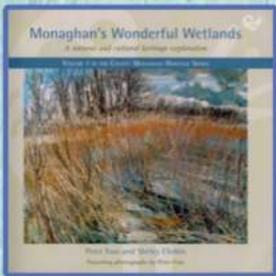


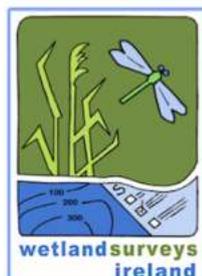
# County Monaghan Wetland Action Plan

## Preliminary Scope and Methodology

by Peter Foss & Patrick Crushell

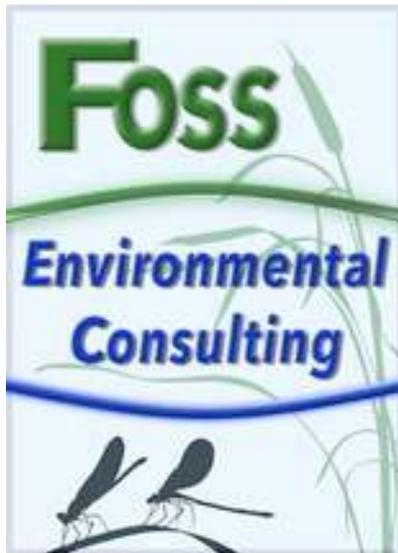


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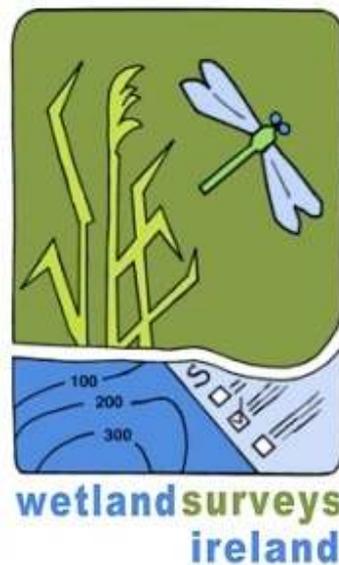
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# County Monaghan Wetland Action Plan Preliminary Scope and Methodology Report

Report prepared by  
P. Foss & P. Crushell

Wetland Survey Ireland &  
Foss Environmental Consulting

for Monaghan County Council &  
Department of Housing, Local Government and Heritage

November 2020



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## **Executive Summary**

### **County Monaghan Wetland Action Plan Preliminary Scope and Methodology Report**

The County Monaghan Wetland Action Plan aims to develop an integrated plan for the conservation of the wetland resource in County Monaghan, through co-operation and engagement with a wide range of partners and community groups.

Extensive work has been undertaken over the past fifteen years in identifying and characterizing the ecological character of wetlands throughout County Monaghan. The outcome of this work has produced a valuable dataset containing information on 710 wetlands, of which 202 have been subject to field survey. This information will form the basis of a Wetland Action Plan for the county. As part of this project, those 202 sites for which standard information is available will be evaluated in relation to the provision of ecosystem services following a "*Rapid Assessment of Wetland Ecosystem Services (RAWES)*" approach as promoted by the Ramsar convention. This approach aims to assess the multiple benefits that wetlands provide.

Following the RAWES assessment, the project will objectively identify management, restoration and rehabilitation priorities for the wetland resource of the county to, amongst other things, improve biodiversity outcomes and climate mitigation/adaptation.

The project will help define climate action as well as management strategies, defining an action plan for wetland protection in County Monaghan.

The project will help determine whether high-carbon ecosystems should be prioritised for restoration and rehabilitation budgets over the coming years to safeguard peat carbon storage and sequestration. In the County Monaghan context, wetlands that are not peatlands may play important roles in flood mitigation and biodiversity protection and the ecosystem services on these sites will also be assessed as part of the project.

Actions will be costed as part of the plan and likely will focus on the re-wetting of drained fens and peatlands, prevention of nutrient inputs to wetlands, removal of invasive species including self-seeded conifers, awareness raising and capacity building initiatives.

A public engagement strategy will be developed and funding sources identified to ensure the wide uptake of the wetland action plan among partners and community groups, the primary beneficiaries in County Monaghan.

## **Acknowledgements**

The County Monaghan Action Plan (MAWP) project is a joint project initiative of Monaghan County Council, and the Department of Housing, Local Government and Heritage, Wetland Surveys Ireland and Foss Environmental Consulting.

The MWAP was made possible through the financial support of Monaghan County Council, and the Department of Housing, Local Government and Heritage.

The authors of this report wish to thank Shirley Clerkin, Heritage Officer, Monaghan County Council for various discussions relating to the direction of the project.



### **Mission**

To develop an action plan which sets a way forward to resource, protect and enhance, conserve and advocate for County Monaghan's wetland biodiversity and heritage. The plan will aim to progress the sustainable development of the resource and maximise on the biodiversity, climate change mitigation and ecosystem services that wetlands can provide.

### **Vision for the County Monaghan Wetland Action Plan**

That the role of wetlands and their biodiversity, heritage, climate change mitigation, sustainable communities, functioning ecosystems, health and well-being of the wider community is accepted across all sectors and organisations in the county and embedded in the resourcing, activities and forward planning of Monaghan County Council.



**County  
Monaghan**  
 **Wetland  
Action Plan**

## 1 Introduction

The County Monaghan Action Plan (MAWP) project is a joint project initiative of Monaghan County Council, and the Department of Culture, Heritage and the Gaeltacht. The plan is being prepared by Wetland Surveys Ireland and Foss Environmental Consulting.

County Monaghan contains a wide range of wetlands which support habitats and species of high biodiversity significance. The diversity of wetlands in Monaghan include raised bogs (cutover), blanket bogs, fens, marshes, large riverine systems, an abundance and variety of lakes, springs, and wet woodlands. This diversity of wetland type reflect the varying topography, hydrology, climate and soils of the county. Monaghan contains some of the finest examples of transition mire fens and mesotrophic inter drumlin lakes that occur in Ireland.

Wetland habitats and associated species have been subject to significant historical declines through land drainage and other landuse pressures. It is estimated that the original area of wetlands in County Monaghan was 20,407ha or 15.8 % of the land area, a value based on the extent of lakes and the wetland indicating sediments.

A wetland map and associated database for the county has been developed by the Monaghan County Council Heritage Office over the past fifteen years. This work has estimated the total area of wetland habitat in county Monaghan as estimated to be 7,319 ha, which represents 5.8 % of the entire county.

The site database holds information on over 710 wetland sites, of which 202 have been subject to field survey. The ecological information gathered on these sites provides a valuable baseline against which the resource can be evaluated in terms of ecosystem services. Such an evaluation will allow informed decision making in relation to the 'wise use' of the Monaghan wetland resource.

Ecosystem services have been defined as the benefits that ecosystems provide to people. These benefits are diverse, spanning factors that provide for our basic biophysical needs (food, fresh water, clean air), regulation of the environment, cultural enrichment, and supporting processes internal to ecosystems that maintain their functioning, resilience and capacities to produce more directly consumed services. As recognised by the Ramsar Convention ([www.ramsar.org](http://www.ramsar.org)), in order to achieve wise use and to contribute to sustainable development, policy-makers and practitioners need to recognise the wide range of benefits that wetlands produce, and to reflect them in their decisions, policies and actions.

With this in mind, as part of the Monaghan Wetland Action Plan, an assessment of the county's Wetland resource will be undertaken following the "Rapid Assessment of Wetland Ecosystem Services (RAWES)" approach as endorsed by the Ramsar Convention. The RAWES will be based on the existing ecological information held in the Monaghan wetland map and associated database.

This County Monaghan Wetland Action Plan (MWAP) aims to provide a targeted and coordinated approach to highlighting, protecting and managing the ecosystem services provided by wet places in the county, and is being coordinated by the Monaghan County Council Heritage Office.

In this way the MWAP will help achieve the priorities and objectives set out in the National Biodiversity Plan (2017-2021), Climate Action and Low Carbon Development (Amendment) Bill 2020, and EU legislation including the Habitats Directive (CEC 1992), Birds Directive (CEC 1979), European Climate Change Programme (CEC 2000) and Water Framework Directive (CEC 2000) at a county level.

### 1.1 Ecosystem Services of Wetlands

Freshwater wetlands are among the most important natural resources on Earth occupying about 6% of the world's land surface. In Monaghan they originally covered as estimated 18.5% of the county. They store and filter water and help control and buffer the effects of flooding. They also give us food, fuel and plant

fibre; they capture carbon from the air and lock it up and support a wealth of fascinating and uniquely adapted wildlife. They form living landscapes giving enjoyment to large numbers of people, and contain a unique record of our past where the best-preserved archaeological remains exist.

Wetlands provide key ecosystem services which must be safeguarded to ensure the health and well-being of both the natural environment and human health and well-being.

- Wetlands support biodiversity. The variety of living organisms found in wetlands contributes to the health of our planet and our own lives by ensuring our food supply, regulating the atmosphere and providing raw materials for industry and medicine.
- Wetlands play a major role in storing flood water and can reduce flooding in built-up areas, vital given the changing weather patterns associated with global climate change.
- Wetlands offer habitat for wildlife. Many migratory birds and other wildlife depend on the ecological setting of wetlands for their survival.
- Wetlands provide significant economic benefits, for example: water supply (quantity and quality); fisheries (over two thirds of the world's fish harvest is linked to the health of coastal and inland wetland areas); agriculture, through the maintenance of water tables and nutrient retention in floodplains; timber and agricultural production; energy resources, such as peat and plant matter; wildlife resources; transport; and recreation and tourism opportunities.
- Wetlands improve water quality by removing and sequestering pollutants and sediments in the water.
- Wetlands store floodwaters, acting like natural sponges and slowing down the force of flood and storm waters as they travel downstream. Far from posing a flood threat, wetlands should be viewed as buffers, to protect areas where people live (DOEHLG 2008).
- Wetlands provide valuable open space and create recreational opportunities. Hiking, fishing, boating and bird watching are just a few of the activities people can enjoy in wetland areas. The scenic vistas of wetlands make them an ideal area for nature photographers or painters.
- Wetlands are vital in preventing further climate change by acting as a store of carbon. Until recently this has not been fully appreciated, and in Ireland it has still not been adequately communicated to the general public. For example, peatlands are known to store 20-30% of the world's soil carbon, exceeding by three times the amounts stored in tropical rainforests (Bragg and Lindsay 2003).
- In addition, wetlands have special attributes as part of the cultural heritage of humanity: they are related to religious and cosmological beliefs, constitute a source of aesthetic inspiration, provide wildlife sanctuaries, and form the basis of important local traditions.

These functions, values and attributes can only be maintained if the ecological processes of wetlands are allowed to continue functioning. Unfortunately, and in spite of important progress made in recent decades, wetlands continue to be among the world's most threatened ecosystems, owing mainly to ongoing drainage, conversion, pollution, and over-exploitation of their resources.

Putting an economic value on something as abstract as the ecological services of a wetland is a difficult idea for most people, but is becoming a more accepted economic tool. More commonly, the open market puts monetary values on society's goods and services. In the case of wetlands, there is no direct market for services such as clean water, maintenance of biodiversity, and flood control. There is, however, a growing

recognition that such natural benefits do have real economic value and that these values need to be included in decision-making processes.

In a report by the Biodiversity Unit of the Department of the Environment, Heritage and Local Government (DOEHLG 2008) the biodiversity value of wetlands in Ireland was estimated to be worth €385 million per year to the Irish economy. In addition a further proportion of the €330 million assigned by this study to the economic value of the nature and eco-tourism value of all Irish habitats can be assigned to wetlands.

One other stark fact to emerge from this report is that “it is clear that the benefits of biodiversity far exceed the costs of the current levels of biodiversity protection” in Ireland, an indication that we still do not value the functions and services provided by wetlands to our well being as a society.

Numerous other reports exist in the literature that give clear examples of the economic value of wetlands. The UK Environment Agency has a wealth of literature showing the value of intact functioning wetlands in the control and alleviation of flooding episodes (Callan 2008). In addition a number of reports exists which show that intact wetland systems provide excellent value for money in the provision of water services when compared to the costs that would accrue if these services had to be supplied by artificial systems. An illustration is the example from the USA where the State of New York purchased a watershed area at a cost of 1.5 billion dollars, rather than spend 3 to 8 billion dollars it estimated it would cost for artificial waste water treatment facilities to do the same job.

The report “Wetland Ecosystem Economics: evaluating the benefits derived from Monaghan’s wetlands” (Hime & Woodrow 2010) undertaken for Monaghan County Council estimated the economic value of just six case study wetlands in the county, covering a variety of wetland types. The report estimated that over a 50 year period, the value of the wetlands (at current prices) ranged from €10,000 for the smallest to €2.9 million for the largest of the six sites. Taken together the economic value for the 6 wetlands was estimated to lie between €4 million to €9.2 million over the same 50 year period, depending on the exact variables applied to functions provided by the wetlands in the economic analysis undertaken.

In many ways, the economic benefits received from wetlands are comparable to the benefits received from things such as public schooling, health care and municipal infrastructure.

Unfortunately, to date, society has generally only realized the benefit of wetland services after they have disappeared or been seriously degraded. Problems with flooding, lost recreational opportunities, reduced fish populations and more costly water treatment are examples of costs understood only after a wetland ecosystem has been degraded or destroyed.

The idea behind putting an economic value on some of these wetland benefits before ecosystem-altering decisions are made is to recognize these potential costs up front and thereby put wetland-related decisions on a more economically sound footing.

Ecosystem services of wetlands can be grouped into four functional categories as follows:

- **Provisioning services** comprise primarily materials that can be harvested or collected from wetlands and energy taken from ecosystems.
- **Regulating services** maintain desired environmental conditions for human society.
- **Cultural services** enrich human society.
- **Supporting services** are necessary for the maintenance of ecosystem integrity, functioning and resilience, and for the production of all other ecosystem services.

The Rapid Assessment of Wetland Ecosystem Services (RAWES) approach which is to be applied during the current study has developed a comprehensive checklist of ecosystem services grouped into the above categories as presented in Figure 1 below.

Each wetland site for which field data is available will be assessed in relation to the various services according to a scoring system adapted from RAWES. This will enable all sites to be ranked according to their relative importance in the provision of ecosystem services. Such an evaluation will provide a valuable resource in deciding on management, conservation, and restoration priorities of the wetland resource of the county in the formulation of the County Monaghan Wetland Action Plan.

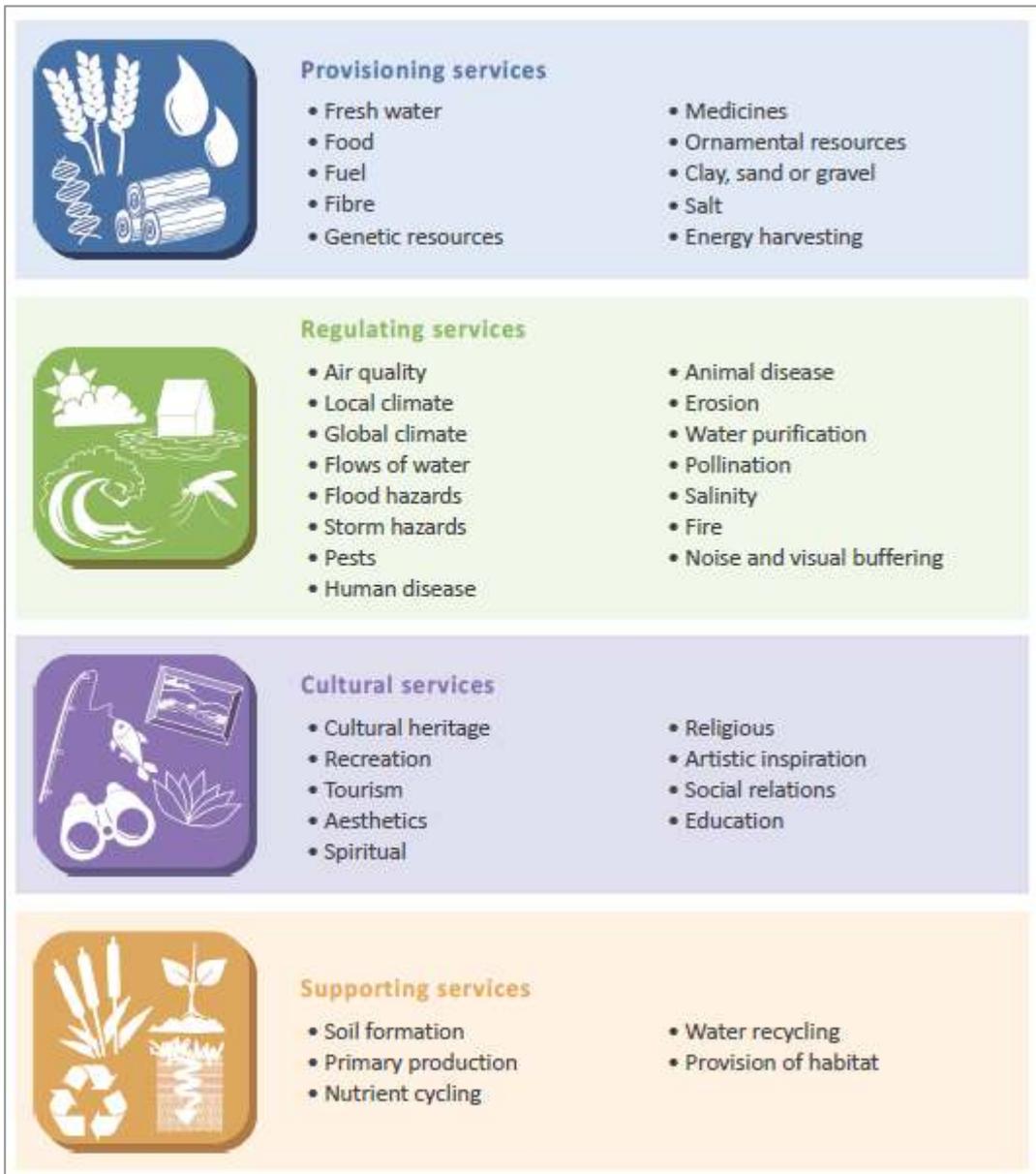


Figure 1: Checklist of ecosystem services used in the RAWES approach.

## 2 Current Project Developments and Future Plans

Wetland Surveys Ireland and Foss Environmental Consulting were commissioned to commence work on the project 1<sup>st</sup> of October 2020. Work undertaken on the project to date has included an initial review of wetland available datasets for the county including the incorporation of recent data sources.

### 2.1 Review of County Monaghan Wetland Resource

County Monaghan contains a wide range of wetlands that support species of international and national importance. These have been the focus of numerous survey and research projects over the course of the past 40 years (Douglas & Ryan 1981; Douglas et al. 1983; Barron 2006; Martin 2006; Foss & Crushell 2007 & 2008; Malone 2008; Woodrow 2008 & 2009; Hime & Woodrow 2010; Nelson & Woodrow 2008; Crushell & Foss 2010, 2011 & 2012; BirdWatch Ireland 2010; and Foss & Crushell 2012 & 2019 *inter alia*). Many of these surveys have informed and assisted in the development of heritage and planning policy in County Monaghan (Monaghan County Council 2006; Monaghan County Council 2012 & Monaghan County Council 2019).

The Monaghan Wetland Map (2012) was the synthesis of these wetland surveys and contains information on 710 wetland sites recognised in the county. This County Monaghan Wetland Map was undertaken through the auspices and with the support of County Monaghan Heritage Plans, Department of Culture, Heritage and the Gaeltacht and The Heritage Council.

Although not all wetlands in County Monaghan have yet been surveyed (see Section 6.1 below), ever increasing environmental and climate change pressures necessitate actions to protect wetlands and the important ecosystem services they provided, without further delay in County Monaghan.

#### 2.1.1 Wetland Map and Database

The 2012 Monaghan Wetland Database held information on 610 sites when it was completed.

As part of the Map of Irish Wetlands project undertaken since 2012 on a voluntary basis by the authors of this report (Foss & Crushell 2012a & 2019), which aimed to map all wetlands in Ireland, a further review of wetland in County Monaghan was undertaken. This review examined sub-soil data together with an analysis of recent aerial photography. This review resulted in an expansion of the wetland sites identified for County Monaghan to include 700 wetland sites and sub-sites.

The County Monaghan Wetland Action Plan (MWAP) project reviewed these sites, and following minor adjustments and some site additions, the sites database and map now contains 710 wetland sites and sub-sites. A summary of the level of detail available on wetland sites within the site database and the GIS are presented in Table 1 and Table 2 respectively.

The County Monaghan Wetland Action Plan (MWAP) project aims to utilise the data in the Monaghan Wetland Map, for conservation planning in the context of the county, so as to maintain or restore the valuable ecosystem services that wetlands provide.

**Table 1: Summary information on the level of detail on the wetlands held in the Monaghan Wetland Database.**

Description	Number of sites
Wetland sites in Monaghan Wetland Database	710
Main sites	636
Sub-sites	74
Sites with a wetland survey (main sites & sub-sites)	277
Main sites with a wetland survey	236
Main sites with a targeted MWS field survey	202
Main sites with 'Other' survey *	373
Main sites with wetland or 'Other' surveys	512
Main sites without survey to date	124

\* Other site surveys include habitat or species surveys with limited wetland focus or information (e.g Finn Lackey Pre-drainage Survey 1983; Blackwater River Pre-Drainage Survey 1981; Damselfly & Water Beetles Survey 2009; Dragonfly Survey 2008; Surveys undertaken as part of various EIS; EPA Water quality Surveys; Birdwatch Ireland bird surveys under iWebs Scheme and Whooper Swan Survey 2010; NPWS National Survey of Native Woodland in Ireland 2008; IFI Angling Surveys.

**Table 2: Summary information on the on the level of detail on the wetlands held in the Monaghan Wetland Map GIS dataset.**

Description	Number of sites
Wetland sites (main sites and sub sites) indicated as point	710
Wetland sites with boundaries mapped	481
Wetland sites with wetland habitats mapped (subjected to wetland field survey)	192

## 2.2 Factors and Pressures Affecting County Monaghan Wetland Habitats

A review of impacts and activities currently affecting wetland, and threats posed to wetlands in the Monaghan Wetland Site database has been undertaken. These impacts were reported in previous surveys and site descriptions, or are visible following inspection of aerial photography of sites. A number of factors causing loss or decline in the quality of wetlands or their functioning have been identified (see Table 3).

These impacts and threats can be summarised as follows:

- Development, tipping and in-filling resulting in serious degradation and loss or fragmentation of wetland habitat.
- Pollution from eutrophication (excessive nutrient input); run-off from roads, landfill leachate, sewage overflow during storms, de-oxygenation and industrial pollution can seriously degrade both running water and standing water habitats. On agricultural or forestry lands, fertiliser run-off and use of pesticides which find their way into ponds and other standing water bodies have had a serious detrimental effect on wetland habitats and associated species.
- Poor catchment management leading to high sediment loading of watercourses. This can have a direct impact upon flora through turbidity as well as fauna such as fish by causing a reduction in gill efficiency and availability of spawning beds.
- Lowering of water levels caused by inappropriate drainage schemes or by abstraction of surface or ground water.

- The use of wetland areas for recreational use, such as fishing, can cause disturbance to wildlife, damage to vegetation and degradation of wetland habitats through bank erosion and trampling.
- Introduced, non-native species of plants and animals such as Rhododendron (*Rhododendron ponticum*), Canadian Waterweed (*Elodea canadensis*), Zebra mussel (*Dreissena polymorpha*) and Himalayan Balsam (*Impatiens glandulifera*) can have a significant effect on the natural balance of wetland ecosystems.
- Physical modification of water courses for flood defense, drainage and hydro schemes has had a detrimental impact on the natural functioning of river systems and their catchment areas.
- Loss of wetland habitat due to residential and industrial development.
- Loss or degradation of suitable adjacent habitats required for many wetland species such as amphibians due to invasive vegetation such as Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*). However, these areas can provide potential cover for other associated wetland species such as otter (*Lutra lutra*).
- Forestry planting of open ground and forestry management operations.

**Table 3: Number of sites listed in County Monaghan Wetland site database impacted by or threatened by various factors (EU Natura 2000 site impacts and activities categories updated by NPWS in 2017).**

<b>Impact &amp; Activities Description</b>	<b>Number of sites with impacts and activities affecting conservation value of site</b>	<b>Number of sites assessed as threatened by activity</b>
<b>A Agriculture</b>	<b>49</b>	<b>17</b>
intensive and non intensive grazing; Intensive mowing/cutting; fertilization; agricultural intensification; restructuring of agricultural holdings;		
<b>B Sylviculture, forestry</b>	<b>40</b>	<b>52</b>
Foest plantation management & use; forest planting of open ground; artificial planting of open ground (non-native reees); forestry clearance;		
<b>C Mining, extraction of materials and energy production</b>	<b>28</b>	<b>13</b>
Peat extraction; hand cutting of peat; mechanical removal of peat; mining and quarrying;		
<b>D Transportation and service corridors</b>	<b>17</b>	<b>2</b>
Roads and motorways; paths, tracks and cycling racks; electricity and phone lines;		
<b>E Urbanisation, residential and commercial development</b>	<b>30</b>	<b>26</b>
Disposal of household waste; disposal of inert materials; continuous urbanisation; Urbanised areas, human habitation;		
<b>G Human intrusions and disturbances</b>	<b>6</b>	<b>31</b>
Wildlife watching; walking, horse riding & non-motorised vehicles;		
<b>H Pollution</b>	<b>85</b>	<b>325</b>
diffuse pollution to surface waters due to agricultural and forestry activities; diffuse groundwater pollution due to agricultural and forestry activities; Pollution of surface water (limnic & terrestrial); Pollution of groundwater (point source and diffuse sources); Air pollution, air-borne pollutants; Soil pollution and solid waste (excluding discharges); garbage and solid waste; Soil pollution and solid waste (excluding discharges); Nitrogen-inputs; diffuse pollution to surface waters due to other sources not listed;		
<b>I Invasive, other problematic species and genes</b>	<b>24</b>	<b>16</b>
Invasive non-native species; problematic native species		
<b>J Natural System modifications</b>	<b>229</b>	<b>322</b>
Other human induced changes in hydraulic conditions; Other human induced changes in hydraulic conditions; human induced changes in hydraulic conditions; Landfill, land reclamation and drying out, general; management of aquatic and bank vegetation for drainage purposes; infilling of ditches, dykes, ponds, pools, marshes or pits; modification of standing water bodies; Modification of hydrographic functioning, general; Water abstractions from surface waters; surface water abstractions for agriculture; surface water abstractions for public water supply; burning down; Canalisation & water deviation;		
<b>K Natural biotic and abiotic processes (without catastrophes)</b>	<b>7</b>	<b>0</b>
accumulation of organic material;		
<b>M Climate change</b>	<b>0</b>	<b>0</b>
<b>X No threats or pressures</b>	<b>43</b>	<b>NA</b>

### 2.3 Proposed Scope and Methodology

This section outlines the scope and methods of the County Monaghan Wetland Action as interpreted by the project team following discussions with Monaghan County Council Heritage Office. The main tasks and workflow involved with delivering the project are illustrated in Figure 2 and presented in more detail below. Some of these work areas have been completed, while others are scheduled for delivery during 2021.

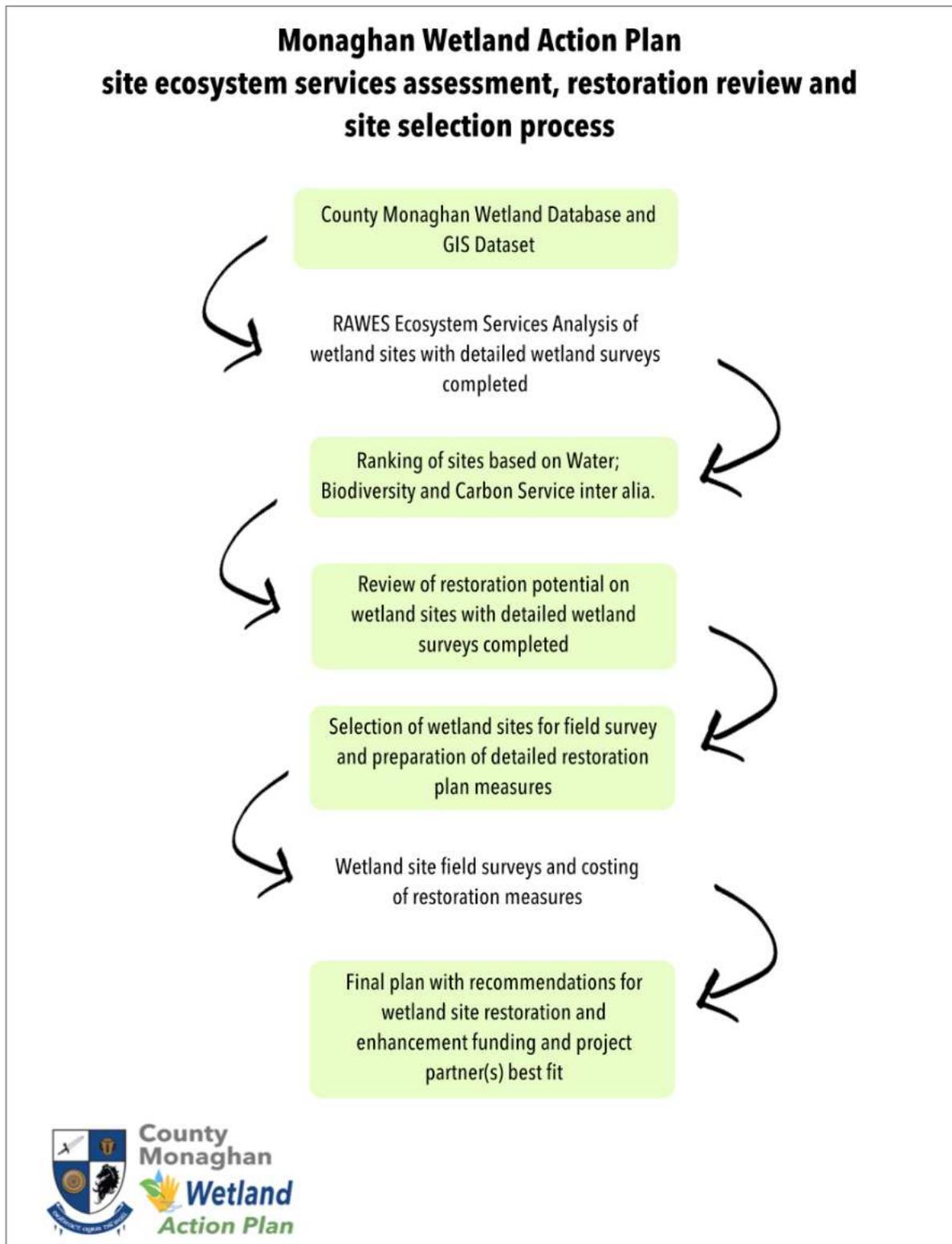


Figure 2: Proposed workflow in the development of the County Monaghan Wetland Action Plan.

### 2.3.1 Classification of wetland sites natural capital and ecosystem services

In County Monaghan 202 wetland sites have been subject to past detailed wetland surveys, where sites were visited in the field (Foss *et al.* 2007, 2008, 2011, 2012), habitat maps prepared, threats and impacts were noted and conservation ranking of site was undertaken (NRA 2009).

For these sites a review of the ecosystem service provided will be undertaken. This review will be undertaken using the Ramsar RAWES system (Ramsar 2020). RAWES has been designed to provide a comprehensive assessment of all the ecosystem services provided by a wetland. A checklist of ecosystem services grouped into four functional categories (Provisioning, Regulating, Cultural and Supporting), as defined in the Millennium Ecosystem Assessment, acts as an initial structured framework. The following four categories are used in the RAWES approach:

- **Provisioning services** comprise primarily materials that can be harvested or collected from wetlands and energy taken from ecosystems.
- **Regulating services** maintain desired environmental conditions for human society.
- **Cultural services** enrich human society.
- **Supporting services** are necessary for the maintenance of ecosystem integrity, functioning and resilience, and for the production of all other ecosystem services.

The review will be based on data held within the Monaghan Wetland database and GIS. Actions associated with the delivery of this aspect of the project are listed below.

Action Theme Code	Action	Status
A1	Create up to date Monaghan Wetland Site database of the current wetland resource	Completed
A2	Create up to date Monaghan Wetland GIS dataset of current wetland resource, publish as interactive web App for use by project team and partners / stakeholders.	Completed
A3	Create ecosystem services assessment database as adjunct to Wetland Database based on Ramsar RAWES scheme. Develop and adapt RAWES scoring system.	Completed
A4	Review sites with detailed wetland surveys in database (202 sites) to assign ecosystem services, assessing sites based on Ramsar RAWES scheme for wetlands	On-going
A5	Undertake GIS analysis of sites to assist with RAWES evaluation. Spatial analysis of various metrics will be undertaken to assist in determining importance of sites in relation to the delivery of different ecosystem services.	Pending
A6	Develop scheme to express success of restoration measures on greenhouse gas reduction and biodiversity enhancement	Pending

**County Monaghan Wetland Action Plan**

**Ecosystem Services Assessment Database - Summary Overview**

Site code: MN3  
 Site name: ESHBRACK BOG NHA SPA  
 Designated code: 001803 004187

Back To Main Database | Provisioning Assessment | Regulatory Assessment | Cultural Assessment | Supporting Assessment

**RAWES SCORING SYSTEM**

Score	Assessment of ecosystem services	Comments
++	Significant positive contribution	• Significant service provided by the wetland and a key element of its ecological character • Large number of beneficiaries (relative to wetland context)
+	Positive contribution	• One of many services provided by the wetland and an element of its ecological character • Limited number of beneficiaries (relative to wetland context)
0	Negligible contribution	• No obvious beneficiaries or benefits • Not an important known part of the wetland's ecological character
-	Negative contribution	• Limited number of dis-beneficiaries
--	Significant negative contribution	• Large number of dis-beneficiaries
?	Gaps in evidence	• Further evidence needs to be obtained

**MWAP Benefit scale**

- 0 Negligible benefit
- + 1-100 people benefit
- ++ Significant service and/or >100 people benefit
- 1-100 people receive dis-benefit
- Significant and/or >100 people receive dis-benefit
- ? Lack of information/evidence

**Survey Site Photograph 1**

ESHBRACK BOG NHA SPA  
 MN3  
 Total Site Benefits as score: 16.0

**SUMMARY OVERVIEW**

Primary Wetland Habitat: Blanket Bog  
 Previous Site description: Slieve Beagh SPA incorporates the Eshbrack Bog NHA.  
 Monaghan Fen Survey Description: General (adapted from NHA description): Eshbrack Bog NHA is an extensive area of upland blanket bog located about 8 km north-west of Scotstown, Co. Monaghan. Although large parts of the site have been affected by hand cutting and mechanical peat extraction, much of the cover areas are now regenerating with peat forming communities. The intact blanket bog areas feature hummock/hollow complexes and bushed slopes. The wide range of associated habitats, which include upland grassland on peaty soil, heath, reed swamp, freshwater marsh, scrub and wet broadleaved woodland, add considerably to the conservation value of the site. The occurrence of Cranberry (*Vaccinium oxycoccos*), an uncommon species of blanket bog and of restricted distribution in the country, is also of note.

Importance Score	Describe benefit	Scale of benefits	Importance as score	Total Importance score
++	Water supply / Reservoir	Local <input checked="" type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International	1.0	16.0
+	Rough grazing	Local <input checked="" type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International	0.5	
+	Turf cutting	Local <input checked="" type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International	0.5	
+	Forestry (only small areas inside NHA)	Local <input checked="" type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International	0.5	
?		Local <input type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International		
?		Local <input type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International		
0		Local <input type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International	0.0	
0		Local <input type="checkbox"/> County <input type="checkbox"/> National <input type="checkbox"/> International	0.0	

Figure 3: User Interface of the Ecosystem Services Assessment Database. This database has been designed to enable all 202 sites to be assessed in relation to wetland ecosystem services using a scoring system adapted from RAWES.

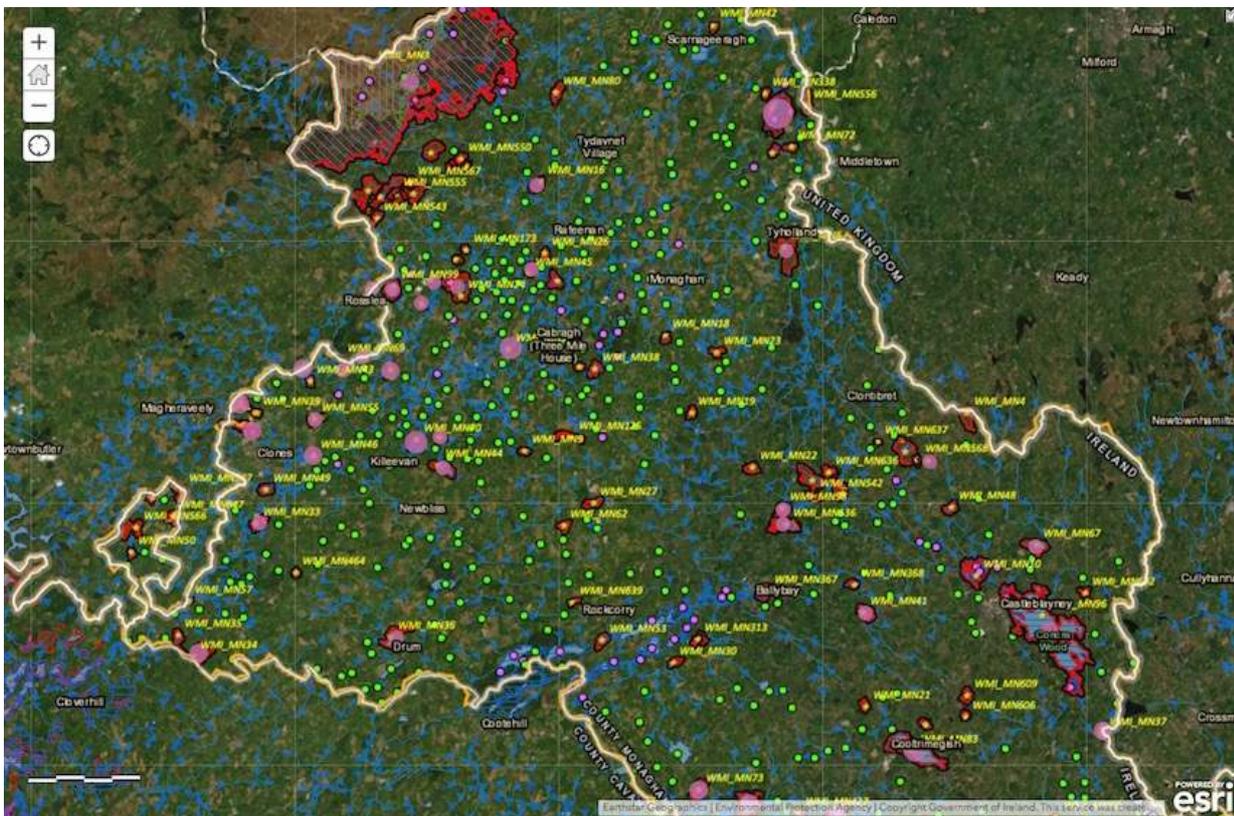


Figure 4: County Monaghan Wetland Action Plan GIS developed as part of the site assessment process.

### 2.3.2 Restoration potential and wetland action measures

Based on the 202 wetland sites that have been subject to past detailed wetland surveys in County Monaghan, assess the restoration potential of these sites and develop a wetland site decision tool to rank and select sites in terms of priority in relation to future management and restoration. Actions associated with the delivery of this aspect of the project are listed below.

Action Theme Code	Action	Status
B1	Develop decision tool / scheme to identify priority wetland sites for restoration and management measures as part of MWAP	Pending
B2	Select priority wetland sites for restoration and management measures as part of MWAP	Pending
B3	Identify sites which demonstrate good management practice and promote those sites	Pending

### 2.3.3 Habitat and species restoration / management surveys with costings

Based on the review of restoration potential on wetlands subject to past detailed wetland surveys, select a sub-set of sites for detailed field survey and the preparation of restoration plans. Develop a costing scheme for restoration and enhancement measures on wetlands selected for action under the MWAP. Actions associated with the delivery of this aspect of the project are listed below.

Action Theme Code	Action	Status
C1	Develop costing table for wetland restoration and management measures.	Pending
C2	Undertake field survey of sites selected for wetland restoration and management measures, and produce detailed rehabilitation plan with costings	Pending
C3	Match sites selected for wetland restoration and management measures, with possible project partners	Pending

### 2.3.4 Agri-environmental measures

Agriculture is the most widespread landuse throughout County Monaghan. Many wetland areas in county Monaghan are in the ownership of farmers, and in many cases are used for agricultural activities. To date agricultural policy through CAP has not adequately incentivised farmers to maintain and / or enhance wetland habitats for the delivery of ecosystem services. Past agri-environmental schemes operating in Monaghan include REPS and more recently GLAS. These schemes have had very limited outcomes in relation to the conservation or enhancement of wetland or other semi-natural habitats. Recent locally adapted results-based schemes have been successfully implemented with local targets as part of the Department of Agriculture, Food, and the Marine (DAFM) EIP initiative. The development of such a scheme for the wetland landscape of Monaghan should be explored. Such a programme should be locally adapted to target wetland habitats and associated species and could also include the cultural heritage. Such a Programme would reward farmers by the provision of an additional market for the provision of public goods (*i.e.* ecosystem services). Actions associated with the delivery of this aspect of the project are listed below.

Action Theme Code	Action	Status
D1	Consultation with stakeholders on the development of an agri-environmental programme.	Pending
D2	Identify potential project partners to develop a proposal for next EIP call to pilot a locally adapted results-based programme suitable to the drumlin / wetland landscape and the farming enterprises in the area. Develop a high level proposal for further development by a project team.	Pending

### 2.3.5 Policy and legislation actions

Widespread awareness and support for the MWAP at county level is essential if the long term goals of wetland protection and for the future benefits and services that these areas provide are to be maintained and enhanced. Support for the plan must be encouraged and fostered at all levels with County Monaghan, both among the general public and within the planning process. Actions associated with the delivery of this aspect of the project are listed below.

Action Theme Code	Action	Status
E1	Develop and promote awareness campaign to ensure political and public buy in for wetland restoration measures	Pending
E2	Through the planning process, ensure developments in sensitive locations are compatible with protection of wetland as set out in the MWAP.	On-going
E3	Ensure that the EIA Regulations are implemented on all wetlands of high conservation value in County Monaghan.	On-going

### 2.3.6 Site designation actions

To ensure the successful implementation of the MWAP, and enhance the access of groups undertaking restoration measures to funding on selected wetland sites, the conservation status of these wetlands should be acknowledged and supported through the designation of such sites at a county and national level. Actions associated with the delivery of this aspect of the project are listed below.

Action Theme Code	Action	Status
F1	Obtain support of NPWS for completion of state designation process on wetland sites ranked as of national conservation value during previous wetland surveys.	Pending
F2	Ensure that sites identified as of high value in the MWAP are identified in future Monaghan County Development Plans.	Pending

### 2.3.7 Cross border co-operation and shared actions

To ensure successful implementation of the MWAP measures on cross border sites, between Northern Ireland and the Republic of Ireland, and enhance the access of groups undertaking restoration measures to funding on these wetland sites, the conservation status of these wetlands should be harmonized across the international border. Actions associated with the delivery of this aspect of the project are listed below.

Action Theme Code	Action	Status
G1	For trans boundary wetland sites, ensure that conservation designations are harmonised by NPWS and DOE NI across the border	Pending
G2	Should cross border wetland sites be selected for MWAP actions, hold meeting with key NI partners to co-ordinate restoration and enhancement measures	Pending

### 2.3.8 Co-operation with partner organisations and communities

To achieve the sustainable management or improvement in habitat quality in a given wetland as part of the MWAP, a common understanding, and sometimes an agreement, is needed between the various managers, owners, occupiers and others whose activities link to, or are affected by the wetland.

Action Theme Code	Action	Status
H1	Hold consultation meetings and online for a with key stakeholders identified as possible partners and beneficiaries of the wetland resource in County Monaghan	Pending
H2	Once site selection has been completed for MWAP actions hold meeting with potential key partners and community groups	Pending
H3	Compile an index of information sources and guidance on good management practices for rivers, streams and wetlands and associated priority species	Pending

### 2.3.9 Public participation and capacity building actions

Community awareness of all the people or organizations involved with a wetland site will enhance a collective commitment to act together to conserve the wetland. Stakeholder empowerment and engagement by owners, farmers, neighbours and local groups should be involved in the wetland restoration and management process within the MWAP.

Action Theme Code	Action	Status
J1	Create online public web application to display and share information on wetlands in County Monaghan (see <a href="http://bit.ly/MonaghanWAP">bit.ly/MonaghanWAP</a> )	Completed
J2	Promote the importance of wetlands, their associated species and threats to them. Communicate with and provide information to key sectors including statutory agencies, NGOs, landowners and managers, schools, community groups and members of the public through media articles, open days, walks, interpretation and events	On-going
J3	Create citizen science app to record site impacts and activities on wetlands	Under consideration

Action Theme Code	Action	Status
J34	Create online public web app to showcase MWAP site restoration projects	Pending
J4	Run public awareness campaigns with interested parties to ensure public buy in for wetland restoration measures and ecosystem benefits provided	Pending
J5	Maintain register of MWAP potential project partners; restoration projects and interest groups in County Monaghan	Created; On-going update
J6	Promote the recreational value of Monaghan wetlands through “Wetlands to Visit in County Monaghan” on-line app. <a href="http://bit.ly/MonaghanWetlands">http://bit.ly/MonaghanWetlands</a>	Created; On-going promotion

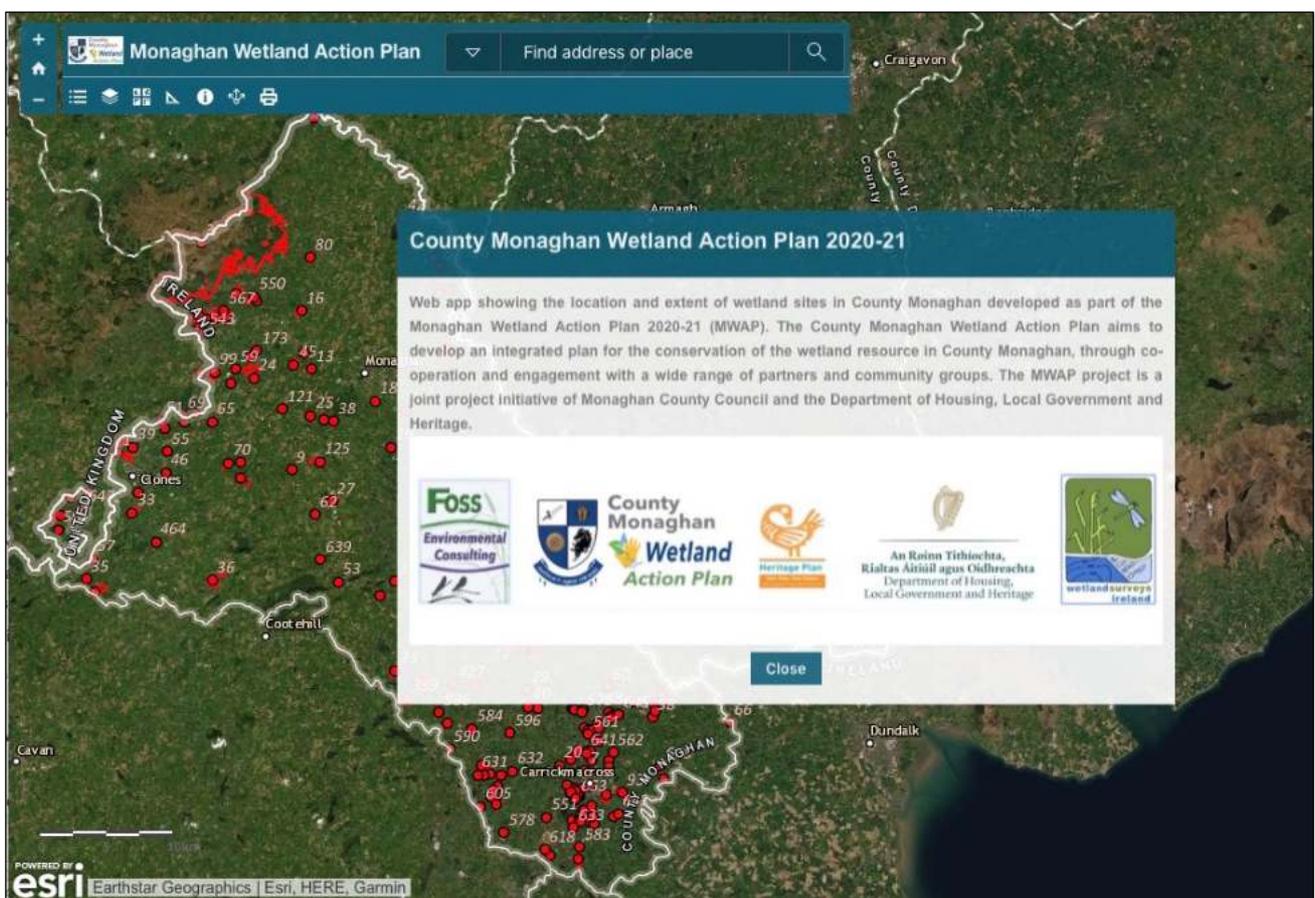


Figure 5: County Monaghan Wetland Action Plan on-line public web application developed to allow sharing of project locations and project aims (Link: [bit.ly/MonaghanWAP](http://bit.ly/MonaghanWAP)).

### 2.3.10 Future plans: research, monitoring and funding requirements

To ensure the successful implementation and on-going development of the MWAP a number of measures are proposed which will be required to enhance knowledge of the wetland resources in County Monaghan; monitor the success of the plans and measures implemented as part of the MWAP; and ensure funding for future restoration measures proposed under the MWAP.

Action Theme Code	Action	Status
<b>Research</b>		
KR1	Produce a survey strategy to complete detailed wetland surveys of sites in County Monaghan which have not been surveyed to date so as to obtain information on full extent of county wetland resource	Pending
KR2	Continue the process of management plan research of wetland sites in County Monaghan	Pending
KR3	Encourage surveys of associated species found on wetlands and research into the management requirements of key species	Pending
<b>Monitoring</b>		
KM1	Design and implement a monitoring scheme to assess favourable condition of wetlands included in sites earmarked for action in the MWAP	Pending
KM2	Research funding sources to allow monitoring of the success and efficacy of wetland action plan restoration measures on wetlands	Pending
KM3	Research greenhouse gas loss figures for various wetland types across the spectrum of intact to heavily impacted sites	Pending
<b>Funding</b>		
KF1	Research funding sources to complete wetland surveys of 'unsurveyed' wetland resource in County Monaghan	Pending
KF2	Research funding sources for wetland restoration and enhancement measure under MWAP on both state designated and non-designated sites	Pending
KF3	Investigate the potential for carbon credit scheme to fund wetland restoration measures on wetlands	Pending
KF4	Create MWAP Supporter groups and potential sponsors directory database and update during course of project	Created; on-going update
KF5	Research resources for on-going programme of wetland habitat assessment and evaluation	Pending

#### 2.4 Project timetable and schedule

The MWAP project commenced on 1 October 2020 and is due to be completed by November 2021. A provisional timetable for the project is presented below.

Month	Key Research & Action Plan Targets	Stakeholder & Community Communication and Consultation	MWAP Project Funding Sources
<b>October 2020</b>	Monaghan Site database analysis (Impacts & Threats); GIS setup; Scope and Methodology Report preparation;	Project start-up; Consultation with Monaghan County Council Heritage Officer; Project scope discussions with Key Project partners	
November	Wetland web app creation and online publication; Scope and Methodology Report preparation;	Consultation with Key Project partners re scope methodology for MWAP	

<b>Month</b>	<b>Key Research &amp; Action Plan Targets</b>	<b>Stakeholder &amp; Community Communication and Consultation</b>	<b>MWAP Project Funding Sources</b>
December	Scope and Methodology Report delivery; Wetland sites ecosystem services analysis;	Consultation with Key Project partners re scope methodology for MWAP; PR	
<b>January 2021</b>	Wetland sites ecosystem services analysis;	On-line consultation workshop with key stakeholders to outline draft plan and seek submissions/support	On-going research on potential funding sources
February	Wetland sites ecosystem services analysis; Establish criteria for assessment of sites using ecosystem services framework and identify key players required to deliver actions	On-going consultation with key stakeholders	On-going research on potential funding sources
March	Selection of sites for actions; Establish criteria for assessment of sites using ecosystem services framework and identify key players required to deliver actions	On-going consultation with key stakeholders; Community announcement of MWAP project seeking submissions; PR	On-going research on potential funding sources
April	Selection of sites for actions; Costing of site actions;	On-going Community consultation; Launch of citizen science app; PR	On-going research on potential funding sources
May	Survey of sites for actions; Costing site actions;	On-going Community engagement	On-going research on potential funding sources
June	Survey of sites for actions; Costing site actions;	On-going Community engagement; Demonstration site public open day	On-going research on potential funding sources
July	MWAP Final data analysis and synthesis	On-going Community engagement	On-going research on potential funding sources
August	Preparation of draft final MWAP report;	Community engagement and capacity building during Heritage Week event;	On-going research on potential funding sources
September	Submission of draft final MWAP report for review;		
October	Delivery of MWAP final report	Launch of Count Monaghan Wetland Action Plan; PR	
November	Delivery of MWAP Database and GIS		

## 2.5 Proposed Monaghan Wetland Action Plan project deliverables

A series of deliverables will be produced from the County Monaghan Wetland Action Plan, which are presented under three main headings: wetland resource identification and action measures, public awareness and engagement and project funding sources. These deliverables are detailed below.

Theme	Deliverable Code	Deliverable
<b>Wetland Resources Identification and Action Measures</b>		
Wetland Action Plan Measures	AD1	Final Report “Monaghan Wetland Action Plan 2021” with ecosystem service analysis; costing of restoration measures, identification of wetland sites for actions, community engagement plan and potential sponsor and funding sources
Monaghan Wetland Resource; Ecosystem Services; MWAP site selection	AD2	Revised County Monaghan Wetland database and GIS with MWAP wetland site analysis
Professional Engagement	AD3	Technical workshops to allow input and review of MWAP by key project stakeholders and agencies
Wetland Action Plan Measures	AD3	Detailed wetland survey of sites for implementation of MWAP measures
<b>Public Awareness and Engagement</b>		
Public Awareness of Monaghan Wetland Resource	AD4	County Monaghan Wetland Sites to Visit on-line story map promotion
Public Awareness of Monaghan Wetland Resource	AD5	County Monaghan Wetlands on-line web application
Public Engagement	AD6	Citizen Science Wetland app allowing community reporting of issues and wetland projects
Public Engagement	AD7	Community workshops to allow input and review of MWAP
Press and media campaign	AD8	Public announcement of project commencement
Press and media campaign	AD9	Public announcement of project completion and launch of MWAP
<b>Project Funding Sources</b>		
Supporters & Funding source	AD10	MWAP Contacts, Supporter Groups and Sponsors Directory database
Funding source	AD11	Research into funding sources including possible EIP and LIFE applications

### 3 Monaghan Wetland Action Plan Partners



Monaghan is well served by local heritage groups, which form an important part of the appreciation of, and protection of heritage in the county. Many of these groups already appreciate the intrinsic value of Monaghan's natural wetland heritage or biodiversity and the services such areas provide to the people of Monaghan, by providing water filtration (through wetlands), buffering of floods (floodplains along rivers, and wetlands acting as sponges and stores), soil fertility, and resources for angling and tourism. Wetlands also contribute to the landscape character of the county.

These various heritage groups have been involved in a range of heritage projects which have already enhanced the value of such areas through the initiatives included within the County Monaghan Heritage Plan (MCC 2006 & 2012).

The County Monaghan Wetland Action Plan will aim to capitalize and engage with this network of support to further the aims of securing funds to restore wetlands, undertake enhancement and management measures, develop and raise the understanding of wetland values at the community level, for wetlands throughout the county.

#### Programme Working Group

- Monaghan County Council, Heritage Office
- National Parks & Wildlife Service, Department of Culture, Heritage and the Gaeltacht
- Monaghan Heritage Forum

#### Potential MWAP Operational Partners, Supporters and possible Funding Sources

- An Taisce
- BirdWatch Ireland
- Border Minority Group
- Castleblayney Community and Enterprise Centre
- Cavan Monaghan Rural Development
- Clogher Historical Society
- Clontibret Development Association
- Clontibret Ramblers Heritage Group
- Coillte
- Collaborative Action Natura Network (CANN)
- Community Wetlands Forum
- Corduff / Raferagh Heritage Group
- County Monaghan Community Forum
- County Monaghan Regional Game Council
- Dartrey Heritage Association
- Department of Agriculture, Forestry and the Marine
- Department of Communications, Climate Action and Environment
- Department of Agriculture, Environment and Rural Affairs NI
- Doohamlet Heritage Committee
- Drumlin CDP
- Eastern Regional Fisheries Board
- Emyvale River Citizen Science Awareness Project
- Environmental Protection Agency
- Farney Community Development Group
- Forest Service

- Hen Harrier EIP
- InCase
- Inland Fisheries Ireland
- Inland Waterways Ireland
- Invasive Species Ireland
- Irish Farmers Association
- Irish Men's Sheds Association
- Irish Peatland Conservation Council
- Irish Rural Link
- Killeevan Heritage Group
- Kilmore / Drumsnat Heritage Society
- Living Bog LIFE project
- Monaghan County Museum
- Monaghan County Council, Community and Enterprise
- Monaghan County Council, Environment Section
- Monaghan County Council, Planning Section
- Monaghan County Library
- Monaghan Tidy Towns Committee
- Monaghan Tourism
- Muckno Heritage Partnership
- National Biodiversity Centre - All-Ireland Pollinator Plan
- National Rural Network
- Northern Regional Fisheries Board
- Patrick Kavanagh Centre
- Sliabh Beagh Environmental Committee
- SOLAS
- Teagasc
- The Heritage Council
- Truagh Development Association Ltd. (Slieve Beagh)
- Tydavnet Tidy Towns
- Ulster Wildlife Trust
- Water and Communities Officers
- National Parks & Wildlife Service

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## Appendices

Appendix 1: List of wetland sites held in Monaghan Wetland database proposed for Ecosystem Services analysis.

**Appendix 1: List of wetland sites held in Monaghan Wetland database with detailed wetland survey information proposed for Ecosystem Services analysis.**

Site Code	Site Name	Designation	Designated Site Code	Centre Easting	Centre Northing
MN26	AGHABOY FEN cNHA	cNHA	002900	262612	335000
MN173	AGHABOY LAKE	Undesignated site		259200	335100
MN28	AGHACLOGHAN FEN cNHA	cNHA	002902	280180	308963
MN51	AGHAFIN LOUGH	Undesignated site, SMR		252257	329882
MN43	AGHAFIN LOUGH LITTLE	Undesignated site		252492	329288
MN527	AGHAVILLA SPRING	Undesignated site		284370	306850
MN528	AGHERAKELTAN	Undesignated site		259131	338738
MN30	AGHNAMULLEN FEN cNHA	cNHA	002904	268433	317194
MN32	ALLAGESH LOUGH pNHA	Undesignated site, pNHA	001780	258761	334698
MN35	ANNAGHEANE LOUGH pNHA	pNHA, cNHA	001836	246869	318110
MN44	ANNAGOSE LOUGH	Undesignated site, SMR		258100	325700
MN529	ANNAHAIA SPRING	Undesignated site		284220	307460
MN45	ANNYALTY LOUGHS	Undesignated site, SMR		261900	334100
MN37	ARDKIRK FEN	cNHA, SMR		287200	314400
MN584	ARDRAGH	Undesignated site		275410	307420
MN594	AUGHRIM BEG	Undesignated site		289703	309692
MN585	AUGHRIM MORE	Undesignated site		289327	309942
MN608	BALLINGARRY LOUGH	Undesignated site, SMR		289297	304925
MN340	BALLYLOUGHAN A	Undesignated site		283709	301100
MN341	BALLYLOUGHAN B	Undesignated site		283880	301329
MN342	BALLYLOUGHAN C	Undesignated site		284130	300750
MN615	BALLYLOUGHAN TURLOUGH D	Undesignated site		283411	300920
MN616	BALLYLOUGHAN TURLOUGH E	Undesignated site		283482	300848
MN617	BALLYLOUGHAN TURLOUGH F	Undesignated site		283522	300716
MN622	BALLYLOUGHAN TURLOUGH G	Undesignated site, SMR		283728	301549
MN621	BALLYLOUGHAN TURLOUGH H	Undesignated site		283594	301359
MN629	BALLYLOUGHAN TURLOUGH J	Undesignated site		284085	301019
MN427	BELLATRIN LOUGH	Undesignated site		274000	310700

Site Code	Site Name	Designation	Designated Site Code	Centre Easting	Centre Northing
MN46	BISHOPS LOUGH	Undesignated site, SMR		252667	326032
MN73	BLACK AND DERRYGOONY LOUGHS pNHA	pNHA, cNHA, ASI, SMR	001596	269671	311639
MN125	BLACKRAW AND GREAGH LOUGHS	Undesignated site		263900	326979
MN40	BOCKS UPPER	Undesignated site		279455	309116
MN580	CARGAGHLISNANARNEY	Undesignated site		288763	309519
MN47	CARGAGHMORE FEN	Undesignated site, SMR		273600	307800
MN531	CARNQUILL BOG	Undesignated site		257618	339296
MN596	CARRICKARTAGH	Undesignated site		278201	307172
MN48	CARRICKASLANE LOUGH AND MULLAGHDUFF LAKE	Undesignated site		280469	324196
MN61	CARRICKMORE	Undesignated site, SMR		253922	329758
MN532	CASHLAN EAST SPRING	Undesignated site		282730	309040
MN533	CASHLAN EAST SPRING 2	Undesignated site		282820	309040
MN534	CASHLAN EAST SPRING 3	Undesignated site		282820	309020
MN411	CLARDERRY	Undesignated site		275700	324700
MN588	CLOGHOGE AND TIEVADINNA	Undesignated site		288813	309016
MN641	CLOGHVALLY	Undesignated site		283844	305776
MN535	CLOGHVALLY LOWER SPRING	Undesignated site		283870	305940
MN647	CLONKEELAN BOG	Undesignated site		246610	323320
MN49	CLONKEEN LOUGH cNHA	cNHA	002841	250637	324524
MN50	CLONOONY LOUGH	Undesignated site		244785	321737
MN631	COMERTAGH	Undesignated site, SMR		275835	304018
MN604	COOLCAIR LOUGH	Undesignated site, SMR		287110	309655
MN27	CORAVILLA / RAKEEN FEN cNHA	cNHA	002901	264877	324103
MN590	CORCREEGHAGH	Undesignated site		273753	305896
MN98	CORDOO LOUGH pNHA	pNHA, cNHA, ASI, SMR	001268	273125	324022
MN536	CORFINLOUGH BOG	Undesignated site, SMR		273293	323311
MN52	CORLEA	Undesignated site		277200	302200
MN537	CORLEA SPRING	Undesignated site		282910	308960
MN538	CORLECK SPRING	Undesignated site		283450	308930
MN539	CORLECK SPRING 2	Undesignated site		283570	308940
MN22	CORLONGFORD FEN cNHA	cNHA	002896	271783	325791

Site Code	Site Name	Designation	Designated Site Code	Centre Easting	Centre Northing
MN541	CORNACREEVE (ED SHESKIN) BOG	Undesignated site		254961	336747
MN38	CORNAGLARE LOUGH	Undesignated site		264860	329990
MN630	CORNALARAGH WOOD	Undesignated site		276298	304010
MN542	CORNANAGH	Undesignated site		274424	324623
MN591	CORNLARAGH NORTH	Undesignated site		277626	303974
MN606	CORRAVOO	Undesignated site		281238	314997
MN53	CORRAVOO LOUGH	Undesignated site		265356	318132
MN543	CORRINSHIGO (ED CLONES)	Undesignated site		255306	336412
MN54	CORVAGHAN	Undesignated site		245700	324100
MN55	CREEVAGHY LOUGH pNHA	pNHA, cNHA, SMR	001599	252697	327618
MN620	CREEVY (SWINBURN)	Undesignated site		284129	305930
MN41	CRINKILL LOUGH	Undesignated site, SMR		276700	319500
MN31	CRUMLIN LOUGH	Undesignated site		264195	330060
MN544	CUMMOGE WELL	Undesignated site		285510	305210
MN313	CUMRY LOUGH	Undesignated site		269500	318242
MN545	DERRYARRILLY BOG	Undesignated site		274380	325270
MN546	DERRYARRIT BOG	Undesignated site		256868	337534
MN547	DERRYBEG BOG (MONAGHAN)	Undesignated site		246983	324466
MN550	DERRYNAGAD	Undesignated site		258935	339072
MN577	DOAGH	Undesignated site		277357	303245
MN628	DONAGHMOYNE FEN	Undesignated site		284714	307643
MN36	DRUM LOUGH	Undesignated site, SMR		256130	318133
MN602	DRUMAKILL	Undesignated site		286342	320526
MN89	DRUMAKILL LOUGH (LOUGH CLARE) pNHA	pNHA, cNHA, ASI	001600	286500	320200
MN57	DRUMAVEALE LOUGH (MONAGHAN)	Undesignated site		247300	319600
MN34	DRUMCOR LOUGH pNHA	pNHA, cNHA, SMR	001841	247461	317205
MN578	DRUMERLOUGH BEG	Undesignated site		277877	299769
MN4	DRUMGALLAN BOG cNHA (MONAGHAN)	cNHA	002732	281079	328323
MN58	DRUMGANNY LOUGH	Undesignated site		288700	308500
MN587	DRUMGOAN FEN	Undesignated site		282452	303355
MN59	DRUMGOAST LOUGH	Undesignated site, SMR		257672	333752

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MN551	DRUMGOOSAT SPRING	Undesignated site		280980	300940
MN60	DRUMHARRIF LOUGH	Undesignated site		285300	310700
MN618	DRUMMOND CROSSROADS	Undesignated site		280888	298544
MN639	DRUMMULLA	Undesignated site		264029	319778
MN121	DRUMSNAT LOUGH	Undesignated site, SMR		261100	330800
MN29	DUNAREE FEN cNHA	cNHA	002903	279388	310382
MN601	DUNELTY	Undesignated site		289614	303928
MN597	ENAGH (FARNEY BY) FEN	Undesignated site		281307	298147
MN3	ESHBRAK BOG NHA SPA	NHA, cSPA, ASI	001603 004167	255000	343000
MN62	FALTAGH	Undesignated site		263600	323100
MN552	GARRIFLY SPRING	Undesignated site		285570	308520
MN637	GLASDRUMMAN EAST	Undesignated site		277207	327008
MN338	GLASLOUGH CONSTRUCTED WETLANDS	Undesignated site		272074	342102
MN82	GLASLOUGH LAKE pNHA	pNHA, cNHA, ASI, SMR	000559	272400	341500
MN554	GOBBAGWELL SPRING	Undesignated site		284190	305240
MN24	GRAFFAGH AND CORINSHIGO FEN cNHA	cNHA, SMR	002898	259015	333070
MN23	GREAGHGLAS FEN cNHA	cNHA	002897	270142	330768
MN581	GREAGHLONE	Undesignated site		276899	302401
MN592	GREAGHLONE NORTH	Undesignated site		277038	302952
MN469	HALF MOON (BALLYLOUGHAN)	Undesignated site		284100	301340
MN99	KILCORRAN LOUGH pNHA	pNHA, cNHA, SMR	001838	256100	333500
MN80	KILLY LOUGH	Undesignated site		263000	342000
MN63	KILLYBOLEY LOUGH	Undesignated site		272423	339515
MN42	KILLYCOOLY LOUGH	Undesignated site		269765	345042
MN583	KILLYGALLY FEN	Undesignated site		283466	298801
MN17	KILLYHOMAN MARSH pNHA	pNHA, cNHA	001782	263149	352300
MN5	KILLYNEILL FEN cNHA	cNHA, SMR	002755	273000	335400
MN12	KILLYVILLY LOUGH pNHA (MONAGHAN)	pNHA, cNHA, SMR	001839	255100	333400
MN344	KILMACTRASNA A	Undesignated site		283369	302620
MN470	KILMACTRASNA B	Undesignated site		283330	302569
MN619	KILMACTRASNA LOUGH	Undesignated site		283551	303164

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MN625	KILMACTRASNA TURLOUGH G	Undesignated site		283034	303128
MN626	KILMACTRASNA TURLOUGH H	Undesignated site		283251	302797
MN627	KILMACTRASNA TURLOUGH J	Undesignated site		283138	302963
MN264	KILMORE LAKE	Undesignated site		255466	337365
MN555	KILMORE WEST BOG	Undesignated site		256155	337487
MN599	KILMURRY	Undesignated site		289288	310237
MN25	KILNACLAY FEN cNHA	cNHA	002899	263208	330354
MN1	KILROOSKY LOUGH CLUSTER SAC	SAC, cNHA, SMR	001786	249083	327440
MN556	KILVEY BOG (MONAGHAN)	Undesignated site		273861	341593
MN609	KNOCKAVOLIS	Undesignated site		281285	315960
MN600	LAGAN LOUGH	Undesignated site		279490	314638
MN557	LARAGH SPRING	Undesignated site		283690	307660
MN558	LARAGH SPRING 2	Undesignated site		283880	307460
MN559	LARAGH SPRING 3	Undesignated site		284160	307420
MN589	LEGGHIMORE FEN	Undesignated site		282697	305262
MN560	LENNAGHT BOG	Undesignated site		254892	337639
MN642	LEONSGRAVE	Undesignated site		284393	301107
MN636	LETTERBANE	Undesignated site		275095	325602
MN33	LISABUCK LOUGH pNHA	pNHA, cNHA, SMR	001835	250206	323036
MN11	LISARILLY BOG pNHA	pNHA, cNHA, SMR	001781	258146	326900
MN561	LISCALL SPRING	Undesignated site		283970	307180
MN595	LISDRUMTURK	Undesignated site, SMR		276778	304052
MN339	LISINISKY MARSH cNHA	cNHA	002911	270600	309600
MN6	LISLANNAN BOG pNHA (MONAGHAN)	pNHA, cNHA, SMR	001840	254785	330363
MN19	LISNALEE FEN cNHA	cNHA	002893	269090	328133
MN562	LONGFIELD OTRA SPRING	Undesignated site		285800	305870
MN64	LOUGH APHUCA	Undesignated site, SMR		283100	305900
MN83	LOUGH EGISH pNHA	pNHA, cNHA, cSPA, ASI, SMR	001605	279000	313507
MN367	LOUGH MAJOR	Undesignated site		272500	320400
MN85	LOUGH NAGLACK pNHA	pNHA, cNHA, ASI, SMR	000561	285364	302672
MN76	LOUGH NAHINCH	Undesignated site		278406	326571

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MN65	LOUGH OONEY	Undesignated site, SMR		255975	329825
MN10	LOUGH SMILEY pNHA	pNHA, cNHA, ASI	001607	281609	321210
MN74	LOUGHBAWN HOUSE LOUGHS pNHA	pNHA, cNHA, ASI, SMR	001595	271773	310779
MN644	MAGHERABOY	Undesignated site		284284	301884
MN564	MAGHEROSS SPRING	Undesignated site		284150	303310
MN93	MONALTY LOUGH pNHA	pNHA, cNHA, ASI, WS, SMR	001608	286508	302915
MN645	MONANAGIRR	Undesignated site		286191	308656
MN39	MORGANS LOUGH	Undesignated site		250178	327887
MN66	MOUNT MATTHEWS (MONAGHAN)	Undesignated site, SMR		294301	308272
MN8	MOYLAN LOUGH cNHA	cNHA, SMR	002531	285429	308863
MN96	MUCKNO LAKE pNHA	pNHA, cNHA, ASI, SMR	000563	284500	319500
MN67	MUCKNO MILL LOUGH	Undesignated site, SMR		284200	322600
MN643	MULLAGHMEEN	Undesignated site		286249	301306
MN16	MULLAGHMORE LAKE (SOUTH) pNHA	pNHA, cNHA, SMR	001785	262400	338100
MN14	MULLAGLASSAN LOUGH pNHA	pNHA, cNHA, SMR	001837	257300	332700
MN7	NAFARTY FEN pNHA	pNHA, cNHA	002077	283701	304473
MN579	NURE BEG FEN	Undesignated site		282829	300768
MN633	NURE BEG LAKE, FEN AND MARSH	Undesignated site		282974	300239
MN298	RAFERAGH FEN	Undesignated site, SMR		276100	304700
MN9	RAFINNY LOUGH pNHA	pNHA, cNHA	001606	261861	326346
MN68	RAHANS LOUGH cNHA (MONAGHAN)	cNHA, SMR	002844	283330	297904
MN69	RATHKEEVAN LOUGH (MONAGHAN)	Undesignated site		253811	330235
MN376	REILLYS LOUGH	Undesignated site		285933	301092
MN70	ROOSKY LOUGH	Undesignated site, SMR		257163	326786
MN566	RORANNA BOG	Undesignated site		244999	322810
MN13	ROSEFIELD LAKE AND WOODLAND pNHA	pNHA, cNHA	001784	263184	333779
MN582	SCALKILL EAST	Undesignated site		277219	301862
MN605	SCALKILL WEST	Undesignated site		276101	301678
MN586	SHANKILL LOUGH (SHANTONAGH)	Undesignated site		272925	308606
MN71	SHANTONAGH LOUGH	Undesignated site, SMR		275694	310649
MN18	SHEETRIM FEN cNHA	cNHA	002892	267900	331500

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MN650	SHIRLEY ESTATE DOLIN	Undesignated site, SMR		283003	302323
MN653	SHIRLEY ESTATE FARM POND	Undesignated site, SMR		283121	302361
MN651	SHIRLEY ESTATE TURLOUGH	Undesignated site		282728	302783
MN652	SHIRLEY ESTATE WET WOODLAND	Undesignated site		282787	302835
MN72	SILLIS LOUGH	Undesignated site		273237	339807
MN567	SKEATRY BOG	Undesignated site		256744	338019
MN464	SKERRICK EAST RESERVOIR	Undesignated site		251961	320902
MN568	TASSAN GRASSLAND	Undesignated site		278962	326210
MN75	TASSAN LOUGH pNHA	pNHA, cNHA, ASI, SMR	001666	279406	326177
MN20	TIRAGARVAN FEN cNHA	cNHA	002894	281889	304850
MN632	TIRNADROLA	Undesignated site		278421	304344
MN570	TOBAR LASAIR SPRING	Undesignated site		284750	306660
MN572	TOBERHEALS SPRING	Undesignated site		285520	304790
MN573	TOBERNAGALLIAG SPRING	Undesignated site		283470	308780
MN574	TOBERNAMUCKY SPRING	Undesignated site		284490	300500
MN343	TONYELLIDA (DONAGHMORE)	Undesignated site		284600	307969
MN368	TONYSCALLON LOUGH	Undesignated site		276300	320700
MN21	TOSSY CROSS FEN cNHA	cNHA	002895	276900	315400
MN576	TULLYMACKILMARTIN SPRING	Undesignated site		285640	308380