The Agile Initiative at the Oxford Martin School

Sprint 3: Scaling up Nature-based Solutions in the UK

AGILE NBS OPPORTUNITY MAPS: DATA SOURCE GUIDE

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Introduction

This guide provides details of how to obtain the input datasets needed for creating the AGILE NbS opportunity maps. We will endeavour to keep this up to date but please be aware that these datasets are updated periodically by the providers. This means two things:

1. The links to obtain the datasets may change
2. The attributes and their names may change, or there may be other changes in the format of the data that affect how the scripts operate. This may require you to make changes to some of the input parameters in the 'User input parameter' sections at the beginning of each module, i.e. attribute names. Comments in the scripts will help you decide what might need changing.

If attributes have changed, you will either need to i) change the name of the attribute in the code or else ii) copy the attribute to a new attribute with the expected name and format. Please notify us of any changes that may require updates to the scripts and/or guidance: alison.smith@eci.ox.ac.uk.

The table below lists the current direct link to each dataset. However, for some datasets it could be easier to download from the LNRS Data Viewer portal, which groups much of the required data in one place with links to the most recent version of each dataset. If so, the table shows which tab in the data viewer lists the data:

- S107(2): data required for the National Habitat Map as defined in the Environment Act Section 107(2), which is the base map for Local Nature Recovery Strategies.
- S107(6): supplementary data, e.g. on co-benefits or constraints relevant to LNRS.
- S107(7): links to potentially useful external data sources.

Data is often available in a choice of formats. The code can handle either shapefiles or geodatabases. Gdbs are usually more compact (about half the size of shapefiles) and may have more meaningful field names as shapefile field names are limited to 10 characters. Geodatabases can only be read in ArcGIS, but you will need this anyway because the scripts use the ArcPy library.

Data is often supplied in a zip file and the shapefile or geodatabase may be within sub-folders. For example, many datasets come in an overall folder with two subfolders named 'data', which holds the actual dataset, and 'docs' for documentation. You can leave all the input data in the file structure it originally came in. Sometimes you will be asked to place the files in a specific folder (usually in the Input_data folder or one of its subfolders) but sometimes you will be given a choice of where to put the data, and you will need to enter the folder location in the user input section of the code. The code will search through all the folders and subfolders (in some steps it looks for user-defined template strings to help identify relevant folders or datasets) and compile a list of shapefiles and geodatabase feature classes. It will then clip out just the area within each area boundary for further processing within each area's output geodatabase.

Acknowledgements

Data sources

Type	Current direct link to dataset	LNRS Data Viewer tab	Notes
Step 1: SetUp_FileStructure.py			
Boundaries			
Local Authority boundaries	Local Authority Districts 2021		Check for more recent versions
OR Catchments	WFD River Waterbody Catchments Cycle 2	NA	
OR Your own boundaries		NA	
Habitat datasets			
Ordnance Survey Mastermap	Download the geodatabase version of OSMM topographic area from OS (you need a license) or (for academics) Edina Digimap.	NA	Do not use a shapefile version, as field names get truncated and the code does not work. On Edina, within the OSMM download options select Topography.
Priority Habitat Inventory (PHI)	Natural England Priority Habitats Inventory (England)	S107(6)	Can be downloaded as a single gdb, or as two separate shapefiles (north and south England).
Wood Pasture and Parkland (WPP)	Defra Data Services Platform Wood Pasture and Parkland	S107(6)	Scroll down the options to get to the direct GDB download (WoodPastureAndParklandEngland-FGDB.zip).
Open Mosaic Habitats on Previously Developed Land (OMHD)	Natural England Open Mosaic Habitat (draft)	S107(6)	
Local habitat data	If local habitat data is available this can be used in place of PHI, WPP and OMHD	NA	May require additional steps to ensure compatibility – see user guide.
Step 5: Merge_CROME.py			
CROME	CROME Crop map of England 2021 (more recent versions may become available).	NA	Most recent version is currently 2021. Datasets cover ceremonial counties.
Step 6: Join_Greenspace.py			
OSMM Greenspace	Download the geodatabase version of OSMM GreenSpace from OS (you need a license) or (for academics) Edina Digimap.	NA	Updated every 6 months. If you are ordering OSMM for a large area directly from OS, you can ask for OSMM GreenSpace to be included at the same time.
OS Open Greenspace	Download from OS website: OS Open Greenspace	NA	Updated every 6 months
Step 7: Merge_ALC.py			
Agricultural Land Class (ALC)	Provisional Agricultural Land Classification (ALC)	S107(6)	There is a more detailed layer called Agricultural Land Classification (ALC) Grades - Post 1988 but it has very limited coverage, so is not used.
Step 8: Union_Designations.py			
National Nature Reserves	Natural England Open Data National Nature Reserves	S107(2)	

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Local Nature Reserves	Natural England Open Data Local Nature Reserves	S107(2)	May not include all LNRs if they have not yet been reported to Natural England by the LPA
Sites of Special Scientific Interest	Defra Data Services Platform Sites of Special Scientific Interest	S107(2)	
Special Areas of Conservation (SACs)	JNCC Special Areas of Conservation	S107(2)	
Special Protection Areas (SPAs)	Defra Data Services Platform Special Protection Areas (England)	S107(2)	
Potential Special Protection Areas (SPAs)	Defra Data Services Platform Potential Special Protection Areas (England)	S107(2)	
Ramsar sites	Defra Data Services Platform Ramsar sites	S107(2)	
Proposed Ramsar sites	Defra Data Services Platform Proposed Ramsar Site	S107(2)	
Marine Conservation Zones	Defra Data Services Platform Marine Conservation Zones	S107(2)	
Ancient Woodland	Natural England Open Data Ancient Woodland	S107(6)	
AONBs	Defra Data Services Platform Areas of Outstanding Natural Beauty	S107(6)	
National Parks	Defra Data Services Platform National Parks	S107(6)	
Country Parks	Defra Data Services Platform Country Parks	S107(6)	
Heritage Coasts	Defra Data Services Platform Heritage coasts	S107(6)	
Green Belt	Ministry of Housing, Communities and Local Government English Local Authority Green Belt Boundaries 2021-2022	NA	
Millennium Greens	Defra Data Services Platform Millennium Greens	NA	
Doorstep Greens	Natural England Open Data Doorstep Greens	NA	
National Trust Open Access Land	National Trust Open Data National Trust Land - Always Open	NA	
National Trust Restricted Access Land	National Trust Open Data National Trust Land - Limited Access	NA	
Important Bird Areas (IBAs)	RSPB Open Data IBAs UK	NA	UK coverage
RSPB reserves	RSPB Open Data RSPB Reserves	NA	
Scheduled Ancient Monuments	Historic England Scheduled Monuments (part of National Heritage List for England)	(S107(6))*	*Link from LNRS portal seems to be deprecated
Historic Parks and Gardens	Historic England Registered Parks and Gardens	NA	
World Heritage Sites	Historic England World Heritage Sites	NA	
Conservation Areas	Historic England Conservation Areas	NA	
Your local designations	e.g. Local Wildlife Sites, Road Verge Nature Reserves	NA	Can usually be obtained from your Local Authority and/or Local Environmental Record Centre
Step 11: Public_access.py			

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CROW open access land	Natural England CRoW Act 2000 – Open Access Mapping Areas	NA	
Public Rights of Way (PROW)	https://osm.mathmos.net/prow/open-data/ Open Government Licensed data only http://www.rowmaps.com/datasets/ - more comprehensive, includes some data provided privately.	NA	
Sustrans cycle routes	National Cycle Network	NA	The code will filter this dataset to extract off-road routes only, as we are not interested in roads.
Open Street Map (OSM) paths, publicly accessible areas and Military areas (assumed to have no access)	Use the R code: R_OSM_Parks.R and R_OSM_paths.R to download data for your area from OSM	NA	Optional step: R code not yet fully tested.
National Forest Estate Recreation Routes England	National Forest Estate Recreation Routes England	NA	Used by R_OSM_parks.R to identify accessible forests
Step 14: Create NbS opportunity maps			
Peat restoration opportunities	England Peat Status Greenhouse Gas and Carbon storage	S107(6)	
Wetland opportunities	Environment Agency Flood Zone 3	S107(6)	
Pond opportunities	Environment Agency Flood Map for Planning (Rivers and Sea) - Flood Storage Areas	S107(6)	
Woodland for flood prevention opportunities	Environment Agency WWNP Wider Catchment Woodland Potential	S107(6)	Locations where there are slowly permeable soils, where scrub and tree planting may be most effective to increase infiltration and hydrological losses.
Slope	OS terrain 5 detailed digital terrain model (DTM) of Great Britain. Select height points (not contours) and download as ASC file(s).	NA	
Soil erodibility and soil type (acid, neutral, calcareous)	The National Soil Inventory is the best dataset but it is not freely available. The best free alternative is the British Geological Survey Soil Parent Material Model https://www.bgs.ac.uk/datasets/soil-parent-material-model/		Free as a 1km grid. Small charge for high resolution version.
Urban areas (for Community Orchards)	OS Open Zoomstack	NA	
Habitat networks	Natural England Habitat Networks (Individual)	S107(6)	

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Additional optional data that could be displayed and use alongside Agile opportunity maps			
Saltmarsh restoration opportunities	MMO saltmarsh potential	NA	
Surface waterbody status	WFD River, Canal and Surface Water Transfer Water Bodies Cycle 2 Classification 2019. Line data. Contains Water Framework Directive data on species present and water quality.		Can be used to assess opportunities for river and lake restoration, and ecosystem services of fish production, recreation, aesthetic value. Geometry is simplified so may not match exact river course.
River obstacles	River obstacles – created by the Rivers Trust, the Environment Agency, Zoological Society of London, Thames Estuary Partnership, The River Restoration Centre and Natural Apptitude, using OS data plus citizen science using an app.		Can be used to assess opportunities to improve connectivity by removing or lowering weirs etc.
Runoff attenuation opportunities	Environment Agency WWNP Runoff Attenuation Features 1% AEP	S107(6)	Areas of high flow accumulations for the 1% Annual Exceedance Probability surface water maps.
Leaky dam and gully blocking opportunities	WWNP Runoff Attenuation Features 3.3% AEP	S107(6)	Areas of ponding or high flow accumulations for the 3.3% Annual Exceedance Probability surface water maps, between 100 and 5000 metres squared, on slopes steeper than 6%.