



OPW Oifig na
nOibreacha Poiblí
Office of Public Works

Nature Based Solutions Potential Site Identification Project (NbS PSI)

Guidance Note



PROJECT	Nature Based Solutions Potential Site Identification Project (NbS PSI)
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1.0 Overview of the project

The OPW has carried out a desk-based potential site identification (PSI) exercise which identifies areas where there is an opportunity to use natural methods nature-based solutions (NbS) to alter or restore riverine environments to help manage flood risk. The assessment is based on physical catchment characteristics (PCD) as defined by a range of national scale spatial datasets.

The following NbS PSI maps have been produced:

- Run off reduction
- Floodplain reconnection
- Floodplain roughening
- Wetland restoration and creation

Each map identifies areas where there is a potential for different categories of NbS measures to be implemented.

Areas defined as having potential for NbS measures does not imply that measures can or should be progressed in all locations within that area and progression to NbS implementation will require on-the ground map proofing and site specific analysis.

For more information on this project, please read the NbS PSI Project Report (Office of Public Works, 2025).

2.0 Data/Map Structure

The maps have been divided into manageable packages defined by River Basin District (RBD) as defined by the 1st cycle of the River Basin Management Plan.

The map layers are named in compliance with OPWs Engineering Spatial Data Specification (ESDS). For more detail the ESDS should be consulted.

The following table explains the naming convention:

RBD	Flood Relief Scheme Reference	NbS Layer Code	Scheme Stage	Status	Revision number
e = Eastern n = North Western Neagh-Bann w = Western s = Shannon i = South Western (Iardheisceart) o = South Eastern (Oirdheisceart)	'000' for all layers	nre – floodplain reconnection nro – floodplain roughening nwc – wetland creation/restoration nrr – run off reduction	na - Stage not applicable, i.e. not a FRS related project	f - final	1,2,3 etc.

Table 1: ESDS map layer naming convention

Example: “o_000_nre_na_f_1”, this layer is in the South Eastern RBD (o), does not apply to a flood relief scheme (000), is for floodplain reconnection (nre), scheme stage is not applicable (na), the status of the layer is final (f) and is the first revision (1)

3.0 Layer Details

3.1 Run off reduction

Surface runoff is the flow of water overland outside a stream or river channel. This map shows areas which have been identified as being sensitive to run off i.e. areas where rainfall generates a high proportion of surface runoff rather than attenuation or infiltration.

NbS measures can be implemented in these areas to reduce and/or slow down run off and thereby increasing the lag-time between rainfall events and resulting in-stream peak water level.

Areas identified as having a potential for run off reduction may be suitable for nature based solutions for flood mitigation such as the following:

- Cross drains and deflectors
- Cross Slope hedgerows (incl. banked hedges)
- Buffer Strips
- Catchment woodlands
- Floodplain woodlands
- Riparian Woodlands
- Ponds, swales etc.
- Leaky barriers - Woven or dead hedging brash, large log or multi-log stack, gully stuffing or interlocking/lattice jams, stone check dams

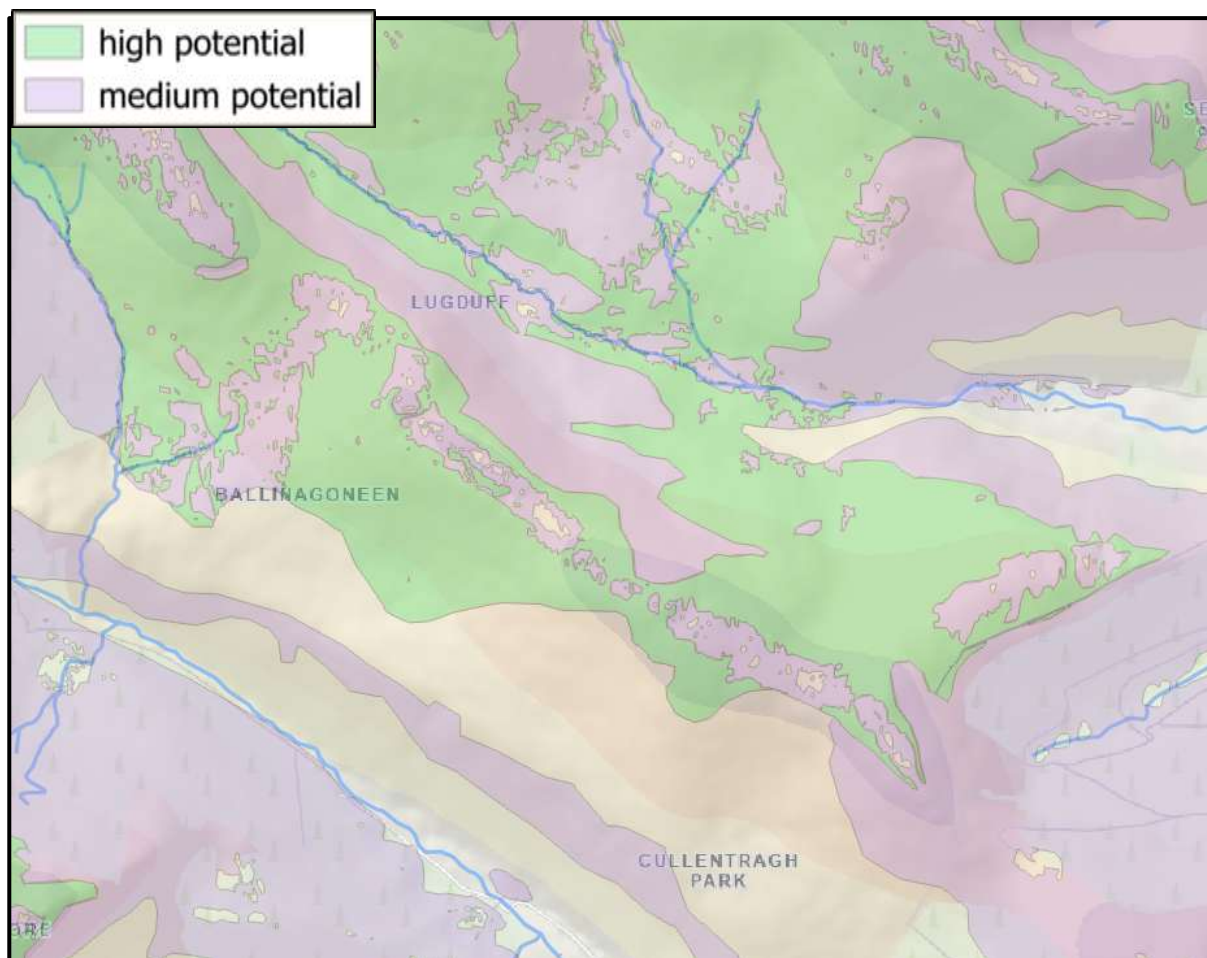


Figure 1: Run off reduction

3.2 Floodplain reconnection

This map identifies sections of river channel that have the potential to be modified to allow reconnection to the floodplain when the water level reaches a certain level, thereby providing additional floodplain storage.

Areas identified as having a potential for floodplain reconnection may be suitable for nature based solutions for flood mitigation such as the following:

- Remove, set back or lower existing embankments
- In-channel features to raise water level for reconnection (embedded or hinged trees, bank-top diverters or crossed logs, stake and wedged logs)
- Paleo-channel restoration
- Floodplain wetland restoration

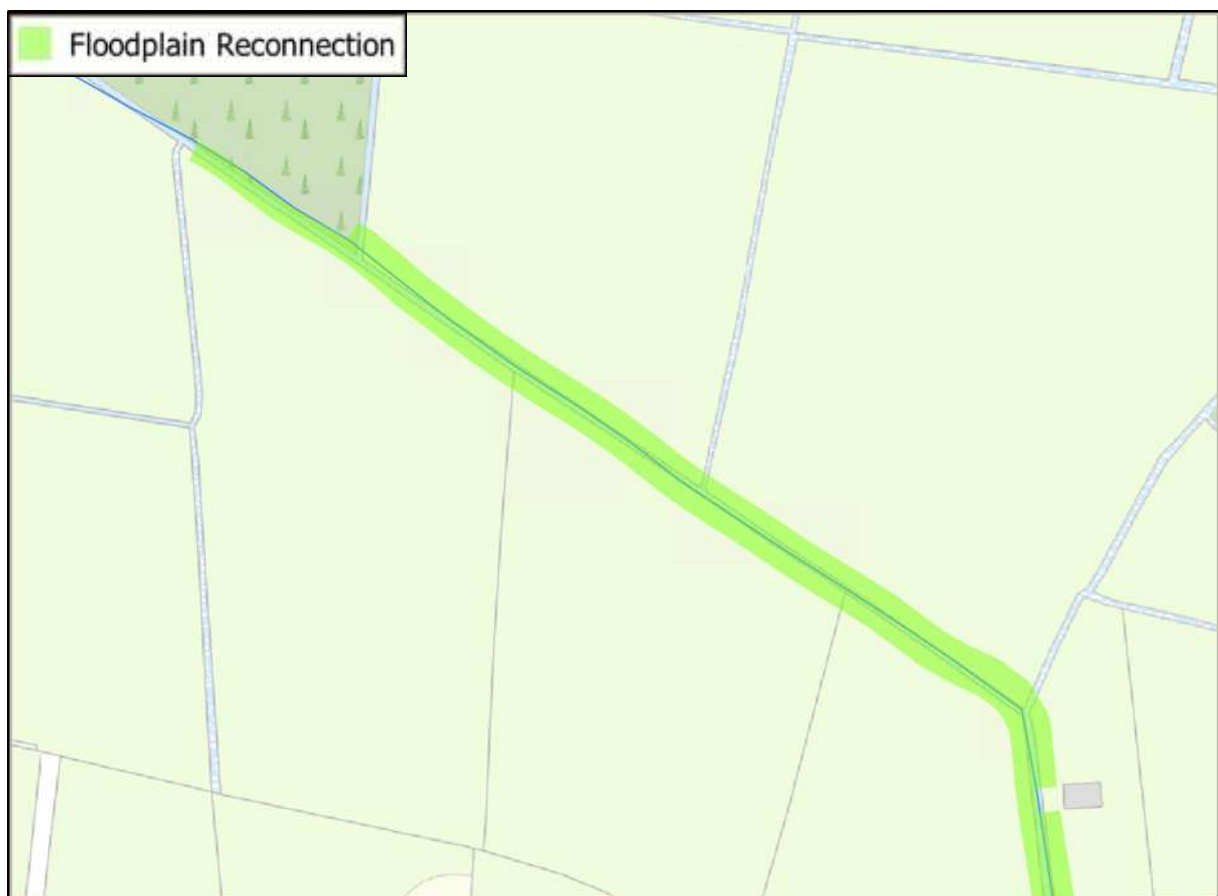


Figure 2: Floodplain reconnection opportunity map

3.3 Floodplain Roughening

This map identifies areas of floodplain which, based on land cover type, have low Manning's n values. Land cover types with low Manning's n values have a lower resistance to surface flow than others, and are thus potentially suitable for floodplain roughening. Floodplain roughening can extend floodplain storage times by slowing flood waters attempting to re-enter the main channel.

Areas identified as having a potential for floodplain roughening may be suitable for nature based solutions for flood mitigation such as the following:

- Floodplain woodlands
- Land and soil management practices
- Ponds etc.

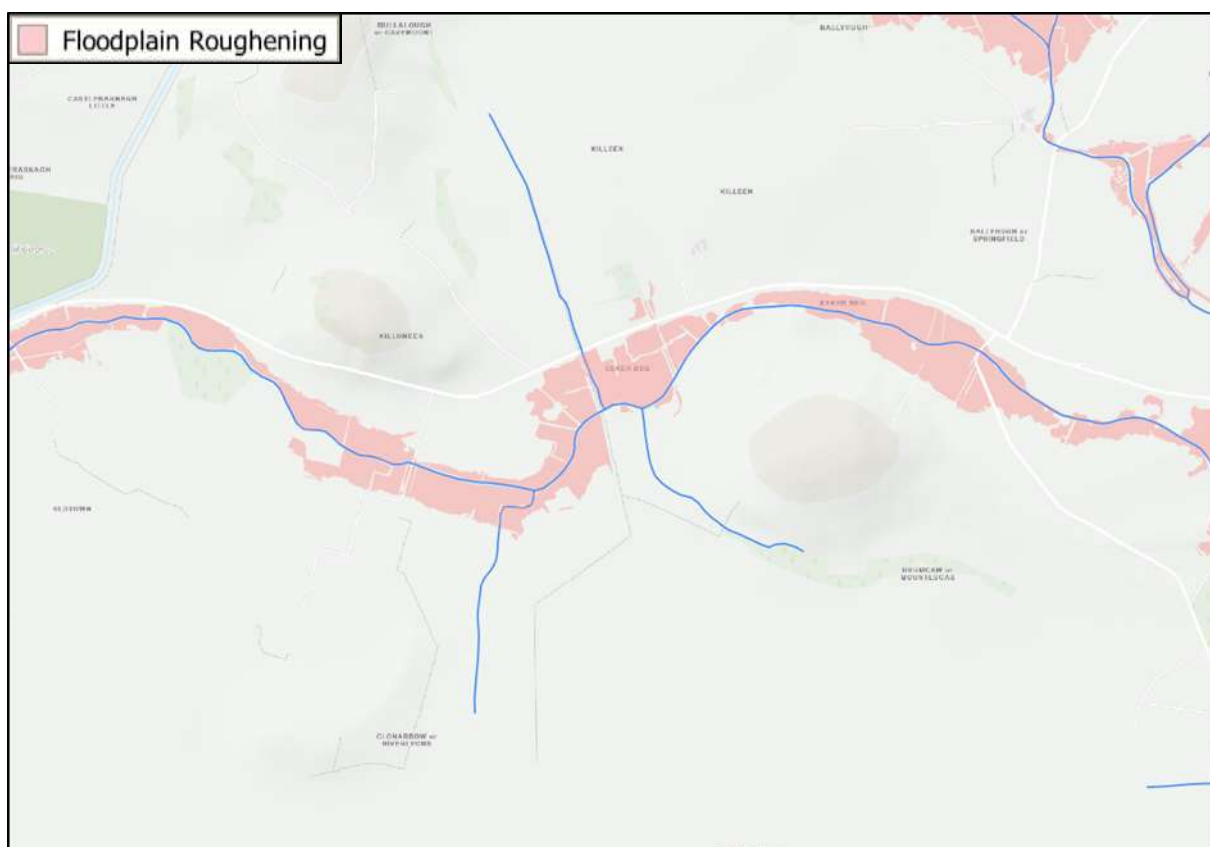


Figure 3: Floodplain Roughening

3.4 Wetland restoration and creation

This map identifies examples of areas suitable for wetland restoration or creation as a nature based solution to fluvial flooding by providing additional soil water storage.

Blanket bog, wet heath and bare peat were selected from NLC 2018 and areas of high and moderately high landslide susceptibility (Geological Survey Ireland, 2016) were removed where there was an overlap. The resulting layers identify areas which have a potential for wetland restoration or creation both inside and outside of areas designated as Special Areas of Conservation (SAC) and Special Protection Areas (SPA) and are not susceptible to landslides.

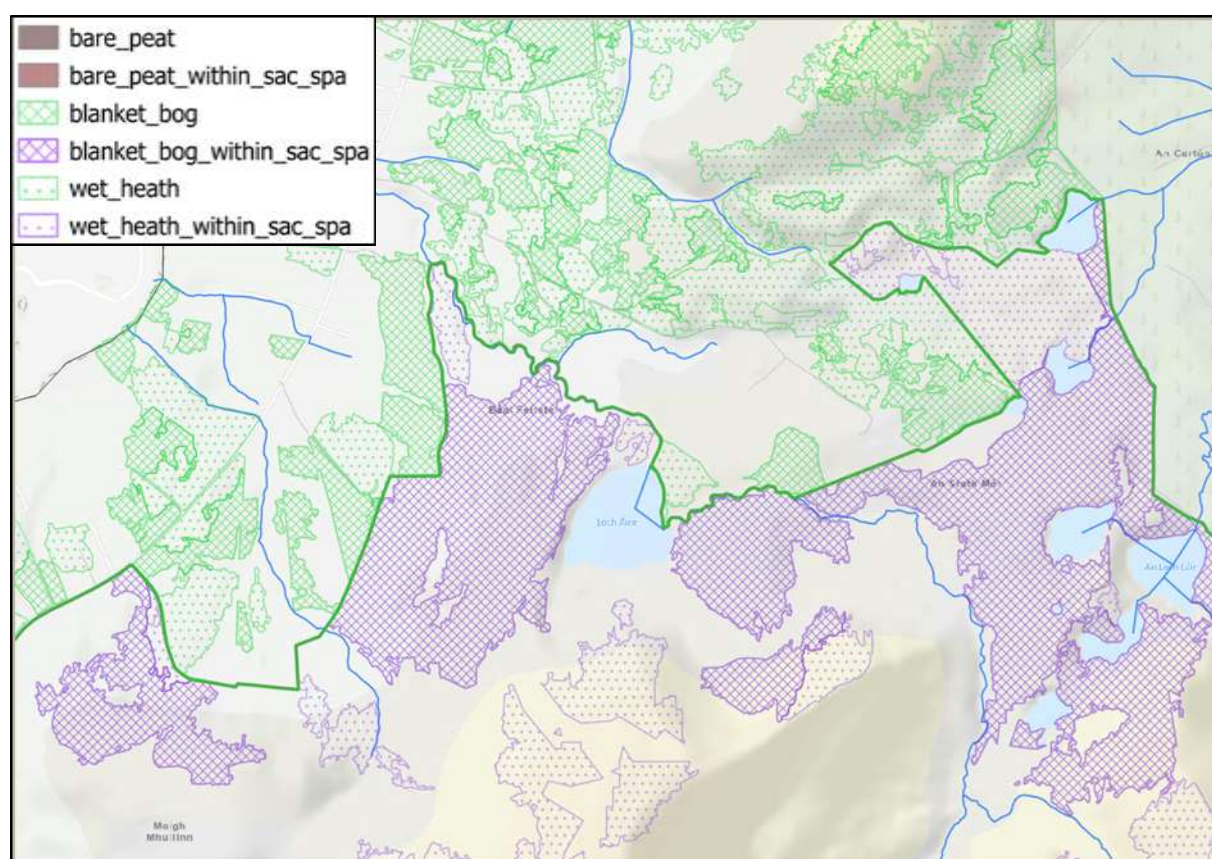


Figure 4: Wetland restoration and creation map

4.0 Interpretation

This project intends to support Local Authorities, government agencies, voluntary groups, community groups and the wider public in their endeavours to implement NbS. NbS opportunity maps have been created on a national scale to help inform site selection and feasibility of various types of NbS measures which will in turn help NbS project planning.

The maps show areas within which there **may** be an opportunity to implement NbS measures and should not be interpreted as a recommendation to implement a given NbS measure in any specific location. On-site investigation and proofing of the maps must be conducted as early as possible when planning an NbS project.

As the maps are developed on a national level, there is inherent uncertainty and assumptions made may not reflect on-site conditions. As such, the maps must be viewed as the first step in identifying areas for NbS implementation.