

## **Annex 1 IHN technical data (for use with Local Authorities and Regional Partnerships supplied data)**

**DRAFT**

This Annex is in three parts:

1. What the dataset contains
2. Using the data within a GIS
3. Summary of data

### **1. What the dataset contains**

The dataset is made up of:

- Habitat and habitat network shape files
- Habitat Network Hotspot shape files
- Habitat and habitat network layer file – available on request

The shape files show a digital map of the habitat networks based on functional connectivity. All data are vector data and show the resultant polygons of habitat network analysis using least cost modelling. The data covers the CSGN area and also Loch Lomond and Trossachs National Park, and Borders.

The data is held by Local Authorities, Regional Partnerships, Central Scotland Green Network Support Unit, Scottish Natural Heritage, Forestry Commission Scotland and Forest Research. It is available to download on SNH Natural Spaces webpages.

When the data is used the following statement should accompany mapping.

“Integrated Habitat Network data from the 2011 Forest Research model.”

#### **1.1 Habitat and habitat network shape files**

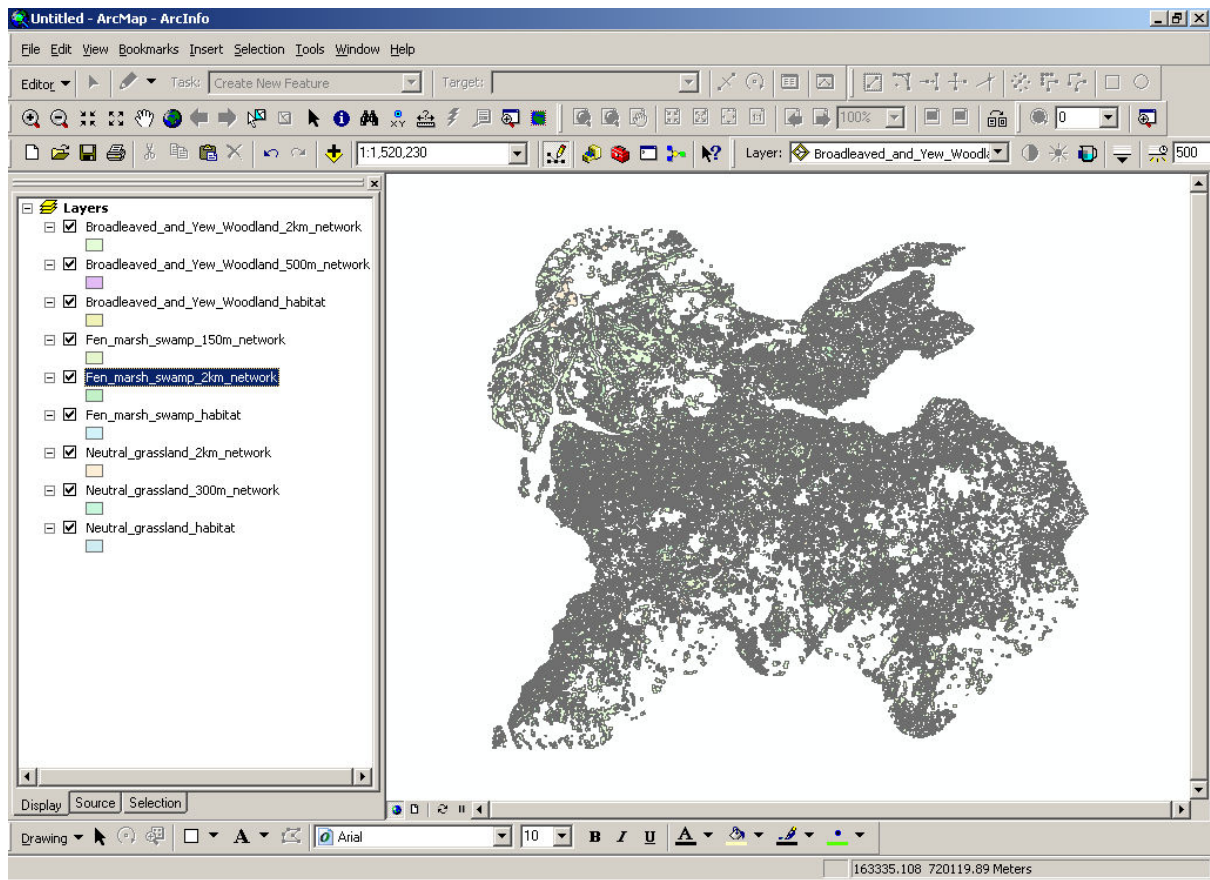
There are nine shape files that make up these. The files names follow a similar format for each habitat type.

Broadleaved woodland (Broadleaved and Yew Woodland)  
Broadleaved woodland moderate dispersal network  
Broadleaved woodland high dispersal network

Wetland habitat ( Fen Marsh Swamp)  
Wetland moderate dispersal network  
Wetland high dispersal network

Neutral grassland habitat  
Neutral grassland moderate dispersal network  
Neutral grassland high dispersal network

They are displayed in ArcGIS with the same titles as file names.



Each polygon within the shape file has both core and non-core habitat as shown in its attribute table below. Only habitat patches of a certain threshold size are classified as core habitat in the attribute tables, however all habitat areas are represented in the data. For woodlands, core habitat is 5ha and above; for grasslands, 1ha; and wetlands, 0.02ha. Habitat patches of less than these threshold sizes still make a contribution to connectivity and networks and should also be considered in modelling. Using the Identify tool will show whether polygons are above or below threshold sizes

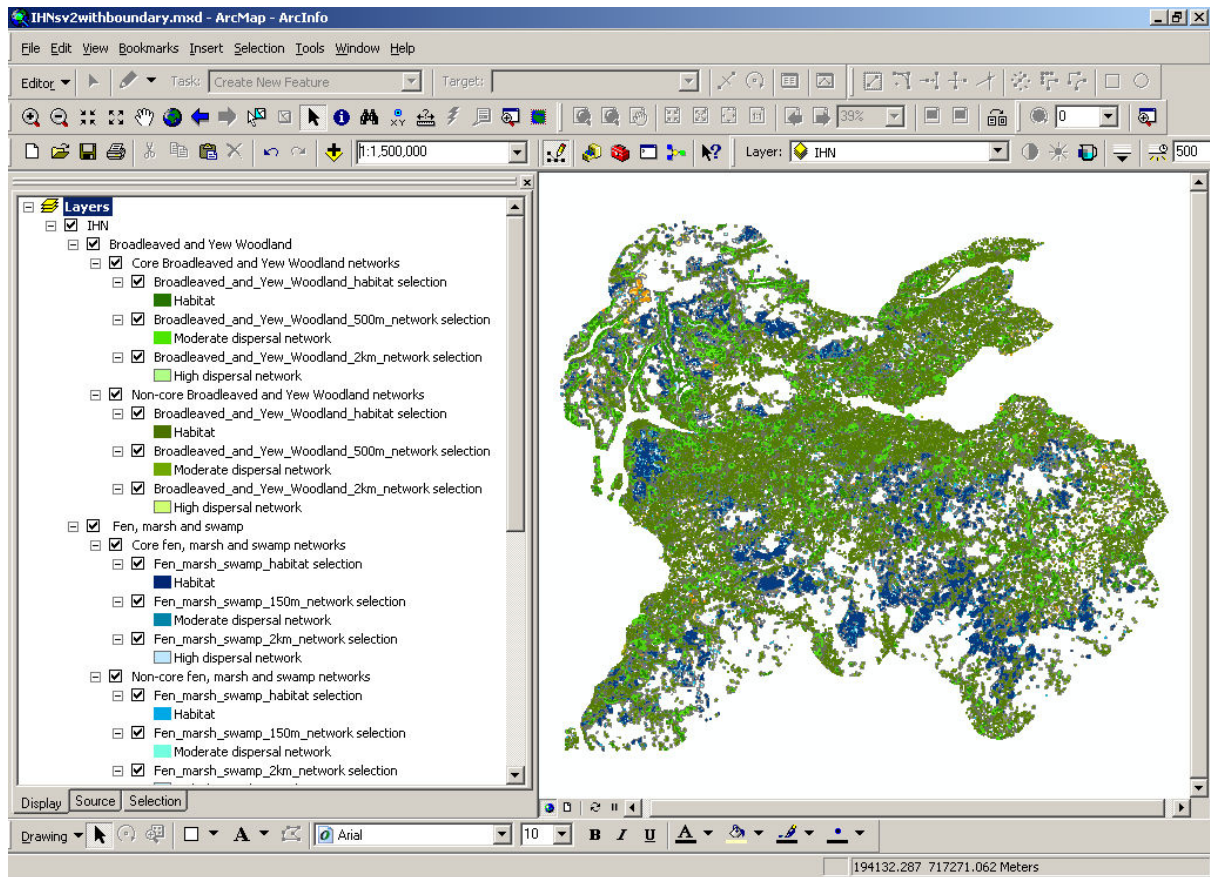
Attributes of Fen_marsh_swamp_habitat selection							
	FID	Shape	NCore150m	NCore2km	Core150m	Core2km	Type
▶	3431	Polygon	0	0	1	1	Core
	34314	Polygon	0	0	2	2	Core
	34315	Polygon	0	0	3	3	Core
	34316	Polygon	0	0	4	5	Core
	34317	Polygon	0	0	5	6	Core
	34318	Polygon	0	0	6	7	Core
	34319	Polygon	0	0	8	4	Core
	34320	Polygon	0	0	9	9	Core
	34321	Polygon	0	0	10	10	Core
	34322	Polygon	0	0	11	11	Core
	34323	Polygon	0	0	7	8	Core
	34324	Polygon	0	0	7	8	Core

The numeric values in the attribute table field headings, e.g. NCore150m, refer to the least cost modelling distance used for the moderate dispersal network, and the higher distance to the high dispersal distance used. The distance is not a simple buffer it is the distance considered, along with landscape permeability values, which have been used to model the networks.

## 1.2 Habitat and habitat network layer file (optional)

Layer files (layer\_name.lyr) include all map display properties for symbolisation and labelling. However, layers do not usually contain the actual datasets. Instead, they typically reference a data source that resides in another location. When we use the layer file we get the colour schemes that make the maps easier to interpret.

The following map shows all layers switched on for all three habitat types.



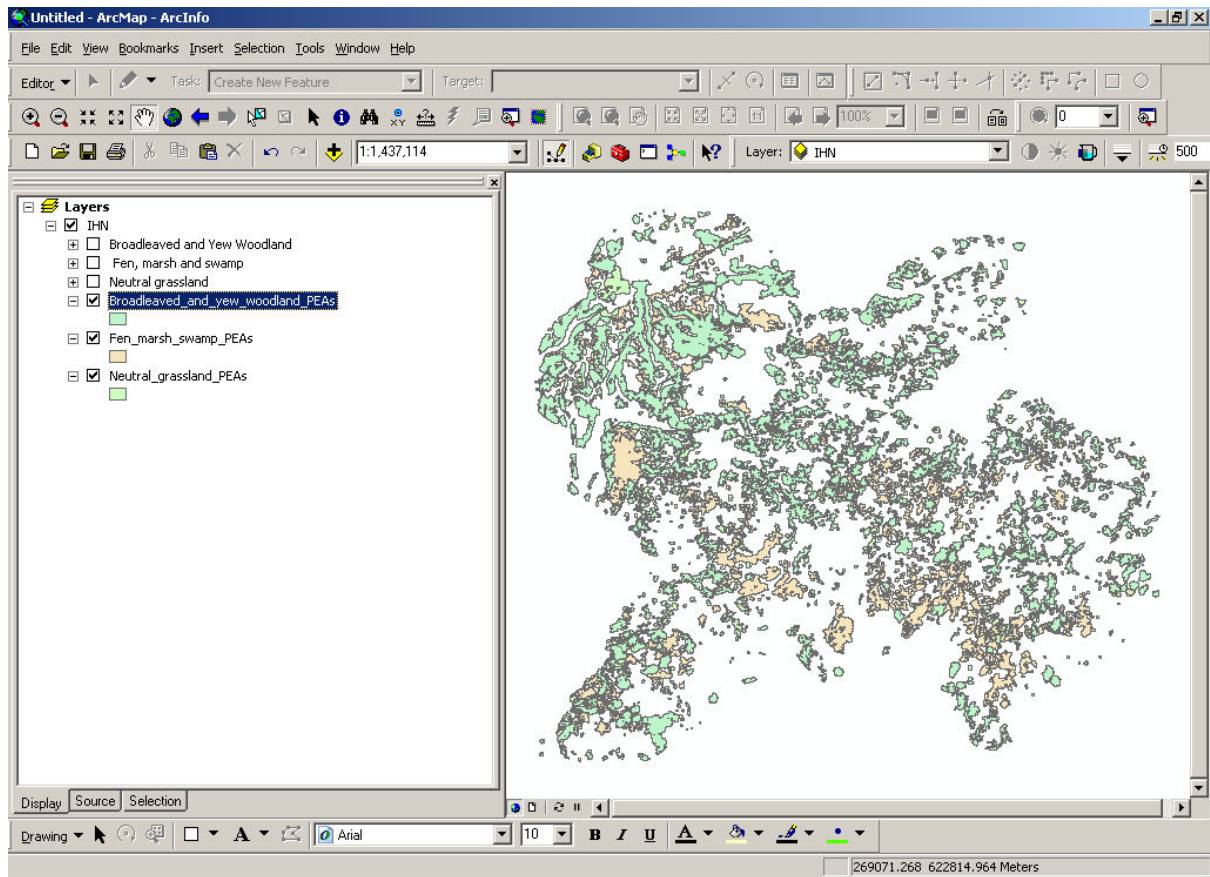
### 1.3 Habitat Network Hotspot shape files

These areas are named Habitat Enhancement Areas in the Forest Research CSGN technical reports 2011. Previous studies used Priority Enhancement Areas PEAs.

There are three shape files that make up these.

- Broadleaved woodland Habitat Network Hotspot
- Wetland Habitat Network Hotspot
- Neutral grassland Habitat Network Hotspot

They are displayed in ArcGIS with the same titles as file names – directly supplied data will use PEA and should be renamed by local data manager.



Each polygon within a shape file has a RANK shown in its attribute table. This rank is based on additional encompassing network modelling and highlights the area with the highest potential for network development, the highest possibility of connecting the largest number of habitat patches and the area with highest current habitat. The ranking is for the whole area covered by the data, in this CSGN, Loch Lomond Trossachs National Park and the Borders, and a rank of 1 is highest. These areas can be re-ranked for an individual local authority area. The ranking takes into account network potential only and does not include an appraisal of other factors.

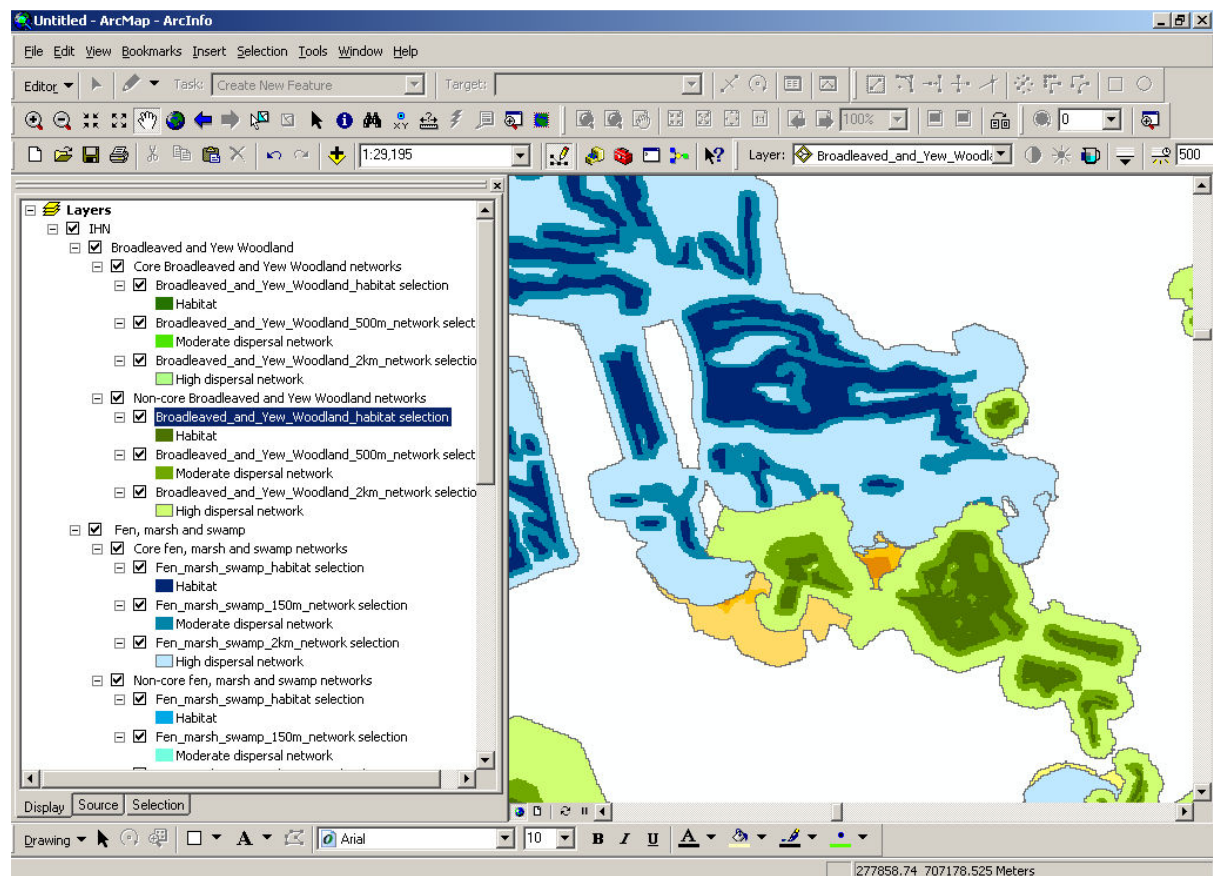
FID	Shape *	RANK	ET_ID
0	Polygon	100	0
1	Polygon	215	1
2	Polygon	109	2
3	Polygon	66	3
4	Polygon	96	4
5	Polygon	56	5
6	Polygon	106	6
7	Polygon	236	7
8	Polygon	258	8
9	Polygon	264	9
10	Polygon	226	10

## 2 Using the data within a GIS

When interpreting the maps it is important to look at each habitat separately, by switching layers on and off, as well as viewing the networks together. This is because as the layers build up over each other they will 'hide' information underneath. Another way to view the habitat networks is to adjust transparencies.

Overlaps are present between habitat networks and particular areas of land are networks for all three habitat types in the study (and may be valuable for habitat of types not yet modelled) and so land-use and/or landscape management changes may not be appropriate in all locations shown on the IHN map. When evaluating habitat creation proposals against the IHN mapping it's important to consider these on a site by site basis along with site visits to make sure that the impact of any change is fully understood.

The map below shows an example where habitat networks are overlapping.



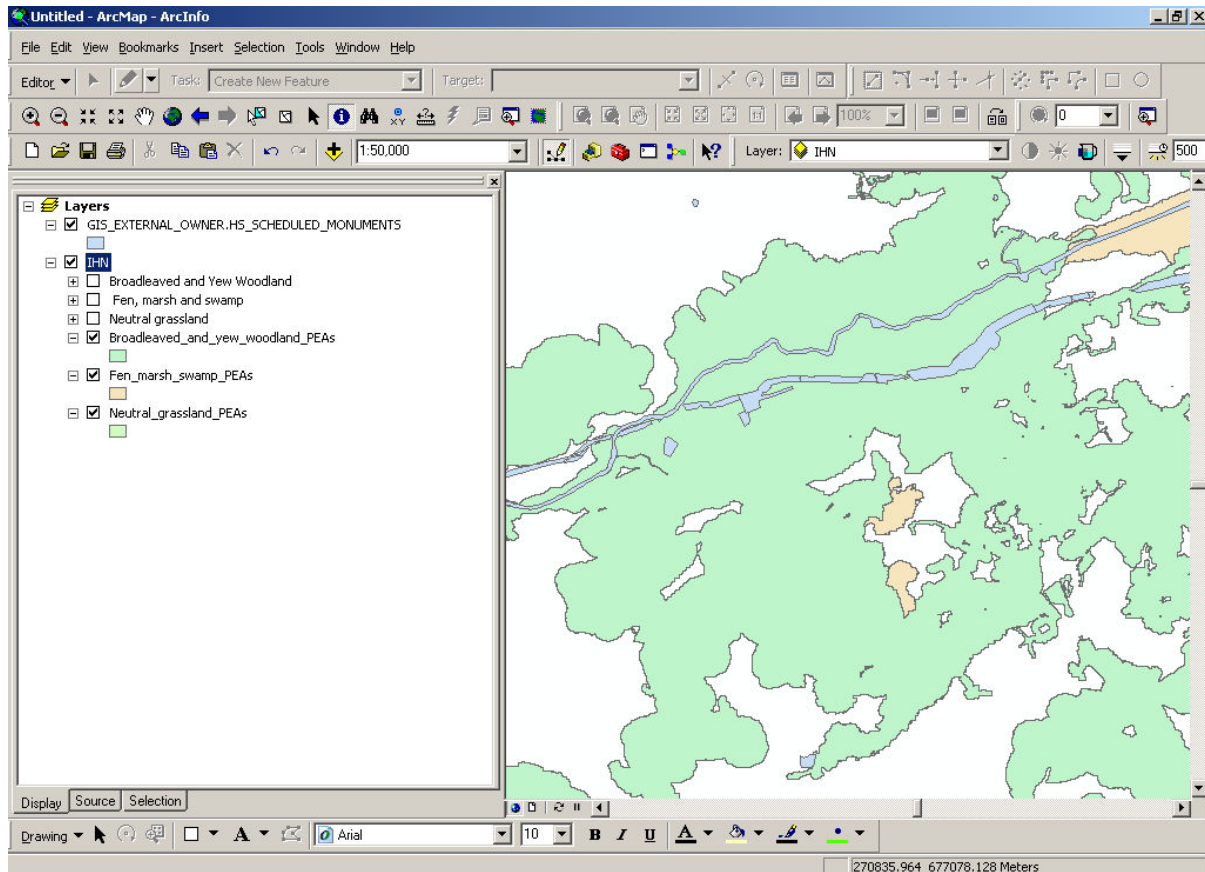
When producing printed maps care must be taken to ensure that the uppermost layer in the table of contents does not unintentionally over-write habitats when more than one network is represented in an area.

As well as reconciling the overlaps of different habitat networks within the map and on the ground it's also important that the IHN is used within a GIS as part of the decision making process, i.e., decision making is not based wholly on the IHN

mapping. The IHN mapping needs to be considered as part of the decision making process considering the landscape: its character and ecology, and other environmental factors, strategies and policies, along with on-site appraisal. It is important to ensure that land-use, landscape management, habitat creation and development planning decisions are not solely based on IHN mapping.

For example, an area shown on the map as woodland habitat and network and identified as a Habitat Network Hotspot (or Habitat Enhancement Area in the Forest Research Technical Report) on closer inspection and in consideration of landscape and visual impacts of woodland creation – may not be a good site for woodland creation. And in turn a woodland creation site of a location that is desirable in terms of landscape and visual impacts and other factors may not be within a Habitat Network Hotspot however will still be of value to biodiversity and may still contribute to habitat networks by improving the landscape permeability of the area.

The map below shows an example where IHN areas are overlapping with Scheduled Monuments and illustrates the importance of ensuring that land use and management decisions are not based solely on the IHN data.



### 3 Summary of data

Name	What it shows	Broad BAP Habitat	UKBAP habitats included
Broadleaved woodland	Shapefile with <ul style="list-style-type: none"> <li>• Habitat</li> <li>• Moderate dispersal network</li> <li>• High dispersal network</li> </ul>	Broadleaved, Mixed and Yew Woodland	Traditional Orchards Wood-Pasture & Parkland Upland Oakwood Lowland Beech and Yew Woodland Upland Mixed Ashwoods Wet Woodland Lowland Mixed Deciduous Woodland Upland Birchwoods
Wetland	Shapefile with <ul style="list-style-type: none"> <li>• Habitat</li> <li>• Moderate dispersal network</li> <li>• High dispersal network</li> </ul>	Fen, Marsh and Swamp	Upland Flushes, Fens and Swamps Purple Moor Grass and Rush Pastures Lowland Fens Reedbeds
Neutral grassland	Shapefile with <ul style="list-style-type: none"> <li>• Habitat</li> <li>• Moderate dispersal network</li> <li>• High dispersal network</li> </ul>	Neutral Grassland	Lowland Meadows Upland Hay Meadows
Broadleaved woodland Habitat Network Hotspots	Shapefile showing Habitat Network Hotspots	Broadleaved, Mixed and Yew Woodland	As shown above
Wetland Habitat Network Hotspots	Shapefile showing Habitat Network Hotspots	Fen, Marsh and Swamp	As shown above
Neutral Grassland Habitat Network Hotspots	Shapefile showing Habitat Network Hotspots	Neutral Grassland	As shown above
CSGN IHN Layer file	Map display properties for symbolisation	Not applicable	Not applicable

### 3.1.1 Further information

CSGN IHN Key messages: [Habitat Networks and Spatial Ecology - Scottish Natural Heritage](#)

IHN data and information download: [Natural Spaces - Scottish Natural Heritage](#)

Habitat networks: [Habitat Networks and Spatial Ecology - Scottish Natural Heritage](#)

Woodland expansion guidance: [Forestry Commission Scotland - Developing native woodland habitat](#)

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