> <li>The sample could be either birds nesting on heathland, or along coastal paths, or both.</li> <li>An additional study could look at the impact of people on ground nesting birds – for example those participating in outdoor recreation activities.</li> </ul>
<p><b>Impact of increased water demand on the ecological condition of rivers in the South Downs National Park</b></p>
<p><b>Impact of signage and interpretation on visitor usage of heathland sites</b></p> <ul style="list-style-type: none"> <li>Research to evaluate the impact of temporary and permanent signage and interpretation on visitor impact on heathlands – 34 potential sites to be included in the sample.</li> </ul> <p><i>Will tie into our five year Heathlands Reunited project and provide valuable information for the project team.</i></p>
<p><b>Investigation into the factors affecting the distribution of Tor Grass, <i>Brachypodium pinnatum</i>, in the South Downs National Park</b></p>
<p><b>Investigation into the benefits of pollinators on vineyards in the South Downs National Park – e.g.:</b></p> <p>Research topics could include:</p> <ul style="list-style-type: none"> <li>What is the net benefit of these vineyards to biodiversity?</li> <li>What proportion of vineyards in the South Downs National Park plant ‘wildflower strips’ in between vines to encourage pollinators and also predators of aphids etc?</li> </ul>
<p><b>Management techniques for the control of Tor Grass, <i>Brachypodium pinnatum</i>, on chalk grassland sites</b></p>

## Broad project area

### Multi-user routes: investigation into surface types and user experiences in the South Downs.

- Desk research investigating surface types used on multi-user routes across the UK (outside of cities), including costs of different options and any associated constraints
- Through surveys or interviews with key users of existing multi-user paths in the South Downs National Park – for example: land owners, access authorities, horse riders, disability access representatives, cyclists, walkers etc- establish the views and experiences of using these paths
- Based on the results of the desk top research and survey work, make recommendations as to the appropriate surface types and installation techniques in the South Downs that could be utilised in future schemes.

*Note that New Forest Forestry Commission are doing a lot of research into suitable materials for car parks. This information may be useful to support this project.*

### Practical monitoring and conservation of South Downs National Park heathlands' species

- Monitoring of specific 'flagship' and 'deadly' heathland species in the South Downs National Park to collect baseline data.
  - Examples of 'flagship' heathland species include: Smooth snake (*Coronella austriaca*); Sand lizard (*Lacerta agilis*); Natterjack toad (*Bufo calamita*); Great crested newt (*Triturus cristatus*); Silver-studded blue butterfly (*Plebejus argus*); Heath tiger beetle (*Cicindela sylvatica*); Dartford warbler (*Sylvia undata*); Nightjar (*Caprimulgus europaeus*); Bell heather (*Erica cinerea*); Common gorse (*Ulex europaeus*)
  - Examples of 'deadly' heathland species include: Adder (*Vipera berus*); Hobby (*Falco subbuteo*); Round-leaved sundew (*Drosera rotundifolia*); Dodder/'Devil's guts'/'Witch's hair' (*Cuscuta epithemum*); Heath tiger beetle (*Cicindela sylvatica*); Broad-bodied chaser dragonfly (*Libellula depressa*); Spider-hunting wasps (*Pompilidae spp.*); Deer/sheep tick (*Ixodes ricinus*).

*Land owners are key to access arrangements. Site visits MUST be arranged through the South Downs National Park Authority.*

### Psychological and physical wellbeing benefits of National Parks

Collate, review and report on existing evidence – e.g. :

- How National Parks serve public health
- Outdoor recreation benefits of national parks

Potential follow up longer term economic study investigating potential cost savings to the NHS of people utilising National Parks to improve their health and wellbeing.

*This is a significant priority area for all National Parks.*

## Broad project area

### Review of Farm Diversification Schemes

Research topics could include:

- Assessment of the barriers and issues that farmers have to address in planning and running farm diversification schemes
- Audit of the types of diversification schemes
- Evaluation of the impact on the environment, infrastructure, income generation and sustainability, and the impact on the local economy and rural tourism
- Examination of the underlying reasons for diversification
- Review of existing, proposed and potential farm diversification schemes.

*This work is very important to the SDNPA as we look to align planning policy with practice in development management.*

### Secrets of the High Woods-related research projects

The National Mapping Programme report by Historic England identifies a wide range of topics for future study, following this Lidar project.

Projects could include:

- Archaeological fieldwork
- Historical geography and history
- Research on types of sites in the project area.

There is also the opportunity to use the LiDAR data collected as part of this project. Available data sets include: Hillshade DTMs and DSMs, LRM, Openness positive, Openness Negative.

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