

ACRES West Connacht

Northwest Connacht/South Mayo Connemara



**ACRES WEST
CONNACHT**

Local Action Plan

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Contents

ACRES West Connacht	1
Northwest Connacht/South Mayo Connemara	1
Local Action Plan.....	1
Abbreviations.....	6
List of Figures	7
List of Tables:	8
Executive Summary.....	10
CAP Strategic Plan 2023-2027.....	10
ACRES West Connacht Cooperation Project.....	10
Local Action Plan.....	12
Stakeholder Engagement.....	12
Outline of the Local Action Plan.....	13
1. Introduction	14
Overview of land management and farming in Ireland.....	14
Overview of Agri-Environmental schemes in Ireland	15
Agri-Climate Rural Environmental Scheme (ACRES).....	16
ACRES CP Results Based Payment.....	17
Objective of ACRES West Connacht Cooperation Project	18
ACRES Cooperation Project interaction with DAFM and other EIP schemes	19
2. Legacy, Culture and Land Management in West Connacht Cooperation Project zones.	20
Archaeology and Architectural Heritage and agri-environmental schemes.....	20
Commonages Management and Agri-environmental schemes.	21
Wildfires.....	23
Peat extraction and Turf cutting.....	24
Protection for Pollinators.....	25
Data Sources	25
3. Cooperation Project Area Background Information	26
North-western Connacht	26
Erris Northwest Mayo, ACRES West Connacht Cooperation Area	27
1. Bedrock Geology	27
2. Aquifers.....	28
3. Groundwater vulnerability.....	28
4. Soil.....	28
5. Corine land cover, Commonage and Agriculture land parcels	28
6. Socio-economic characteristics of farming in the CP area.....	29

7. SAC/SPA/NHA – review of Environmental Assets.....	36
8. Archaeology and Architectural Heritage.....	38
9. Hydrological Catchment Description	40
10. Priority Areas of Action and Blue Dot.....	41
Ox Mountain Northwest Mayo, ACRES West Connacht Cooperation Area.....	41
1. Bedrock	41
2. Aquifers.....	41
3. Groundwater vulnerability.....	41
4. Soil and texture	45
5. Corine land cover, Commonage and Agriculture land parcels	45
6. Socio-economic characteristics of farming in the CP area.....	45
7. SAC/SPA/NHA – review of Environmental Assets.....	46
8. Archaeological and Architectural Heritage.....	52
9. Hydrology.....	54
10. Priority Area of Action and Blue Dot.....	54
Northwest Connacht Achill and Nephin Cooperation Project.....	54
1. Bedrock	54
2. Aquifers.....	55
3. Ground water Vulnerability	55
4. Soil.....	59
5. Corine land cover, Commonage and Agriculture land parcels	59
6. Socio-economic characteristics of farming in the CP area.....	59
7. SAC/SPA/NHA – review of Environmental Assets.....	63
8. Archaeological and architectural heritage.....	65
9. Hydrology.....	67
10. Priority Area of Action and Blue Dot.....	67
South Mayo Connemara Cooperation	68
North Connemara and Erriff Cooperation Area.....	70
1. Bedrock	70
2. Aquifers.....	70
3. Groundwater vulnerability.....	70
4. Soil and sub soil.....	70
5. Corine land cover, Commonage and Agriculture land parcels	75
6. Socio-economic characteristics of farming in the CP area.....	75
7. SPA/SAC/NHA.....	79
8. Archaeology and Architectural Heritage.....	81

9.	Hydrology	83
10.	Priority Area of Action and Blue Dot.....	83
	Connemara Theas ACRES West Connacht Cooperation Area.....	84
1.	Bedrock Geology	84
2.	Aquifer	84
3.	Groundwater Vulnerability	84
4.	Soil.....	88
5.	Corine land cover, Commonage and Agriculture land parcels	88
6.	Socio-economic characteristics of farming in the CP area.....	88
7.	SAC/SPA/NHA.....	92
8.	Archaeology and Architectural Heritage.....	94
9.	Hydrology	96
10.	Priority Area of Action and Blue Dot.....	96
	Corrib and Mask CP encompasses the Corrib Catchment.	97
1.	Bedrock Geology	97
2.	Aquifer	97
3.	Groundwater Vulnerability	97
4.	Soil.....	97
5.	Corine land cover, Commonage and Agriculture land parcels	102
6.	Characteristics of farms Socio-economic.....	102
7.	SAC/SPA/NHA.....	105
8.	Archaeology	106
9.	Hydrology.....	109
10.	Blue dot/PAA.....	109
4.	Evaluation and Rational for Management.....	110
1.	Threats In the Erris CP.....	110
2.	Threats in Ox Mountain CP area	110
3.	Threats in Achill Nephin CP area.....	111
5.	Threats in the Conamara Theas CP area	111
6.	Threats in the Corrib Mask CP area.	112
5.	Management.....	112
	Archaeology	112
	Management requirement:	112
	Commonages Management.....	114
	Wildfires.....	114
	Peat extract and Turf Cutting.....	114

Invasive Species	114
Biodiversity and Pollinators	115
Breeding Wader	115
Corncrake	115
Grassland:	115
Invasive Species	115
Freshwater Habitats (Rivers and Lakes).....	115
Machair and Salt Marshes	116
6. West Connacht Project Action Plan:	116
Communication Plan.....	116
Targeting and screening NPI/LA.....	117
Monitoring	117
Monitoring undertaken through scorecards - Ongoing.....	117
WCCP additional programmes – Ongoing.	117
• Bursary Programme	117
• Work Placement students.....	117
• Continued contribution to Pearl Mussel monitoring, Great Yellow Bumble Bee, Machair, Corncrake Life and Wild Atlantic Nature.	117
Appendix I: WCCP Socio-economic characteristics.....	118
Appendix II Protection of Archaeological Sites.....	125
Appendix III list of SAC Annex I and II species.....	126
Appendix IV Birds.....	133
Appendix V Habitat	133
Appendix VI WCCP Bryophyta.....	133
Appendix VII WCCP Bee specie profile.....	133
Appendix VIII WCCP Butterfly specie profile	133
Appendix IX: List of NHA and designated sites present in the Erris ACRES Cooperation.	134
APPENDIX X - SCORECARDS	135
Acknowledgements.....	137
Reference	137

Abbreviations

Agricultural Sustainability support and advisory programme: ASSAP

Agri-Environment Cooperation Program

Basic Income Support for Sustainability SCHEME: BISS

Basic Payment Schemes: BPS

Co-corporation Project: CP

Common Agricultural Policy: CAP

Commonage Management Plan: CMP

Electoral Divisions: ED

European Agricultural Fund for Rural Development: EAFRD

Geographical Information Systems: GIS

Generic Land Management: GLAMS

Green Low-carbon Agri-environment Scheme: GLAS

Local Action Plan: LAP

National Parks and Wildlife Service: NPWS

Non-Productive Investment: NPI

Prioritised Action Frameworks: PFA

Result Based Payments: RBPs

River Basin Management Plan: RBMP

Special Area of Conservation: SAC

Special Protected Area: SPA

Surface water: River, lakes and streams

Water Framework Directive: WFD

List of Figures

Figure 1: Outline of agri-environmental schemes in Ireland	15
Figure 2: ACRES West Connacht Cooperation Project area.....	17
Figure 3: ACRES Co-operation results-based model.....	18
Figure 4: Map of Wild Nephin National Park, Ballycroy, Life and EIP projects in the WCCP.....	27
Figure 5: Bedrock geology within the Erris ACRES West Connacht Cooperation zone.....	30
Figure 6: Aquifer types present within the Erris ACRES West Connacht Cooperation zone.	31
Figure 7: Groundwater vulnerability within the Erris ACRES West Connacht Cooperation zone.	32
Figure 8: Soil within the Erris ACRES West Connacht Cooperation zone.....	33
Figure 9 : Corine within the Erris ACRES West Connacht Cooperation zone.....	34
Figure 10: Commonage, land parcels and landuse within the Erris ACRES West Connacht Cooperation zone. Other landuse denotes privately owned land.....	35
Figure 11: List of SAC, SPA, NHA and pNHA within the Erris ACRES West Connacht Cooperation zone.	37
Figure 12: Map of Archaeological and architectural heritage sites in the Erris ACRES West Connacht cooperation zone.	39
Figure 13: Bedrock geology within the Ox Mountain ACRES West Connacht Cooperation zone.	42
Figure 14: Aquifer description within the Ox Mountain ACRES West Connacht Cooperation zone. ...	43
Figure 15: Groundwater vulnerability within the Ox Mountain ACRES West Connacht Cooperation zone.....	44
Figure 16: Soil within the Ox Mountain ACRES West Connacht Cooperation zone	47
Figure 17: Soil texture within the Ox Mountain ACRES West Connacht Cooperation zone.....	48
Figure 18: Corine within the Ox Mountain ACRES West Connacht Cooperation zone.....	49
Figure 19: Commonage, land parcels and landuse within the Ox Mountain ACRES West Connacht Cooperation zone. Other landuse denotes privately owned land.....	50
Figure 20: Map of SAC, SPA, NHA and pNHA within the Ox Mountain ACRES West Connacht Cooperation area.	51
Figure 21: Map of Archaeological and architectural heritage sites in the Ox Mountain and Lough Conn ACRES West Connacht cooperation zone.	53
Figure 22: Bedrock geology within the Achill Nephin ACRES West Connacht Cooperation zone.	56
Figure 23: Aquifer within the Achill Nephin ACRES West Connacht Cooperation.....	57
Figure 24: Groundwater vulnerability within the Achill Nephin ACRES West Connacht Cooperation.	58
Figure 25: Soil within the Achill Nephin ACRES West Connacht Cooperation.....	60
Figure 26: Corine within the Achill Nephin ACRES West Connacht Cooperation.	61
Figure 27: Landuse within the Achill Nephin ACRES West Connacht Cooperation.	62
Figure 28: Map of SAC, SPA, NHA and pNHA within the Achill Nephin ACRES West Connacht Cooperation area.	64
Figure 29: Map of Archaeological and architectural heritage sites in the Achill Nephin ACRES West Connacht cooperation zone.....	66
Figure 30: Map of Life and EIP projects in the South Connemara ACRES West Connacht cooperation zone.....	69
Figure 31: Bedrock geology within the North Connemara Erriff ACRES West Connacht Cooperation zone.....	71
Figure 32: Aquifer within the North Connemara Erriff ACRES West Connacht Cooperation.	72
Figure 33: Groundwater Vulnerability within the North Connemara Erriff ACRES West Connacht Cooperation.	73
Figure 34: Soil within the North Connemara Erriff ACRES West Connacht Cooperation.	74

Figure 35: Corine within the North Connemara and Erriff ACRES West Connacht Cooperation.	77
Figure 36: Landuse within the North Connemara and Erriff ACRES West Connacht Cooperation.....	78
Figure 37: Map of SAC, SPA, NHA and pNHA within the North Connemara Erriff ACRES West Connacht Cooperation area.	80
Figure 38: Map of Archaeological and architectural heritage sites in the North Connemara and Erriff ACRES West Connacht cooperation zone.	82
Figure 39: Bedrock geology of Conamara Theas Cooperation Area	85
Figure 40: Aquifer within the North Conamara Theas ACRES West Connacht Cooperation.....	86
Figure 41: Groundwater Vulnerability within the Conamara Theas ACRES West Connacht Cooperation.	87
Figure 42: Soil within the Conamara Theas ACRES West Connacht Cooperation.	89
Figure 43: Corine land cover within the Conamara Theas ACRES West Connacht Cooperation.....	90
Figure 44: Landuse within the Conamara Theas ACRES West Connacht Cooperation.....	91
Figure 45: Map of SAC, SPA, NHA and pNHA within the Conamara Theas ACRES West Connacht Cooperation area.	94
Figure 46: Map of Archaeological and architectural heritage sites in the Conamara Theas ACRES West Connacht cooperation zone.....	95
Figure 47: Bedrock geology of the Corrib Mask ACRES West Connacht Cooperation.....	98
Figure 48: Aquifer description within the Corrib Mask ACRES West Connacht Cooperation.	99
Figure 49: Groundwater Vulnerability within the Corrib Mask ACRES West Connacht Cooperation.	100
Figure 50: Soil within the Corrib Mask ACRES West Connacht Cooperation.....	101
Figure 51: Corine within the Corrib and Mask ACRES West Connacht Cooperation.	103
Figure 52: Landuse within the Corrib and Mask ACRES West Connacht Cooperation.	104
Figure 53: Map of SAC, SPA, NHA and pNHA within the Corrib and Mask ACRES West Connacht Cooperation area.	107
Figure 54: Map of Archaeological and architectural heritage sites in the Corrib Mask ACRES West Connacht cooperation zone.....	108
List of Tables:	
Table 1: Description of categories of ACRES non-productive investment and landscape actions	18
Table 2: History of Commonages and Agri-environmental schemes.....	23
Table 3: National GIS datasets used in site description for the Local Action Plan report.	25
Table 4: List of habitats, flora, fauna and bird's species protected in Erris CP area under Natura 2000.	36
Table 5: Description of WFD Hydrological area in the ACRES West Connacht corporation project. ...	40
Table 6: List of waterbodies at risk of not achieving WFD good or high ecological status in Erris CP area.	41
Table 7: List of habitats, flora, fauna and bird's species protected in Ox Mountain CP area under Natura 2000.	46
Table 8: List of waterbodies at risk of not achieving WFD good or high ecological status in the Moy/Killala Catchment and in the Ox Mountain CP area.....	54
Table 9: List of habitats, flora, fauna and bird's species protected in Achill Nephin CP area under Natura 2000. A full list is presented in Appendix III.....	63
Table 10: List of waterbodies in the Achill Nephin CP at risk of not achieving WFD good or high ecological status in the Erriff-Clew Bay Catchment.....	67
Table 11: List of habitats, flora, fauna and bird's species protected in North Connemara and Erriff CP area under Natura 2000. A full list is presented in Appendix III.....	79
Table 12: List of waterbodies at risk of not achieving WFD good or high ecological status in the Erriff Clew Bay hydrological in the North Connemara and Erriff CP.....	83

Table 13: List of habitats, flora, fauna and bird’s species protected in Conamara Theas CP area under Natura 2000. A full list is presented in Appendix III..... 92

Table 14: List of waterbodies at risk of not achieving WFD good or high ecological status in the Galway Bay North Catchment..... 96

Table 15: List of habitats, flora, fauna and bird’s species protected in Conamara Theas CP area under Natura 2000. A full list is presented in Appendix 1..... 105

Table 16: List of waterbodies at risk of not achieving WFD good or high ecological status in the Corrib Catchment..... 109

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Executive Summary

CAP Strategic Plan 2023-2027

The CAP Strategic Plan defines the roadmap for the sustainable development of agriculture in Ireland, to continue to ensure food systems are fair, sustainable, healthy, and produced in an environmentally friendly manner, as well as ensuring a fair economic return for the primary producer. One objective of CAP Strategic Plan and the new Agri-environmental scheme (ACRES) is to contribute to the alignment of the objectives of the CAP strategic Plan with the Water Framework Directive, River Basin Management Plans, the National Biodiversity Action Plan, the Birds and Habitats Directives, and the Prioritised Action Framework for Natura areas.

ACRES West Connacht Cooperation Project.

The West Connacht Cooperation Project area encompasses two cooperation zones, northwest Mayo, and south Mayo/Connemara. In northwest Mayo the Cooperation zone covers up to 210,000 ha of farmland, the majority of which occurs in Co Mayo, with smaller areas in Co. Sligo, and Co. Roscommon. The mountain ranges of the CP area include, the Ox Mountains, Nephin and Nephin Beg Mountain range, Slievemore, Minaun, Croaghaun and Corraun hill in Achill. It extends from the western coastline of Clew Bay, Mulranny, and Achill Island, to the east as far as the shores of Lough Gara, and as far north of Erris and the Mullet Peninsula. The farmland habitats within these areas range from coastal dunes and grasslands to upland peatlands. The project area includes approximately 76,130 ha of commonage lands, the majority of which occurs in upland areas. Included within the project area are a number of offshore islands including Achill Island, Inishkea North and the three hundred and sixty-five islands of Clew Bay.

In south Mayo/Connemara, the Cooperation zone covers an area of 228,000 ha extending from Galway City in the southeast to Louisburgh in the north-west. The farmland habitats within these areas range from coastal dunes and grasslands to upland peatlands and heaths. Mountain ranges of the CP area include the Maumturks, the Twelve Bens, Mweelrae and Sheefry. The project area includes approximately 85,000ha of commonage and there are a number of offshore islands including Inisbofin, Inisturk and numerous islands off Clew Bay and the south Connemara coast. The lowlands in the eastern part of the Cooperation zone are surrounding Lough Corrib and Lough Mask represent some of the more agriculturally productive areas. The wider Cooperation area supports a wide range of habitats and species of high conservation concern including blanket bog, upland heaths and grasslands, coastal grasslands and dune systems, and a large number of good and high-status rivers and lakes.

The pressures associated with agriculture and land use varies according to the landscape in question and the type of farming being practiced. Those areas with high status water bodies, protected freshwater habitats and species are most sensitive to altered flow, nutrient, sediment and chemical run-off from the land. High stocking levels, inadequate protection of water bodies, land drainage, and excessive or inappropriate application of nutrients and chemical have been shown to contribute to the risk of deterioration of water quality and associated habitats. Upland habitats such as blanket bog, heath, and acid grasslands require sensitive management in relation to stocking densities to prevent the degradation the sensitive habitats and peat soils. In more remote locations, such as off-shore islands, abandonment has led to species poor scrub replacing species-rich coastal grasslands or heaths. Management of grazing and habitat improvement for waders and pollinators particularly on coastal dunes and machair are essential for these vulnerable and dynamic systems. Habitat loss and

disturbance due to land conversion or intensification is a pressure throughout much of the CP area. This has led to loss of valuable foraging habitat for species such as Corncrake and other bird species including breeding waders and Chough. Similarly, there has been conversion of heath and peatland areas to grassland in recent decades causing the loss of biodiversity, declined water quality, and negative climate impacts due to disturbance and drainage of peat soils. Additional pressures evident on peatland habitats include peat extraction, uncontrolled burning, over and under grazing on these sensitive habitats. The spread of non-native species, Rhododendron in particular, presents a major risk to biodiversity throughout much of this Cooperation Project area.

Farming is extensive in the WCCP region with cattle, sheep, and mixed livestock being the dominant farm types, with a large proportion of commonage farming in the region intertwined with a total of sixty-six Special Areas of Conservation and twenty-six areas of Special Protected Areas.

The Cooperation Project is an opportunity through the hybrid results-based model to address these various pressures across the area by incentivising better management of these habitats to deliver the conservation objectives of environmental assets. The local adaptation will be overseen and facilitated by the operation of the local team with expert knowledge to ensure that the correct measures are promoted to gain maximum environmental benefit and co-benefits. Learnings from various agri-environmental projects operating in the area (i.e., Curlew Conservation Programme, Pearl Mussel Project EIP, Wild Atlantic Nature LIFE IP, Corncrake / Traonach LIFE, LAWPRO and ASSAP) has help inform the design of the local adaptations required to meet the environmental needs and objectives of the area. Local partnerships between the CP Team and existing teams will ensure the CP will work in alignment and compliment the work of these projects. A review of the environmental needs and objectives of the area will be undertaken as part of developing the plan for each local area.

Local Action Plan

This document provides an outline of the Local Action Plan for ACRES West Connacht with a clear definition of ecological objectives based on robust ecological research, working directly with farmers and farm advisers in a locally led approach. This review includes assessment of various ecological and environmental datasets relevant to the CP area including; the Conservation Objectives of any Designated Sites (including Habitats Directive Article 17 and Birds Directive Article 12 reporting and monitoring surveys), EPA catchments data, Blue Dot and Priority Action Areas, objectives of the Water Framework Directive and River Basin Plans, and the Climate Action Plan. The advantages of a results-based approach is that monitoring is built into the farmland assessments (scorecard data) which are also used to determine payment levels. The outcome of the results-based payment will be used to help inform the content of individual farm sustainability plans, appropriate Non-Productive Investments (NPIs) suitable for different target areas, and priorities for landscape actions. With support from local farmers and farm advisers as well as expert the LAP targets are site specific across WCCP and include habitat or species specific surveys, hydrology, green-house gasses, air quality, nutrients and / or water quality. Where necessary we will involve external expertise to scope and undertake some of this monitoring relating to hydrology, peatland restoration, freshwater pearl mussel, and greenhouse gases in consultation with land owners and farm advisers.

Stakeholder Engagement

During the development of this Local Action Plan, regional consultation with local farmers, farming representative, farming bodies was sought during ACRES WCCP Farmer information meeting between November 2022 - May 2023. The main issues arising and discussed includes:

Northwest Mayo: Commonage grazing, commonage shareholder engagement with the scheme, turbary – peat extraction and turf cutting, burning on commonages, drainage - to prevent local football pitch from flooding, drainage - to prevent road flooding, council drainage inside commonage, dumping, removing forestry from SAC peatland, protection of sand dunes and enable fencing without affecting BISS payments, Gunnera (Clare Island and Achill), Rhododendron and Japanese knotweed management, legacy, tourism damaging sand dunes, build strictures on dunes, introduction of cattle to island, scoring land cut for silage, timing of land scoring, storage of silage bales in fields, land abandonment, Communicating methods with farmer and fencing, clarity on rewetting and rewilding?, food security, compensation for farming communities.

South Mayo/Connemara. Commonage management, turbary, burning on commonages, stonewall maintenance, Cattle access to lakes, Bracken removal, Methods of dealing with docks and thistles, Tourism and lack of wastewater capacity, feeding animals in the winter with ring feeders, additional help needed to communicate scheme requirements to the aging farming population in the region, control the spread of invasive species, plan for long term projects for commonage management, intensive farm plots wont score using the scorecard, dumping after campers in coastal areas, unleashed dogs, overgrazing issues on commonages outside farmer control, problem with mink which kill lambs and wildlife, requirement of avian and vermin control, problem with deer which eat grass and travel long distances, deer population expanding. Issues with bracken and bracken management – mechanical rolling is not possible in large areas of Conamara Theas, illegal dumping, problems with horse abandonment on commonage.

Expert advice, input and data were sought and provided from other key stakeholders in the region including farming representative (IFA, INHFA) , farming bodies and environmental NGOs,

Department of Agriculture, Food and the Marine (DAFM), Department of Housing, National Parks and Wildlife Service (NPWS) - Rangers and DCOs, Environmental Protection Agency (EPA), Biodiversity Ireland, Birdwatch Ireland, Local Authority Water Programme (LAWPRO), Teagasc and the Agricultural Sustainability support and advisory programme (ASSAP), Inland Fisheries Ireland (IFI), Office of Public Works (OPW), Bird Watch Ireland, Bat Conservation Ireland, The Barn Owl Project, Curlew EIP, Farming Rathcroghan EIP, Mayo, Galway, Sligo and Roscommon County Council (Environmental and Heritage, Fire sections), Irish Water, National Federation of Group Water Schemes (NFGWS), Udarus na Gealtacht, Mayo Dark Sky Park, Wild Atlantic Nature, Life on Machair EIP, Forum Connemara, Corncrake Life, the Great Yellow Bumble Bee EIP, Local Anglers and Mountaineering Ireland.

Opportunities to collaborate with all stakeholders include the provision of provide regulatory advice, consultation or AA screening, protection of water courses and establishment of buffer zones, continued protection of archaeology, protection of NATURA 2000 sites and Annex habitats, flora, fauna and bird species, support the protection of Dark Skys and nocturnal species.

Upon completion of the first draft of West Connacht Local Action plan and post the Department of Agriculture, Food and Marine review, it is our intention to seek and invited feedback from all our stakeholders. The WCCP Local Action Plan Steering Group to include individual's farmers and local communities' representatives as well as local representation from NPWS, DAFM, Department of Housing, Local Government and Heritage, Teagasc, ACA, IFI, IFA, INHFA, EPA, LAWPRO, County Councils, Marine Institute and any other interested body requestion to participate.

Outline of the Local Action Plan

1. Introduction to the ACRES Cooperation zones specifically focusing on ACRES West Connacht Cooperation Project Zone.
2. General Information of the project area, outlining the physical description of the geology, aquifers, ground water vulnerability, soil, land use and hydrological-water quality.
3. There is a full description of the location and cultural importance of the archaeological and architectural and socio-economic information for each project zones.
4. An outline of the Natura 2000 SAC and SPA's relevant to each zone is described using habitat maps, designations habitats and qualifying interests of flora and fauna and bird species of conservation concern.
5. Outline of the Water Framework Directive and River Basin Districts (RBD) in the Cooperation zone. There is a description of surface waterbodies at risk of not achieving good water quality status, Blue Dot catchment and drinking water locations in each zone.
6. Regional Threats and Pressures
7. Key characteristics and integration of the ACRES Cooperation Project Agri-Environmental scheme, results-based payments; non-productive investments; landscape, cooperative, commonage actions funded through cooperation measure.
8. Overall vision and objectives for the area in support of the alignment the objective of the CAP Strategic Plan with the objectives of the Water Framework Directive, River Basin Management Plans, the National Biodiversity Action Plan, the Birds and Habitats Directives, and the Prioritised Action Framework for Natura areas.

1. Introduction

The CAP Strategic Plan 2023-2027 main focus is on results and performance and to ensure food systems are fair, sustainable, healthy, environmentally friendly and to safeguard a fair economic return for the primary.

- Support viable farm income and enhance competitiveness.
- Contributing to the achievement of environmental and climate objectives at a national and EU levels.
- Strengthening the socio-economic fabric of rural areas.

ACRES Cooperation project will contribute to support the alignment and implementation of the objective of the CAP Strategic Plan with the objectives of the Water Framework Directive, River Basin and Birds and Habitats Directives within the Cooperation zones as set out to strive to achieve National Environmental, Water, Biodiversity and Climate ambitions. This will be done while adhering to European legislation Habitats Directive (92/43/EEC) and the Birds Directive (79/409/EC), which form the dominant legislation available to protect, restore and conserve these habitats for future generations.

Overview of land management and farming in Ireland

Ireland farming heritage has shaped our landscape and contains a broad range of cultural resources including settlements, archaeological monuments and built heritage. There are over 136,000 archaeological sites and recorded monuments, dating to before 1700 AD which makes the nature and accessibility of our archaeology very unusual in comparison to other countries. Many of the structures and associated features in the landscape were built by farming communities over nine millennia, reflecting the range of recorded monument types. Recorded prehistoric monuments include burial mounds, stone circles, enclosures and standing stones. The early Christian and early medieval periods sites include ringforts, cránnogs, coastal defences and ecclesiastical buildings. Norman Ireland and late medieval saw the arrival of more defensive structures in the form of castles and tower houses.

In more recent history, the Irish Land Commission was established in 1881 and its main function expanded in 1885 from establishing fair rents to also breaking up large estates and to facilitate tenants to purchase of their holdings. This Land Commission legacy still shaped farming landscape and practices particularly in rural Ireland today. The Department of Agriculture Food and Marine (DAFM), identifies fields in terms of parcel of land on the Land Parcel Identification System (LPIS) and each land parcel had a unique number attributed to a farmer herd number/farm business number and further identifies land as enclosed private land and commonage.

Commonages refers to land that is owned by more than one person (shareholder) and each commonage owner has a defined fraction of the total area of the commonage land to use for grazing animals. There are 4,500 commonages in Ireland (Rebsburg et al. 2009). Commonages has weathered economic, social, cultural adaptation and changes to agricultural and environmental policies and continue to be an integral component of rural Ireland. Owners hold symbolic historical significance, inherited ownership and a direct connection to the land is very much part of the commonage farming system. Commonage management in recent decades has become fractured due to the lack of consistent management approach from policy makers and some commonage owners opting for the 'current situation' as per agri-environmental schemes to commonage management (Resburg et al. 2009).

The 'Coordination of Information on the Environment' (Corine) land cover mapping layer for Europe, has 44 standardised land classifications. In Ireland agriculture land falls into land cover of peatland, pasture, land principle occupied by agriculture with areas of natural vegetation, moors and heaths, natural grassland and beaches and dunes. There is approximately 67% of land in the Republic of Ireland that is managed for agriculture activities (Moran et al., 2020). In 1992 Natura 2000 designations (Special Areas of Conservation (SAC) and Special Protected Areas (SPA) and Natural Heritage Areas (NHA) under the Wildlife (Amendment) Act of 2000) were designated in Ireland, with an estimated land cover of 13%, of which 60% is farmed (O'Rourke and Finn 2020). There was a further relatively recently classification of High Nature Value (HNV) Farmland, estimated to represent 33% of Irish agricultural land of which 50% is overlapping a designated NATURA 2000 area (Moran et al. 2021). HNV farms are characterized as semi natural vegetation with low intensive farming systems (Moran et al. 2021). The area of the proposed expanding Marine Protect Areas has not been included).

Overview of Agri-Environmental schemes in Ireland

As a measure to stop the decline of biodiversity across Europe, agri-environmental scheme was compulsory and introduced across all member states under the Common Agricultural Policy (CAP). It provided a structured plan for sustainable agriculture and provided significant funding for practical nature conservation in the EU. The CAP fund is split into two 'Pillars':

Pillar I: delivers the direct payment to farmers (e.g., Basic Payment Schemes (BPS), now Basic Income Support for Sustainability Scheme (BISS).

Pillar II: delivers the European Agricultural Fund for Rural Development (EAFRD).

In Ireland the Rural Environmental Protection schemes (REPS) was established in 1994. Each scheme under specific requirements provides financial reward for farming in an environmentally friendly manner above the basic premium scheme. The main aim of REPS was to move from intensive farming to a more extensive and environmentally friendly way of farming. With farmers incentivised to carrying out specific measures seen as being ecologically and environmentally beneficial. REPS farmers signed up for mandatory actions which introduced more control on waste management, nutrient control, protection of wildlife areas and archaeological monuments. O'Rourke et al. (2020) describes the various scheme adopted in Ireland since 1994 (DAFM, 2012, DAFM 2021) and the Agri-Climate Rural Environmental Scheme (ACRES) is the new Agri-environment climate scheme established as part of Irelands CAP Strategy Plan that commence in January 2023-2027 (Figure 1).

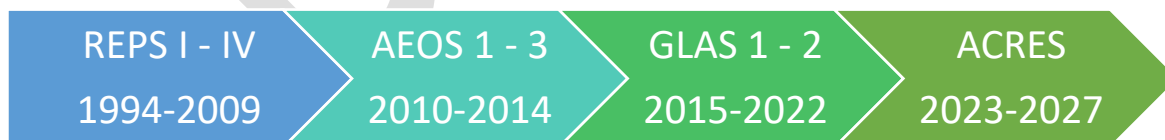


Figure 1: Outline of agri-environmental schemes in Ireland

After almost thirty years of agri-environmental schemes, the effectiveness of these schemes is unclear (Tsakiridis et al. 2022, O'Rourke et al. 2020), and there remains a decline in habitats, biodiversity and climate. To acknowledge this, there was a shift in Ireland to contribute to the development of a results-based approach and there were a number of successful pilots agri-environmental programs commenced that strive to improve the quality of watercourses and habitat restoration that will benefit the large regions specifically in the Burren, endangered Freshwater Pearl Mussel EIP and Hen Harrier EIP respectively (McLoughlin et al. 2020). These pilot projects are locally

adapted, results based and used the scorecard approach to characterise agricultural land in vulnerable catchments areas. The objectives of the pilot projects were to undertake a whole farm assessment. For example, in the PMP project there was a farm nutrient plan developed, an overview of water courses and flow regimes conducted, and an assessment of nutrient and sediment risk of entering water courses. This helps identify sources of risk to habitats, climate and water and implement remediation measures to protect and enhance the environment and water quality through targeted actions, 'the right measure in the right place'.

The establishment of ACRES and the Cooperative Projects provides an opportunity through the hybrid results-based model to address these various pressures across the area by incentivising better management of these habitats to deliver the conservation objectives of environmental assets in high priority geographical areas of Ireland. A local team with expert knowledge will ensure that the correct measures are promoted to gain maximum environmental benefit and co-benefits. Knowledge transfer from various recent agri-environmental projects operating in the area (i.e. Curlew Conservation Programme, Pearl Mussel Programme, LAWPRO area of Action and Teagasc ASSAP) will help focus efforts and inform decision making required to meet the environmental needs and objectives of the area. Collaboration with local partnerships between the CP Team will continue to work together.

There are a number of complementary ongoing EIP programmes running concurrently with ACRES in the West Connacht Cooperation zone, including the Life on Machair programme, funded under the Department of Housing, Local Government and Heritage to improve the condition of Irelands Machair habits and improve ecological condition for pollinators and breeding waders. Life on Machair programmes have numerous machair sites in Mayo and Galway. The Corncrake Tranonach Life programme is working to improve the conservation status in Ireland of the Corncrake through working directly with farmers and landowners to improve and create habitat for early/late cover for the corncrake, delayed mowing and wildlife friendly mowing. The Great Yellow Bumblebee one-year EIP 2021- 2022 results-based project. The aim of the programme was to improve the habitat and abundance of wildflowers on farms in the region to benefit the endangered Great Yellow Bumblebee and pollinators in general. Wild Atlantic Nature (WAN) Life IP with the aim to add value to the services provided by peatland habitats and to improve the conservation status in SAC blanket bogs, particularly focused in the northwest Ireland.

The Wild Nephin and Connemara National Parks provide additional support and habitat expertise and enable opportunities for knowledge exchange across the WCCP zones, including the important conservation of our UNESCO dark sky in the Mayo and now Connemara which form part of the International Dark Sky Park. These regions represent some of the darkest, pristine night skies, which are unpolluted from artificial lighting. There is also the Joyce Country and Western Lake Geopark project in the region, this UNESCO Geopark is globally recognised for having geological formation of international importance spanning back 700 million years.

Agri-Climate Rural Environmental Scheme (ACRES)

The ACRES scheme has two approaches.

1. ACRES General Approach - National program
2. ACRES Cooperation Approach - For eight high priority geographical areas

This report will only focus upon the ACRES Cooperation Approach (CP). There are eight ARCES Cooperations established in Ireland, incorporating large regions in Donegal (Inishowen Development

partnership), North Connaught Ulster, Mid-West Southern Uplands, Southeast (The Hen Harrier Project Limited), Burren (High Nature Value Service), West Cork Kerry (South Kerry Development Partnership) and Northwest Connacht and South Mayo Connemara (ACRES West Connacht). This is a voluntary scheme which farmers signed up for 5 years (2023-2027) and in spring 2023, approximately 4995 farmers were accepted into the ACRES West Connacht CP zone (Figure 2).

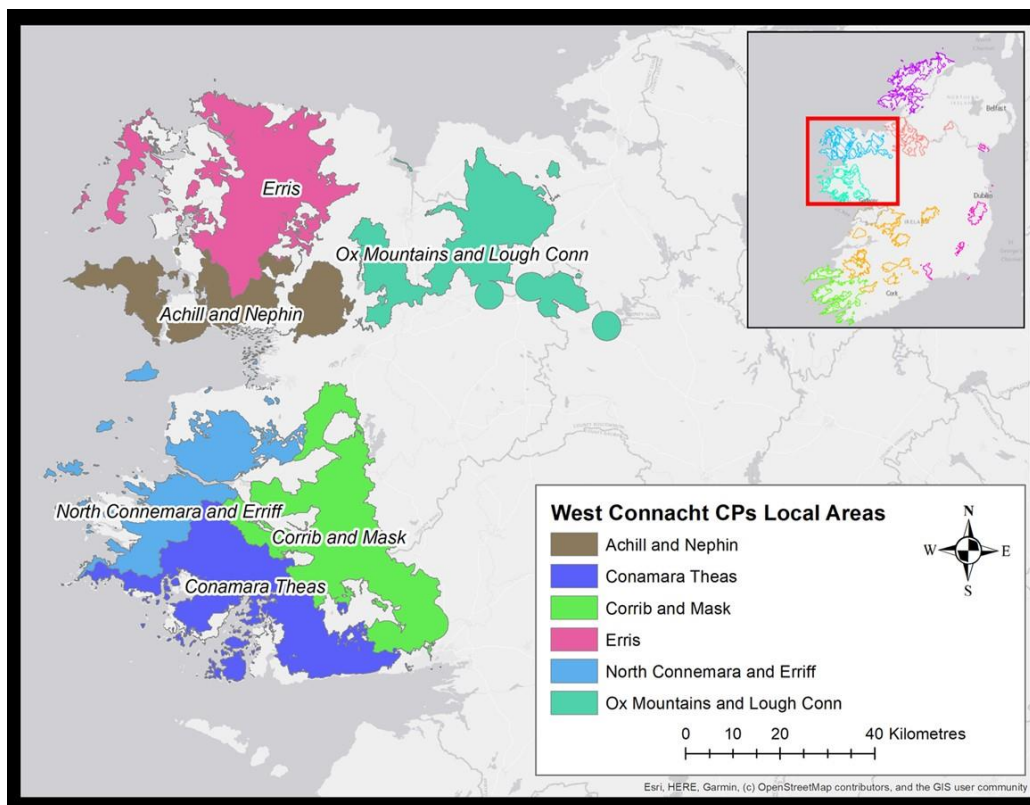


Figure 2: ACRES West Connacht Cooperation Project area.

ACRES CP Results Based Payment

The ACRES Cooperation Project applies a qualitative approach to assess all farmed forage land using a habit specific scorecard approach within the CP zone on private forage and commonage land and is known as the results-based payment (RBAP). Under this scheme, land is scored, using a specific habitat related scorecard, (there are ten scorecards available, Grassland, Low input peat, Peatland, Rough grazing, Scrub woodland, Coastal, Breeding wader, Chough, Corncrake and Burren Winterage).

The scorecard assesses the ecological integrity and threats and pressures within farmer land parcel. Farm advisors will be scoring all private enclosed land and the CP commonage team will be scoring all commonage land >10 hectares. A desk-based field delineation was undertaken with the CP teams using the DAFM General Land Management (GLAM) programme for the assignment of all scorecards across the CP areas. CP Teams will commence scoring on commonage in late spring 2023 and advisors will begin scoring all private forage land in summer 2023 (June-September). There is a maximum of €7,000 available through results-based payments per ACRES CP participant per year. From scorecard results, recommendations are provided to incentives an increase the land score year on year for the duration of the scheme. The participant can implement and adopt land management actions that enhance and overall lessen potential environmental risk on the land to biodiversity, climate and water. The incentive is through an annual results-based payment to the landowner and

there is additional support to landowners over the duration of the ACRES CP scheme through non-productive investment (NPI) (€1500) and Landscape Actions (€2000) (Figure 3, Table 1).

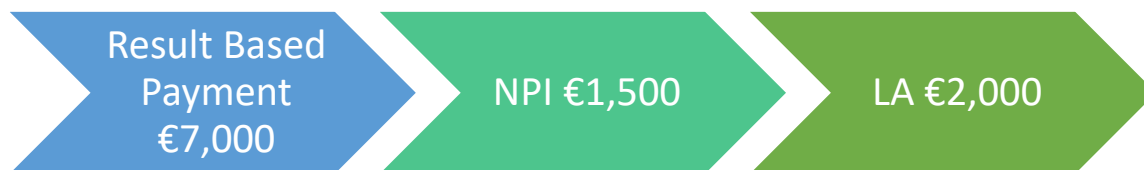


Figure 3: ACRES Co-operation results-based model.

Table 1: Description of categories of ACRES non-productive investment and landscape actions

Landscape Actions	Non-Productive Investment
Commonages	Improvements to Access
Invasive Species	Agricultural Sustainability
Hydromorphology (Drainage systems)	Animal Nutrition and Support
Hydromorphology (Floodplains)	Fencing and Grazing Management
Hydromorphology (Peatland Restoration)	Direct Wildlife Supports
Specialised Wildlife Supports	Water Supply and distribution
Wildfire Resilience	Archaeological Landscapes
Post fire Recovery	Enhanced Parasite Management
Post Landslide Recovery	
Recreational Landscapes	

Objective of ACRES West Connacht Cooperation Project

- Support the alignment the objective of the CAP Strategic Plan with the objectives of the Water Framework Directive, River Basin Management Plans, the National Biodiversity Action Plan, the Birds and Habitats Directives, and the Prioritised Action Framework for Natura areas within the Cooperation project areas of WCCP.
- Establish a Local Action Plan by collating all relevant data available within the Cooperation Project to inform decision making and knowledge sharing.
 - Generate geospatial datasets
 - Review of environmental assets in the area
 - Produce farm plans to include local objectives.
- Support the development and implementation of the ACRES CP programme in each CP zone.
- Develop scorecards, guidance, tip sheet material and scorecard training material.
- Develop Landscape Actions and Non-Productive Investments.
 - Undertake full risk assessment of all LA and NPI's.
 - Screening and targeting LA and NPI's.
- Coordinate CP training events for Farmers and Farm Advisors.
- Provide specialised training and mentorship for advisers and farmers.
- Delineation and assign all scorecards to WCCP ACRES CP farms.
- Identify objectives for every land parcel, through scorecards.
- Assess commonage >10ha (commonage 80% in the West Connacht CP).
- Provide local hands-on level of support to farmers, advisors and to other government agencies and stakeholders working in the region.
- Approval of NPI and LA for payment (certify delivery approval and submit for payment).

- Undertake monitoring strategy, implement monitoring year one baseline assessment for the result-based scores, undertaken every second year thereafter.
- Quality control.
- Communication and collaboration with other stakeholders working in the region to ensure there is no duplication of effort.

ACRES Cooperation Project interaction with DAFM and other EIP schemes

The current agricultural system in Ireland included the Basic Income Support for Sustainability (BISS) ensures the viability of farming income in Ireland funded under CAP Pillar I. There are a number of other relevant voluntary schemes available in parallel to BISS include Agri-climate Rural Environmental Scheme (ACRES), Eco-scheme (Eco), Complementary Income Support for sustainability (CRISS), Complementary Income Support for Young Farmers Scheme (CIS-YF), Protein Aid, Area of Natural Constraints (ANC), Straw Incorporation Measures (SIM) and Organic Farming Scheme (OFS). NPWS Farm Plan scheme is another scheme available to support Irish farmers, to continue to farm and to protect sensitive and protected habitats, flora, fauna and birds.

European Innovation Partnership for Agriculture Productivity and Sustainability (EIP-AGRI):

The EIP's for Agriculture Productivity and Sustainability to contribute the EU's Europe 2020 Strategy of smart, sustainable and inclusive growth (DAFM 2019). In Ireland the EIP-AGRI projects were funded by the DAFM under the Rural Development Programme (RDP) with the aim to bring together Agri-communities such as farmers and businesses, researchers, advisors and scientist to encourage co-operation and innovation in rural Ireland. There were numerous well known and successful EIP-AGRI projects the Freshwater Pearl Mussel and Hen Harrier, with a practical result-based approach to farming. Other projects include unutilised agricultural biomass, sheep genetics, pollinators, organic production, flood management, water quality, invasive species, biodiversity, soil, peat uplands, sheep genetics, farming in an archaeological landscape and bioenergy. There was an open call for EIP proposals were made in 2016 and 2017. There were 23 successful EIP projects across the country including Inishower Upland Farmer Project, Cúlra Créafóige – Cultivation Renewal Programme, The Conservation of Breeding Curlew in Ireland, Farming Rathcroghan Project, Maximising Organic Production Systems (MOPS) North Connemara Locally Led Agri-environmental Scheme, Caomhnú Arann, Hen Harrier Project, Biomass to Biochar for Farm Bioeconomy (BBFB), Mulkear EIP, Allow Project – Duhallow Farming for Blue Dot Catchment, Biorefinery Glas, Small Biogas Demonstration Programme, DANÚ Farming Group, Sustainable Uplands Agri-Environmental Scheme (SUAS), Enable Conservation Tillage (RCT), Blackstairs Farming Futures, The Duncannon Blue Flag Farming and Communities Scheme, Protecting Farmland Pollinators, Biodiversity Regeneration in the Dairying Environment (BRIDE), Ovi Data, Pearl Mussel Project, Sustainable Agricultural Plan for the MacGillycuddy Reeks. These EIP helped build research and results-based experience across agri-environment community and build research capacity that has directly contributed to the development of the ACRES CP programme.

All existing EIP schemes that are complementary to some of the overarching ACRES CP goals to benefit the climate, water quality and biodiversity there is a needs to be clear and agreed that there should be no risk of double funding (i.e. being paid twice for the same objectives on the same land).

2. Legacy, Culture and Land Management in West Connacht Cooperation Project zones.

A significant proportion of the Northwest Connacht Cooperation zone (47%) occurs within European Sites, with approximately 96,000ha occurring within 33 Special Areas of Conservation (SACs) and approximately 36,000ha occurring within 14 Special Protection Areas (SPAs). The Qualifying Interests and Special Conservation Interests of these sites cover a wide range of habitats and species including freshwater habitats (e.g. lakes and wetlands), coastal (e.g. machair and saltmarsh), and terrestrial habitats (e.g. grasslands, woodlands, and peatlands), freshwater species (e.g. Freshwater Pearl Mussel, Salmon, White-clawed crayfish, Lampreys), mammals (e.g. Otter), and a variety of bird species (e.g. waders, waterbirds, coastal and marine species, and raptors). One priority catchment for Freshwater Pearl Mussel, the Newport catchment, occurs within this CP area. In addition, there are a number of WFD high status water bodies as well as WFD Areas for Action.

In South Mayo Connemara CP area, approximately 62% of the area occurs within European Sites, with almost 141,000ha occurring within 34 Special Areas of Conservation (SACs) and approximately 47,800ha occurring within 11 Special Protection Areas (SPAs) (some of these habitats overlap). The Qualifying Interests and Special Conservation Interests of these sites cover a wide range of habitats and species including freshwater habitats (e.g. lakes and wetlands), coastal (e.g. dunes and machair), and terrestrial habitats (e.g. grasslands, woodlands, and peatlands), freshwater species (e.g. Freshwater Pearl Mussel, Salmon, Lamprey), mammals (e.g. Otter), and a variety of bird species (e.g. waders, waterbirds, coastal and marine species, and raptors). Three of the "Top 8" Freshwater Pearl Mussel (FPM) catchments occur within this CP area (Bundorragha, Dawros, and Owenriff). In addition, there are a number of WFD high status water bodies as well as WFD Areas for Action (incl. restoration or protection).

There are 532 surface water bodies (263 lakes and 268 rivers), the WCCP Local Action Plan will particularly focus upon water catchment areas to support the source protection, conservation and restoration of ecological status of these surface waterbodies. Present in this region are some of the great western lakes, draining high catchments of Mayo and Galway, some of these lakes include Lough Conn, Lough Cullin, Lough Carra (not in CP zone but within the water catchment), Lough Mask and Lough Corrib. These large lakes are all managed for Salmonid waters and supporting a long list of other Qualifying Interests. The vulnerability of salmonid stocks can be attributed to a multitude of pressures during the freshwater stage of their life cycle, including sediment, landuse, change, water quality, reduced numbers of returning adult salmon, reduced numbers of eggs to mention a few, predation and climate. In recent generations and as direct result of Irish agricultural policy, significant fragmentation, alternation, land abandonment, hydrological modification, drainage and conversion to improved grasslands has occurred with a decrease in biodiversity and ecosystem services threatening habitats water quality, climate, rare flora, fauna, fish and birds that inhabit these important habitats.

Archaeology and Architectural Heritage and agri-environmental schemes

Our history and archaeology outline the constant evolution of farming to social and economic conditions. These cultural resources are also of great economic importance and an asset to local communities attracting thousands of visitors each year who want to experience and explore this unique landscape. Legislation and conventions have been adopted at EU and National level to assist in the protection and management of our natural and cultural environment (www.archaeology.ie). This legislation protects national monuments and archaeological objects that are of national importance above or below the surface of the ground and prohibits any injury to the monument and

requires the finding of anything of archaeological significance to be reported. A total of 4,076 sites of archaeological and architectural importance have been established as occurring within the West Connaught CP zone with the vast majority located under private ownership on farmsteads.

Farming is the dominant factor influencing the historical landscape and the protection of these assets. Under the CAP Pillar I direct payments (BPS and more recently BISS), a third of the payment is conditional on cross compliance with environmental standards such as wildlife, soil, water and heritage asset management. This inclusion of historical environment within the definition of environment has benefited the historical landscape and assets. This continues protection and investment in historical assets and field boundaries such as stone walls and hedgerows provide an additional protection and an integrated approach to land management which also has a significant social and economic benefit to rural communities. Other legislation protection archaeology includes Nation Monument Amendment Act 1994 and 2004, Planning legislation and Environmental Impact Assessments (EIA). The archaeological survey of Ireland (ASI) form part of the role of the National Monument service and protect features of historical and archaeological interest. Agri Environmental schemes contributed to the protection of these assets as well as maintenance and protection of rural heritage such as dry-stone walls. Conservation of farming heritage and archaeology in the WCCP Local Action Plan provides continued support and information to landowners in the care of archaeological monuments on their land.

Following on from REPS, the Agri-Environment Options Scheme (AEOS) was launched in 2010, which centred around environmental outcomes and did not include any archaeological measures. In 2015, the Green, Low-Carbon, Agri-Environment Scheme (GLAS) was launched which included the archaeological measures 'Protection and Maintenance of Archaeological Sites'. In GLAS, only clearly visible archaeological sites were eligible, and the farmers could choose which sites to include and the tillage option in GLAS included the establishment of a 10 margin with vegetation control, including strimming or mowing the margin by hand each year. The grassland option in GLAS was based around vegetation control of encroaching scrub and dying, unstable trees on the monument and in a 3 m margin. For the first time, overwintering was allowed, and management of masonry monuments were included in the specification.

Commonages Management and Agri-environmental schemes.

There are approximately 440,000 ha of commonage land in Ireland, with approximately 160,000 ha of commonage land within the in WCCP zone. These lands are delivering significant benefits to farmer who use them for livestock production and for the public goods. In WCCP, commonage areas are located predominantly on peatland but are also located in coastal areas. These peatlands when intact can sequester a large amount of carbon and can also provide a clean source of drinking water and provide a home to many of Irelands rare species of flora and fauna and birds.

Commonage farming has changed over generations because of the introduction of "Headage" payment. Farmers were paid per animal they owned, and this resulted in a dramatic increase in stock numbers in commonage regions. As a result, overgrazing was widespread in the 80's and 90's. With the introduction of the agri-environmental scheme (REPS, there was a reduction in cattle numbers on commonage hills due to the constraints of having to house cattle for a period over the winter and a 30% reduction of sheep stock within 6 western counties where most overgrazing was documented (includes Commonages in Mayo and Galway). AEOS highlighted that large areas of commonages were under grazed, and this was linked to the age profile of the farmers and off farm employment in these areas. In the GLAS scheme a commonage plan was introduced with a minimum

and maximum number of sheep being allocated to each commonage shareholder who participated in the GLAS scheme.

Current commonage management practices differ across farmers and across regions these include:

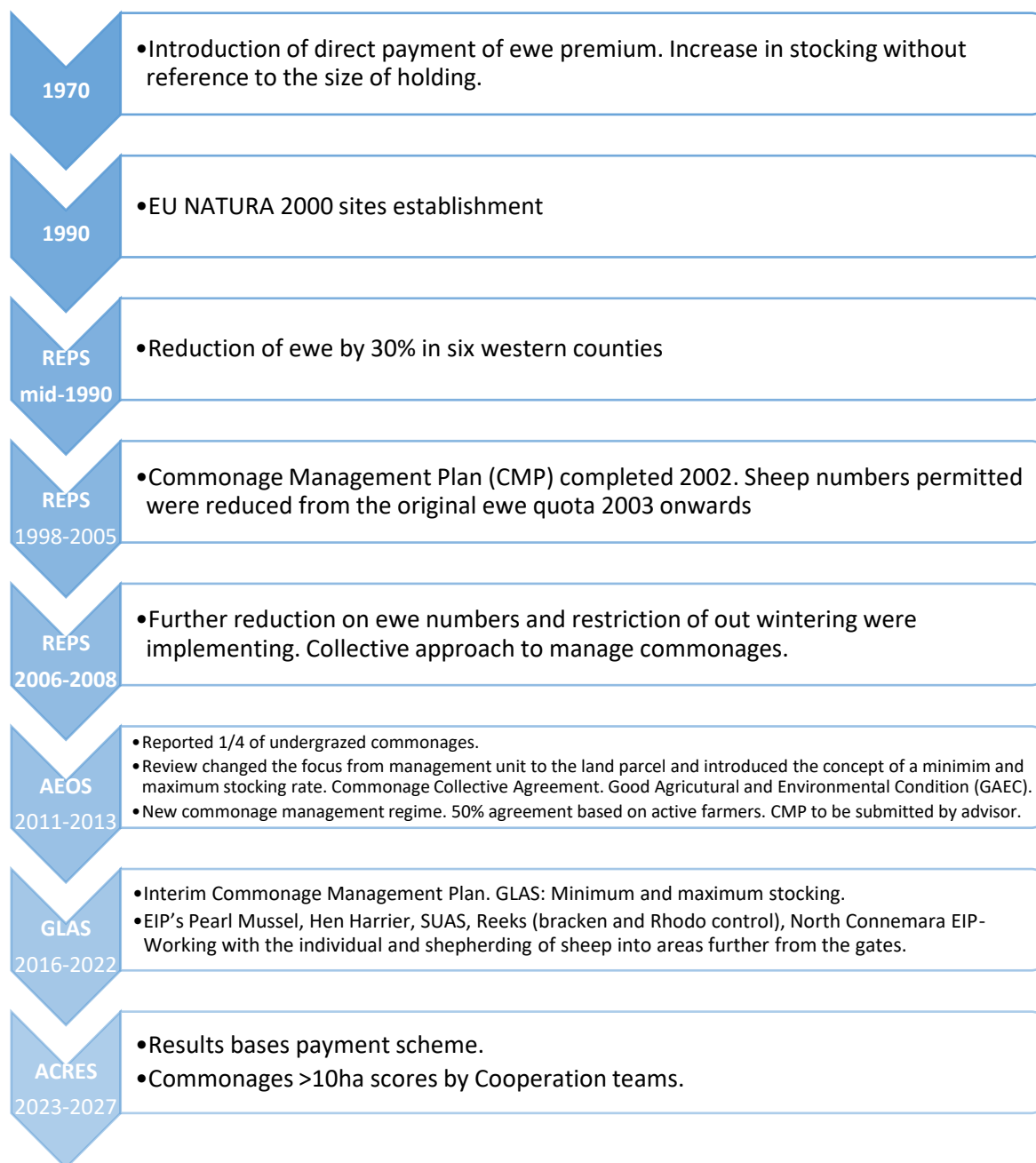
- All year-round grazing – Farmers will leave their sheep on the commonage all year round. They may only be gathered for dosing and shearing. Sheep are mated with rams let out on the hill. These rams are then removed after the mating season is over.
- All year- round grazing with seasonal removal - ewes are brought to the low greener land for mating (November - January) and lambing (April - May) and returned to the hill. These animals will be sheared on the hill and lambs will be weaned in autumn or at mating time.
- Dry ewes – grazing commonages between August - November only.
- Used in rotation- sheep are held on the area for some time to give the other low land or other commonage land a chance to recover.
- Reintroduction of sheep by GLAS farmers – farmers were incentivised to keep a minimum stocking rate on commonage for the GLAS scheme. Farmers would keep this allotted number for the duration they chose. This was usually when the ewes were dry in late autumn or before lambing in spring.
- Other commonage farming methods includes mixed grazing with cattle or horses along with sheep or mixed grazing with cattle and horses only. Horses can be on the commonage all year round whereas cattle are usually moved on and off at different stages. This can be their primary grazing animal and ensure compliance with agri-environmental scheme obligations and BISS payments.

There are many ways in which commonage shareholders interact with one another:

- No interaction. Farmers use the commonage as they use their other lands. No need for interaction with other shareholder farmers.
- Picking up strays - when gathering, some of other shareholders sheep can be gathered too. These sheep are either penned/delivered to the shareholder to help them out or released to go back to where they came from.
- Farming together - Some farmers work together on commonages to gather, dose and shear sheep.
- Commonage arrangement, generally supporting older shareholder with sheep management.
- Carrying out works - usually in the form of gates and fencing, shareholders come together to undertake works or by contributing their share towards work or materials.

In recent years there have been several target schemes or EIP (The Freshwater Pearl Mussel Project, SUAS project in Wicklow, the Reeks project in Kerry and the North Connemara scheme in Connemara) focuses on commonage management. Each of these schemes set out to implement changes to the commonage management at a local level. WCCP will be undertaking a similar approach for commonage communication and stakeholder engagement for agreed focused management based on scorecard results.

Table 2: History of Commonages and Agri-environmental schemes.



Wildfires

Burning on hills and uplands dates back as far as the 18th century and traditionally was used as a means of land management with the aim of improving foraging grounds. Today grazing management is the most effective and sustainable method for long term management in upland areas. Although prescribes and controlled burning are other management methods available when there is no other solution to help rejuvenate under-grazed upland areas. The prescribed or controlled burning management method must occur under controlled managed conditions in consultation with all relevant authorities (DAFM, 2019). A burning strategies include using natural landforms and barriers to prevent unwanted spread and also the use of water to contain the fire, fire breaks and fire control

lines can also be successfully used (Wicklow Uplands Council - Sustainable Uplands Agri-environment Scheme (SUAS) and is supported by legislation, section 40 of the Wildlife Act 1976 and the Wildlife (Amendment) Act 2000 state that it is illegal to burn on uncultivated land from the 1st of March to the 31st of August each year.

Illegal burning incidents of upland pasture often occur without any consultation to relevant authorities and within the bird nesting season. The target areas are typically dominated by *Molinia caerulea* (purple moor grass, fionán grass) and Heathers (*Calluna vulgaris*, *Erica cinerea*, *Erica tetralix*), Gorse (Whins) (*Ulex europaeus*, *Ulex galii*), Purple Moor Grass (*Molinia caerulea*), Deer Grass (*Trichophorum caespitosum*) and Bracken (*Pteridium aquilinum*). Burning is primarily undertaken in an misguided attempt to improve grazing conditions. The use of burning and fire in the majority of incidents is not the most effective management strategy, for example, on Gorse and bracken are known to be fire adapted and burning stimulates seeds to germinate which will result in a spread of gorse/bracken which can outcompete natural vegetation and habitats. (DAFM 2019). *Molinia* dominance is problematic as it provides a low grazing nutrition and is a result of past burning.

In 2021, 85% of all wildfires reported occurred in the west of Ireland (Cork, Kerry, Galway, Mayo) in the first quarter of the year (www.ucc.ie/en/flares/thescienceofwildfires/). For the Mayo region there was 195 fires (bog fires, controlled burning, forest fires, gorse fires and grass fires) in 2020, 115 fires in 2021 and 128 fires in 2022 (www.mayococo.ie records of burning incidents). The main concern with burning as a land management tool is the threat to wildlife and habitat and the impact on water, soils and carbon sources. This concern is amplified by the fact that in 2013, 75% of the burnt area detected in Ireland by the European Commission was located within Natura designated land (European Commission, 2013). The top three habitats that were burnt in Roscommon in 2020 was raised bog (52%), heavily improved grassland (19%) and Blanket bog (5%) (www.ucc.ie/en/flares/thescienceofwildfires/). Additional issues related to burning include air quality, human and structural safety and respiratory health.

Peat extraction and Turf cutting

There is a long history of peat extraction or turf cutting in Ireland and in recent centuries, peatlands were encouraged to be “reclaimed” for agricultural usage. In the 19th and 20th centuries peat cutting was carried out to provide fuel for homes. The turf development board (TDB) was formed in 1934 and Bord Na Mona was formed in 1946 which formed the “first development plan” and led to the establishment of two ESB turf-fired power stations. In 1979 as a result of a shortage in oil, led to the development of the Turf Development Act 1981 which provided grants for private turf producers. This saw an increase in peat extraction from 350,000 tonnes in 1893 to 1.4 million tonnes by 1990 (www.bordnamonalivinghistory.ie).

The ‘Bog’ and turf cutting was a way of life during summer months for multiple generations past and present and is still seen as an important part of our cultural heritage today (O’Connor et al. 2021). Peatlands and bogs were always associated with poor margin land, unproductive and undervalued, over utilised and exploited. Management includes wind farms, afforestation, invasive species dominance and intensification of agriculture and turf cutting. The management of peatlands in Ireland has never been sustainable and has significant impacts on these rare and protected habitats

and the flora and fauna and bird species reliant on them (Renou-Wilson et al. 2011). In 2010 the cessation of turf cutting compensation scheme was established to include 53 SCA Raised bogs and in 2014, 36 Natural Heritage Areas (NHA) were also included. Today there is a major focus to conserve and protect bog, Blanket, Raised, Fen habitats in Ireland and looking at the contribution of peatlands to generations to come.

Protection for Pollinators.

In Ireland, our pollinators are all insects, and they include butterflies, moths, wasps, beetles, ants, hoverflies, and bees. Most of our pollination is carried out by wild bees. We have one managed honeybee species and approximately over 100 different wild bee species of which 20% are bumblebees and 80% are solitary bees. More than half of Ireland's bee species have declined substantially in numbers since 1980, and one third of our bee species are at risk of extinction. 18% of butterflies and 8% of macro-moths are threatened with extinction (<https://pollinators.ie/plan-for-pollinators-and-biodiversity-on-your-farm/>).

Pollinators are very important because they pollinate 78% of European flowering plant species, and 71 of the 100 crops that provide 90% of the world's food supply. In Ireland, the annual value of animal pollination to home produced food crops is estimated to be €59 million per year. Wild pollinators are not only important for healthy diets, agricultural economies, and food security but they also affect ecosystem structure, process, and other ecosystem services.

Insect-pollinated plant species play important ecological roles such as providing fruits and seeds for birds and other wildlife, contributing to nutrient cycling e.g., nitrogen fixation, and to climate change adaptation. Wild pollinator conservation measures can also benefit other beneficial taxa, such as natural pest enemies that enhance biological control, and they may play an important role in landscapes in terms of microclimate regulation, soil erosion prevention and in creating windbreaks. Therefore, wild pollinator conservation can represent a win-win solution for tackling both the biodiversity loss and the climate crises.

Agricultural intensification not only reduces foraging resources and nesting sites for pollinators, but it also involves the use of pesticides which can directly or indirectly kill pollinators (Storkey et al. 2020).

Data Sources

Several national digital Geographical Information Systems (GIS) layers were available from several sources as outlined in Table 3.

Table 3: National GIS datasets used in site description for the Local Action Plan report.

Dataset	Source	Description
Streams/Rivers/Lakes	EPA www.catchment.ie	Location of the streams, rivers, and lakes.
CORINE	EPA www.catchment.ie	Image and classification of land cover based on satellite imagery.
Bedrock Geology	EPA www.catchment.ie	Irish bedrock geology
Aquifer Bedrock	EPA www.catchment.ie	Irish ground water aquifers
Aquafer Vulnerability	EPA www.catchment.ie	Connectivity between contamination and aquifers.
Soil	EPA geoportal	Soil type
PIP-P	GLAM	

Farm Parcels	GLAM	Land description
NATURA sites	www.npws.ie	SAC/SPA/NHA/pNHA
Site and Monument, Architectural Heritage	www.maps.archaeology.ie	National Inventory of Architectural Heritage (NIAH) Mayo (2008-2013), Galway (2008), Sligo (2004). National Monuments for Mayo and Galway.
Dr Barry O'Donoghue	info@ihhws.ie	Irish Hen Harrier Winter Survey
Dr John Carey	www.corncrakelife.ie	Corncrake 2019-2022 and target areas.
Dr Karin Dingerlus	GYBBProject@gmail.com	Target area for the Great Yellow Bumblebee
Kathryn Finney	kfinney@birdwatchireland.ie	Curlew EIP
Anita Donaghy	adonaghy@birdwatchireland.ie	Breeding Wader Hotspot data for WCCP.
John Higgins		Retired NPWS Ranger. Local knowledge for Breeding Wader around Corrib Mask CP zone.

3. Cooperation Project Area Background Information

North-western Connacht

Northwest Connacht is a location renowned for its wild and dramatic landscape of hills, mountain ranges, peatlands, rivers and lakes. The newly renamed Wild Nephin National Park in Ballycroy is in the centre of the North Mayo CP zone with its wealth and diverse habitats and fauna. In 2016 the National Park region received international recognition as one of the best locations in the world to view the night sky and all the wonders that it brings to us and to the surrounding nature and is now also the Mayo Dark Sky Park. Across northwest Connacht and concentrated on the Mullet Peninsula and in there are several complementary European Innovation Partnerships (EIP) currently working in the Erris, Achill Nephin and the Ox Mountain and Lough Conn CP zone, including Life on Machair (2021-2027), Corncrake Life (2020-2023), Great Yellow Bumblebee Project EIP (2020-2021) and upland peatland the Wild Atlantic Nature EIP (2021-2029) (Figure 4).

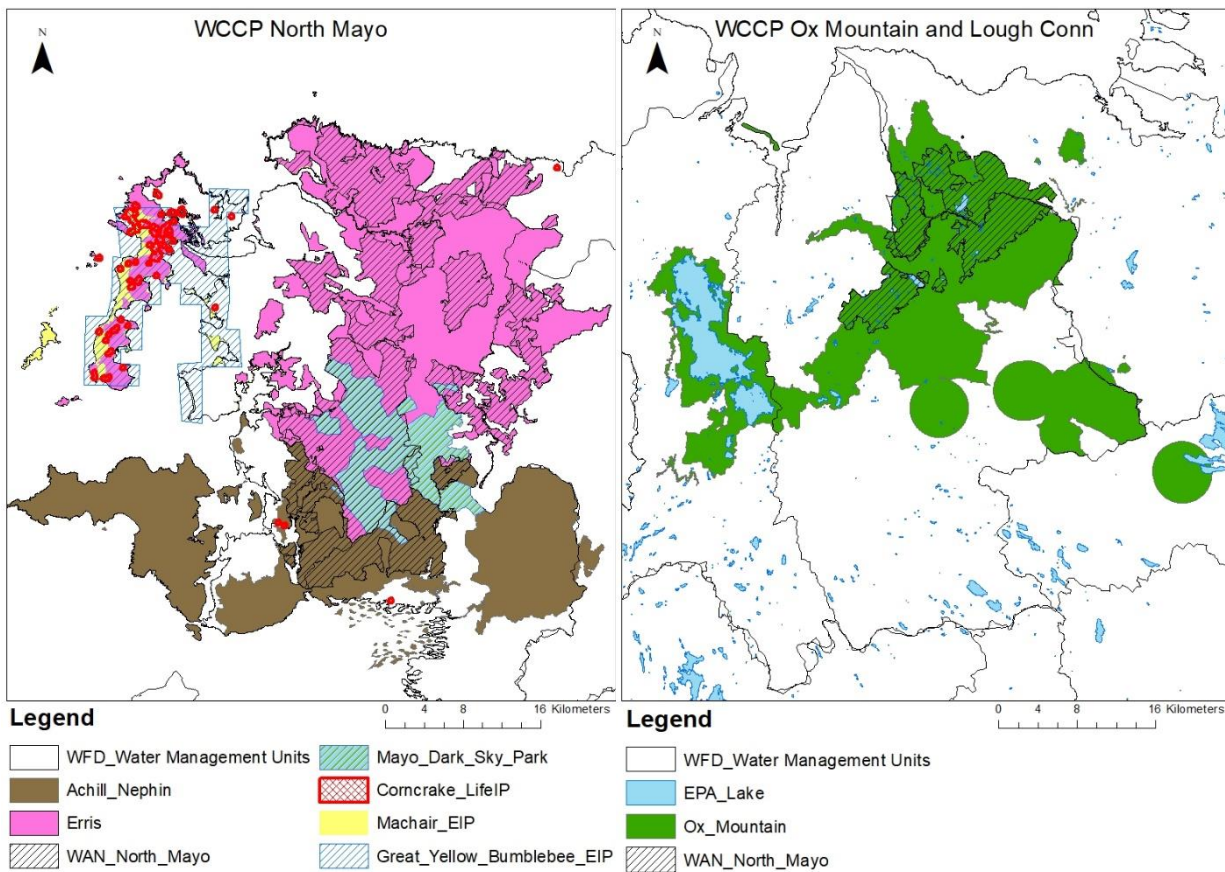


Figure 4: Map of Wild Nephin National Park, Ballycroy, Life and EIP projects in the WCCP.

Erris Northwest Mayo, ACRES West Connacht Cooperation Area

The Erris CP region in North Mayo is home to a vast range of diverse habitats that accommodate large numbers of biodiversity across approx. 20 Electoral Divisions (ED's) listed in Appendix 1. Due to the defined boundaries of the ACRES Co-Operation CP zone, the data collected from CSO statistics accounts for all the Erris region so is not a clear indication of the true Erris ACRES CP zone. The ACRES CP zone extends to certain parts of the Erris region due to the fact of its high nature value habitats. These consist of blanket bog, heaths, salt marshes, machair as well as semi-improved and improved grasslands. Erris cp encompasses mountainous terrain and Atlantic blanket bog that is dominated to the north by Maumakeogh (380m), Glinsce (304m) to Sliabh Fioch (331m), to the south to Slievemore (620m) and running across the Nephin Beg Mountain range (620m) encompassing Ballycroy National Park.

1. Bedrock Geology

The bedrock underlying the Erris CP zone consists of a number of geological formations (Figure 5). Much of Erris region is underlain by Downpatrick formation sandstone siltstone, Minnaun sandstone formation, sandstone and siltstone, surrounded by Benmore formation psammities with heavy mineral bands. In northern tip of Mayo there is Broadhaven formation, monotonous psammities. On the Mullet Peninsula orthogneisses, Inishkea division, semi-pelitic and psammite schists and at the very tip, Termon granite. Additional rock formation in the region includes Banger/Corslieve formation quartzites and schist formation and white quartzite.

2. Aquifers

An aquifer is an underground body of permeable rock that collect water in sufficient quantities for use in empty spaces. The variation in bedrock formation present in the Erris CP zone gives rise to the aquifer formation over thousands of years (Figure 6). We used the Geological Survey Ireland (GSI) categories (Based upon the UNESCO-IHP System) to classify the aquifers in the region. The dominant aquifer classification for Erris CP zone is 'Poor Aquifer – Bedrock which is generally unproductive except for local zones'. These unproductive aquifers correspond with the sandstone, siltstone and psammite formations dominant in the region. There are two bands of 'Locally important aquifer – bedrock which is generally productive' and Locally Important aquifer – bedrock which is moderately productive only in local zones. The poor aquifer classification is generally considered unproductive (wells produce low yields of water), and these areas represent two thirds of Ireland. These areas are not important sources of public water supplies but are important in the delivery of water to watercourses in the region (EPA 2020).

3. Groundwater vulnerability

Ground water vulnerability is a description of the likelihood water contaminated by activities in the surrounding catchment reaching groundwaters. The vulnerability classification encompasses geological and hydrogeological features and is based upon 1). Infiltration time, 2). The quantity of contaminants that reach the groundwater and 3). The attenuation capacity of the geological material to infiltrate the contaminant. The groundwater vulnerability of the Erris CP zone is described in Figure 7, is complex and encompasses all five vulnerability classifications. The higher elevations through the centre of the region are dominated by the two highest groundwater classifications (E (Rock at/near surface or karst) and Extreme). The remaining region of the Erris CP zone is a mosaic of High, Moderate, and low classification of Ground water vulnerability. The Mullet Peninsula is dominated by a groundwater vulnerability of High with small pockets of Extreme and E also present. The groundwater vulnerability is affected by the permeability of the subsoil and soil present in the region (Figure 7).

4. Soil

Soil is an important feature as it the interface that lies between the bedrock and the vegetation. Soil is a feature that influences the ground water vulnerability and can filter out contaminants, although the effectiveness of this filtering is dependent on the soil type and texture. The Erris Cooperation Project zone is dominated by blanket peat and podzol peaty soil and defined with a peat texture. There are areas on undefined Aeolian along the coast of the Mullet Peninsula and small pockets of Marl Sand along the coast with a sandy texture (Figure 8). There are areas of rock and loam found in areas with high elevation, with small pockets of course loamy soil along the east of the Erris CP zone.

5. Corine land cover, Commonage and Agriculture land parcels

Land cover on the ground or through remote sensing, including natural or planted vegetation, construction, ice, water and rock. Land use is not assessed using CORINE. Land cover in Erris CP is predominantly peat bog with large pockets of coniferous forestry and transitional woodland scrub. Along the Mullet Peninsula land use is classified as pasture, natural grasslands, moor and heathlands and land principally occupied by agriculture with significant areas of natural vegetation Figure 9. There are large areas of commonage in the north, as well as at the top and tip of the Mullet Peninsula and along the south of Erris CP zone. The land parcels are predominantly along the south, sandwiched between commonage and peatland/forestry and along the Mullet Peninsula, with pockets along the north and east of the Erris CP zone (Figure 10). The management associated to the land cover classification in the Erris region will inform the CP local action plan. There are 1630 herd numbers associated with land in the Erris CP area, with approximate claimed area of 17,193 ha under BPS. Of

the total number of land parcels, 50% were registered as participants in GLAS. There were 451 herd numbers associated with commonages of which 90% participated in GLAS.

6. Socio-economic characteristics of farming in the CP area.

Much of the farmed area in the Erris region consists of mountainous blanket bog and uplands on commonage lands that are farmed by more than one farmer in co-operation. Sheep generally are the main choice of livestock that graze these uplands commonages. Sheep outnumber cattle 10:1 on commonage, whereas on habitats such as machair, semi-improved and improved grassland cattle are better represented and account for half the Livestock Units (LU) on these habitats (Appendix 1).

Erris consists primarily of hill and mountain farming which involves physical work and long hours on vast areas of treacherous land be it checking, shepherding, or gathering livestock for seasonal dipping, mating, or lambing. North Mayo receives high rainfall on an annual basis, the 3-year average rainfall of 1300 mm (2020-2022) from Met Eireann Belmullet Weather Station. Farming in the Erris region is challenging, it is also an area that is very proud of its agricultural roots. The Erris Agricultural Show is celebrated in Belmullet annually where skills such as sheep shearing are demonstrated as well as showing elite livestock that are produced on the high nature value lands in Erris. In addition, Bangor hosts 13 fair days a year where the main street is transformed to days gone by with all types of sheep available for sale and farmers barter with one another over prices. Mayo-Sligo mart is also approx. 40km from the heart of Erris and this opens trade to farmers outside of the region to buy Erris produced livestock which often sells at a premium price.

Erris is considered marginal in land type; this land has sustained many generations by producing crops and meat. However, with more and more people working part-time, some areas have become overgrown and require increased grazing, while crop production is very rare. In other cases, intensification has occurred which has led to over grazing in other instances which highlights some of the issues that can occur on the ground when traditional farming practices change due to socio economic circumstances.

Islands in Erris region lying off the Atlantic Ocean, these islands, while no longer inhabited, provide ideal habitats to numerous breeding and wintering birds as well as being farmed with livestock. Islands such as the Inishkea Islands which are situated off the coast of Belmullet take in many summer visitors as boats take tourists to the island from Blacksod Bay and from Achill on day trips. These islands offer financial income to the area through tourism whilst farmers still farm these areas with livestock being shipped on and off the island by boat.

According to CSO data, the median sized holding in the region is 27.7 ha and the median age of farmers in the Erris region in 2020 was 55.5 years old, with the youngest median age in one ED (Belderrig) being 53 and the eldest median age in another ED (Rathill) being 65 years old. There is no data available on farm succession in the region, it is undoubtedly a concern for many farmers as this is a nationwide issue.

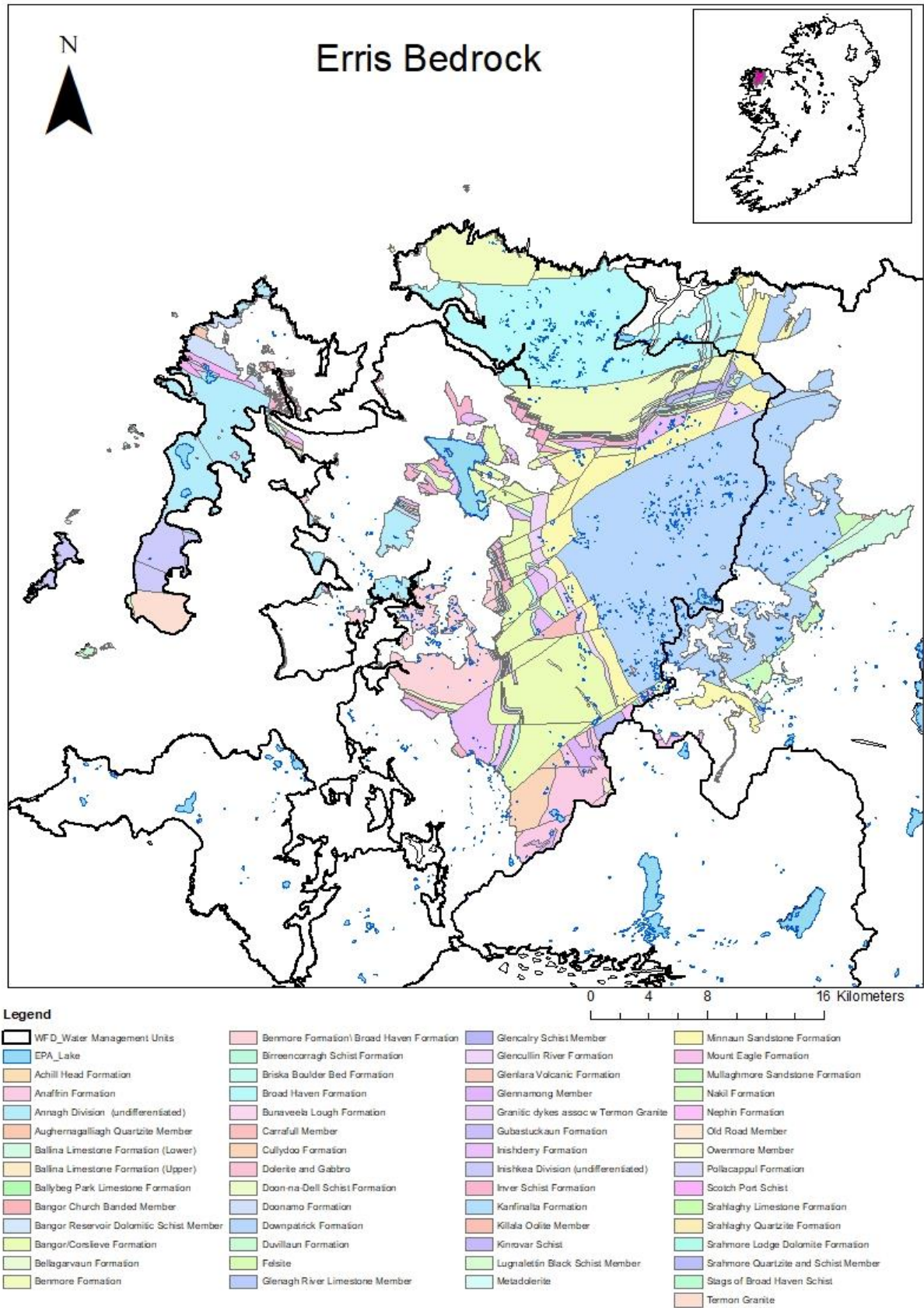


Figure 5: Bedrock geology within the Erris ACRES West Connacht Cooperation zone.

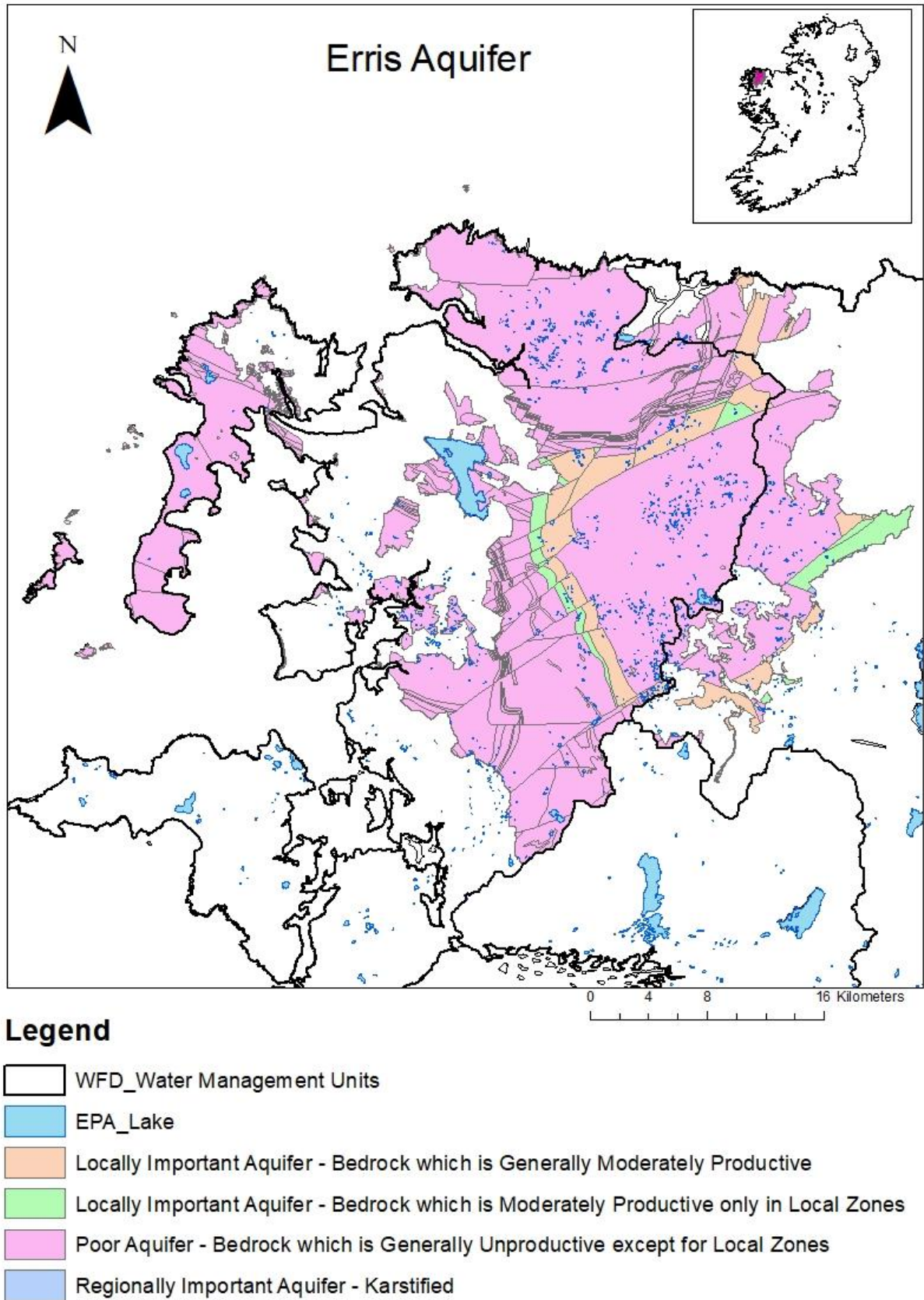


Figure 6: Aquifer types present within the Erris ACRES West Connacht Cooperation zone.

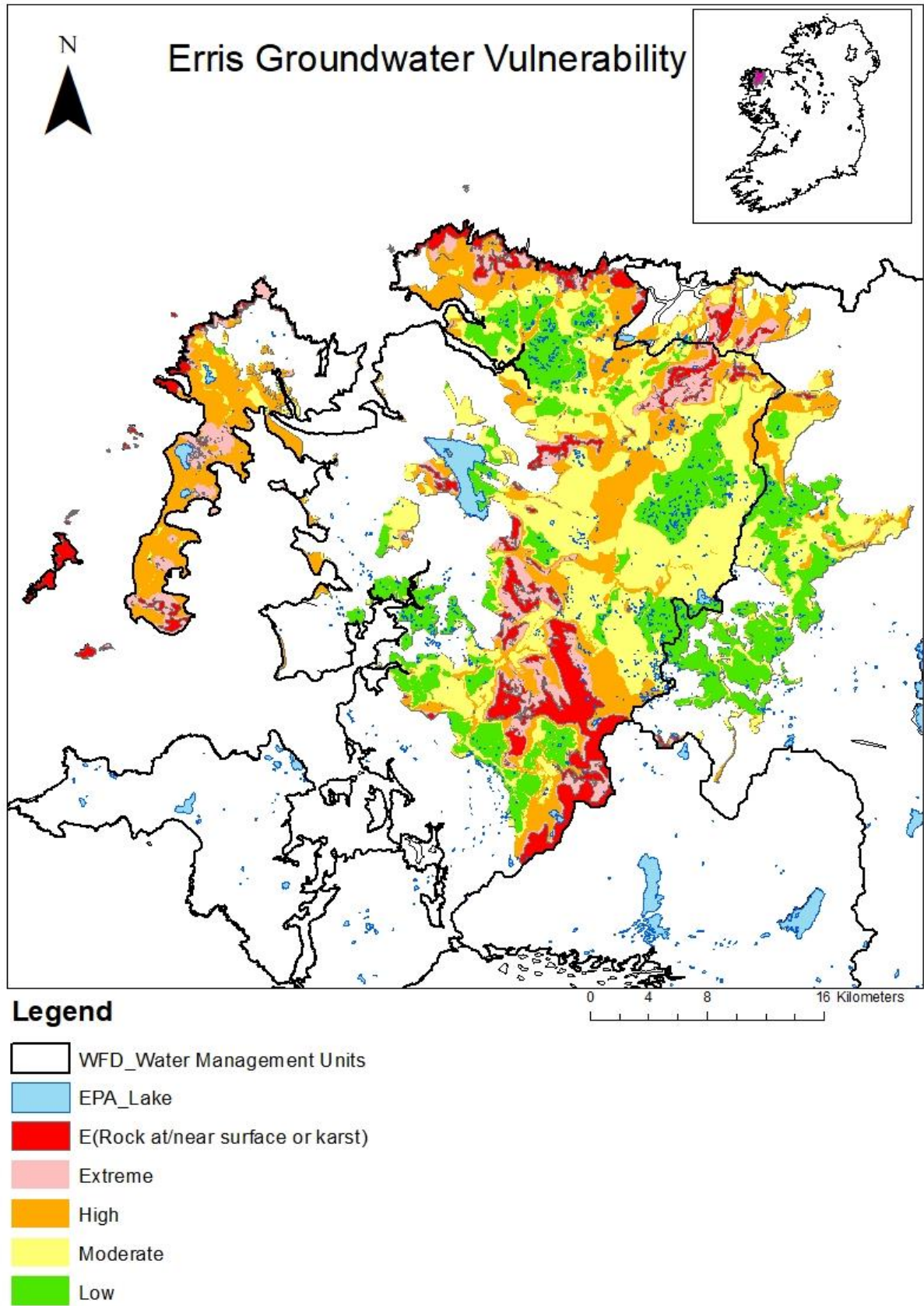


Figure 7: Groundwater vulnerability within the Erris ACRES West Connacht Cooperation zone.

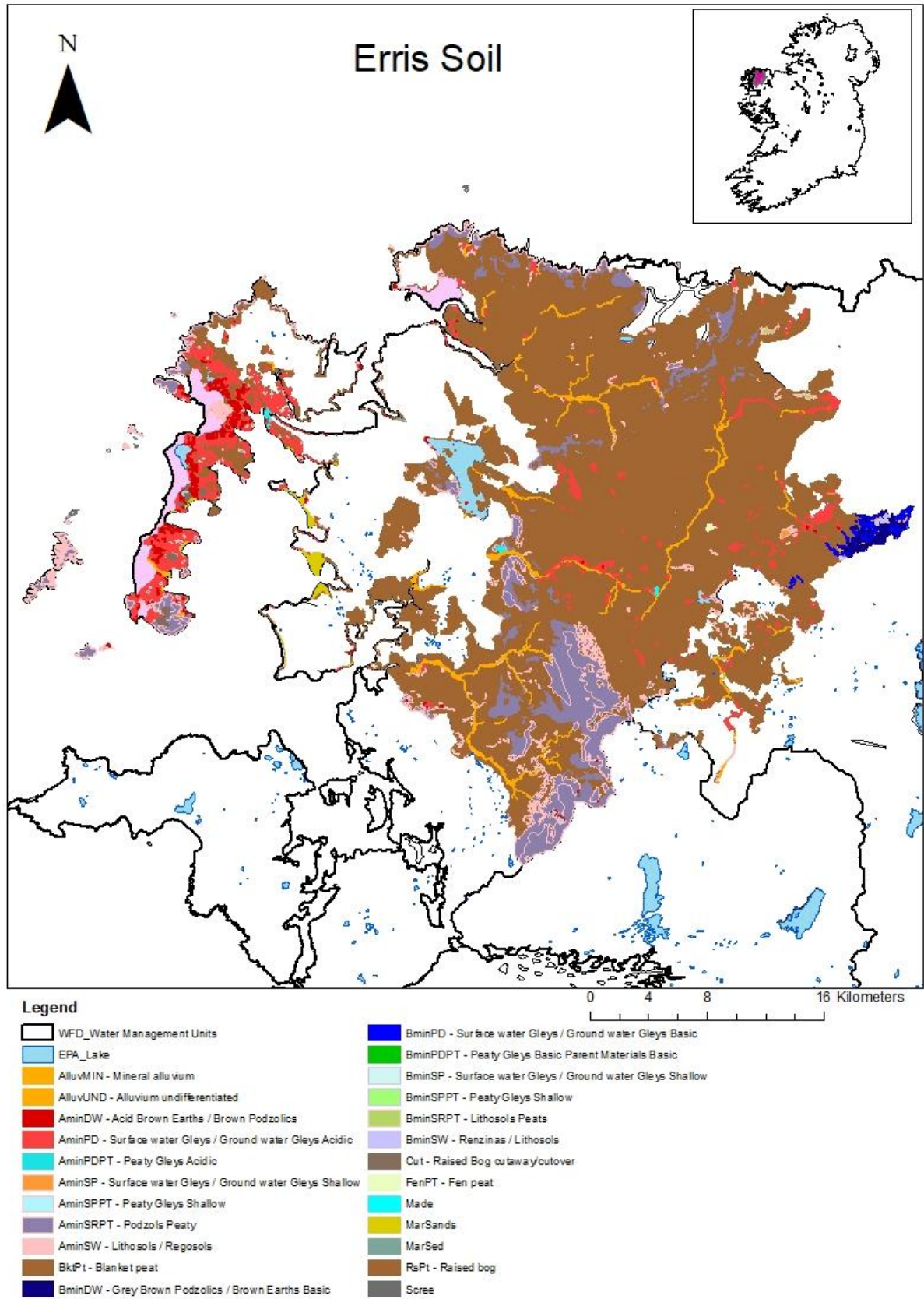


Figure 8: Soil within the Erris ACRES West Connacht Cooperation zone.

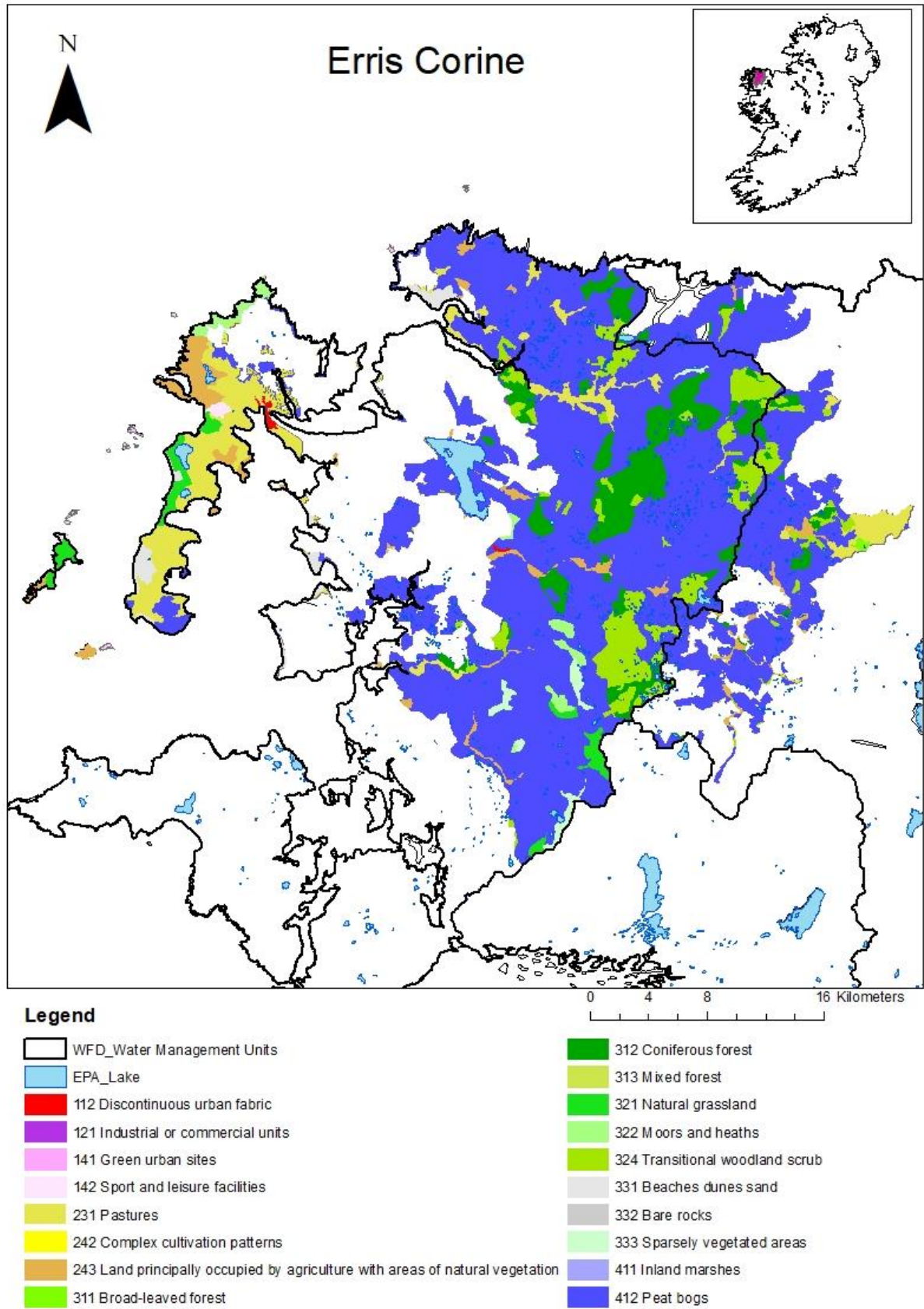


Figure 9 : Corine within the Erris ACRES West Connacht Cooperation zone.

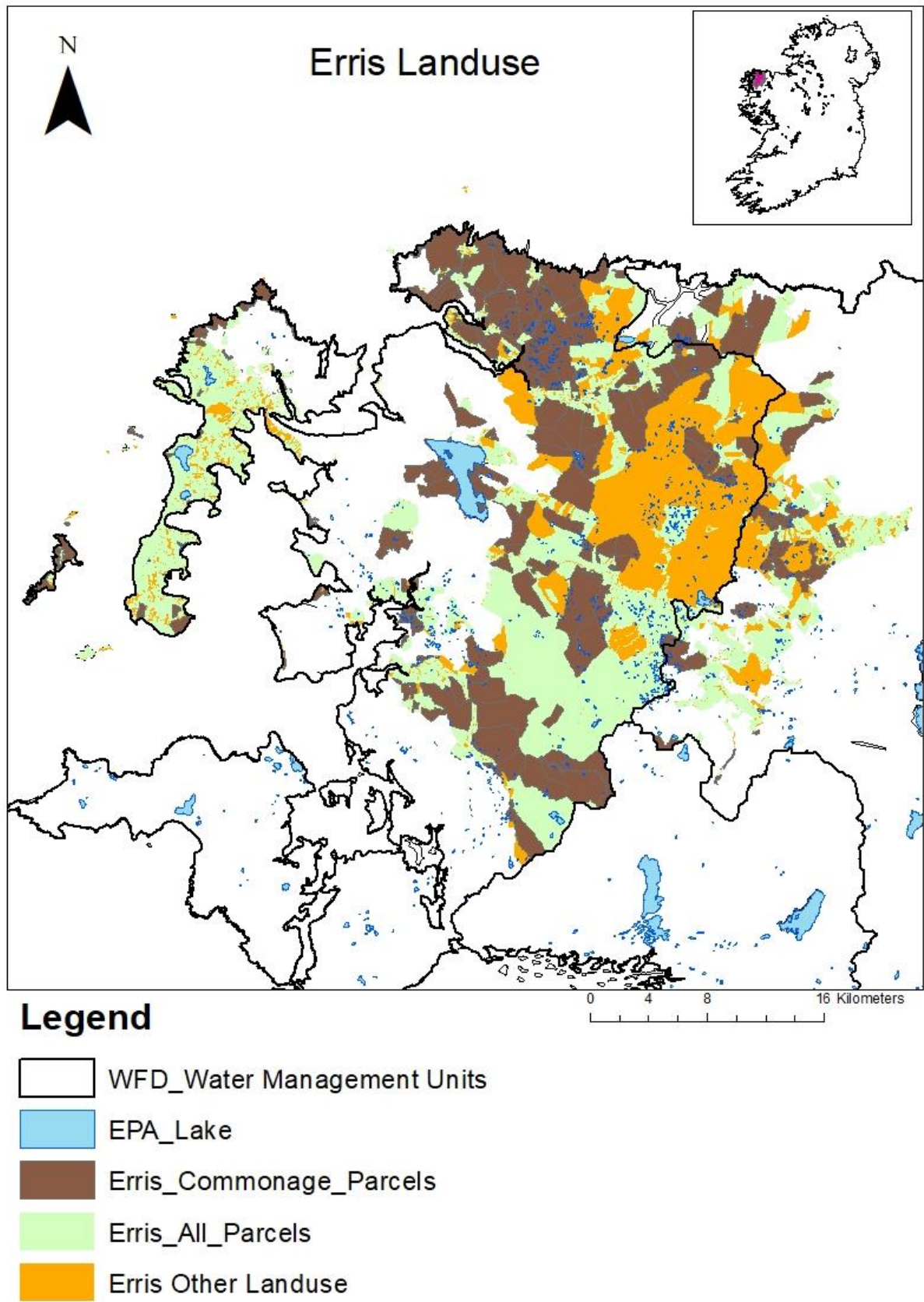


Figure 10: Commonage, land parcels and landuse within the Erris ACRES West Connacht Cooperation zone. Other landuse denotes privately owned land.

7. SAC/SPA/NHA – review of Environmental Assets.

Special Areas of Conservation (SAC) and Special Protected Areas (SPA) are derived from the EU Habitats Directive (92/43/EEC). The aim of the Habitats Directive is to contribute to the conservation and take measures to maintain or restore natural habitats and species that are listed in Annexes to the Directive at a favourable conservation status. Annex I is a list of protected habitats and Annexes II, IV and V are a list of protected flora and fauna species which are considered threatened in the EU. The EU Birds Directive (2009/147/EC) and Natural Heritage Areas (NHAs) are described in Figure 11 and Appendix III and IV.

A significant proportion of the Erris CP area occurs within European Sites, with a number of designated sites overlapping including, 10 designated SCAs, 6 SPAs, 9 NHAs and 10 pNHAs. The Qualifying Interest and Special Conservation Interest of these sites cover a range of habitats, species and birds are listed in Table 4. There is a full description of all the habitats, birds, Qualifying interest, and pollinators provided in Appendices (III Species, IV Birds, V Habitats, VI Bryophytes, VII Bee, VIII Butterflies).

Table 4: List of habitats, flora, fauna and bird's species protected in Erris CP area under Natura 2000. A full list is presented in Appendix III, IV and V.

Habitat	Flora	Fauna	Birds
Dystrophic Lakes	Rhynchosporion Vegetation	Geyer's Whorl Snail (<i>Vertigo geyeri</i>)	Red-throated Diver (<i>Gavia stellata</i>)
Blanket Bogs (Active)	Marsh Saxifrage (<i>Saxifraga hirculus</i>)	Atlantic Salmon (<i>Salmo salar</i>)	Great Northern Diver (<i>Gavia immer</i>)
Wet Heath	Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>)	White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	Slavonian Grebe (<i>Podiceps auritus</i>)
Alkaline Fens	Petalwort (<i>Petalophyllum ralfsii</i>)	Sea Lamprey (<i>Petromyzon marinus</i>)	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)
Vegetated Sea Cliffs	<i>Najas flexilis</i> (Slender Naiad)	Brook Lamprey (<i>Lampetra planeri</i>)	Common Scoter (<i>Melanitta nigra</i>)
Alpine and Subalpine Heaths		Otter (<i>Lutra lutra</i>)	Red-breasted Merganser (<i>Mergus serrator</i>)
Machairs			Ringed Plover (<i>Charadrius hiaticula</i>)
Juniper Scrub			Sanderling (<i>Calidris alba</i>)
Transition Mires			Dunlin (<i>Calidris alpina</i>)
Marram Dunes (White Dunes)			Whooper Swan (<i>Cygnus cygnus</i>)
Fixed Dunes (Grey Dunes)			Storm Petrel (<i>Hydrobates pelagicus</i>)
Decalcified Dune Heath			Merlin (<i>Falco columbarius</i>)
Natural Eutrophic Lakes			Sandwich Tern (<i>Sterna sandvicensis</i>)
Lowland Hay Meadows			Golden Plover (<i>Pluvialis apricaria</i>)
Degraded Raised Bog			Corncrake (<i>Crex crex</i>)
Old Oak Woodlands			Barnacle Goose (<i>Branta leucopsis</i>)
Alluvial Forests			Lapwing (<i>Vanellus vanellus</i>)
Floating River Vegetation			Chough (<i>Pyrrhocorax pyrrhocorax</i>)
Wetland and Waterbirds			Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)

*Coastal habitats and species have been excluded from the list presented.

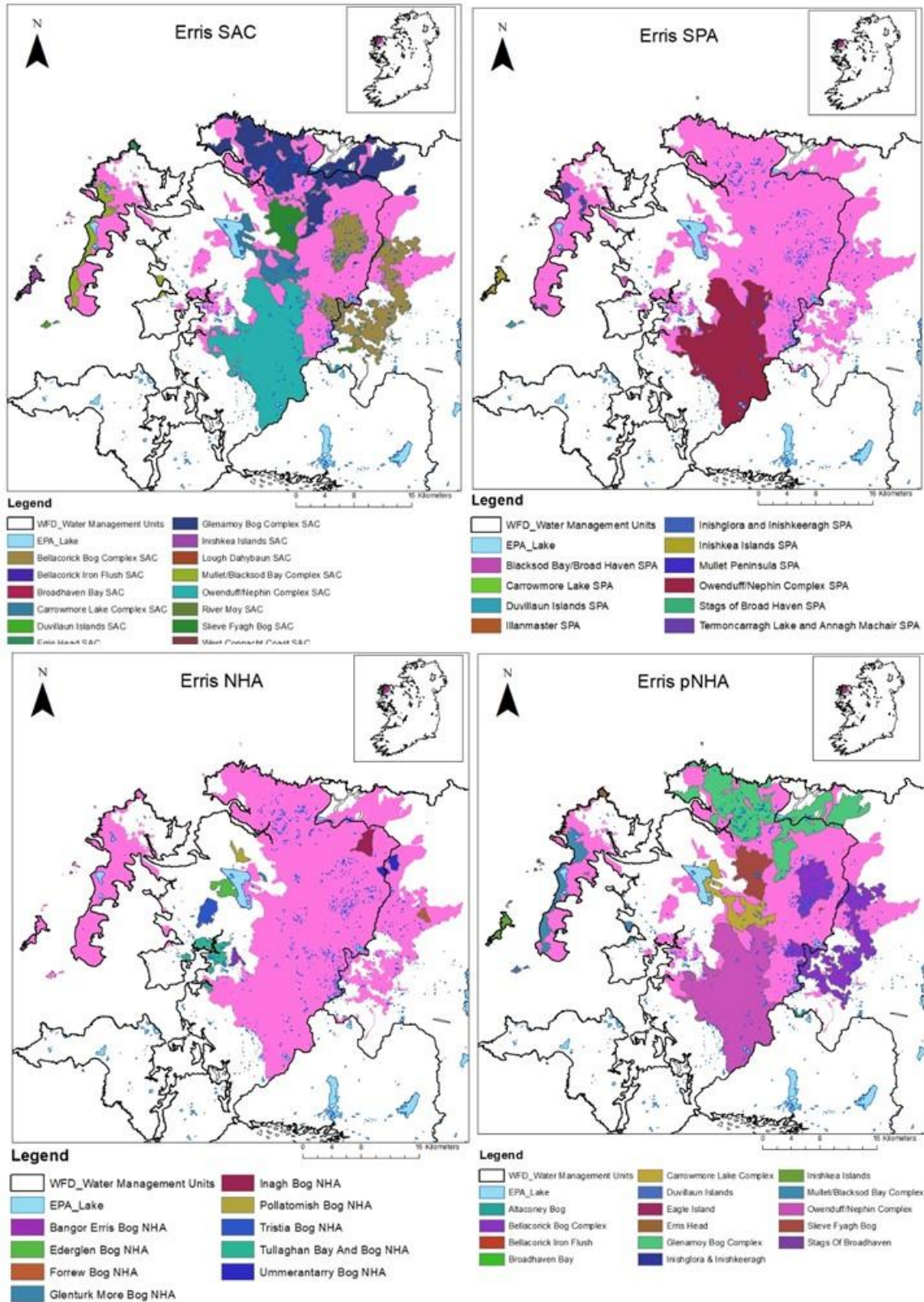


Figure 11: List of SAC, SPA, NHA and pNHA within the Erris ACRES West Connacht Cooperation zone.

8. Archaeology and Architectural Heritage

A total of 457 sites of archaeological and architectural importance are identified within the Erris CP zone (Figure 12). These sites include settlement remains, burial sites, and associated features from the neolithic period, the early and late bronze age, early and post medieval and early modern Ireland. These include megalithic tombs, standing stones, field systems, souterrains, ringforts, stone circles, crannogs, castles, ecclesiastical sites, and burial grounds. Settlements and their associated sites related to farming, fishing, and coastal defence, can be clearly seen on the map along the coastline and on the Iniskea Islands.

The rich prehistoric archaeological remains in these areas are due to the use of field stone as the main building material and the fact that many of the sites have been preserved under the cover of blanket bog. This preservation of archaeology has resulted in the most extensive Stone Age monument in the world located to the north at the Céide Fields, which borders commonage in the Erris CP zone. Beneath the bogland the oldest fossilised farmland in the world made up of a system of stone-walled fields, dwelling areas and megalithic tombs extends over hundreds of hectares of bogland. The most common monuments in this area are those related to its farming history and include 22 ringforts, 25 enclosures and 24 hut sites.

There is an important maritime history associated with this area. The remains of 23 promontory forts dating back to the Iron Age are found along the coast. It was also a landing point for the La Rata ship from the Spanish Armada after it was shipwrecked in 1588. In the 1500's the Clew Bay coastline was the territory of the famous Pirate Queen Gráinne Mhaol and the remains of one her defensive coastal tower houses is located nearby at Dooma along the Fahy shoreline. In more recent history Blacksod Light House dating to the mid-19th century, which was a weather reporting station during World War II.

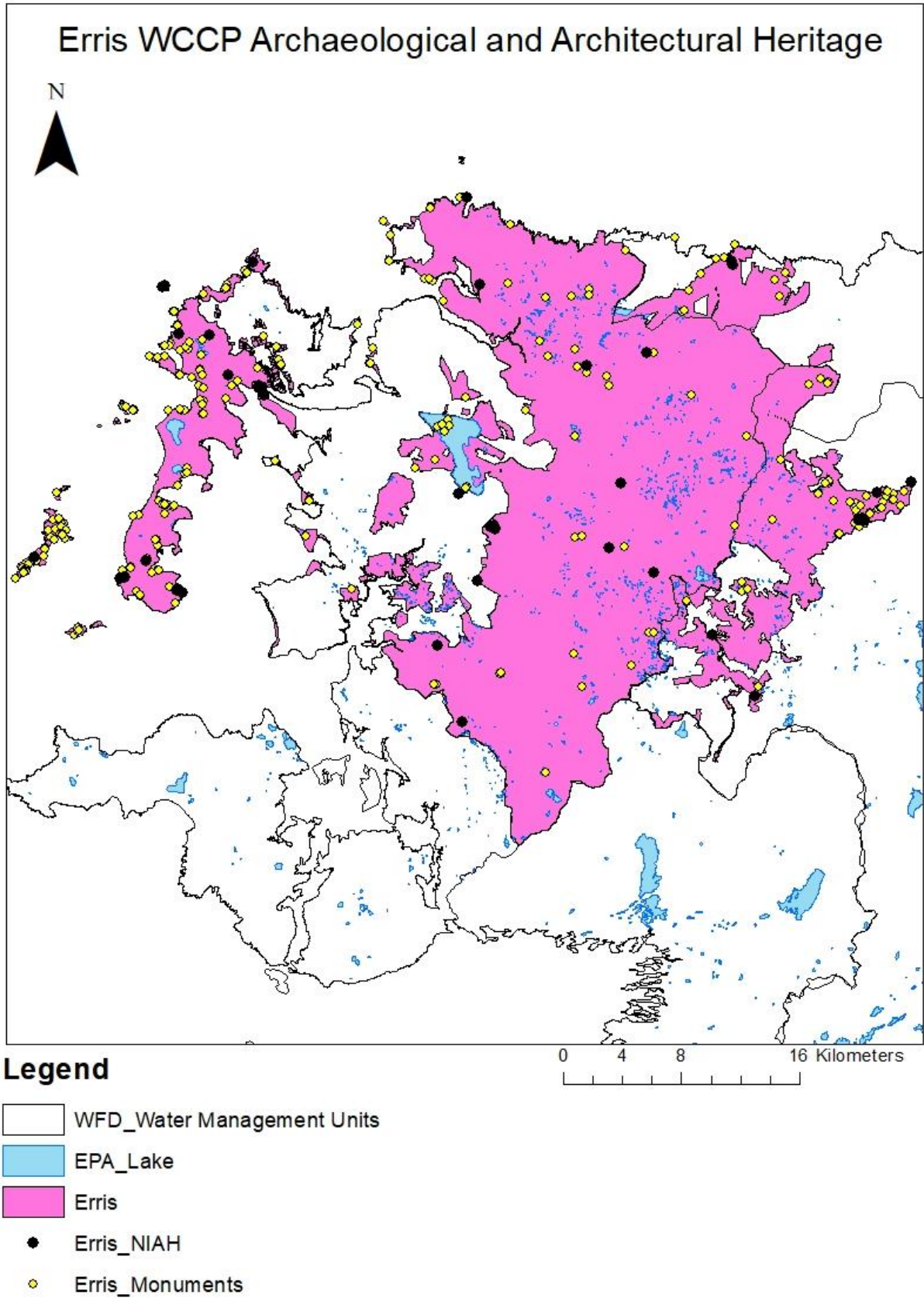


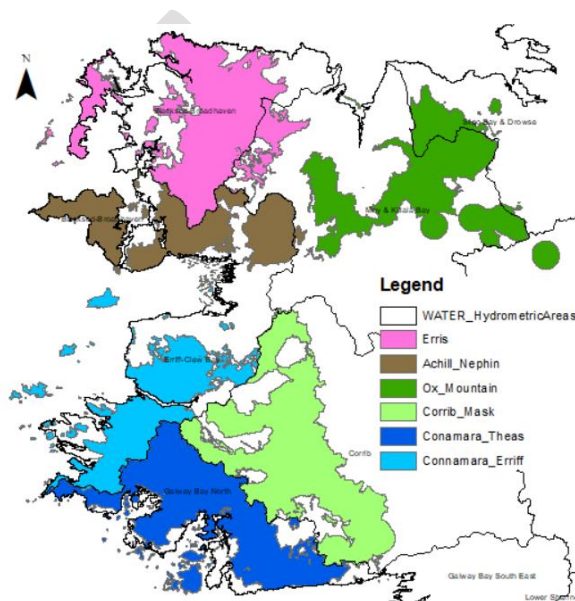
Figure 12: Map of Archaeological and architectural heritage sites in the Erris ACRES West Connacht cooperation zone.

9. Hydrological Catchment Description

Under the Water Framework Directive (WFD, 2000/60/EC), Ireland is divided into eight River Basin Districts (RBDs), two are international RBD, with boundaries shared by the Republic and Northern Ireland. The ACRES West Connacht Cooperation Project lies within the Western River Basin District and is incorporated across several WFD catchments as outlined in Table 5. An overview of the main pressures in the WFD catchments and sub-catchments with a particular focus on land management from the WFD 3rd Cycle regional reports based on WFD data collected 2013-2018. All surface water with defined urban, industry or wastewater pressures have not been listed in the tables of 'At Risk' in this report.

Table 5: Description of WFD Hydrological area in the ACRES West Connacht cooperation project.

ACRES West Connacht	WFD Hydrological Area
North West Mayo	
Erris	Blacksod-Broadhaven Moy and Killala Bay
Ox Mountain and Lough Conn	Sligo Bay Upper Shannon Moy and Killala Bay
Achill and Nephin	Blacksod-Broadhaven Erriff-Clew Bay Moy and Killala Bay
South Mayo Connamara	
North Connemara and Erriff	Erriff-Clew Bay
Conamara Theas	Galway Bay North
Corrib and Mask	Corrib Catchment



Northwest Mayo Erris CP encompasses the Blacksod-Broadhaven and Moy/Killala Bay catchments. The Blacksod-Broadhaven catchment includes all inland watercourses from Blacksod to Broadhaven Bay, Corraun Point, Bunwee Head and Achill Island. There is a total of 11 sub catchment in this region with a total of 58 rivers, 13 lakes and 10 groundwater bodies. Under the WFD water body classification, in this catchment there are 8 high status waters, 37 good status, 7 moderate status and 1 poor status. There are 38 waterbodies currently un-assigned a status. Continued protection of these water courses will be of high priority within the Erris CP area. The ACRES West Erris CP incorporates a large proportion of the Blacksod-Broadhaven and a small area of the Moy Killala Hydrological Catchment, there was 2 river and 2 lakes currently classified as 'at-risk' of not achieving the WFD objective of Good or High ecological status. For the 'at risk' rivers and lakes, sediment impacts, nutrients, morphological, hydrological, chemical and other (Table 6).

Table 6: List of waterbodies at risk of not achieving WFD good or high ecological status in Erris CP area.

Sub-catchment code	Waterbody name	Waterbody type	WDF Status	Significant Pressure
33_8	Glenamoy_010	River	At Risk	Agri/For
33_8	Glenamoy_020	River	At Risk	Agri/ Hymo/ Other
34_14	Shanvolahan_010	River	At Risk	For, Hymo, Peat
33_5	Cross	Lake	At Risk	Agri
33_7	Carrowmore	Lake	At Risk	Other

*Other is classified in the 3rd WFD RBMP as abstraction, anthropogenic pressure, historical pollution, invasive species, atmospheric, waste treatment.

10. Priority Areas of Action and Blue Dot.

There are existing designated Priority Areas for Action for the restoration of the water status to good water quality by 2027, there are three Group Water Schemes (GWS) and one public lake water supply in the region. Highlighting the importance of these drinking supplies in the Erris region. There are a number of Blue Dot sites, this programme ensures the protection, maintenance and conserve High Status water quality.

Ox Mountain Northwest Mayo, ACRES West Connacht Cooperation Area

1. Bedrock

The bedrock underlying the Ox Mountain consists of many geological formations (Figure 13). Much of Ox Mountain CP zone, including Lough Conn is underlain by Limestone Formations. Limestone is a sedimentary rock and the solubility of limestone in water and weak acids is attributed to a karst landscape. These areas are known to have shallow soils and have a high infiltration and flow rates capacity into bedrock aquifers. This results in a reduced ability for filtration of waterborne contaminants between the surface waters and the ground waters. In the south of the Ox Mountain CP zone, there are three distance circular areas with several veins of Lisgorman Schale Formation, Oak Park Limestone, Visean Limestone and Kilbryan Limestone Formation. Above this there are of Dadgan Limestone strips, followed by Moy sandstone, semi pelitic psammitic schist, schist, Ballina Limestone and Slieve Gamph igneous complex. Surrounding Lough Conn is Ballina Limestone, Capnagower formation sandstone and siltstone, Slieve Gamph igneous complex and ribbons of Quartzite formation pale psammite and quartzite.

2. Aquifers

In the Ox Mountain and Lough Conn CP area there are a number of aquifer classifications which contribute to yielding water in sufficient quantities for use. This is because of the numerous bedrock types in the region that gives rise to the aquifer types. The dominant aquifer is a Poor Aquifer running through the middle of the region and to the southwest of Lough Conn (Figure 14). To the north of Lough Conn and north of the CP area the aquifer type is classified as Regionally Important - Karstified. There are also strips of Locally Important Aquifers – Bedrock which is Generally Moderately Productive and Bedrock which is Moderately Productive in Local Zones.

3. Groundwater vulnerability

In the Ox Mountain CP area, there are 5 groundwater vulnerability classifications present, with the majority of the area to the south of Lough Conn and in the middle of the CP area falling into the High, Extreme and E (Rock at/near the surface or karst) classification (Figure 15). The area southeast of the Ox Mountain CP area predominantly has a low vulnerability classification. There are patches of moderate groundwater vulnerability identified to the north of the Ox Mountains and Lough Conn.

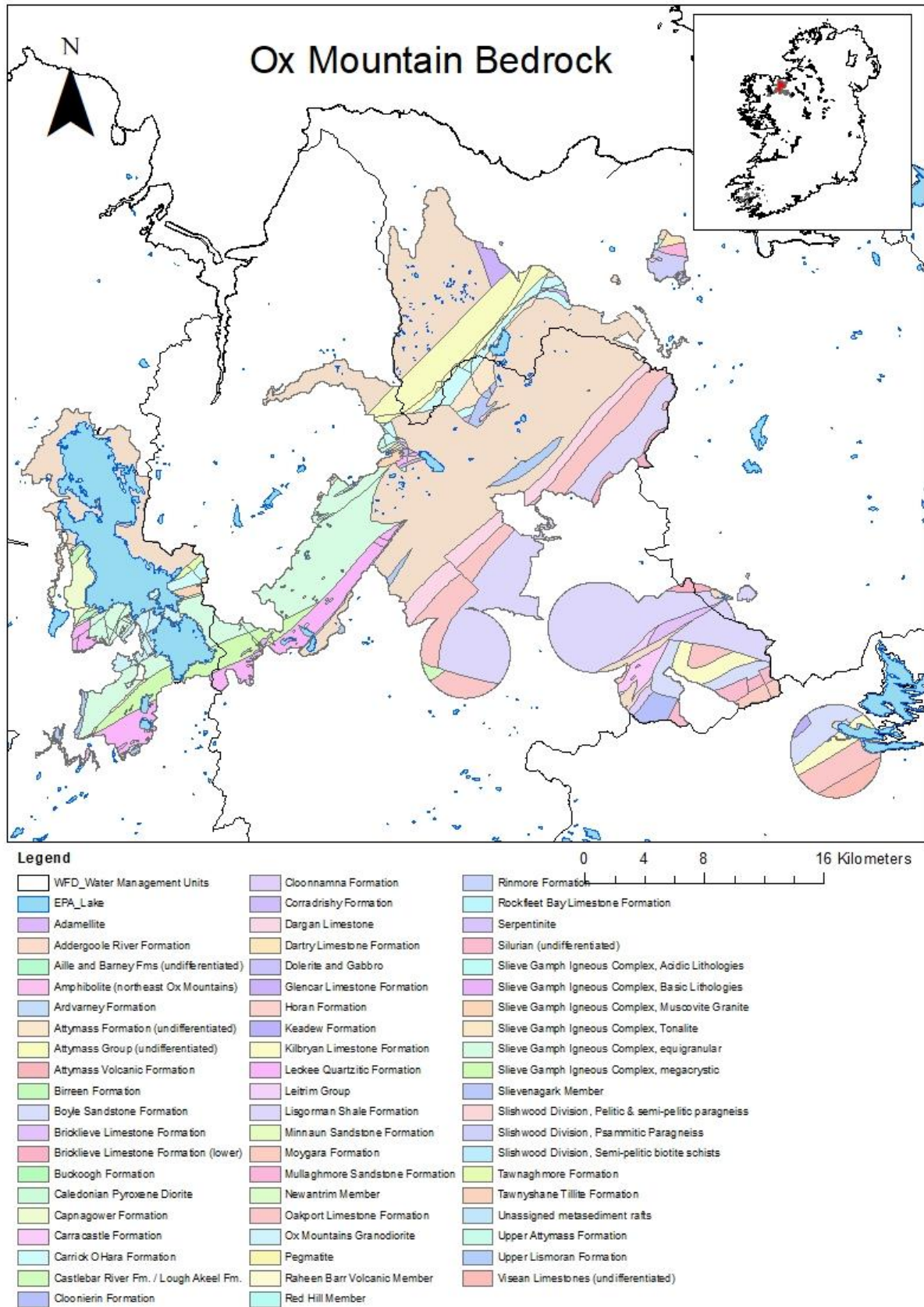


Figure 13: Bedrock geology within the Ox Mountain ACRES West Connacht Cooperation zone.

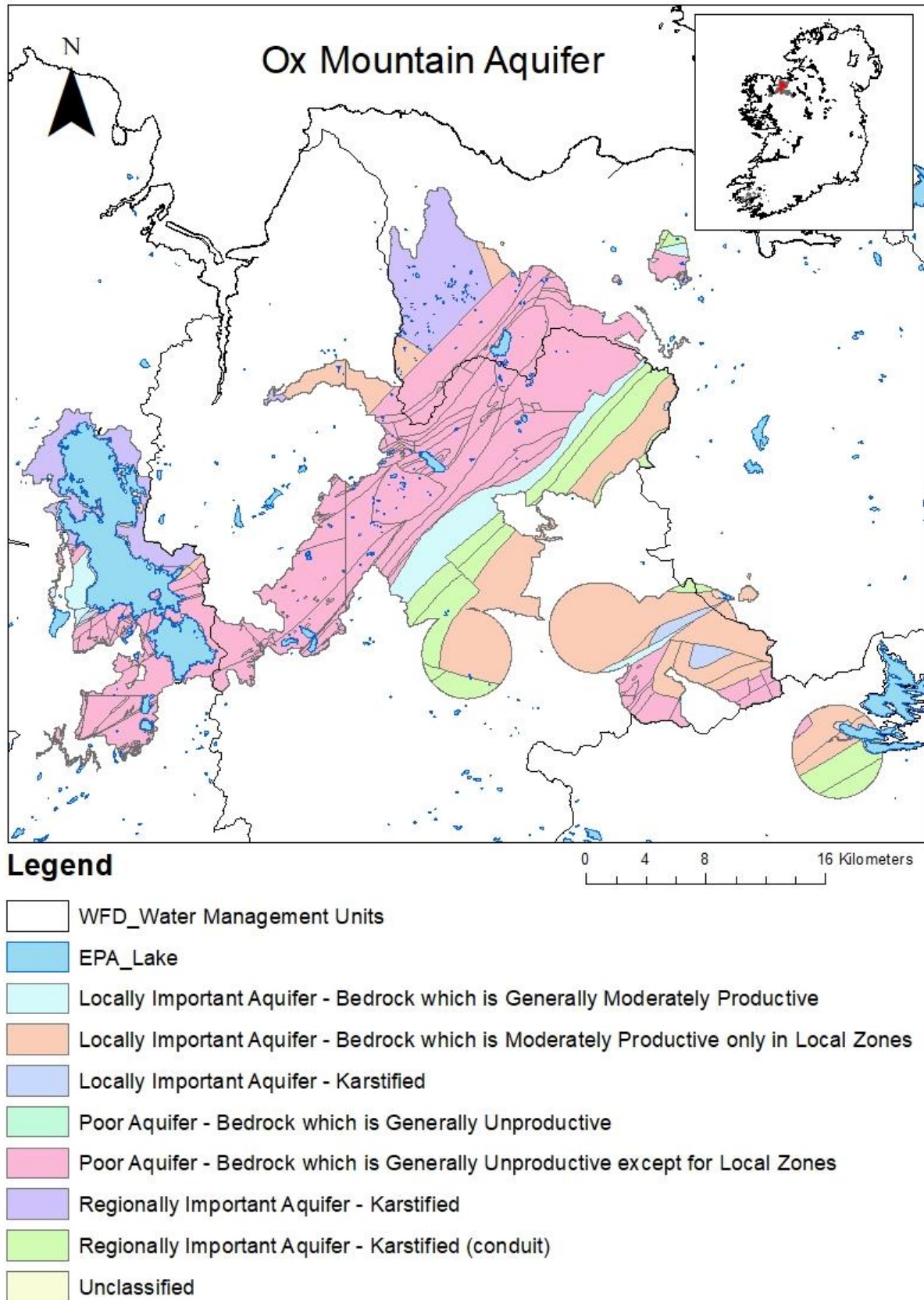


Figure 14: Aquifer description within the Ox Mountain ACRES West Connacht Cooperation zone.

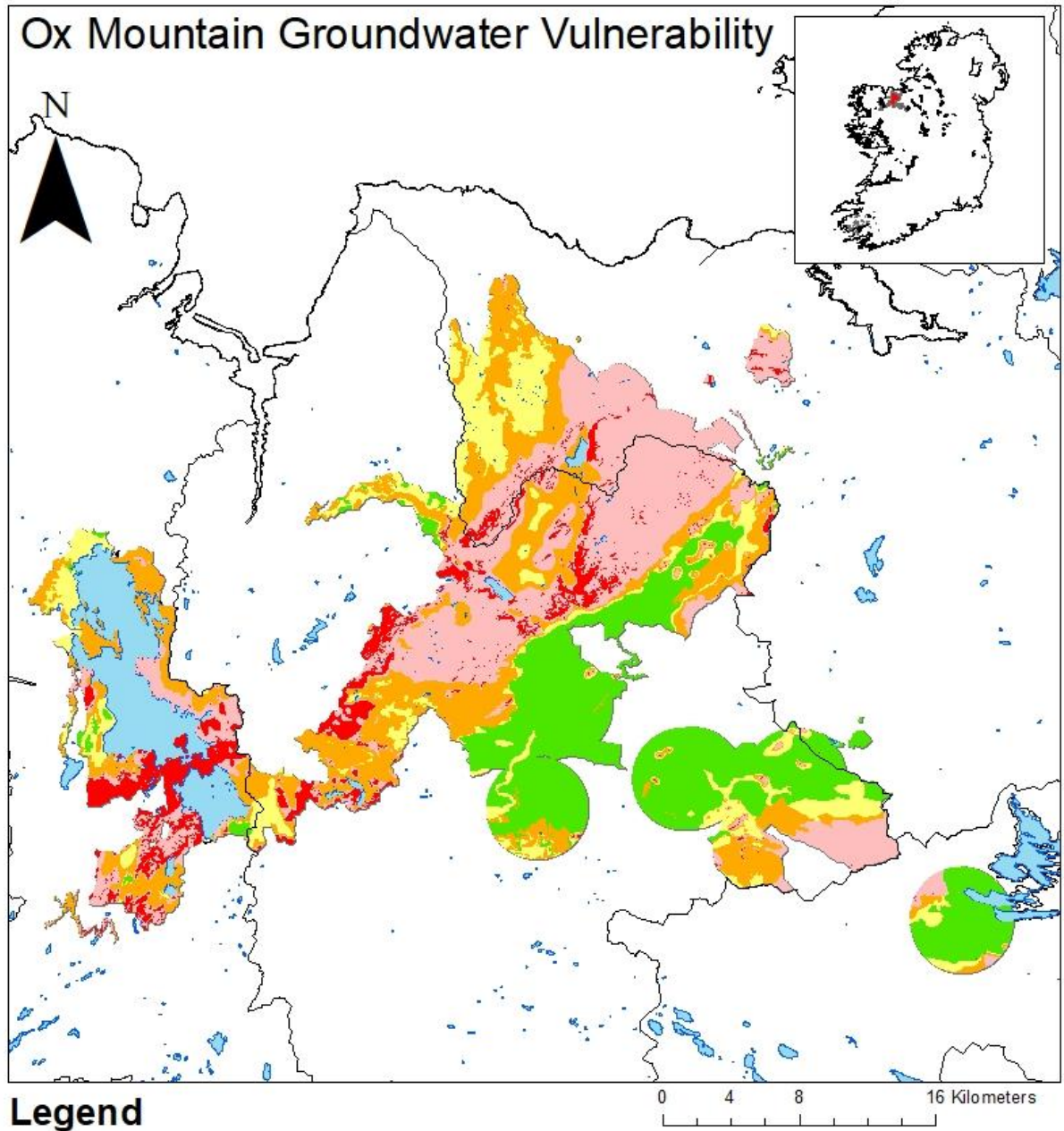


Figure 15: Groundwater vulnerability within the Ox Mountain ACRES West Connacht Cooperation zone.

4. Soil and texture

Soils are an essential feature that influences the groundwater vulnerability to potential contamination from the surround areas and may act as a protective filtration layer. Its effectiveness is dependent on the soil type, permeability, and thickness. The Ox Mountain CP area soils are dominated by Blanket peat, acid brown earth, brown podzolic, Peaty Gleys Acidic and Podzols Peaty. There are very large areas of cutaway raised bogs particularly in the southeast and inside the circular regions of the Ox Mountain CP area. To the north of Lough Conn, there is a mix of Grey Brown Podzolic and Surface water Gleys. There are ribbons of Alluvium soil throughout the CP area (Figure 16). The soil texture was predominantly classes as Peat, with areas of fine and course loamy around Lough Conn and in the circular areas in the southeast of the Ox Mountain CP area (Figure 17).

5. Corine land cover, Commonage and Agriculture land parcels

Land cover in the Ox Mountain CP is primarily classified as Peat, Pasture and Land principally occupied by agriculture with significant areas of natural vegetation. Along the Ox Mountain the land cover is primarily peat, with a large area of moor and heath, transitional woodland-scrub and coniferous forestry. There are also three burnt areas denoted in Corine land cover. To the east of the Ox Mountain CP area within the circular regions and Lough Gara the land cover is pasture and land principally occupied by agriculture with significant areas of natural vegetation. Surrounding Lough Conn and Lough Cullin are pockets of broadleaved forests along the west of Lough Conn and between the two lakes. The dominant land cover surrounding Lough Conn is pasture and land principally occupied by agriculture. There are also small regions of inland marsh (Figure 18).

An assessment of landuse in the Ox Mountain CP area indicates that much of the commonage land is located northwest of the Ox Mountain, with only small pocket around the southwest of Lough Conn and Lough Cullin. There are large regions of the Ox Mountain privately owned and contributes to the large patches of coniferous forestry plantations in the region. There are three areas denoted as Burnt Areas in the Corine Land cover, which is in agriculture land parcel land (Figure 19). Commonage parcel land is noted predominantly as permanent pasture, with some bog and scrub also listed as commonage. There were 2,150 herd numbers within the Ox Mountain and Lough Conn CP of which 19.5 % of herd numbers participated in GLAS, with 35,391 Ha area claimed in BPS. There are 204 commonages in the region with 55 % participating in GLAS.

6. Socio-economic characteristics of farming in the CP area.

The Ox Mountains and Lough Conn CP zone intercepts with an estimated 36 electoral divisions (Appendix 1). Of these, 16 are in Sligo, 19 are in Mayo and 3 are in Roscommon. Due to the difference between the boundaries of the CP zones and Electoral Divisions (EDs), the numbers extracted from ED zones may not represent the on-the-ground situations, particularly in areas where CP only covers a small portion of the ED area. The Ox mountains and Lough Conn CP area is concentrated along the spine of the Ox mountains and around the boundaries of Lough Conn, Lough Cullin and Lough Gara with further CP areas in high nature value areas such as around the River Moy SAC. The area within the CP zone is primarily upland areas with higher concentrations of sheep than cattle. However, some ED zones were more populated by cattle than sheep. Only one ED zone had dairy cows recorded and there was no tillage land reported within the CP zone. The median age for farmers was >50 years old. This older demographic presents challenges regarding future investment into the farms and potential farm succession. In 2019, approximately 40% of farmers in the Border region and 45% in the West region had off-farm employment. In the areas covering by 90% or more of the CP zone, the average land holding was between 45ha (90% coverage areas) and 27.5ha (100% coverage areas). Overall, the average land holding within the EDs intersected by the CP zone was 26ha.

7. SAC/SPA/NHA – review of Environmental Assets.

A significant proportion of the Ox Mountain area occurs within European Sites, with a number of designated sites overlapping including, 10 designated SACs, 2 SPAs, 1 NHAs and 15 pNHAs (Figure 20). The Qualifying Interest and Special Conservation Interest of these sites cover a range of habitats, species and are listed in Table 7. There is a full description of all the habitats, birds, Qualifying interest, and pollinators provided in Appendices (III Species, IV Birds, V Habitats, VI Bryophytes, VII Bee, VIII Butterflies).

Table 7: List of habitats, flora, fauna and bird's species protected in Ox Mountain CP area under Natura 2000. A full list is presented in Appendix III.

Habitat	Flora	Fauna	Birds
Dystrophic Lakes	Killarney Fern (<i>Trichomanes speciosum</i>)	Geyer's Whorl Snail (<i>Vertigo geyeri</i>)	Tufted Duck (<i>Aythya fuligula</i>)
Blanket Bogs (Active)	Marsh Saxifrage (<i>Saxifraga hirculus</i>)	Atlantic Salmon (<i>Salmo salar</i>)	Common Scoter (<i>Melanitta nigra</i>)
Wet Heath		White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	Common Gull (<i>Larus canus</i>)
Alkaline Fens		Sea Lamprey (<i>Petromyzon marinus</i>)	Whooper Swan (<i>Cygnus cygnus</i>)
Transition Mires		Brook Lamprey (<i>Lampetra planeri</i>)	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)
Lowland Hay Meadows		Otter (<i>Lutra lutra</i>)	
Degraded Raised Bog			
Old Oak Woodlands			
Alluvial Forests			
Active raised bogs			
Transition mires and quaking bogs			
Degraded raised bogs still capable of natural regeneration			
Depressions on peat substrates of the Rhynchosporion			
Molinia Meadows			
Orchid-rich Calcareous Grassland			
Rhynchosporion Vegetation			
Floating River Vegetation			
Wetland and Waterbirds			

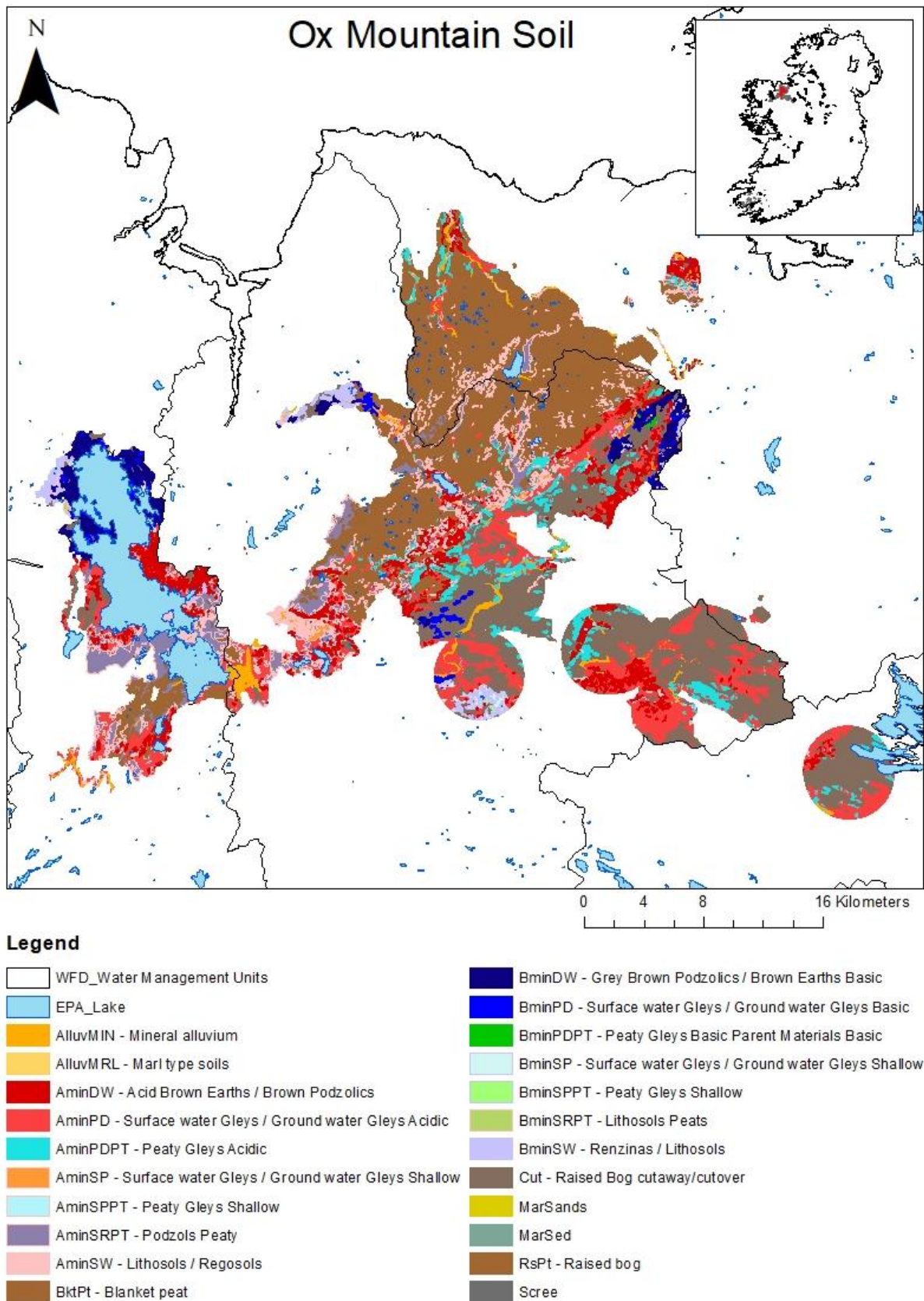


Figure 16: Soil within the Ox Mountain ACRES West Connacht Cooperation zone

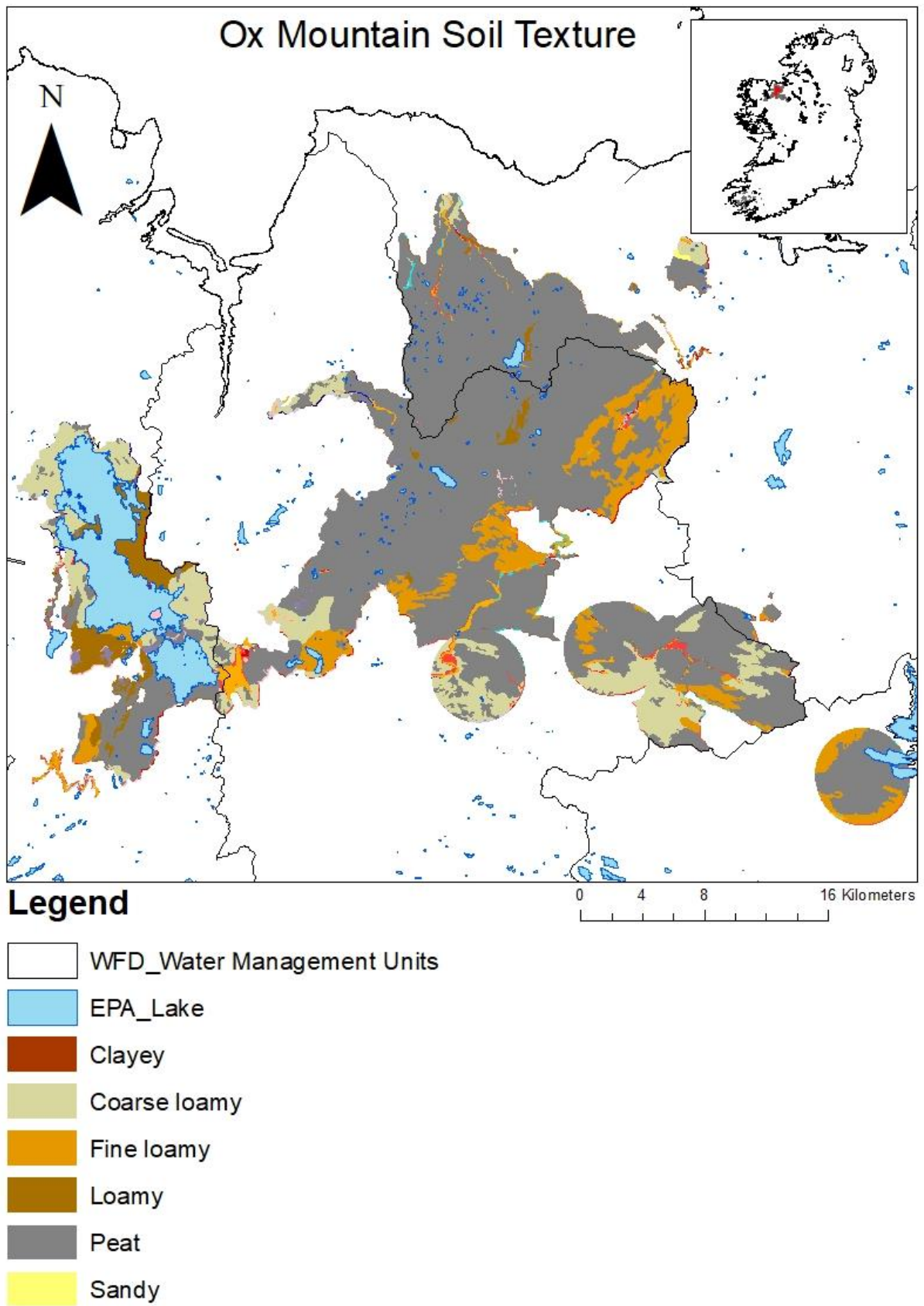


Figure 17: Soil texture within the Ox Mountain ACRES West Connacht Cooperation zone

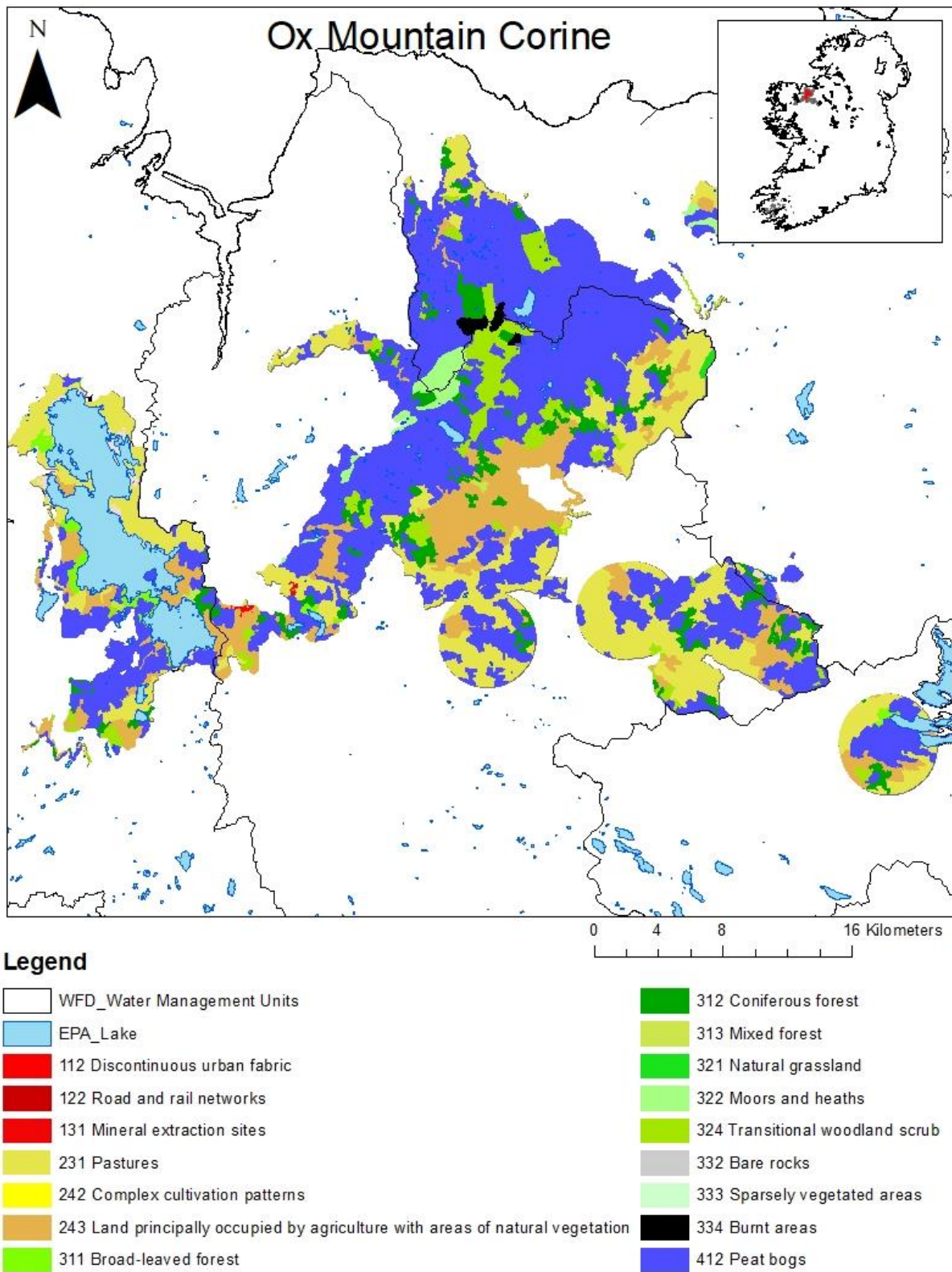


Figure 18: Corine within the Ox Mountain ACRES West Connacht Cooperation zone

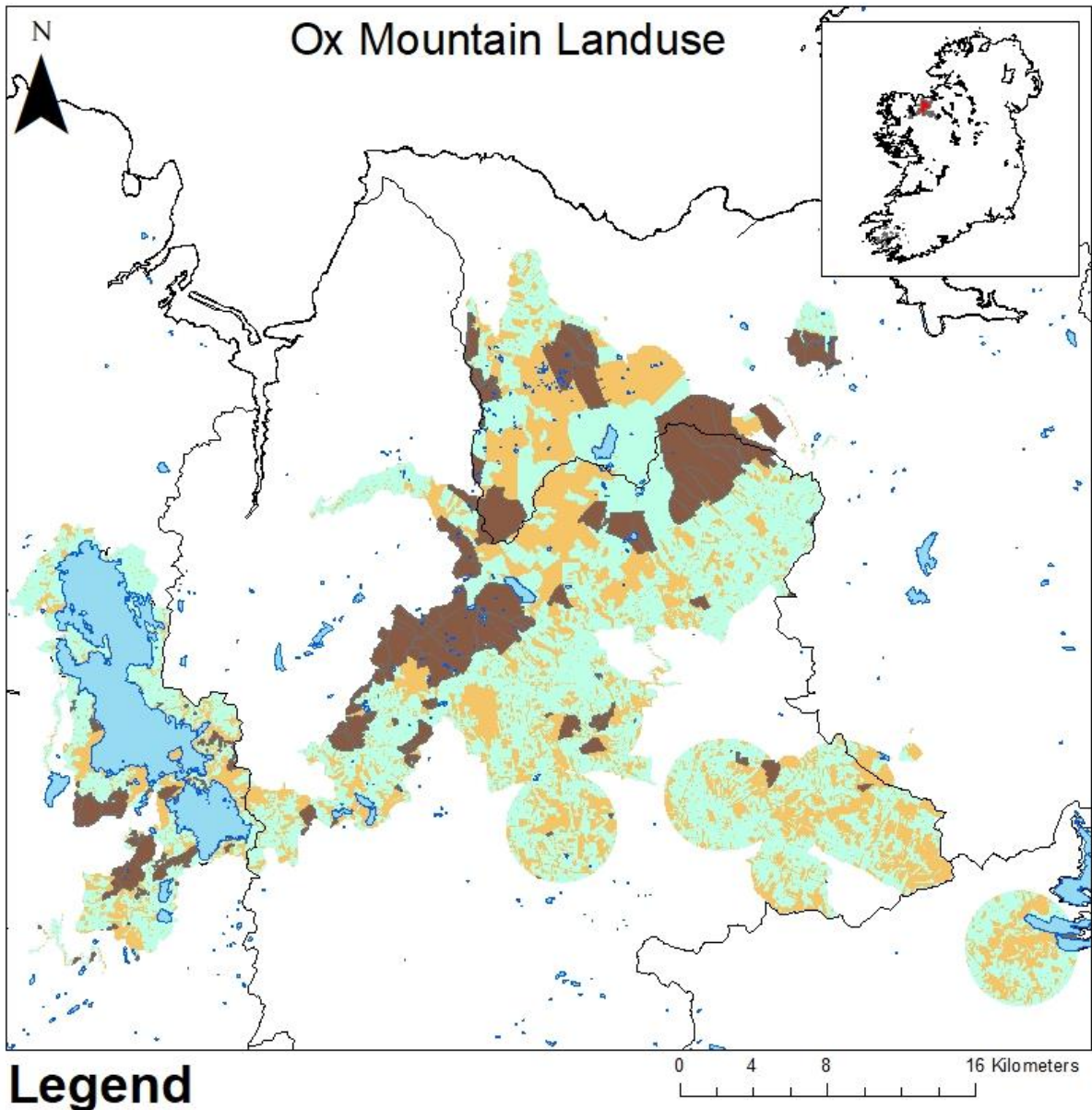


Figure 19: Commonage, land parcels and landuse within the Ox Mountain ACRES West Connacht Cooperation zone. Other landuse denotes privately owned land.

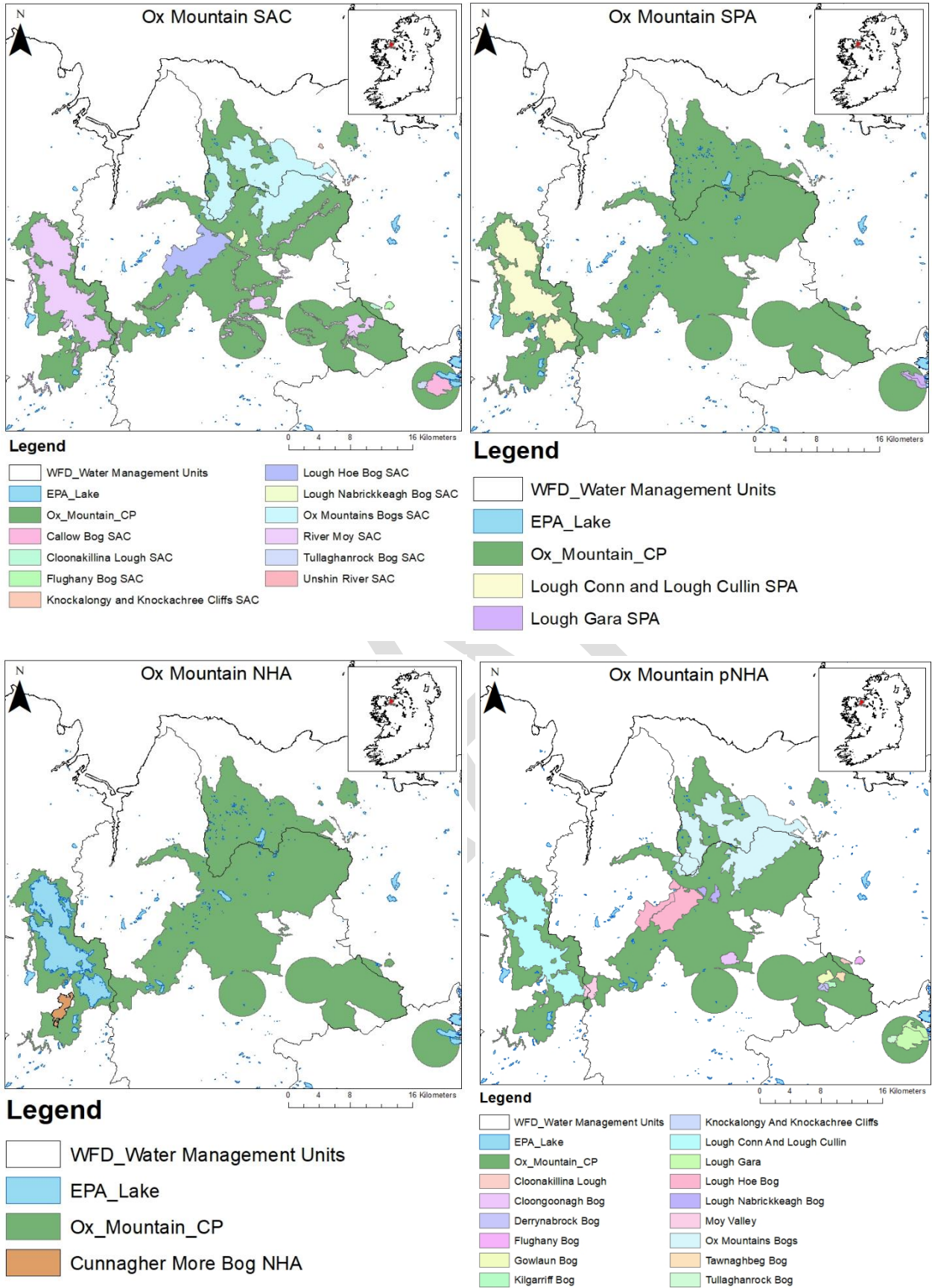


Figure 20: Map of SAC, SPA, NHA and pNHA within the Ox Mountain ACRES West Connacht Cooperation area.

8. Archaeological and Architectural Heritage

A total of 1,112 sites of national archaeological and architectural importance are present within the Ox Mountain CP zone (Figure 21). These sites include settlement remains, burial sites, and associated features from the neolithic period, the early and late bronze age, early and post medieval and early modern Ireland. These include megalithic tombs, standing stones, field enclosures, souterrains, ringforts, stone circles, crannogs, castles, ecclesiastical sites, and burial grounds. The rich prehistoric archaeological remains in these areas are due to the use of stone as the main building material and there are 44 recorded Megalithic tombs connected to communal burial dating back to the Neolithic period c. 4000-2000 BC in this cp zone. The oldest and densest concentration of Neolithic tombs in Ireland is located further to the north of the CP zone at Carrowmore Megalithic Cemetery with the remains of over 35 passage tombs found there.

In the Ox Mountains there are several megalithic tombs located on elevated sites including wedge tombs and court tombs such as the Carrowreagh Court tomb and Doomore Cairn. There is a heavy concentration of settlements and their associated sites in this zone, especially Ringforts – raths of which there are 361 recordings and enclosures of which there were 113. This type of enclosed ring fort farmstead consisted of a circular earthen bank or stone wall with most dating to between C. 550 – 900AD, but there is evidence of a longer history even prehistoric activity, and re-use in the later medieval period at some sites. There are also many records of cránnogs dating from a similar period as the ringforts in the local lakes especially in Lough Conn and Lough Cullin. A total of 48 cránnogs occur, which are man-made islands in lakes used for habitation and accessed by boat or an artificial causeway. There are 82 post 1700 architectural structures in the zone consisting of buildings, churches, bridges, schools, and industrial mills such as Foxford Woollen Mills.

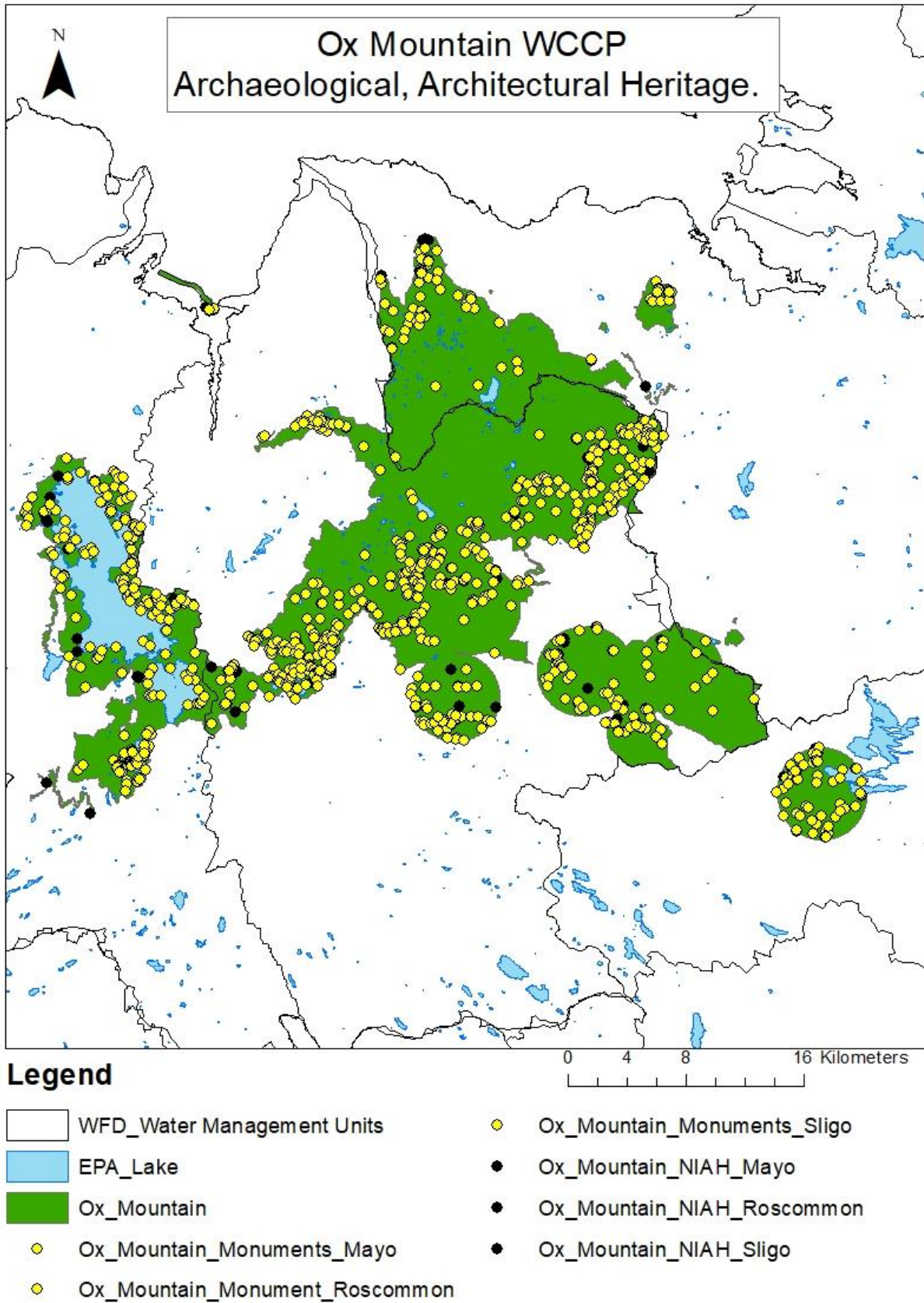


Figure 21: Map of Archaeological and architectural heritage sites in the Ox Mountain and Lough Conn ACRES West Connacht cooperation zone.

9. Hydrology

The ACRES West Connacht Cooperation Project lies within the Western River Basin District and is incorporated across several WFD catchments as outlined in Table 5. Moy and Killala Bay catchments includes all streams and rivers draining the Moy River entering Killala bay between Benwee head and Lenadon point in Sligo. There are 22 sub-catchments with 115 rivers and 19 lakes. Under the WFD water body classification, in this catchment there are 16 high status waters, 91 good status, 23 moderate status and 12 poor status.

The ACRES West Ox Mountain CP incorporates a large proportion of the Moy catchment particularly around Lough Conn and the Ox Mountains. Within these CP areas, there are 2 lakes and 10 rivers currently classified as 'at-risk' of not achieving the WFD objective of Good or High ecological status as a result of landuse. For the 'at risk' rivers and lakes, excess nutrients and morphology impacts are significant pressures, with sediment, hydrological and organics are the other pressures impacting waterbodies in this sub-catchment (Table 8).

Table 8: List of waterbodies at risk of not achieving WFD good or high ecological status in the Moy/Killala Catchment and in the Ox Mountain CP area.

Sub-catchment code	Waterbody name	Waterbody type	WDF Status	Significant Pressure
34_5	Castlehill	River	At Risk	Agri
34_20	Clydagh_020	River	At Risk	For
34_8	Deel (Crossmolina)_050	River	At Risk	Other
34_7	Eignagh_020	River	At Risk	Hymo
34_7	Eignagh_030	River	At Risk	Hymo
34_9	Glenree_020	River	At Risk	Hymo
34_16	Moy_010	River	At Risk	Ag, For, Hymo
34_16	Moy_040	River	At Risk	Hymo
34_18	Mullaghanoe_010	River	At Risk	Ag, For, Hymo
34_18	Owengarve (Sligo)_010	River	At Risk	Hymo
34_18	Owengarve (Sligo)_020	River	At Risk	Hymo
34_1	Sonnagh (Moy)_010	River	At Risk	Ag, Hymo
34_15	Yellow (Knock)_010	River	At Risk	For, Hymo
34_12	Cullin	Lake	At Risk	Ag, Other
34_12,34_20, 34_5	Conn	Lake	At Risk	Other

*Other, is classified in the 3rd WFD RBMP as abstraction, anthropogenic pressure, historical pollution, invasive species, atmospheric, waste treatment.

10. Priority Area of Action and Blue Dot

There are existing designated Priority Areas for Action for the restoration of the water status to good water quality by 2027, seven are three Group Water Schemes (GWS) and five public lake water supply in the region. Highlighting the importance of these drinking supplies in the Lough Conn/Ox Mountain region. There are a number of Blue Dot sites, this programme ensures the protection, maintenance and conserve High Status water quality.

Northwest Connacht Achill and Nephin Cooperation Project

The Achill and Nephin CP zone is divided into an estimated 21 Electoral Divisions (ED) (Appendix 1).

1. Bedrock

The bedrock underlying Achill Nephin Cooperation area appears complex as it consists of numerous different formations (Figure 22). However, the majority of these formations are comprised of Schist, Sandstone, Quartzite, Psammitic, and Dolomite marble with small bands of limestone outcrops. Schist

is a metamorphic rock formed from different rocks including sedimentary rock such as mudstone and igneous rocks. Sandstone is a sedimentary rock made of compacted sand. Achill head formation consists of Pelitic schist and psammitic, Keem Schist Formation of grey graphitic schist with psammites, Slievemore, Dugort and Doega are made up of Quartzite and psammite schist. Along the coast from Achill to Newport Maam Formation of red sandstone conglomerate and mudrock dominates, with bands of Quartzite and calc and graphitic schist; psammitic dominate in the north, upper catchment. The Newport catchment is primarily Capnagower Formation of Grey sandstone and siltstone, Maam Formation, Nephin Formation and Birreen Formation of Igneous conglomerate sandstone. There is a small pocket of Aille Limestone Formation located to the east. Schist is a low-density rock and are generally poor aquifers because they have low porosity and are typically impermeable.

2. Aquifers

The majority of the Achill Nephin CP is classed as a 'Poor Aquifer – Bedrock which is generally unproductive except for Local Zones' particularly in Achill and the upper catchment of Owengarve, Burrishoole and Newport. This aquifer is considered unproductive but are important to delivering water to rivers and lakes via shallow groundwater pathways (EPA 2010). There is a band of 'Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones' running parallel to the coastline and in bands in the Newport River catchment. There are also Locally Important Aquifer – Bedrock which is generally Moderately Productive and a patch to the east of the Newport catchment of Regionally Important Aquifer – Karstified (conduit) as a result of the porous limestone in the area.

3. Ground water Vulnerability

The principal groundwater vulnerability in the Achill Nephin Cooperation area is classed as E (Rock at /near surface or Karst), which reflects the steep slopes of the mountainous landscape and thin soils in the region. The vulnerability of groundwater is affected by the permeability of the overlying subsoils and soils and the interactions with surface water and groundwater. Groundwater vulnerability decreases with decreasing elevation within the Achill Nephin CP area. The highest elevation areas are classified as E (Rock at or near the surface/karst, the highest vulnerability classification) or extreme (Figure 24). The area immediately surrounding north, west, and south of Beltra Lough is classified as moderate to low groundwater vulnerability.

Achill Nephin Bedrock

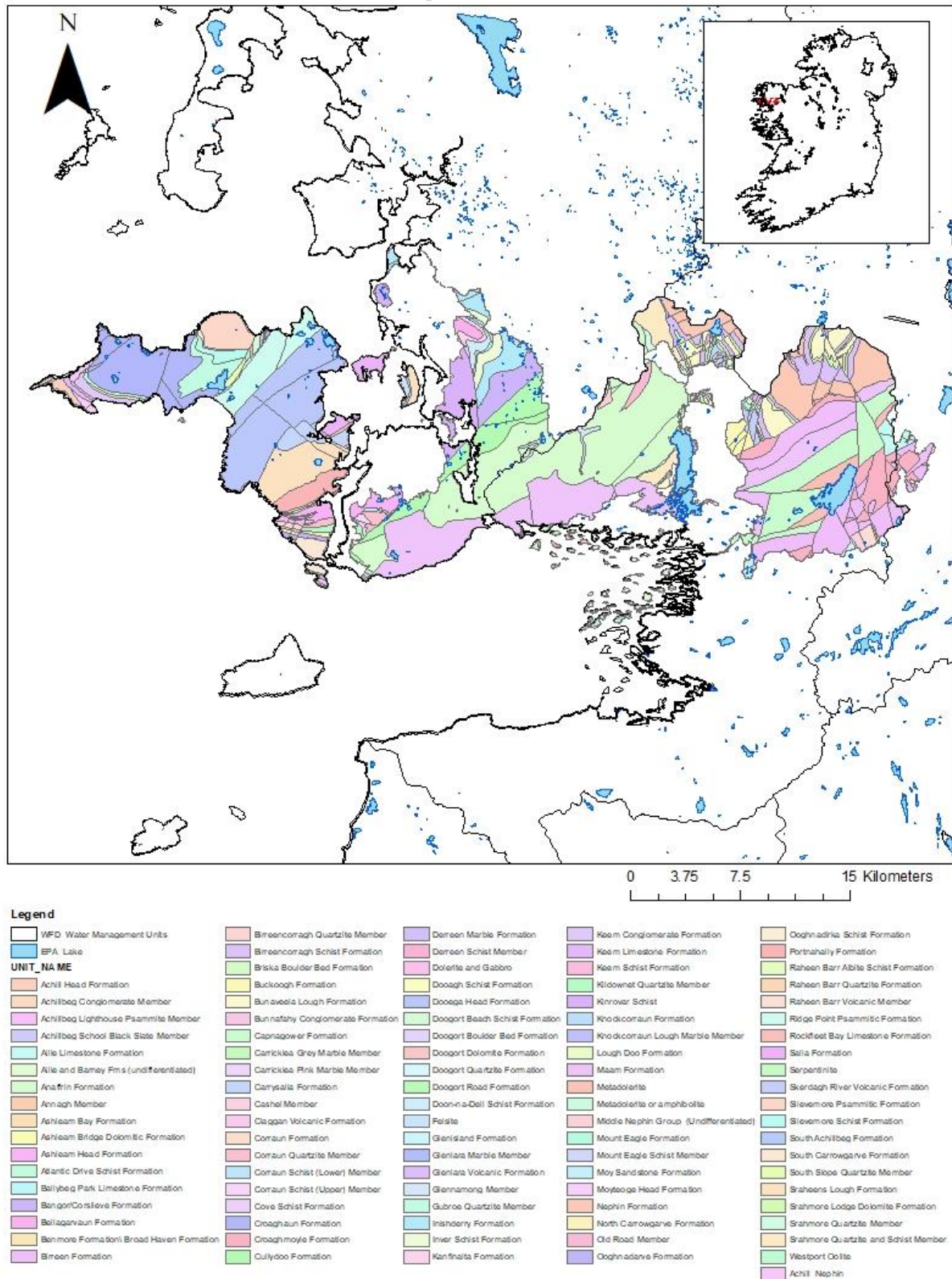
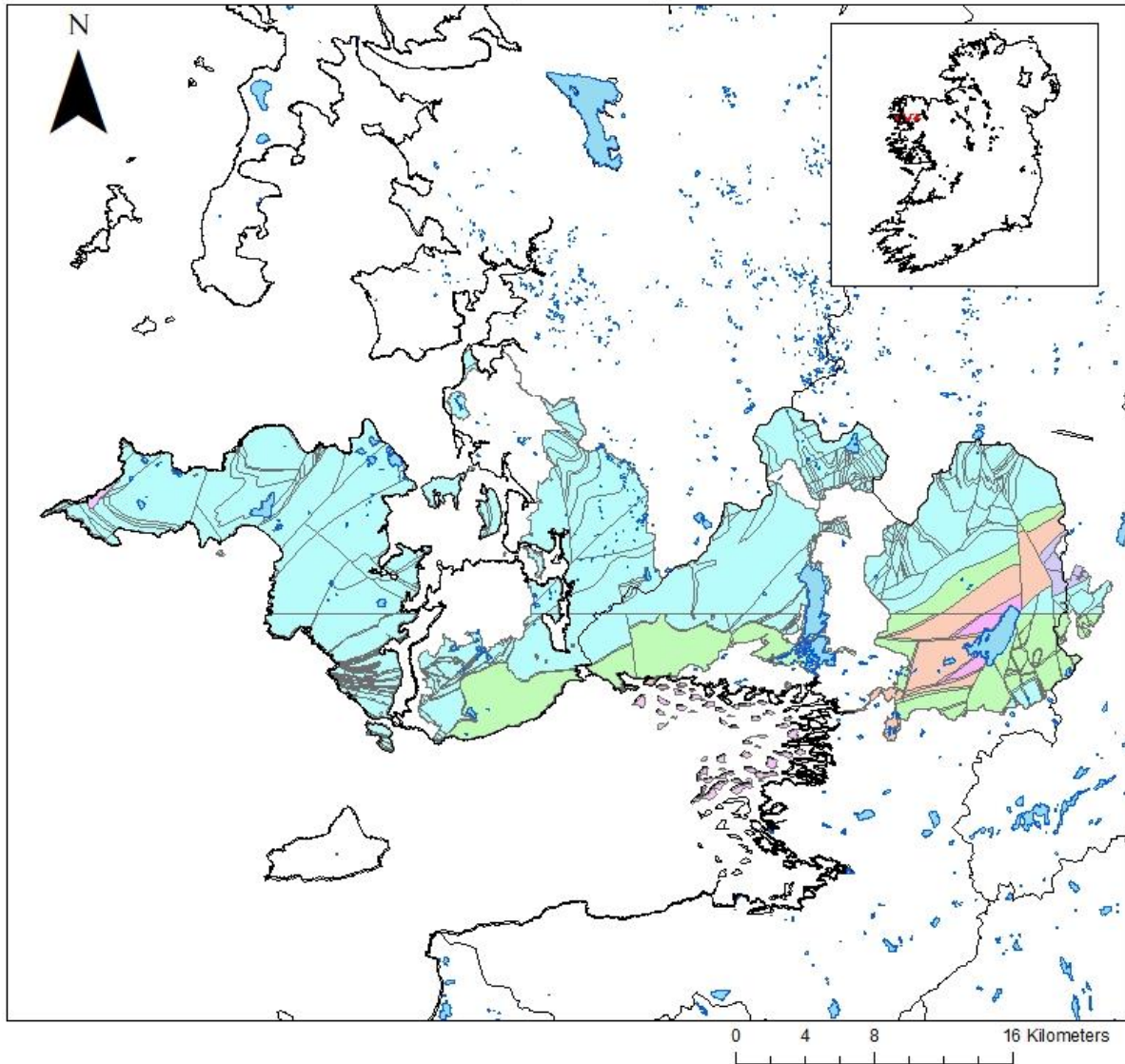


Figure 22: Bedrock geology within the Achill Nephin ACRES West Connacht Cooperation zone.

Achill Nephin Aquifer

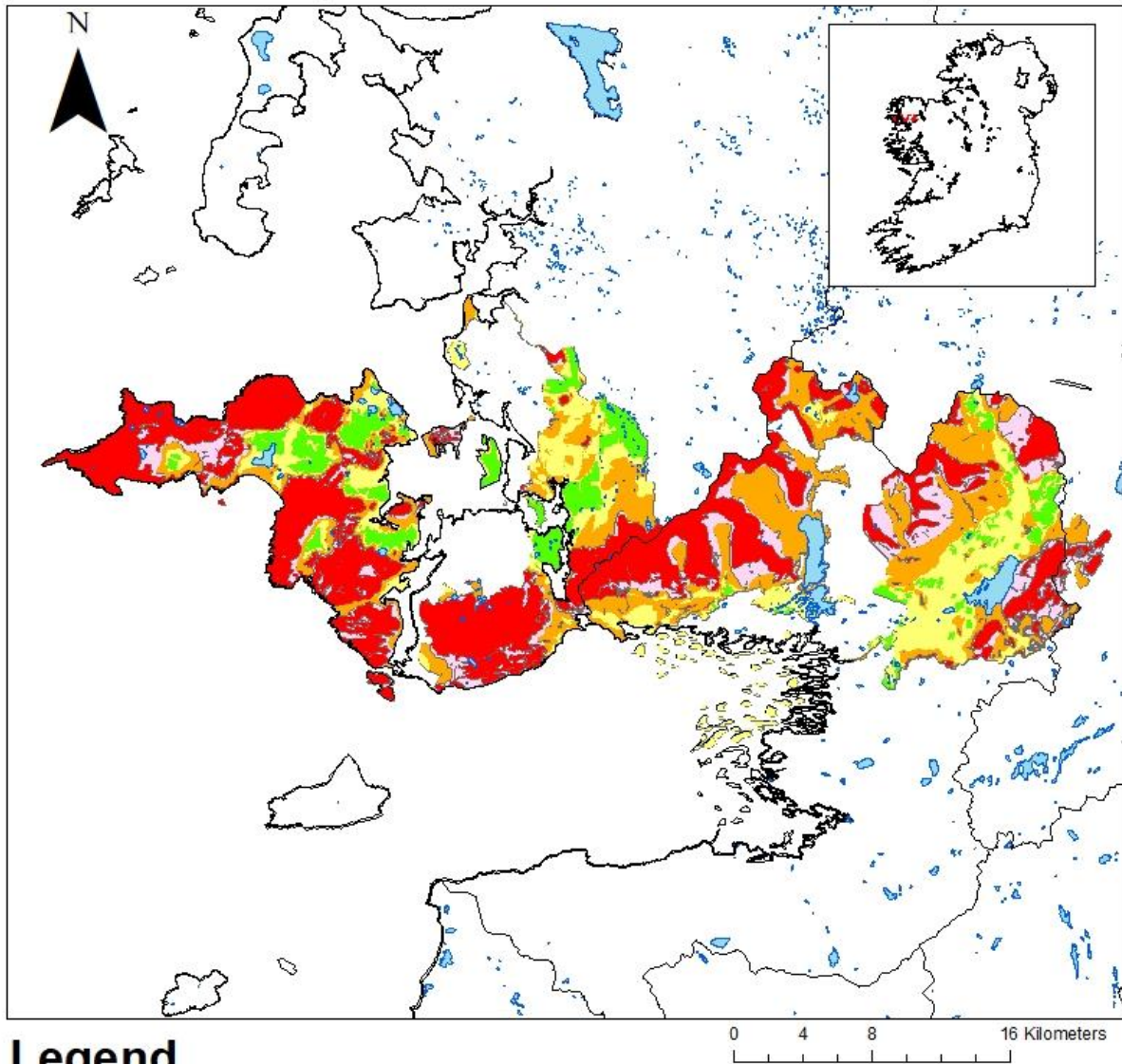


Legend

- WFD_Water Management Units
- EPA_Lake
- Locally Important Aquifer - Bedrock which is Generally Moderately Productive
- Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones
- Locally Important Aquifer - Karstified
- Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones
- Regionally Important Aquifer - Karstified (conduit)

Figure 23: Aquifer within the Achill Nephin ACRES West Connacht Cooperation.

Achill Nephin Groundwater Vulnerability



Legend



-  WFD_Water Management Units
-  EPA_Lake
-  E(Rock at/near surface or karst)
-  Extreme
-  High
-  Moderate
-  Low

Figure 24: Groundwater vulnerability within the Achill Nephin ACRES West Connacht Cooperation.

4. Soil

The Achill Nephin CP area is dominated by Blanket Peat, Podzol Peaty and Gley acidic soils (Figure 25). Podzol are typically poorly drained soil that are formed in mountain and hill areas. Gley are poorly draining soils mainly due to high clay content, developed under waterlogged conditions. Most Gley are poor and unsuitable for cultivation, typically located in wet and low-lying areas. There are areas identified as Cut – Raised Bog cutaway/cutover located to the south and southwest of Lough Beltra and to the west of Lough Feeagh. There are pockets of Sand Marl along the coastline. The soil texture in the area is predominantly classified as Peat, Loamy and Clayey. There are also large regions of exposed rock.

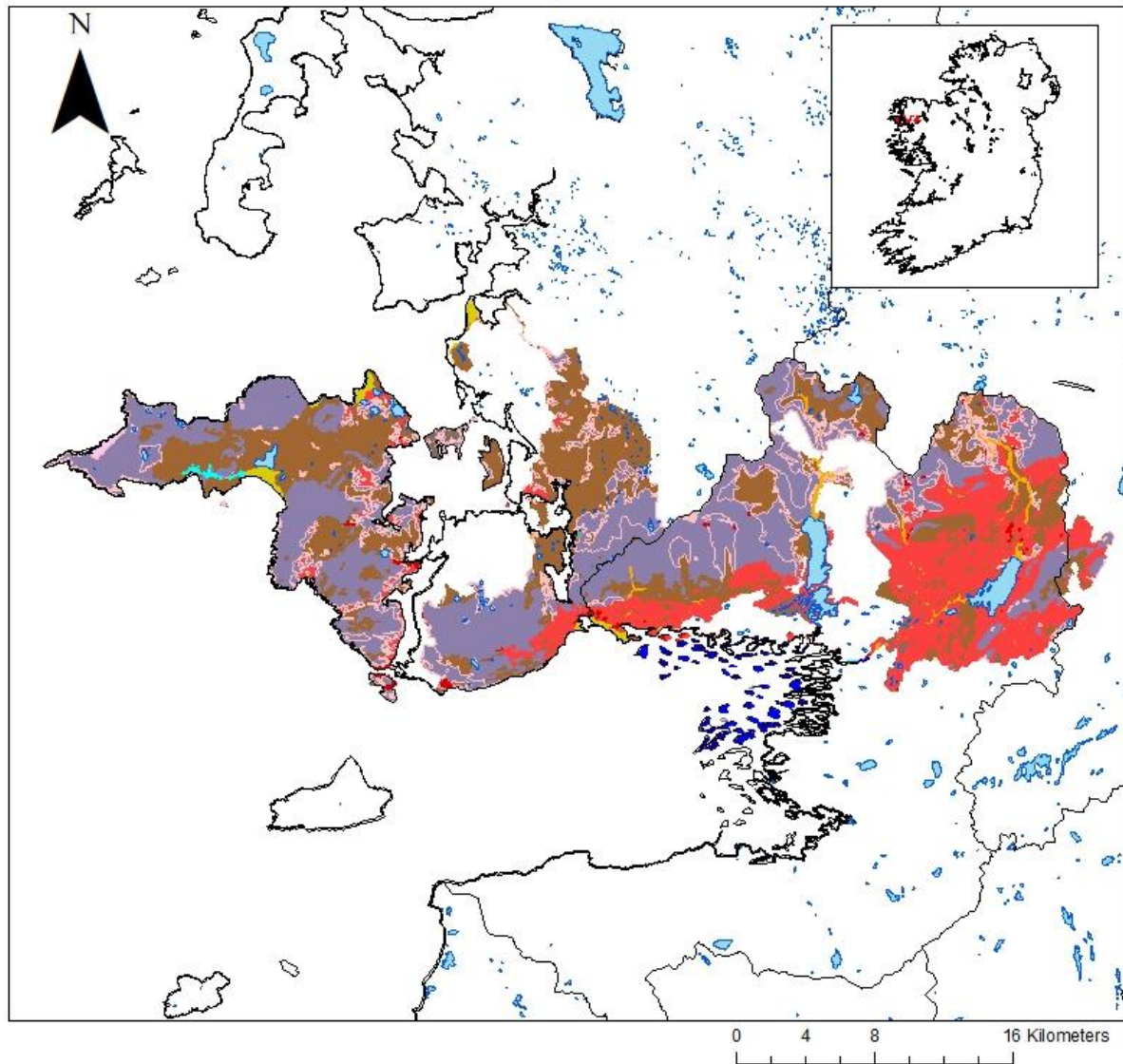
5. Corine land cover, Commonage and Agriculture land parcels

Land cover in the Achill Nephin CP is primarily classified as peat with small pockets of pasture and land principally occupied by agriculture with significant areas of natural vegetation, moor heathland and natural grasslands. There are several beaches and dunes located along the coastline in the Achill Nephin CP area. There are small compartments of transitional woodland scrub located beside coniferous plantation, particularly in in Owengarve, Burrishoole and Newport catchments (Figure 26). In the Achill Nephin CP area, there are 1,074 herd numbers with 15,202ha claimed and 5,180 land parcels. There is 55.4% of herd numbers participating in the current agri-environmental scheme (GLAS). An assessment of landuse in the Achill Nephin CP area indicates that there are vast areas of commonage in this area with inherited share distributions of ½ commonage share to 1/3342th share, with the majority located in Achill, Mullranny, the Owengrave and Burrishoole catchments. There are 565 herd numbers with commonages of which 87% are denoted as participating in GLAS. There are a small proportion of commonage located in the Newport catchment, there are also large regions of the Newport catchment privately owned and attributes for the large patches of coniferous forestry plantations in the region (Figure 27). Commonage parcel land is noted predominantly as permanent pasture, with some bog and scrub also listed as commonage.

6. Socio-economic characteristics of farming in the CP area.

The predominant land-based activities in the Achill/Nephin CP zone include agriculture, local fisheries, and has become increasingly reliant on tourism. The land is mainly extensively farmed due to the natural constraints of the land type and climate and consists of mixed farm systems of cattle and sheep grazing in lowland grasslands, with hill sheep grazing forage in the uplands. Only one electoral area recorded no cattle which was in Dooega on Achill Island. The average farm size in the Achill CP zone was 7ha and in the Nephin CP zone was 32.5ha. The age profile for all the farmers in the Achill/Nephin CP zone is > 50 years, with the average median farmer age of 60 years. Farms in Achill and Nephin are generally made up of a mixture of privately owned land and upland commonage land. Suckler farming and sheep farming are the most common enterprises. Sheep generally farm the commonage with the suckler cattle farming the private fields. These types of farming are seen to have the lowest family farm income of farming enterprises nationally and has led to many farmers taking on off farm jobs.

Achill Nephin Soil

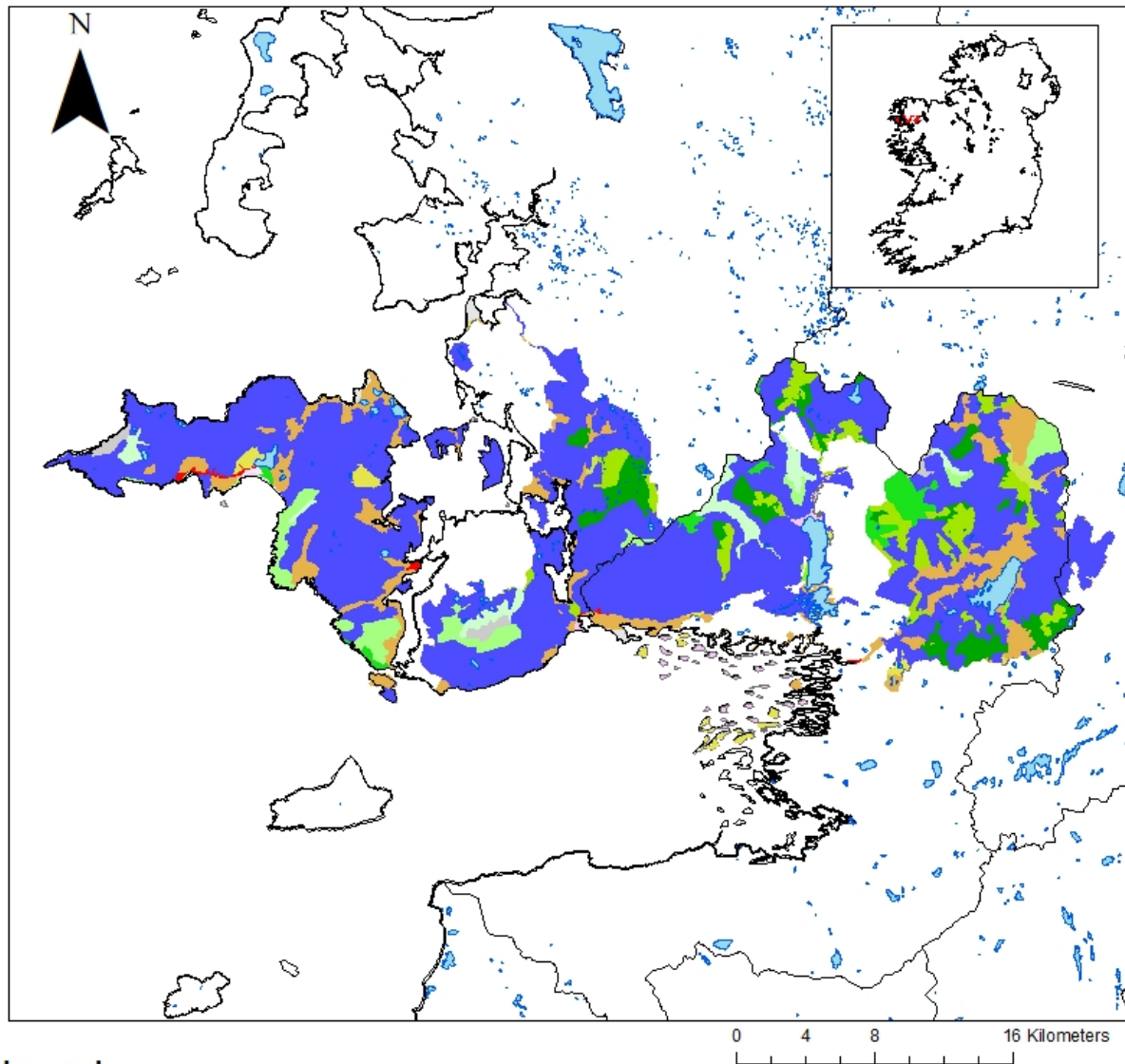


Legend

WFD_ Water Management Units	BminDW - Grey Brown Podzolics / Brown Earths Basic
EPA_Lake	BminPD - Surface water Gleys / Ground water Gleys Basic
AlluvMIN - Mineral alluvium	BminSRPT - Lithosols Peats
AlluvMRL - Marl type soils	Cut - Raised Bog cutaway/cutover
AlluvUND - Alluvium undifferentiated	Lac
AminDW - Acid Brown Earths / Brown Podzolics	Made
AminPD - Surface water Gleys / Ground water Gleys Acidic	MarSands
AminSP - Surface water Gleys / Ground water Gleys Shallow	MarSed
AminSPPT - Peaty Gleys Shallow	RsPt - Raised bog
AminSRPT - Podzols Peaty	Scree
AminSW - Lithosols / Regosols	Reed Swamp / Marsh
BktPt - Blanket peat	

Figure 25: Soil within the Achill Nephin ACRES West Connacht Cooperation.

Achill Nephin Corine

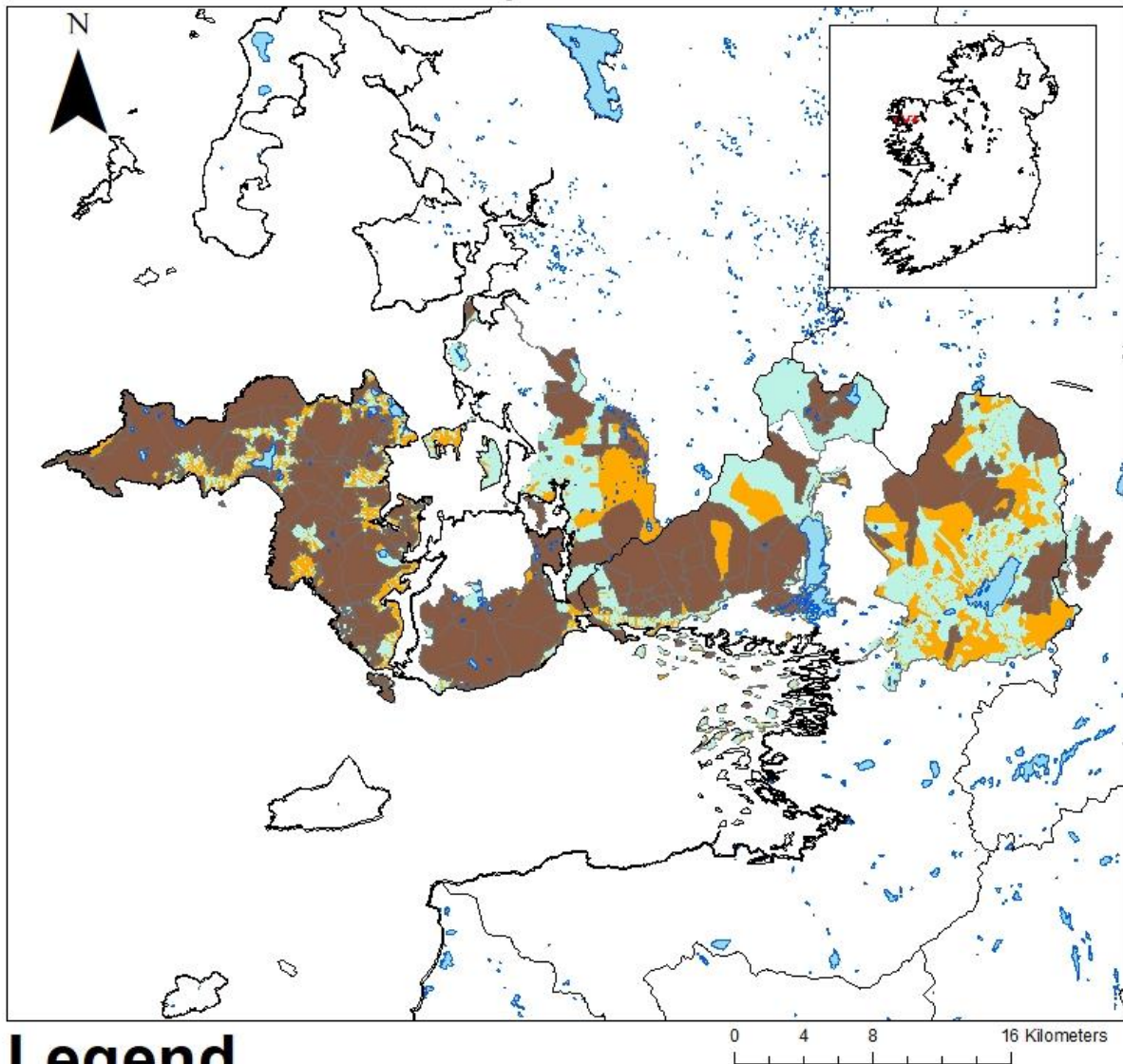


Legend

WFD_Water Management Units	312 Coniferous forest
EPA_Lake	313 Mixed forest
112 Discontinuous urban fabric	321 Natural grassland
141 Green urban sites	322 Moors and heaths
142 Sport and leisure facilities	324 Transitional woodland scrub
211 Non-irrigated land	331 Beaches dunes sand
231 Pastures	332 Bare rocks
242 Complex cultivation patterns	333 Sparsely vegetated areas
243 Land principally occupied by agriculture with areas of natural vegetation	334 Burnt areas
311 Broad-leaved forest	412 Peat bogs

Figure 26: Corine within the Achill Nephin ACRES West Connacht Cooperation.

Achill Nephin Landuse



Legend

-  WFD_Water Management Units
-  EPA_Lake
-  Achill_Nephin_Commonage
-  Achill_Nephin_All_Parcels
-  Achill_Nephin_Other_Landuse

Figure 27: Landuse within the Achill Nephin ACRES West Connacht Cooperation.

7. SAC/SPA/NHA – review of Environmental Assets.

There is a large area of Achill Nephin CP area within European protected sites, with a number of designated sites overlapping including, 10 designated SACs, 2 SPAs, 4 NHAs and 9 pNHAs (Figure 28). The Qualifying Interest and Special Conservation Interest of these sites cover a range of habitats, species and are listed in (Table 9). There is a full description of all the habitats, birds, Qualifying interest, and pollinators provided in Appendices (III Species, IV Birds, V Habitats, VI Bryophytes, VII Bee, VIII Butterflies).

Table 9: List of habitats, flora, fauna and bird's species protected in Achill Nephin CP area under Natura 2000. A full list is presented in Appendix III.

Habitat	Flora	Fauna	Birds
Tidal Mudflats and Sandflats	Petalwort (<i>Petalophyllum ralfsii</i>)	Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Red-throated Diver (<i>Gavia stellata</i>)
Large Shallow Inlets and Bays	Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>)	Atlantic Salmon (<i>Salmo salar</i>)	Great Northern Diver (<i>Gavia immer</i>)
Reefs	Marsh Saxifrage (<i>Saxifraga hirculus</i>)	Otter (<i>Lutra lutra</i>)	Slavonian Grebe (<i>Podiceps auritus</i>)
Atlantic Salt Meadows			Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)
Mediterranean Salt Meadows			Common Scoter (<i>Melanitta nigra</i>)
Tidal Mudflats and Sandflats			Red-breasted Merganser (<i>Mergus serrator</i>)
Coastal Lagoons*			Ringed Plover (<i>Charadrius hiaticula</i>)
Perennial Vegetation of Stony Banks			Sanderling (<i>Calidris alba</i>)
Annual Vegetation of Drift Lines			Dunlin (<i>Calidris alpina</i>)
Wet Heath			Bar-tailed Godwit (<i>Limosa lapponica</i>)
Dry Heath			Curlew (<i>Numenius arquata</i>)
Alpine and Subalpine Heaths			Sandwich Tern (<i>Sterna sandvicensis</i>)
Juniper Scrub			Golden Plover (<i>Pluvialis apricaria</i>)
Siliceous Rocky Slopes			Merlin (<i>Falco columbarius</i>)
Blanket Bogs (Active)*			
Siliceous Scree			
Machairs*			
Alpine and Subalpine Heaths			
Oligotrophic Waters containing very few minerals			
Dystrophic Lakes			
Transition Mires			
Rhynchosporion Vegetation			
Floating River Vegetation			
Wetland and Waterbirds			

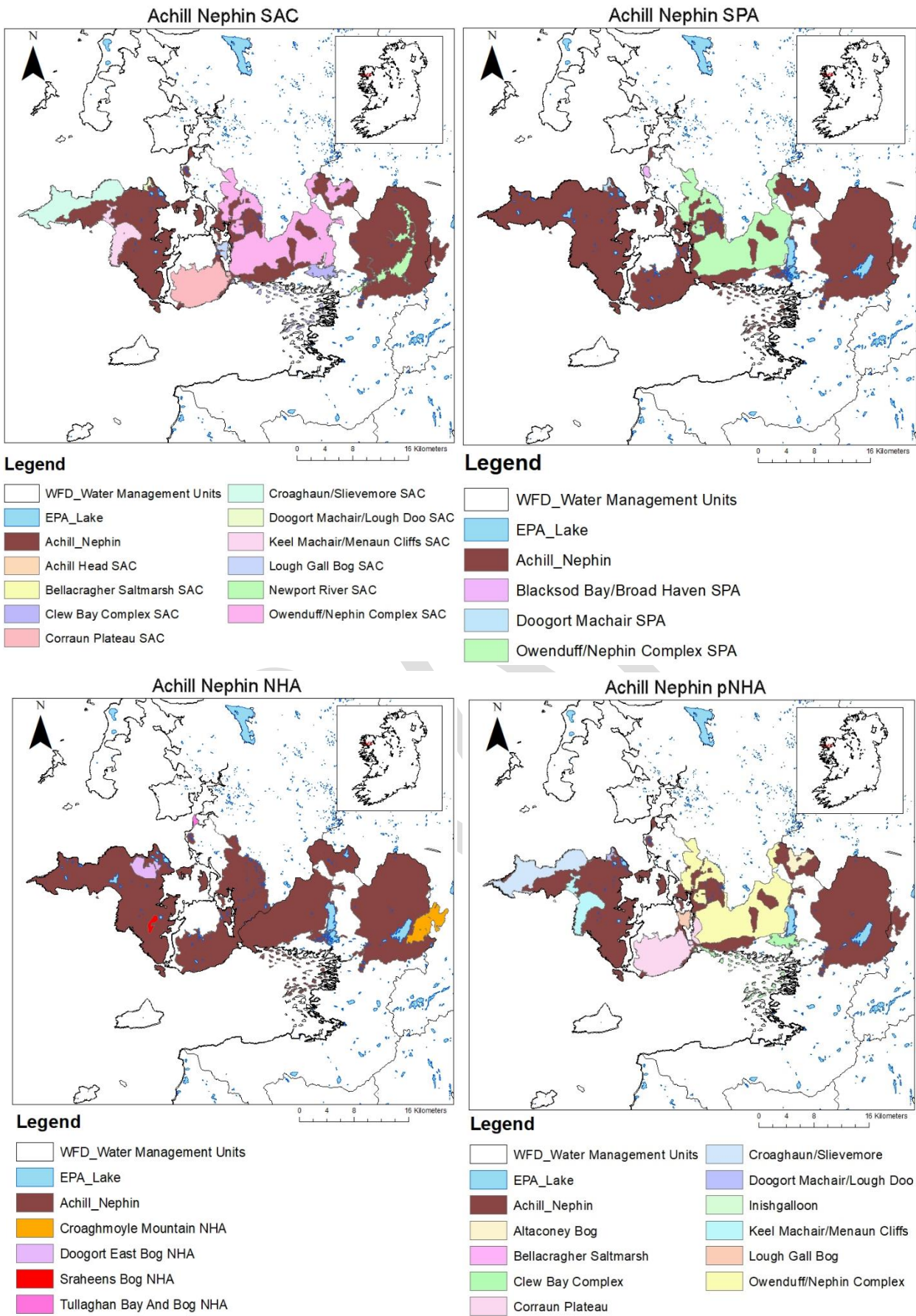


Figure 28: Map of SAC, SPA, NHA and pNHA within the Achill Nephin ACRES West Connacht Cooperation area.

8. Archaeological and architectural heritage

A total of 392 sites of archaeological and architectural importance have been established as occurring within the Achill Nephin CP zone (Figure 29) and include a wide range of settlement remains, burial sites, and associated features dating from the neolithic period, up until the 19th century. These include megalithic tombs, standing stones, enclosures, field systems, souterrains, ringforts, hut remains, crannogs, castles, ecclesiastical sites, and burial grounds. Settlements and their associated sites are mainly located near resources for farming and fishing, as seen along the coastline between Mulranny and Newport and into the islands of Clew Bay. There is only a scattering of recorded monuments located in the upland areas, however there may be unidentified sites present there. Prehistoric sites include 15 Megalithic structures, 10 cairns, 9 cists and 2 stone circles. Human remains found in a cave dating back to 3,600 BC were found on Ben Gorm in the Nephin Range (Dowd, M. et.al, 2020). The rich prehistoric archaeological remains in these areas are due to the use of stone as the main building material and the fact that many of the sites have been preserved under the cover of blanket bog. The most numerous monument types are those associated with settlement including 28 enclosures and 20 ringforts dating from the early and late Christian periods and the remains of 48 stone houses from an indeterminate date. Archaeological excavations have been taking place on Achill Island for over 30 years by the Achill Archaeology Field School and have yielded much information on various types of monuments preserved under the bog there. In the 1500's the Clew Bay coastline was the territory of the famous Pirate Queen Gráinne Mhaol and the defensive coastal tower houses associated with her at Kildavenet and Rockfleet are still standing today in this area. There are 52 post 1700 architectural structures in the zone consisting of buildings, churches, bridges, schools, and a signal tower. The 'Deserted Village' located on the side of Slievemore mountain on Achill Island, with houses dating back to the 18th and 19th century, stands as a reminder of the local history of famine and emigration and attracts hundreds of visitors each year.

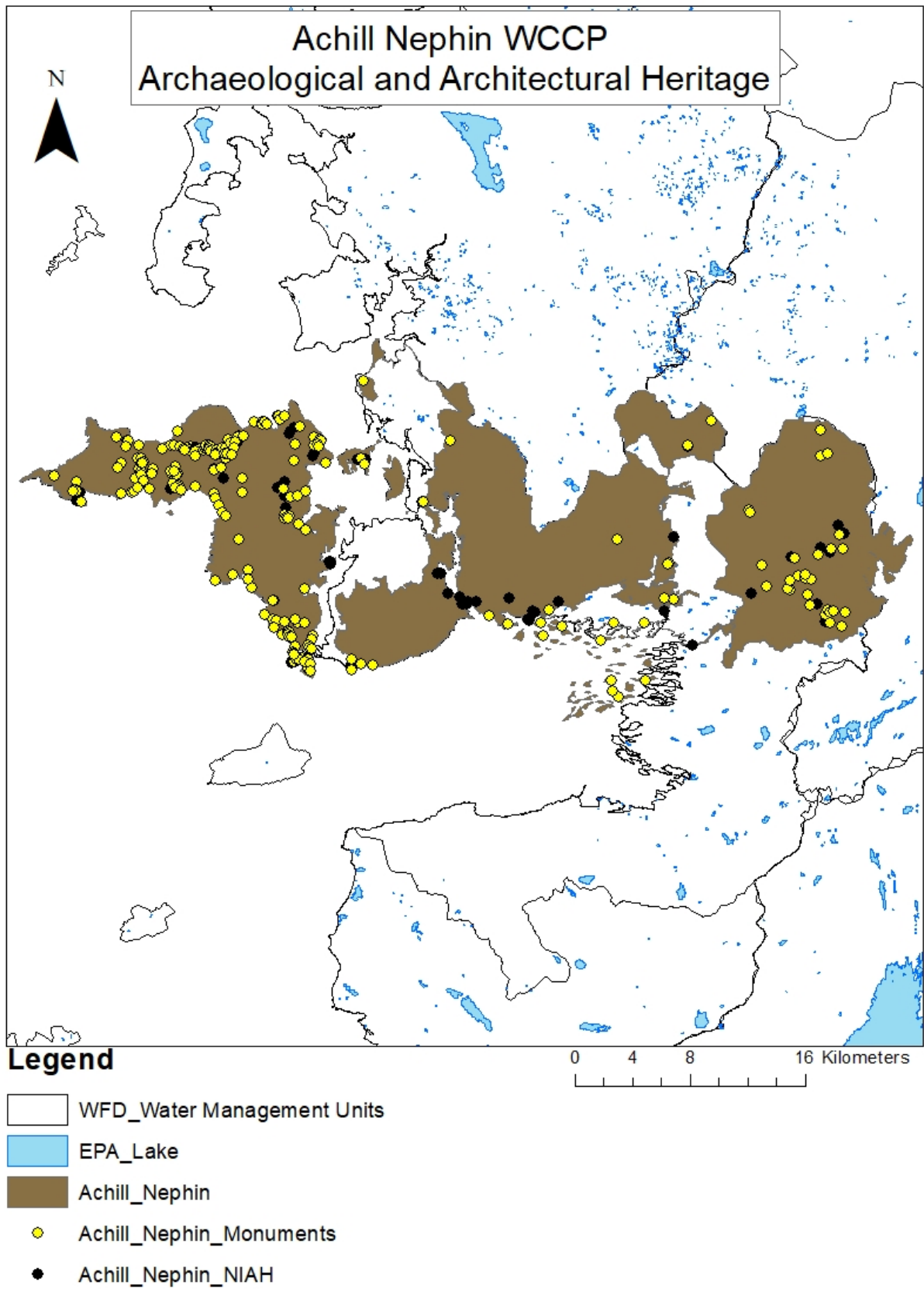


Figure 29: Map of Archaeological and architectural heritage sites in the Achill Nephin ACRES West Connacht cooperation zone.

9. Hydrology

The ACRES West Connacht Cooperation Project lies within the Western River Basin District and is incorporated across several WFD catchments as outlined in Table 5. The Achill Nephin CP incorporates a large proportion of the Erriff-Clew Bay Hydrological catchment. The Erriff-Clew Bay catchment area includes all inland water courses from the Erriff river between Slyne head in Galway to Corraun point in Mayo. There are a total of 13 sub-catchments in this region with a total of 80 rivers, 80 lakes and 22 groundwater bodies. Under the WFD water body classification, in this catchment there are 22 high status waters, 54 good status, 17 moderate and 7 poor status. There are 104 waterbodies currently with un-assigned status.

Within the ACRES Achill Newport CP area there are 7 rivers currently classified as 'at-risk' of not achieving the WFD objective of Good or High ecological status (Table 10). For the 'at risk' rivers nutrients and morphological are the most prevalent issues in the Erriff Clew Bay catchment. Sediment, hydrological, chemical and other (Other includes acidification, elevated temperature, litter, microbial, chemical pollution) were identified as the land management pressures impacting the waterbody. Pressures from agriculture was identified as the dominant pressure, directly related to phosphorus loss to surface water, and sedimentation through bank erosion, animal access or stream crossing, and overgrazing in Owengrave (Mayo)_010 and Owengarve (Mayo)_020. Forestry was identified as a pressure resulting in the loss of sediment and the release of nutrients into waterbodies. Forestry on steep slopes is also an issue specifically in Skerdagh_010. Hydromorphology impacts including bank erosion due to cattle tramping, peat extraction, domestic wastewater treatment plants, industry/tourism, quarries, and urban runoff were identified as pressures on watercourses in this catchment.

Table 10: List of waterbodies in the Achill Nephin CP at risk of not achieving WFD good or high ecological status in the Erriff-Clew Bay Catchment.

Sub-catchment code	Waterbody name	Waterbody type	WDF Status	Significant Pressure
32_5	Crumpaun_020	River	At Risk	For
32_3	Glenamong_010	River	At Risk	Ag/For
32_5	Glenisland_010	River	At Risk	Agri/For
32_5	Newport (Mayo)_010	River	At Risk	For, M+Q
32_2	Owengarve (Mayo)-010	River	At Risk	For/Hymo
32_2	Owengarve (Mayo)_020	River	At Risk	Ag/Hymo
32_5	Skeragh_010	River	At Risk	For

10. Priority Area of Action and Blue Dot

There are four Group Water Schemes (GWS) and a number of rivers that are designated as supplying drinking water in the region. Highlighting the importance of these drinking supplies in the Achill/Nephin. There are a number of Blue Dot sites, this programme ensures the protection, maintenance and conserve High Status water quality.

South Mayo Connemara Cooperation

South Connemara has a diversity of windswept dramatic landscapes from mountain ranges, lakes and peatlands rolling to the coastline and the Atlantic Ocean. This region is the home to Connemara National Park, Joyce Country Geopark and the Western way. This region is also the location of numerous collaborative Agri environmental result based EIP projects such as in such as North Connemara Locally led Agri-environmental scheme on conjunction with local farmers and local stakeholders managed by FORUM Connemara (2016-2021), Corncrake Life (2018-2023), Life on Machair (2022-2028) and Wild Atlantic *Nature (WAN) (2020-2029)*

South Connemara comprises of three ACRES Cooperation, North Connemara and Erriff, Conamara Theas and Corrib and Mask zones. This region also has established of Connemara Dark Sky and are seeking international accreditation for the quality of the natural dark skies in the region.

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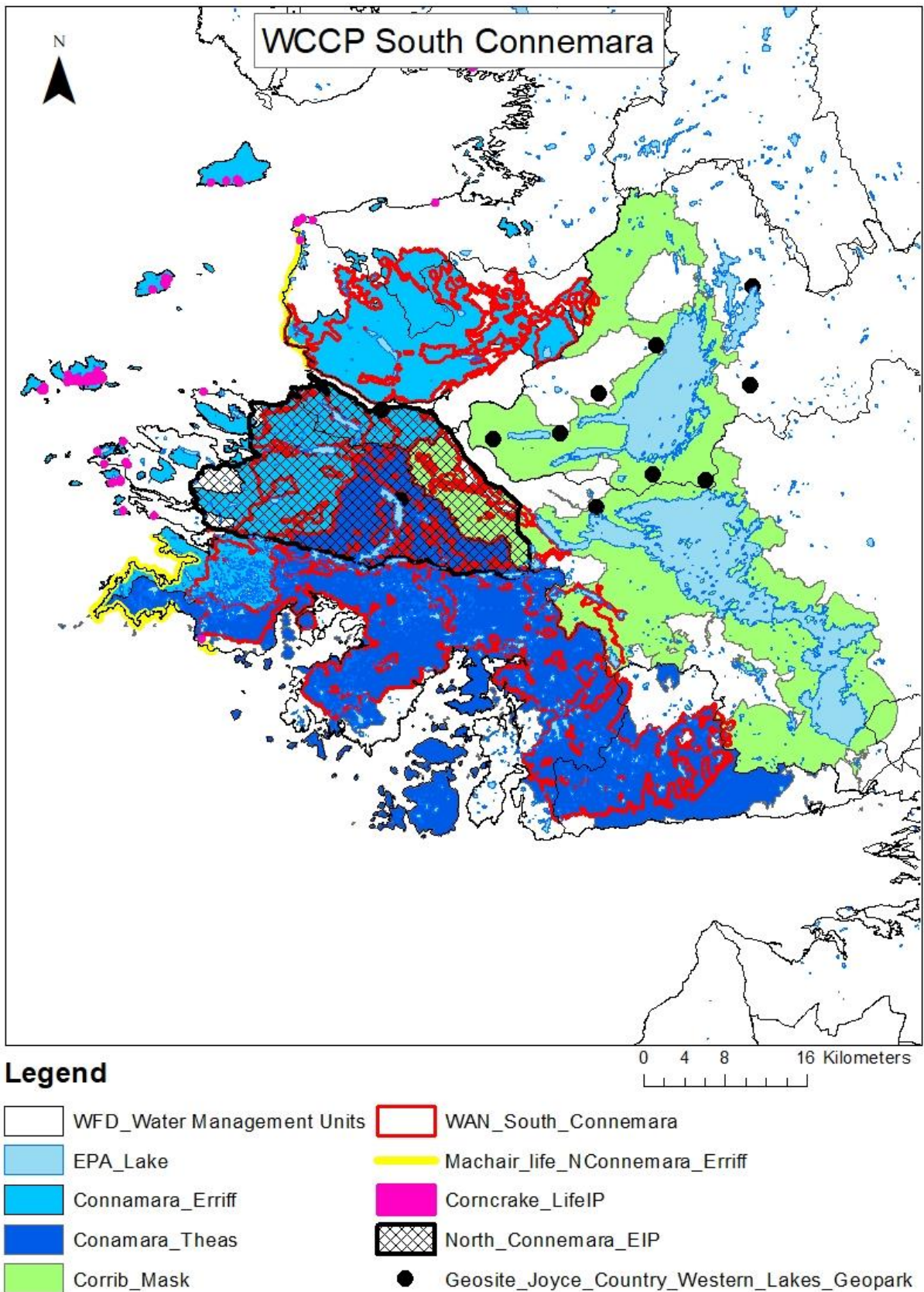


Figure 30: Map of Life and EIP projects in the South Connemara ACRES West Connacht cooperation zone.

North Connemara and Erriff Cooperation Area

1. Bedrock

The bedrock underling the North Connemara and Erriff CP area contains numerous geological formations (Figure 31). To the north of Erriff, the bedrock consists of Shaffry Formation and Dolerite and Gabbro, Glenummera Formation of grey slate and sandstone and Mweelrea Formation. In Connemara, south of Erriff, the vein of bedrock consists of Salrock Formation of red mudrock, pale sandstone, BenLevy grit Formation of schist with a large pocket of Streamstown Schist Formation of psammitic. The bedrock on Clare Island to the northeast of the island consists of Maan Formation of red sandstone, conglomerate, and mudstone. With Capnagower gotmation of grey sandstone and siltstone to the east of the Island. The rest of the islands consists of ribbons running from east to west of Knockmore sandstone Formation and Bunnamohaun siltstone Formation and Glen Pebbly Arkose Formation. Inishturk consists of Sheefry Formation and Derrylea Formation of sandstone, mudrock conglomerate. Inishbofin bedrock on the island is split in half, with Ben Levy Grit Formation of schist found in the north and to the south if Inishbofin and for Inishshark the bedrock was made up of Ballyakill Schist Formation of quartzite, schist.

2. Aquifers

In the North Connemara and Erriff CP area was dominated by only one aquifer type (Figure 32) Poor Aquifer - Bedrock which is generally unproductive. There is a small area to the northeast of Erriff, and Clare Island that is considered a Locally important Aquifer – Bedrock which is Generally Moderately Productive,

3. Groundwater vulnerability

All 5 groundwater vulnerability classifications are found in the North Connemara Erriff CP area, with the predominant classification of E (Rock at/near the surface or karst), Extreme and High throughout the CP area and on all the islands (Figure 33). The groundwater vulnerability is associated with steep slopes, thin soils with high infiltration rate and the low attenuation capacity of the surrounding geology and soils. There are small pockets of Low and Moderate groundwater vulnerability also evident.

4. Soil and sub soil

Blanket peat, Podzol Peaty with veins of Lithosol/Regsols dominating the soil structure in the North Connemara and Erriff CP. In Erriff, there are areas of groundwater Gleys acidic and Acid brown earth podzolics. The soil structure in clareIsland is Lithosols/Regosol to the north with Surface water Gleys/Ground water Gleys Basic to the south. Inishturk, Inishbofin and Inishshark are comprised of Podzols Peaty soils with patches of Lithosols/Regosols. The soil texture in Erriff was Peat, Course Loamy and Loamy, and in north Connemara was predominantly Peat (Figure 34).

North Connemara and Erriff CP Bedrock

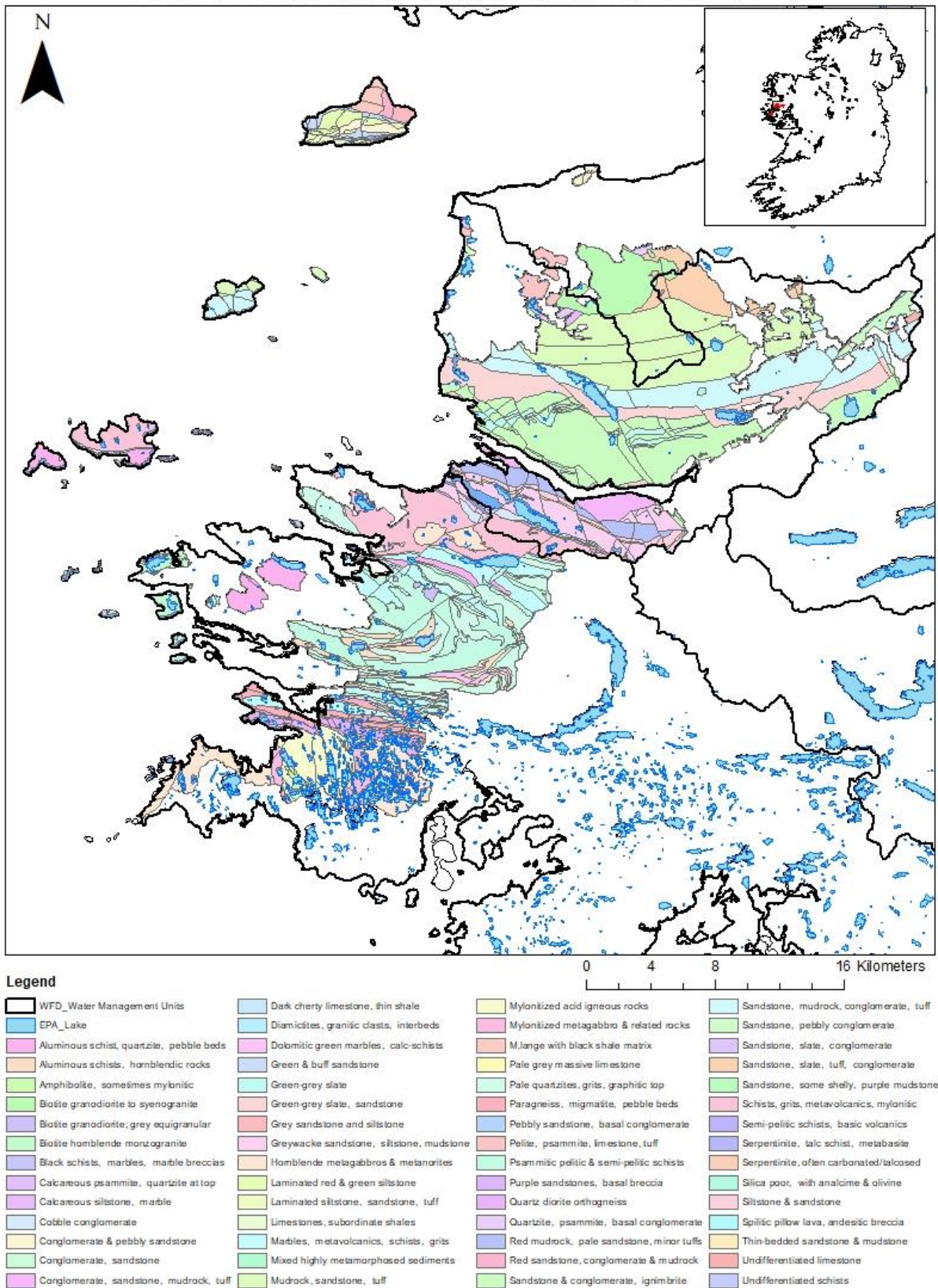
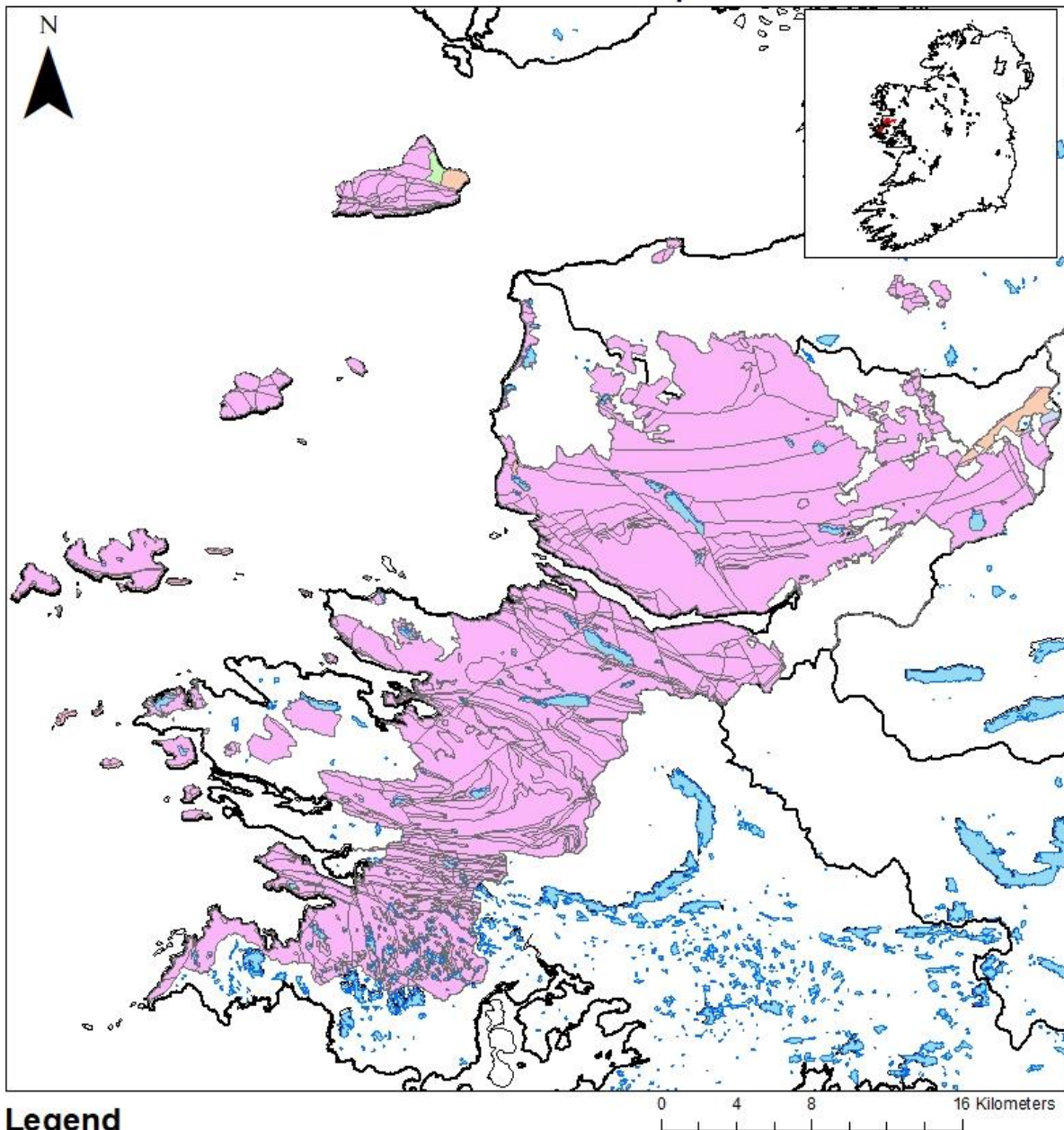


Figure 31: Bedrock geology within the North Connemara Erriff ACRES West Connacht Cooperation zone.

North Connemara and Erriff CP Aquifer

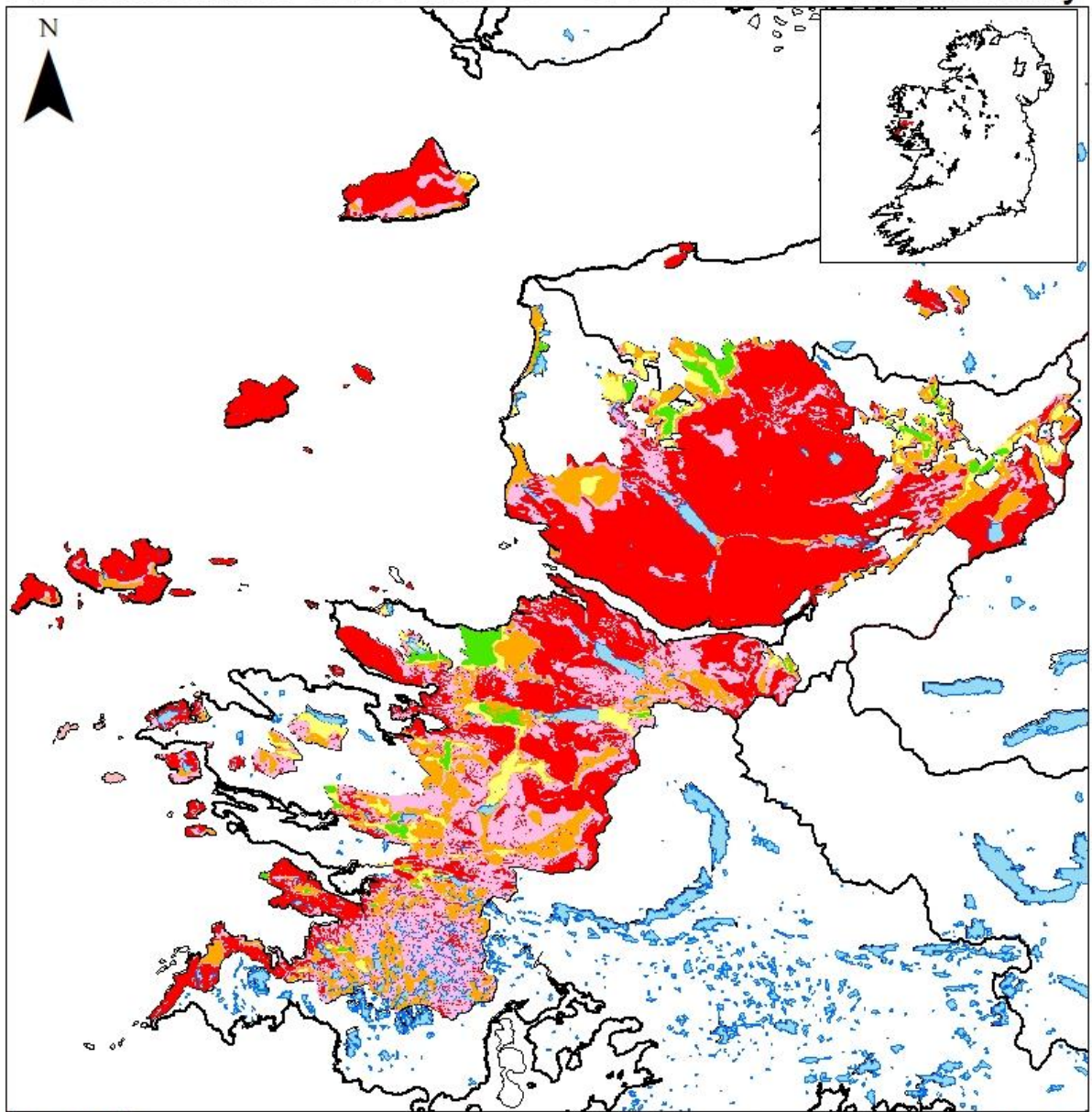


Legend

- WFD_Water Management Units
- EPA_Lake
- Locally Important Aquifer - Bedrock which is Generally Moderately Productive
- Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones
- Locally Important Aquifer - Karstified
- Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones
- Regionally Important Aquifer - Karstified (conduit)

Figure 32: Aquifer within the North Connemara Erriff ACRES West Connacht Cooperation.

N. Connemara and Erriff CP Groundwater Vulnerability



Legend

- WFD_ Water Management Units
- EPA_Lake
- E(Rock at/near surface or karst)
- Extreme
- High
- Moderate
- Low

Figure 33: Groundwater Vulnerability within the North Connemara Erriff ACRES West Connacht Cooperation.

N. Connemara and Erriff CP Soil

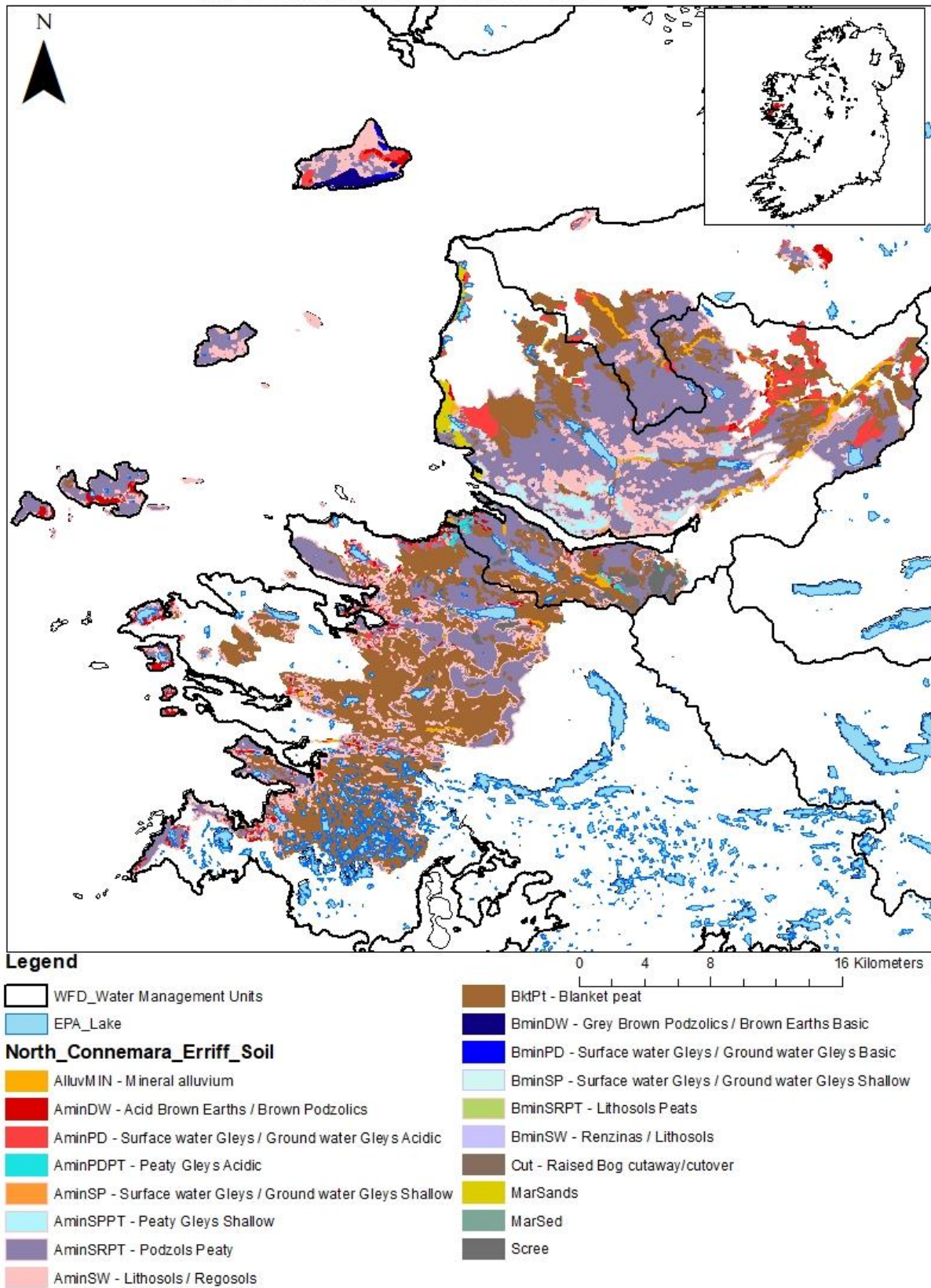


Figure 34: Soil within the North Connemara Erriff ACRES West Connacht Cooperation.

5. Corine land cover, Commonage and Agriculture land parcels

The dominant land cover in the North Connemara and Erriff CP is peat bog, with areas of Coniferous forests, natural grassland, Moors and heathlands and transitional woodland. Along the coast, there are land areas classified as principally occupied by agriculture with areas of natural vegetation. Clare Island land covers is peat bog with areas of bare rock to the north and land principally occupied by agriculture with areas of natural vegetation to the south. Inishturk, Inishbofin and Inishshark land cover is classified as pasture, natural grassland, sparsely vegetated areas, moors and heathlands and land principally occupied by agriculture (Figure 35). The landuse in this region is principally agriculture and commonage (Figure 36), of which there are 1160 herd number attributed to the region, with just above half (54.1%) of herd numbers are participating in the current GLAS agri-environmental scheme. There are 489 herd numbers with commonages scattered across the CP region and on the islands, of which 88.1% are noted as participating in GLAS. There are pockets of 'Other' landuse described in Figure 36, which included privately owned lands and forestry.

6. Socio-economic characteristics of farming in the CP area.

Farms within the North Connemara and Erriff (NCE) CP zone are typically composed of upland (mountain land - peatlands) and lowland pastures (green land - grasslands). Uplands have seen little agricultural improvement in the past, whereas lowland pastures are more likely to have been subject to some level of 'improvement' in the form of draining, reseeding, liming and/or fertilizer additions. Despite this, semi-natural and semi-improved pastures are still prevalent on the lowlands. In terms of animal nutrition and forage quality, relatively intensive grazing practices in the lowlands likely supports extensive grazing in the upland areas. Farming system includes specialist sheep, specialist beef and mixed grazing dominate the region. Extensive farming, with cattle and sheep grazing in lowland grasslands, with hill sheep (usually Blackface Mountain ewes) grazing the uplands from (approx.) November to March, and again in the summer. The duration of the summer grazing may depend on the availability of higher quality lowland forage and market pressures to sell stock. Farms composed of lowland grassland pastures, especially if they have been subject to agricultural improvement in the past, are more likely to support heavier lowland breeds of sheep with higher annual energy requirements and heavier continental cattle breeds (the latter applies to both suckler and dry stock farming enterprises). There has been a decline in traditional farming practices in this region, e.g., tillage and hay-making, a decline in stonewall building and use of smaller traditional breeds of cattle.

Islands: Clare Island, Inishturk and Inishbofin are the three inhabited Islands lying in a north easterly south westerly direction off the North Connemara Erriff Local Area. Clare Island is the largest and most northerly of the three and Inishturk is the smallest. Inishbofin is the most southerly of the three Islands described. Clare Is and Inishturk are serviced by a passenger ferry/cargo boat departing from Roonagh Pier outside Louisburgh Town. Inishbofin is serviced by ferry/cargo boats departing from Cleggan. This service is provided year-round to the island inhabitants. The economies of Inishbofin, Clare Island are particularly concentrated around tourism during the summer months.

The agricultural landscape of all three Islands consists of high nature value owing to the rich variety of habitats and species recorded there, few larger commonage areas along the relatively exposed seaward side of the islands and small and numerous relatively fertile and sheltered fields to the southeast. Upland commonages are found on both Clare Island and Inishturk. Livestock include sheep, cattle, horses and donkeys. Sheep farming is the dominant farm enterprise on all three Islands as it suits the climate, poor soils and rough/hilly terrain. The number of farm holdings on each of the three Islands is between 20-40. Island farms tend to be smaller than the average farm size within the NCE

local area. The average farm size across Clare Island and Inishturk is 15.7 ha and the average farm size on Inishbofin is 12.8 ha.

Isolation and the smaller size of island economies adds a layer of difficulty for the Island farmer, geographic isolation will have an impact on the cost of transporting agricultural inputs and outputs (increasing the costs to the farmer for supplementary feeding, animal health measures etc and puts a downward pressure on sale prices for livestock). It is likely that some supplementary feedstuff for livestock is imported annually to the Islands, however, supplementary feeding within an extensive low input farming system aims to support animal health rather than inflate local stocking rates. In addition, movements of livestock and other agri-goods and service on and off the Islands can be hampered by inclement weather. The recognition and promotion of cultural heritage are an important goal of national authorities and their programmes of governance. Isolation from the mainland has led to the development of strong Island identities, including the development of a suite of social customs, local traditions and potentially undiscovered recurring farming practices which define an Islands' natural capital. Overall, recognising and supporting traditional farming practices unique to each Island within the WCCP will likely improve the conservation status of Island habitats and species.

DRAFT

North Connemara and Erriff Corine

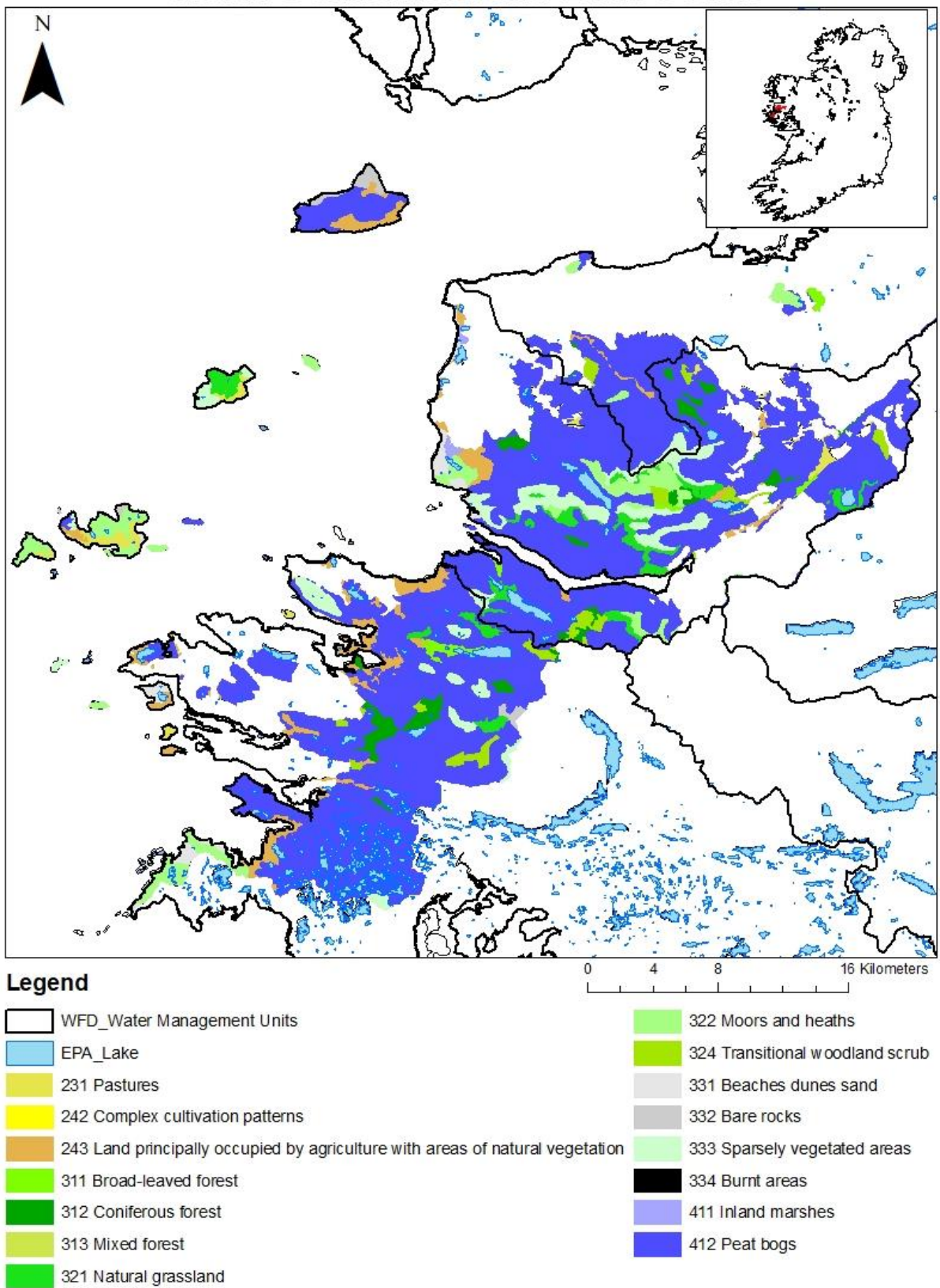
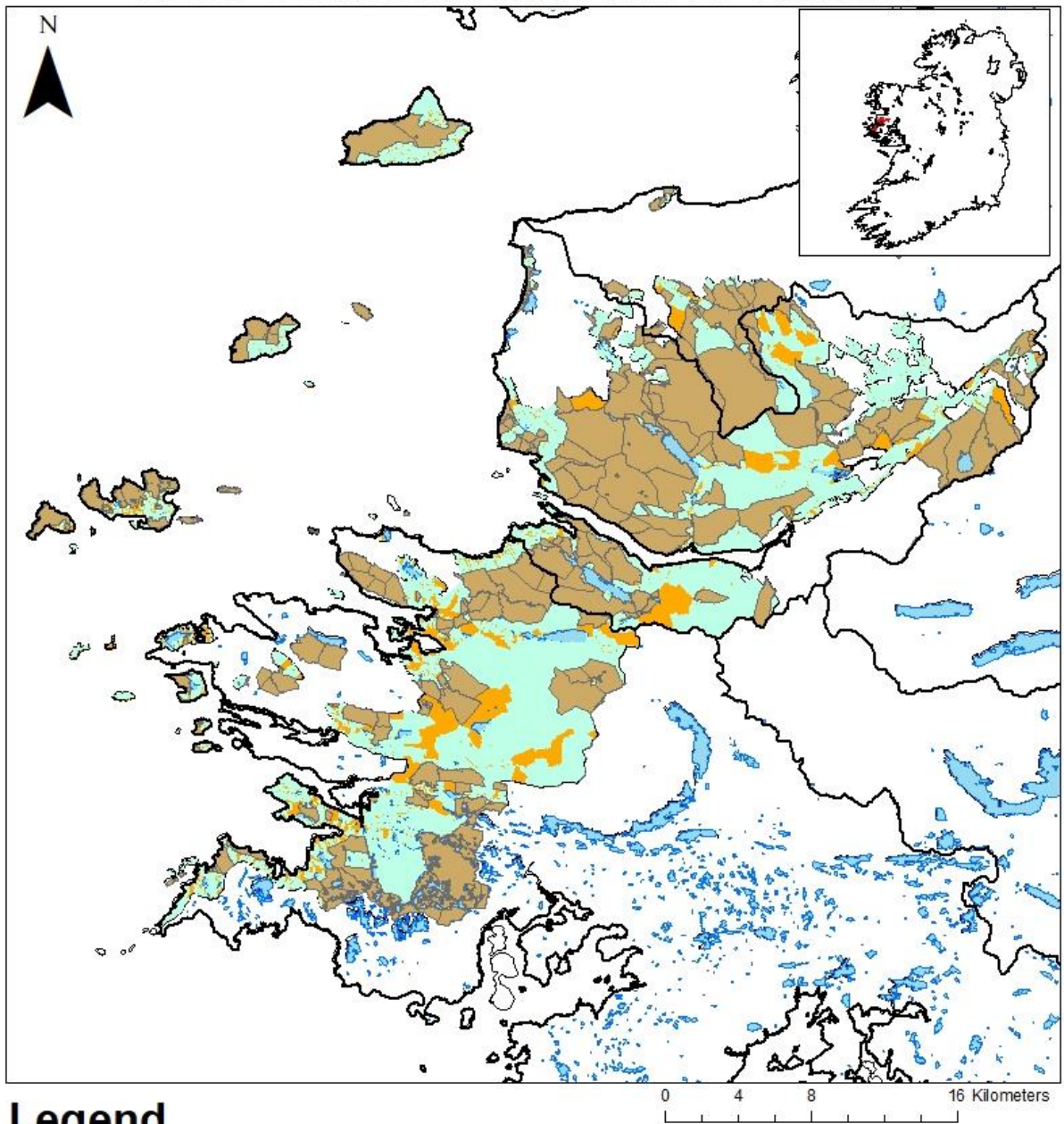


Figure 35: Corine within the North Connemara and Erriff ACRES West Connacht Cooperation.

North Connemara and Erriff CP Landuse



Legend

- WFD_Water Management Units
- EPA_Lake
- North_Connemara_Erriff_Commonage
- North_Connemara_Erriff_Parcels
- Other

Figure 36: Landuse within the North Connemara and Erriff ACRES West Connacht Cooperation.

7. SPA/SAC/NHA

In the North Connemara and Erriff CP, there are 21 designated SCAs, 7 SPAs, 4 NHAs and 30 pNHAs. The Qualifying Interest and Special Conservation Interest of these sites cover a range of habitats, species and are listed in (Table 11). There is a full description of all the habitats, birds, Qualifying interest, and pollinators provided in Appendices (III Species, IV Birds, V Habitats, VI Bryophytes, VII Bee, VIII Butterflies).

Table 11: List of habitats, flora, fauna and bird's species protected in North Connemara and Erriff CP area under Natura 2000. A full list is presented in Appendix III.

Habitat	Flora	Fauna	Birds
Alpine and Subalpine Heaths	Slender Naiad (<i>Najas flexilis</i>)	Otter (<i>Lutra lutra</i>)	Fulmar (<i>Fulmarus glacialis</i>)
Dry Heath	Petalwort (<i>Petalophyllum ralfsii</i>)	Atlantic Salmon (<i>Salmo salar</i>)	Shag (<i>Phalacrocorax aristotelis</i>)
Oligotrophic to Mesotrophic Standing Waters		Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Common Gull (<i>Larus canus</i>)
Old Oak Woodlands		Marsh Fritillary	Kittiwake (<i>Rissa tridactyla</i>)
Alkaline Fens			Guillemot (<i>Uria aalge</i>)
Lowland Hay Meadows			Razorbill (<i>Alca torda</i>)
Molinia Meadows			Chough (<i>Pyrrhocorax pyrrhocorax</i>)
Hard Water Lakes			Cormorant (<i>Phalacrocorax carbo</i>)
Machairs			Merlin (<i>Falco columbarius</i>)
Transition Mires			Golden Plover (<i>Pluvialis apricaria</i>)
Blanket Bogs (Active)			Manx Shearwater (<i>Puffinus puffinus</i>)
Hydrophilous Tall Herb Communities			Barnacle Goose (<i>Branta leucopsis</i>)
Juniper Scrub			Arctic Tern (<i>Sterna paradisaea</i>)
Perennial Vegetation of Stony Banks			Corncrake (<i>Crex crex</i>)
Wet Heath			Storm Petrel (<i>Hydrobates pelagicus</i>)
Floating River Vegetation			
Dystrophic Lakes			
Oligotrophic Waters containing very few minerals			
Humid Dune Slacks			
Dunes with Creeping Willow			
Decalcified Dune Heath			
Fixed Dunes (Grey Dunes)			
Marram Dunes (White Dunes)			
Embryonic Shifting Dunes			
Mediterranean Salt Meadows			
Atlantic Salt Meadows			
Annual Vegetation of Drift Lines			
Siliceous Rocky Slopes			
Rhynchosporion Vegetation			

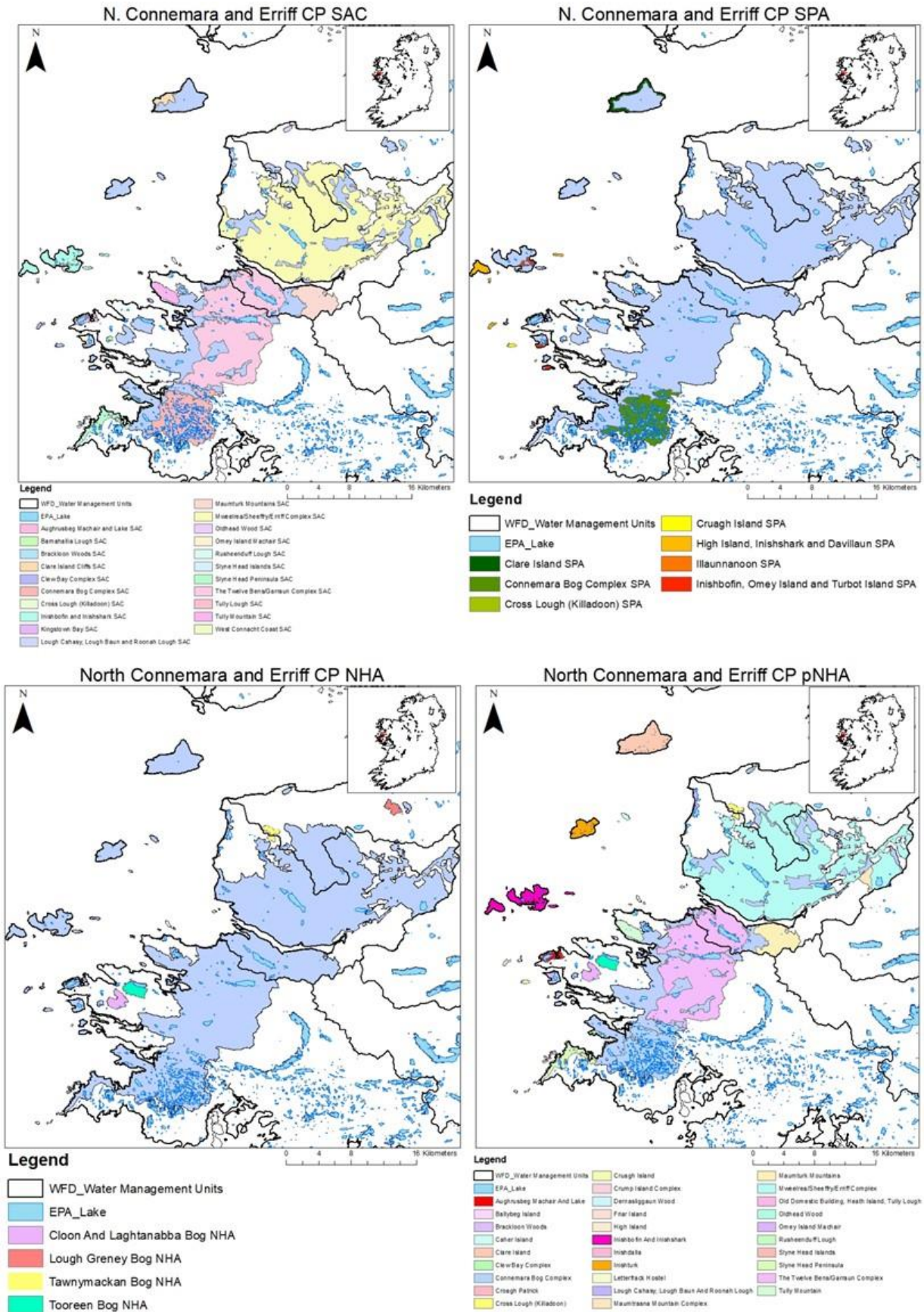


Figure 37: Map of SAC, SPA, NHA and pNHA within the North Connemara Erriff ACRES West Connacht Cooperation area.

8. Archaeology and Architectural Heritage

A total of 650 sites of national archaeological and architectural importance have been established as occurring within the North Connemara Erriff CP zone (Figure 38) and include settlement remains, burial sites, and associated features from the neolithic period, the early and late bronze age, early and post medieval and early modern Ireland. These include megalithic tombs, standing stones, field enclosures, souterrains, ringforts, fulachta fias, stone rows, cránnogs, castles, ecclesiastical sites, cross slabs, and burial grounds. There is a heavy concentration of settlements, and their associated sites in the lowland areas, near to lakes and along the coastline. They include 22 ringforts, 6 cránnogs, 57 enclosures, 44 hut sites, 42 houses, 12 field systems, 7 middens and 53 fulachth fia representing various periods of settlement. In the upland areas there is a prevalence of neolithic megalithic tombs and cairns c. 4000-2000 BC used for communal burial and situated in prominent locations. The rich prehistoric archaeological remains in these areas are due to the use of stone as the main building material and their preservation in some areas under the blanket bog. A stone alignment uncovered by turf cutting in Tully dates to the bronze age and is associated with the midwinter solstice. Located in the CP Zone is Ard Oileán (High Island) which since the seventh century had been the site of an early Christian monastery or hermitage and is the location of 82 recorded monuments many of religious significance such as cross slabs, leachts and clocháns. Clare Island has a strong association with the famous 15th century Pirate Queen Gráinne Mhaol who was resident on the island. The defensive coastal tower houses known as Granuaile's Castle is located near the pier and it is reputed that she is buried somewhere on the island. There are 51 post 1700 architectural structures in the zone consisting of buildings, churches, bridges, schools, castles and Kylemore Abbey is the most renowned of them all, attracting thousands of visitors each year.

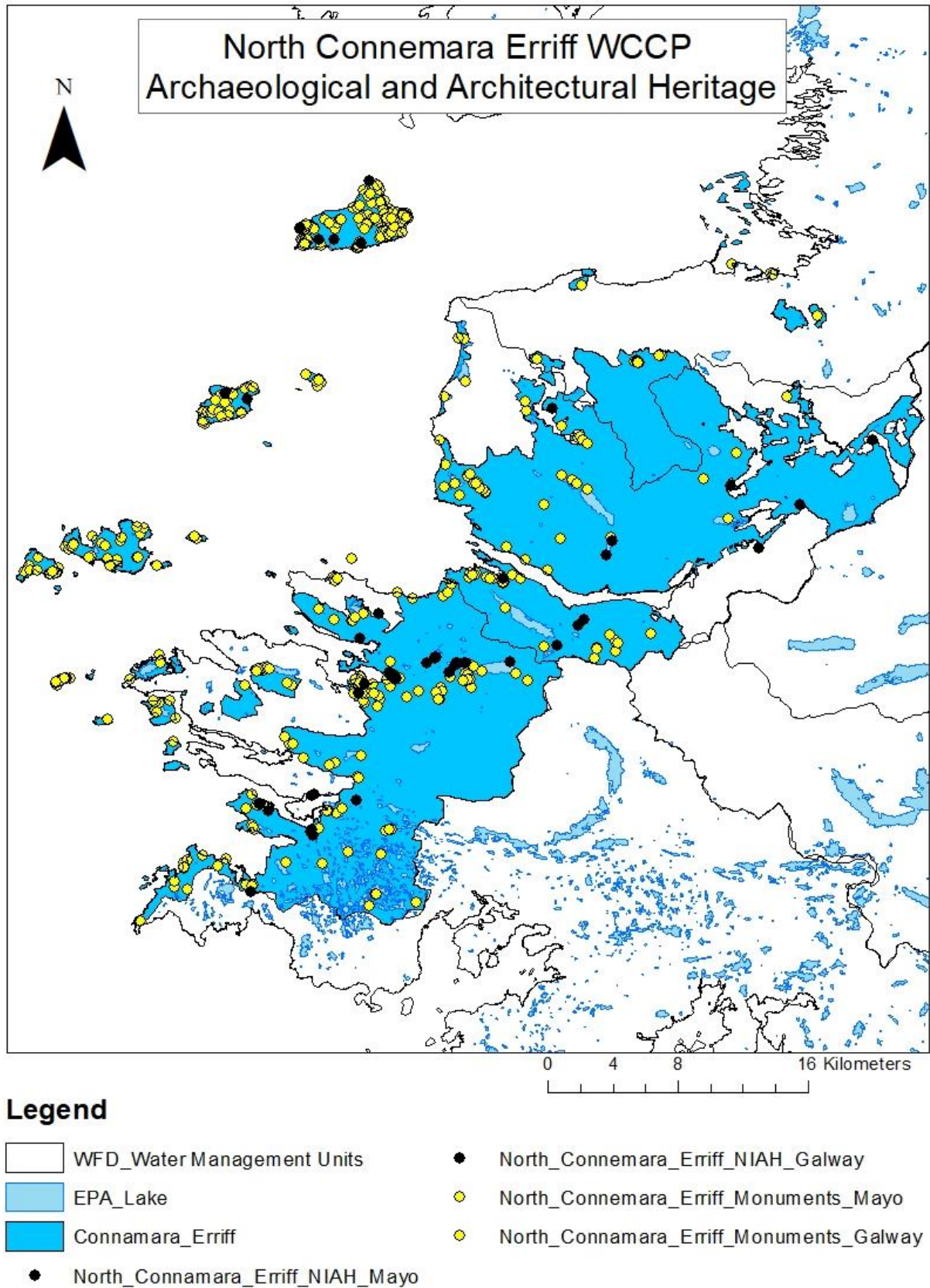


Figure 38: Map of Archaeological and architectural heritage sites in the North Connemara and Erriff ACRES West Connacht cooperation zone.

9. Hydrology

The ACRES West Connacht Cooperation Project lies within the Western River Basin District and is incorporated across several WFD catchments as outlined in Table 5. The North Connemara and Nephin CP incorporates a large proportion of is located of the Erriff-Clew Bay Hydrological catchment. The Erriff-Clew Bay catchment area includes all inland waters courses from the Erriff river between Slyne head in Galway to Corraun point in Mayo. There is a total of 13 sub-catchment in this region with a total of 80 rivers, 80 lakes and 22 groundwater bodies. Under the WFD water body classification, in this catchment there are 22 high status waters, 54 good status, 17 moderate and 7 poor status. There are 104 waterbodies currently un-assigned a status.

Rivers and With the ACRES North Connemara and Erriff CP area there are 47 rivers and 69 lakes, with 5 of these rivers and 4 lakes currently classified as ‘at-risk’ of not achieving the WFD objective of Good or High ecological status (Table 12). For the ‘at risk’ rivers nutrients, morphological are the most prevalent issues in the Erriff Clew Bay, sediment, hydrological, chemical and other. (Other includes acidification, elevated temperature, litter, microbial, chemical pollution) were identifies as the land management pressure impacting the waterbody. Pressures from Agriculture was identified as the dominant pressure, directly related to phosphorus loss to surface water and sedimentation through bank erosion and animal access or stream crossing and overgrazing. Bundorragha waterbody unknown anthropogenic impacts from bank erosion from anglers and creation of weirs for anglers. Industry was also noted as a potential pressure for the Bundorragha and Dawros and highlight a concern of nutrients being the main issue of concerns a direct result of tourism. Communication with local communities. Hydromorphology impacting back erosion due to cattle tramping, peat extraction, domestic wastewater treatment plants, industry/tourism, quarries, and urban runoff was identified as having pressures on watercourses in the catchment.

Table 12: List of waterbodies at risk of not achieving WFD good or high ecological status in the Erriff Clew Bay hydrological in the North Connemara and Erriff CP.

Sub-catchment code	Waterbody name	Waterbody type	WDF Status	Significant Pressure
32_3	Bundorragha-020	River	At Risk	Hymo, Ind, other
32_1	Bunowen (Louisburgh)_010	River	At Risk	Agri, DWW, Peat
32_8	Carrownisky_020	River	At Risk	AG, DWW
32_13	Dawros_040	River	At Risk	Peat
32_12	Derryehorraun_010	River	At Risk	DWW, Peat.
32_12	Beaghauneen	Lake	At Risk	Other
32_13	Aughrusbeg	Lake	At Risk	Other
32_11	Tully	Lake	At Risk	Ag
32_12	Nambrackmore Cushatrower	Lake	At Risk	Other

*Other, is classified in the 3rd WFD RBMP as abstraction, anthropogenic pressure, historical pollution, invasive species, atmospheric, waste treatment.

10. Priority Area of Action and Blue Dot

There are six GWS and a number of rivers that are designated as supplying drinking water in the North Connemara/Erriff region. There are a number of Blue Dot sites, this programme ensures the protection, maintenance and conserve High Status water quality. Two of the “Top 8” Freshwater Pearl Mussel (FPM) catchments occur within this North Connemara and Erriff area (Bundorragha and Dawros).

Connemara Theas ACRES West Connacht Cooperation Area.

South Connemara CP Zone is divided into an estimated 19 Electoral Divisions (ED) (Appendix I). The Connemara Theas is surrounded by steep mountainous terrain, with Maumturk mountain (700m) to the north-east and Twelve bends (690m) to the northwest and is completely encompassed by the west of Ireland coastline.

1. Bedrock Geology

The bedrock underlying Connemara Theas Cooperation area is complex with many formations (Figure 39). Most of these formations are comprised of Schist, Quartzite, Gneiss. Bennabeola Quartzite Formation is layered over the twelve bends, with Streamstown Schist Formation intertwined with Barnanoraun Schist formation and a pocket of Ballynakill Schist Formation and Ben Levy Grit Formation. There are veins of Lake Marl Formation running from east to west. Closer to the coastline, there are large slabs of Metagabbro and related Lithologies, with a large pocket of Roundstone Granit made of coarse non-porphyritic monzogranite outside of Roundstone surrounding Inis Ní and Rosroe. To the south of Bertaghboy Bay are Quartz Diorite Gneiss, with large areas of Errisbeg Townland Granite and around Kilkieran Bay, with the east of the Conamara Theas CP are covered in Granite formations such as Shannapheasteen, Porphyritic meycrystic and Knock Formations.

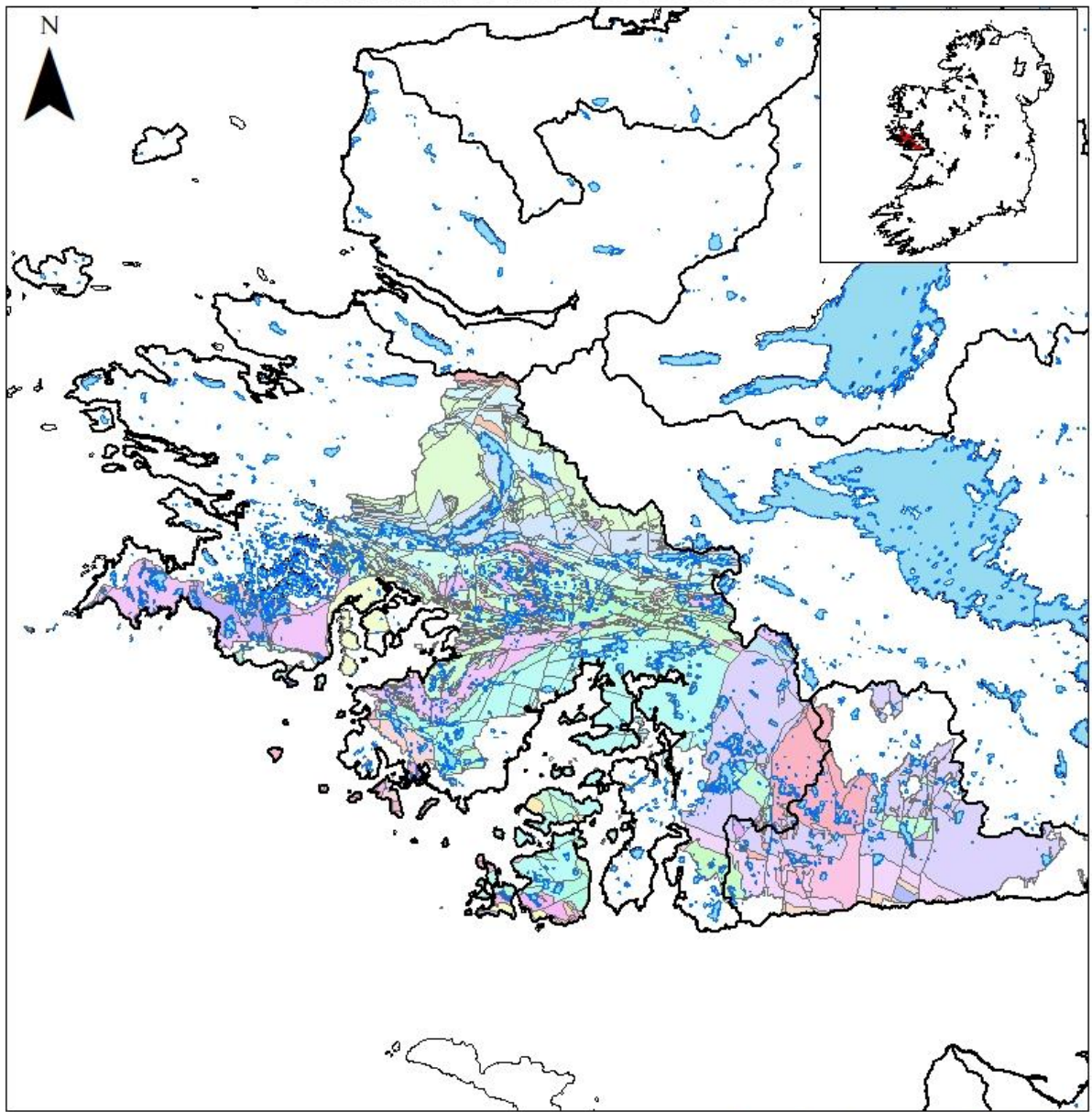
2. Aquifer

There was only one aquifer classification for the Conamara Theas CP area which was Poor – Bedrock which is generally unproductive except for Local zones (Figure 40).

3. Groundwater Vulnerability

In the Conamara Theas CP area, the groundwater vulnerability is mainly E (Rock at/near the surface or karst), Extreme and High (Figure 41). There are small pockets of Low and Moderate groundwater vulnerability also evident.

Conamara Theas Bedrock

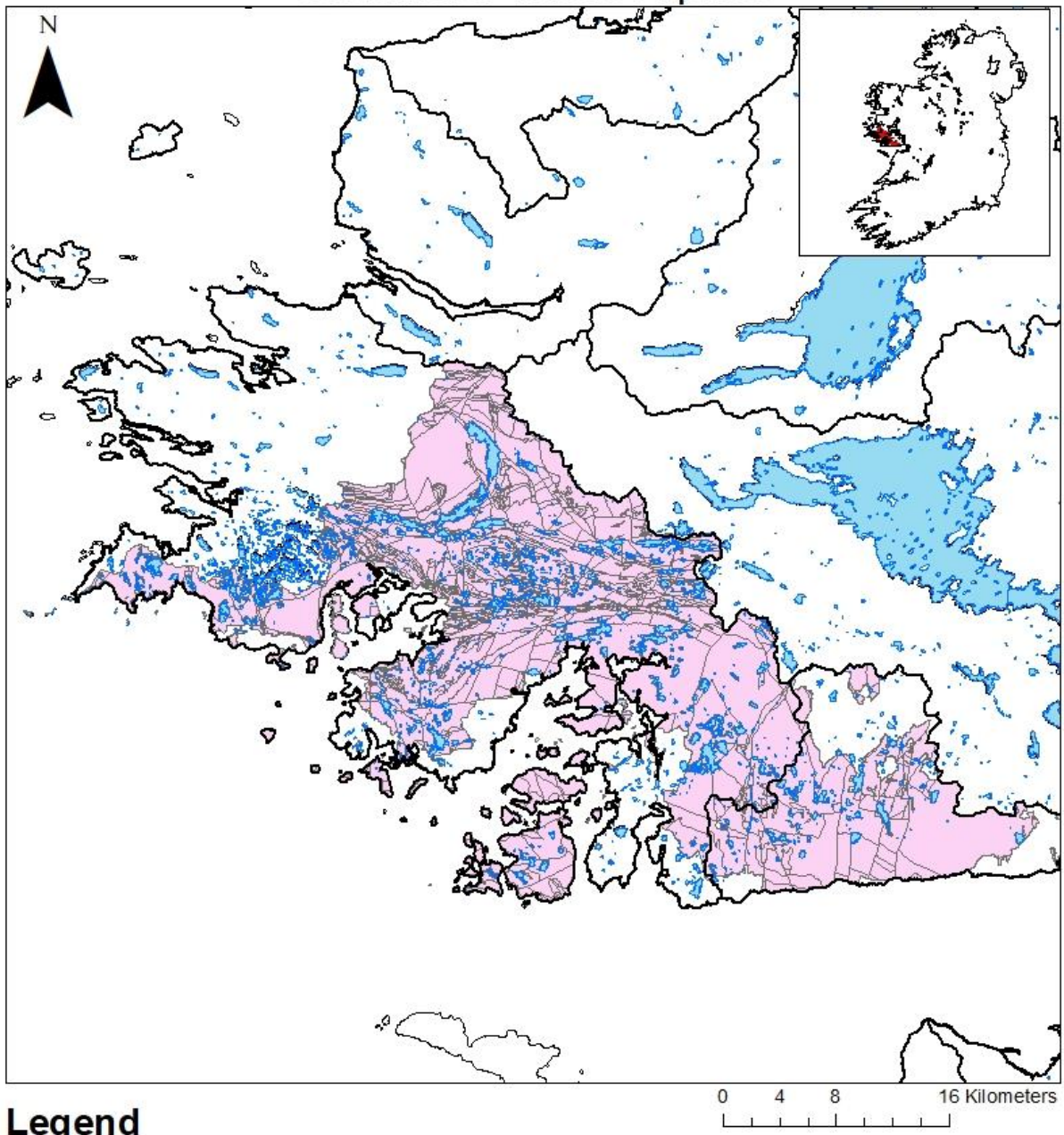


Legend

WFD_ Water Management Units	Cornamona Marble Formation	Lettergesh Formation	Oughterard Granite
EPA_Lake	Costello Murvey Granite	Lettermore Granodiorites	Paragneiss, Migmatite and Hornfels
Ballyconneely Amphibolite	Cuilleen-type	Lettermullen Formation	Porphyritic-Megacrystic Granite
Ballynakill Schist Formation	Delaney Dome Meta-rhyolite Formation	Loch Faollean Formation	Quartz Diorite Gneiss
Barnanoraun Schist Formation	Dolerite and Gabbro	Lough Fadda Granodiorite	Quartz Diorite Gneiss & Granitic Gneiss
Ben Levy Grit Formation	Errisbeg Townland Granite	Lough Lurgan Granite	Quartz porphyry and Felsite
Bennabeola Quartzite Formation	Fine-grained foliated granite	Lough Mask Formation	Roundstone Granite
Callowfinish Granite	Golan Formation	Lough Naacorussaun Metabasites	Ryans Farm Formation
Carna-type	Gorumna Formation	Magma Mixing-Mingling Zone	SOUTH CONNEMARA GROUP
Cashel Schist Formation	Granodiorite and diorite	Marginal Porphyritic Granite	Sedimentary lenses
Cleggan Boulder Bed Formation	Kilbride Formation	Metadolomite	Serpentine
Cloghmore Granodiorite	Knock Granite	Metagabbro and Related Lithologies	Shannapheasteen Granite
Connemara Marble Formation	Lakes Marble Formation	Murvey Granite	Streamstown Schist Formation

Figure 39: Bedrock geology of Conamara Theas Cooperation Area

Conamara Theas Aquifer



Legend




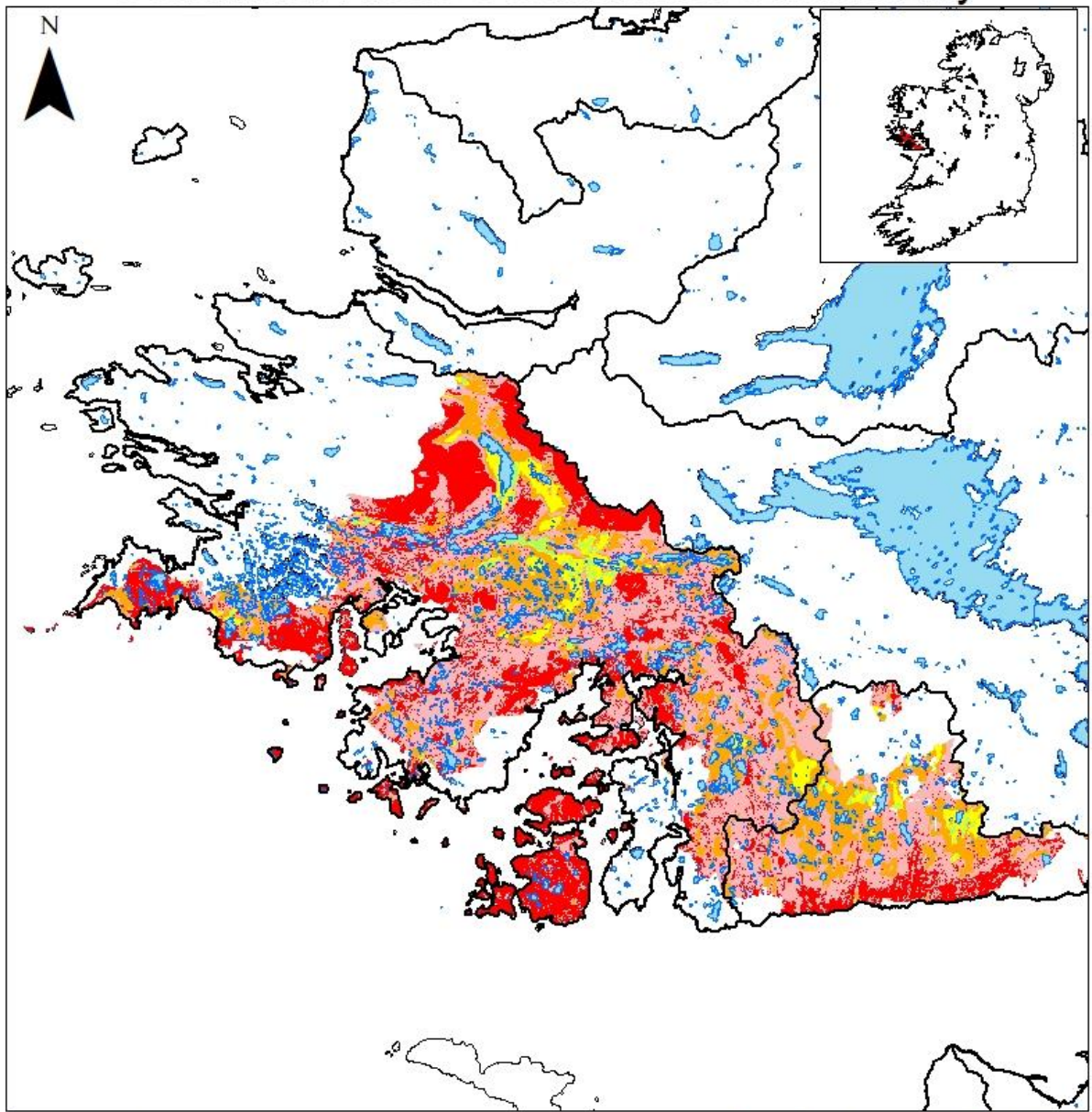
-  WFD_Water Management Units
-  EPA_Lake
-  Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones

Figure 40: Aquifer within the North Conamara Theas ACRES West Connacht Cooperation

Conamara Theas Groundwater Vulnerability



Legend








-  WFD_ Water Management Units
-  EPA_Lake
-  E(Rock at/near surface or karst)
-  Extreme
-  High
-  Moderate
-  Low

Figure 41: Groundwater Vulnerability within the Conamara Theas ACRES West Connacht Cooperation.

4. Soil

Soils in the Conamara Theas are predominantly Blanket peat, Lithosols/regosols, Peaty Gleys Acidic and Podzols Peaty, Acid Brown earth, Brown Podzolic and surface water Gleys/Ground water Gleys Acidic (Figure 42). Along the coast there is a small region of Made near the Slyne Head Peninsula. The soil texture across the CP area is Peaty, with bands of Loamy texture drifts with siliceous stone running along the Twelve Bens mountain range. There are also small pockets of fine Loamy drifts with limestone along the coast near Carraveg Bay.

5. Corine land cover, Commonage and Agriculture land parcels

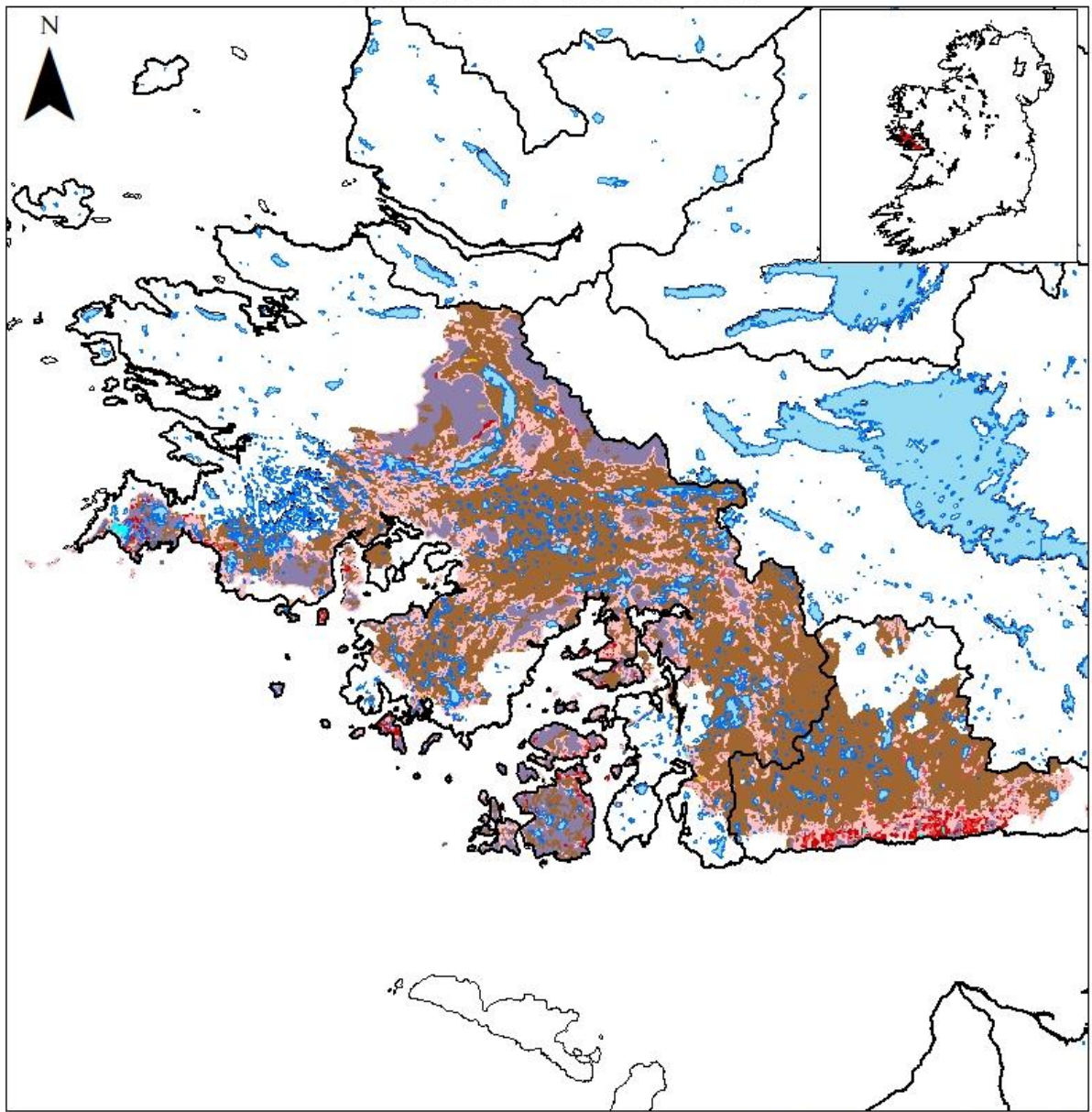
The main land cover in the Conamara Theas CP is Peat Bog, with compartments of transitional woodland scrub, Coniferous forests and sparsely vegetated areas, Land principally occupied by agriculture and broadleaved woodlands. Along the coast and on the Islands the land cover is described as Moors and Heathlands, land principally used for agriculture and sparsely vegetated areas. To the east of the CP, there is a large burnt area evident surrounding coniferous forest and Transitional woodland scrub. In the same region along the coast the land cover is denoted as Complex Cultivation Patterns attributed to the urban sprawl. The land use in this region is principally agriculture and commonage (Figure 44), of which there are 1530 herd numbers in the region with approximately 28543 ha of claimed area, with 42% of Herd numbers participated in GLAS. There are 489 herd numbers with commonages in the region, of which 75% participated in GLAS. There are large areas of 'Other' land use highlighted, described private land particularly along the coast and forestry owned land by Coillte.

6. Socio-economic characteristics of farming in the CP area.

Farming in south Connemara is typically comprised of lowland grasslands used for cattle and sheep and extensive commonages mainly used for hill sheep for a proportion of the year. There are some areas where the traditional extensive farming is being replaced with more intensive farming particularly on low-lands regions which remains economically marginal. As in other regions there is an aging farming community, with younger farmers only farming part-time, showing a shift towards the simplification of farming practices resulting in the loss of regional traditions such as hay making and keeping native breeds such as the Connemara pony.

According to the Census of Agriculture 2020 there are 1,385 holdings in this area, with 24,221.7 hectares farmed and 11,139 livestock units (Appendix 1). The average holding size is 17.5Ha with .5 livestock unit per hectare. The type of livestock found on these farms is as follows: 11,035 cattle, 4,811 non-dairy cows and 38,066 sheep. The area farmed is all grassland with no tillage. This data shows that farming in South Connemara is of low intensity with low stocking rates and small grassland farms with higher concentrations of sheep than cattle.

Conamara Theas Soil



Legend

WFD_ Water Management Units	BminSP - Surface water Gleys / Ground water Gleys Shallow
EPA_Lake	BminSPPT - Peaty Gleys Shallow
AlluvMIN - Mineral alluvium	BminSRPT - Lithosols Peats
AlluvMRL - Marl type soils	Cut - Raised Bog cutaway/cutover
AminDW - Acid Brown Earths / Brown Podzolics	FenPT - Fen peat
AminPD - Surface water Gleys / Ground water Gleys Acidic	Made
AminSRPT - Podzols Peaty	MarSands
AminSW - Lithosols / Regosols	MarSed
BktPt - Blanket peat	RsPt - Raised bog
BminDW - Grey Brown Podzolics / Brown Earths Basic	Scree
BminPD - Surface water Gleys / Ground water Gleys Basic	

Figure 42: Soil within the Conamara Theas ACRES West Connacht Cooperation.

Conamara Theas Corine

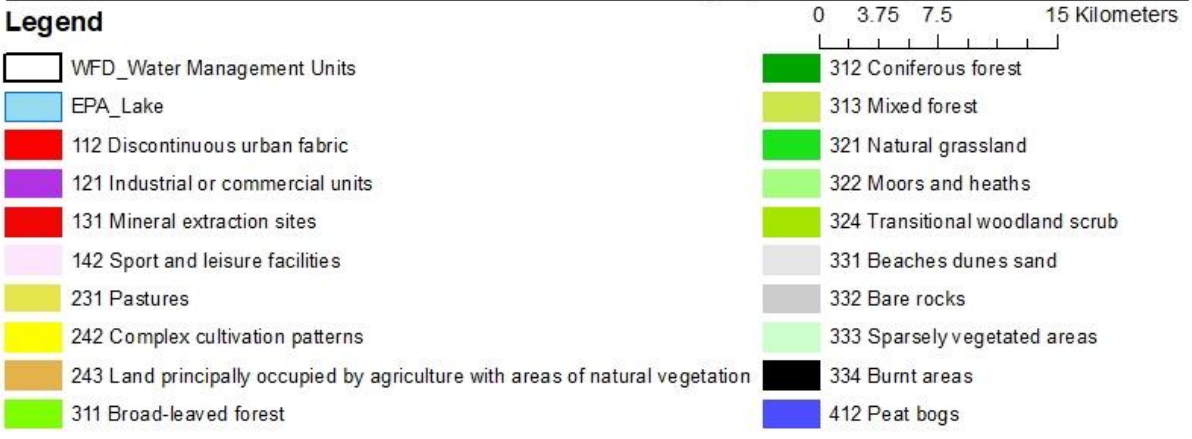
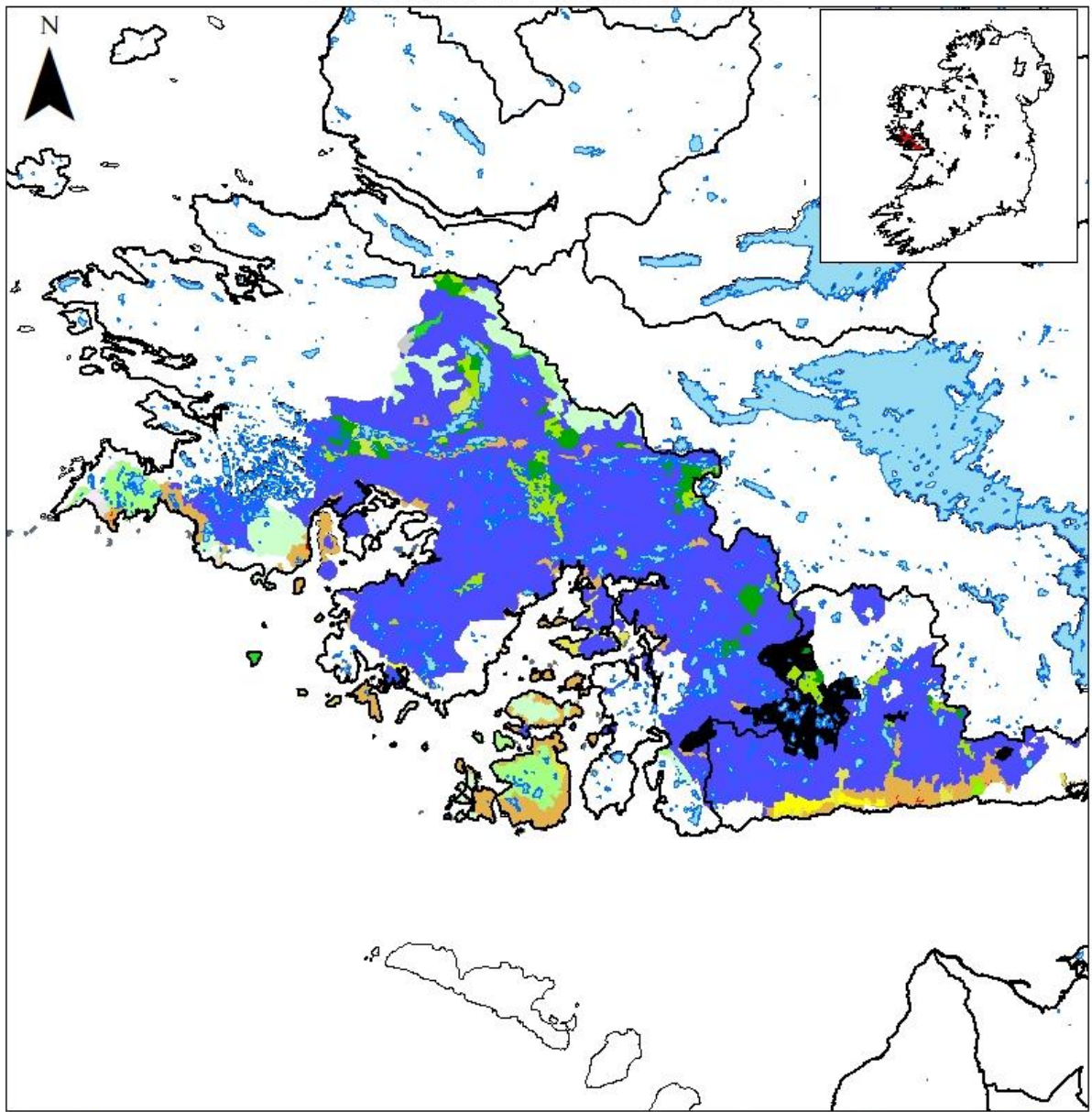
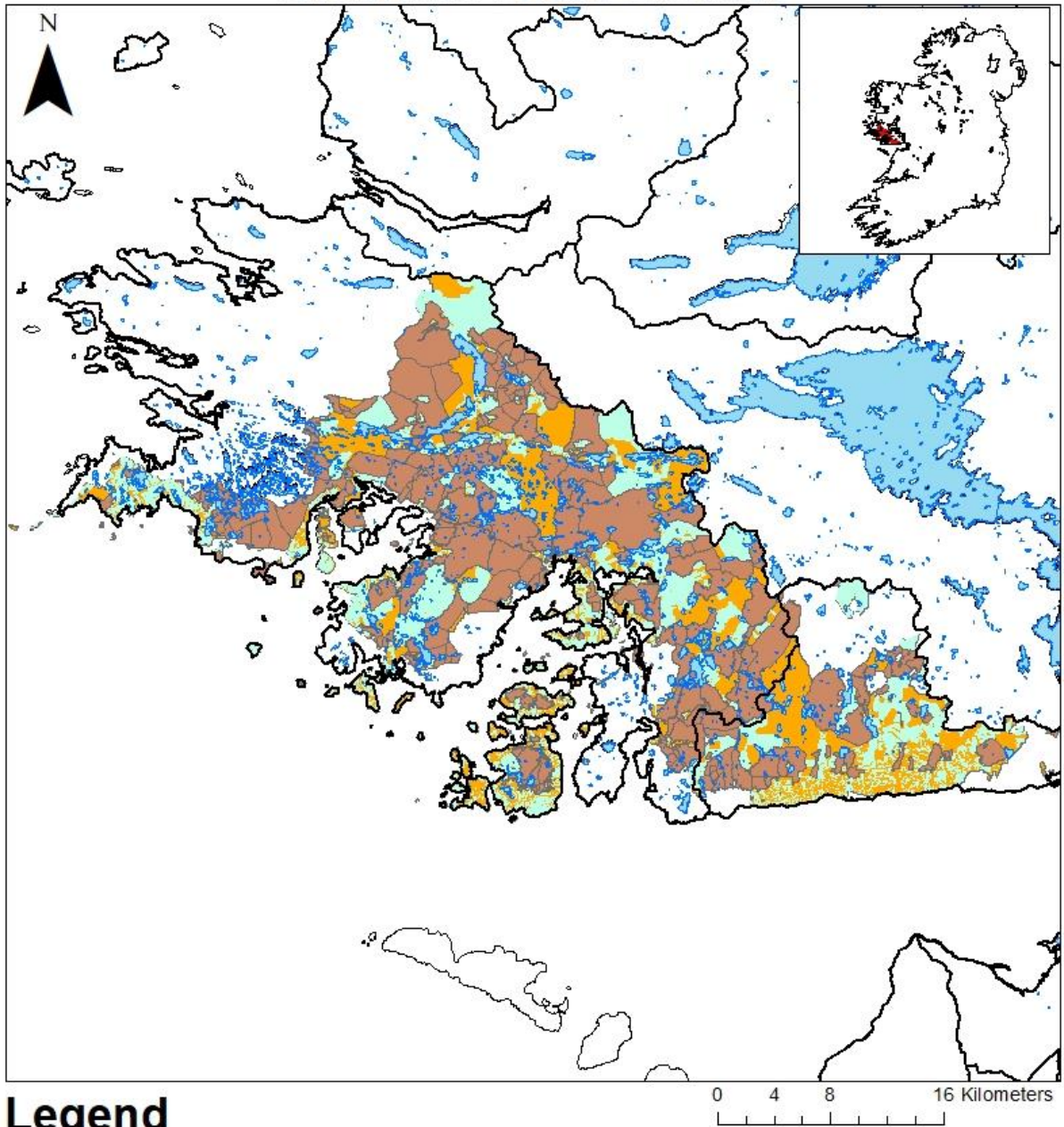


Figure 43: Corine land cover within the Conamara Theas ACRES West Connacht Cooperation.

Conamara Theas Landuse



Legend




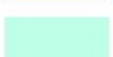

-  WFD_Water Management Units
-  EPA_Lake
-  Conamara_Theas_Commonage
-  Conamara_Theas_All_Parcels
-  Conamara_Theas_Other

Figure 44: Landuse within the Conamara Theas ACRES West Connacht Cooperation.

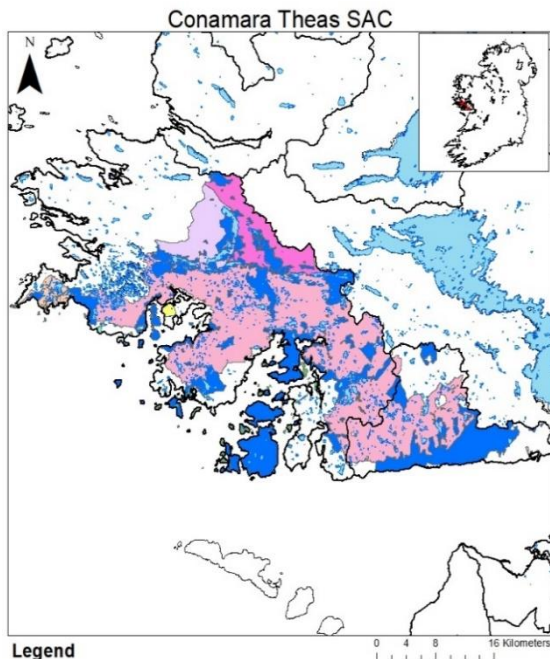
7. SAC/SPA/NHA

In the Conamara Theas CP, there are 12 designated SCAs, 3 SPAs, 3 NHAs and 22 pNHAs. The Qualifying Interest and Special Conservation Interest of these sites cover a range of habitats, species and are listed in Table 13. There is a full description of all the habitats, birds, Qualifying interest, and pollinators provided in Appendices (III Species, IV Birds, V Habitats, VI Bryophytes, VII Bee, VIII Butterflies).

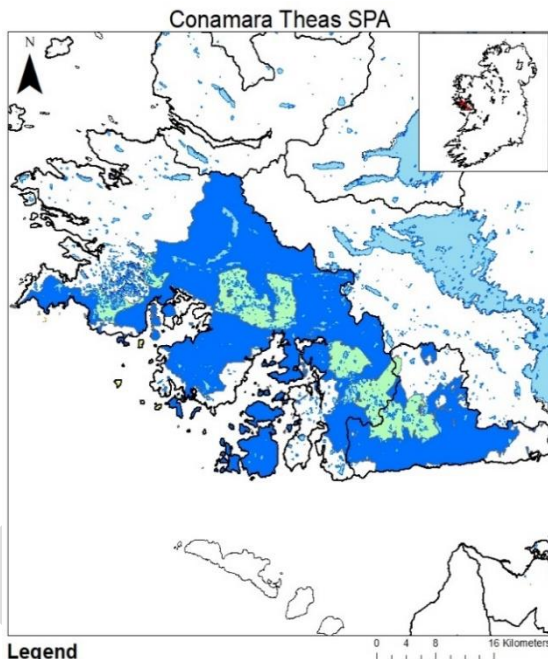
Table 13: List of habitats, flora, fauna and bird's species protected in Conamara Theas CP area under Natura 2000. A full list is presented in Appendix III.

Habitat	Flora	Fauna	Birds
Oligotrophic Waters containing very few minerals	Slender Naiad (<i>Najas flexilis</i>)	Marsh Fritillary (<i>Euphydryas aurinia</i>)	Cormorant (<i>Phalacrocorax carbo</i>)
Dystrophic Lakes	Petalwort (<i>Petalophyllum ralfsii</i>)	Atlantic Salmon (<i>Salmo salar</i>)	Merlin (<i>Falco columbarius</i>)
Oligotrophic to Mesotrophic Standing Waters		Otter (<i>Lutra lutra</i>)	Golden Plover (<i>Pluvialis apricaria</i>)
Floating River Vegetation		Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Common Gull (<i>Larus canus</i>)
Wet Heath			Black-throated Diver (<i>Gavia arctica</i>)
Dry Heath			Great Northern Diver (<i>Gavia immer</i>)
Molinia Meadows			Grey Heron (<i>Ardea cinerea</i>)
Blanket Bogs (Active)			Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)
Transition Mires			Wigeon (<i>Anas penelope</i>)
Rhynchosporion Vegetation			Teal (<i>Anas crecca</i>)
Alkaline Fens			Red-breasted Merganser (<i>Mergus serrator</i>)
Old Oak Woodlands			Ringed Plover (<i>Charadrius hiaticula</i>)
Annual Vegetation of Drift Lines			Golden Plover (<i>Pluvialis apricaria</i>)
Embryonic Shifting Dunes			Lapwing (<i>Vanellus vanellus</i>)
Marram Dunes (White Dunes)			Dunlin (<i>Calidris alpina</i>)
Fixed Dunes (Grey Dunes)			Bar-tailed Godwit (<i>Limosa lapponica</i>)
Oligotrophic Waters containing very few minerals			Curlew (<i>Numenius arquata</i>)
Large Shallow Inlets and Bays			Redshank (<i>Tringa totanus</i>)
Perennial Vegetation of Stony Banks			Turnstone (<i>Arenaria interpres</i>)
Vegetated sea cliffs of the Atlantic and Baltic coasts			Black-headed Gull (<i>Chroicocephalus ridibundus</i>)
Salicornia Mud			Common Gull (<i>Larus canus</i>)
Atlantic Salt Meadows			Sandwich Tern (<i>Sterna sandvicensis</i>)
Mediterranean Salt Meadows			Common Tern (<i>Sterna hirundo</i>)
Turloughs			Barnacle Goose (<i>Branta leucopsis</i>)
Juniper Scrub			Arctic Tern (<i>Sterna paradisaea</i>)
Orchid-rich Calcareous Grassland			Little Tern (<i>Sterna albifrons</i>)
Cladium Fens			
Limestone Pavement			
Machairs			
Lowland Hay Meadows			
Alpine and Subalpine Heaths			
Siliceous Rocky Slopes			
Hard Water Lakes			
Siliceous Scree			

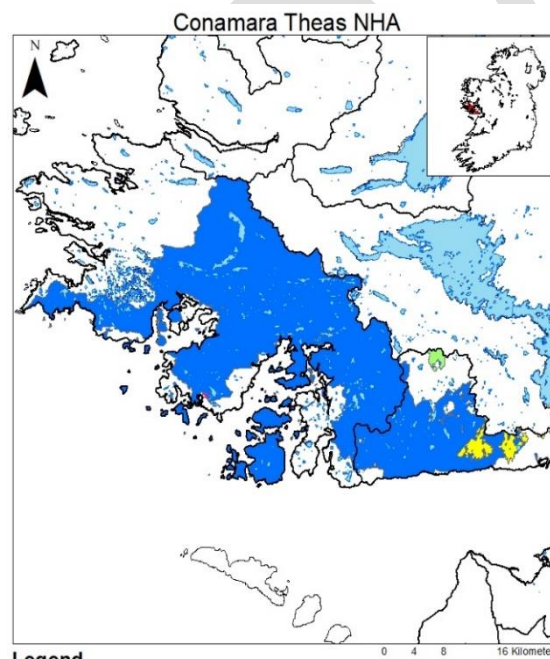
Calcareous Rocky Slopes
Wetland and Waterbirds



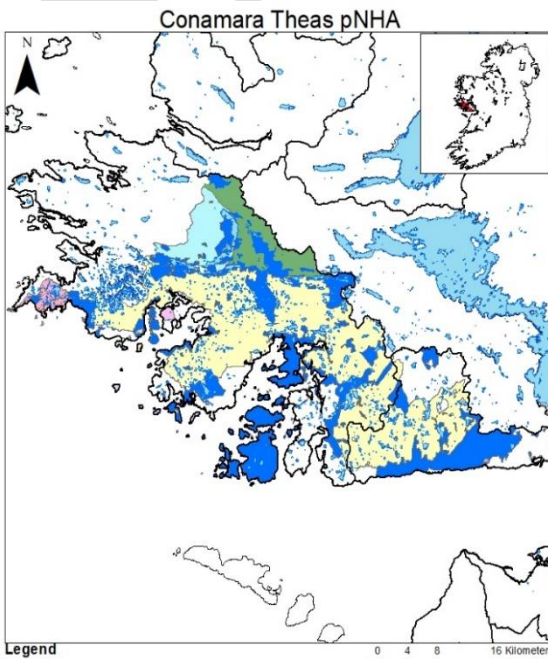
- Legend**
- WFD_Water Management Units
 - EPA_Lake
 - Connemara Bog Complex SAC
 - Cregduff Lough SAC
 - Dog's Bay SAC
 - Galway Bay Complex SAC
 - Kilkeran Bay And Islands SAC
 - Lough Nageeron SAC
 - Maumturk Mountains SAC
 - Murvey Machair SAC
 - Rosroe Bog SAC
 - Slyne Head Islands SAC
 - Slyne Head Peninsula SAC
 - The Twelve Bens/Garraun Complex SAC



- Legend**
- WFD_Water Management Units
 - EPA_Lake
 - Conamara Theas
 - Connemara Bog Complex SPA
 - Inner Galway Bay SPA
 - Slyne Head To Ardmore Point Islands SPA



- Legend**
- WFD_Water Management Units
 - EPA_Lake
 - Conamara Theas CP
 - Carna Heath And Bog NHA
 - Moycullen Bogs NHA
 - Oughterard District Bog NHA



- Legend**
- WFD_Water Management Units
 - EPA_Lake
 - Conamara Theas CP
 - Ardmore Point Grassland
 - Ballyconneely Bay
 - Bertraghboy Bay
 - Connemara Bog Complex
 - Cregduff Lough
 - Dog's Bay
 - Eagle Rock
 - Finish Island Machair
 - Furbogh Wood
 - Galway Bay Complex
 - Horse Island Complex
 - Inishmuskerry
 - Kinvarra Saltmarsh
 - Mace Head Islands
 - Mason Island Machair
 - Maumturk Mountains
 - Mweenish Island Machair
 - Rosroe Bog
 - Slyne Head Islands
 - Slyne Head Peninsula
 - St. Macdara's Island
 - The Twelve Bens/Garraun Complex

Figure 45: Map of SAC, SPA, NHA and pNHA within the Conamara Theas ACRES West Connacht Cooperation area.

8. Archaeology and Architectural Heritage

A total of 388 sites of national archaeological and architectural importance have been established as occurring within the Conamara Theas CP zone (Figure 46) and include settlement remains, burial sites, and associated features from the neolithic period up to the 19th century. These include megalithic burial sites, hut sites, middens, enclosures, ringforts, cránnogs, ritual sites, castles, ecclesiastical sites, and burial grounds. Recorded monuments are more concentrated in the coastal and lowland areas close to resources and fertile land. There are fewer recorded monuments in the lowland blanket bog plains and upland areas. Conamara Theas CP does not have the numerous ringforts or raths as the rest of Connacht with only nine recorded in this zone and settlement seems to have been largely unenclosed, with hut sites, hearths and shell middens remaining. There is however a high concentration of ecclesiastically monuments, many dating to early Christian Connamara, where island and coastal hermitages were located and there was a tradition of maritime pilgrimage that reached its peak popularity in the 11th and 12th centuries (Aalen et.al, 1997). They include 33 holy wells; 8 penitential stations; 4 mass rocks; 8 leachts; 13 graveyards; 25 churches; 5 cross slabs and 5 chapels. The long tradition of pilgrimage is still celebrated today on St. MacDara's Island Monastery which was founded in the 6th century and is the site of a stone oratory built in the 10th century. There are 81 post 1700 architectural structures in the zone consisting of buildings, churches, bridges, and schools. The country house on the estate of Ballynahinch Castle was built in 1754, but the first castle on this site was built in in the late medieval period around 1546 by the ruling O'Flaherty family. This is another castle that the famous 15th century Pirate Queen Gráinne Mhaol was associated with.

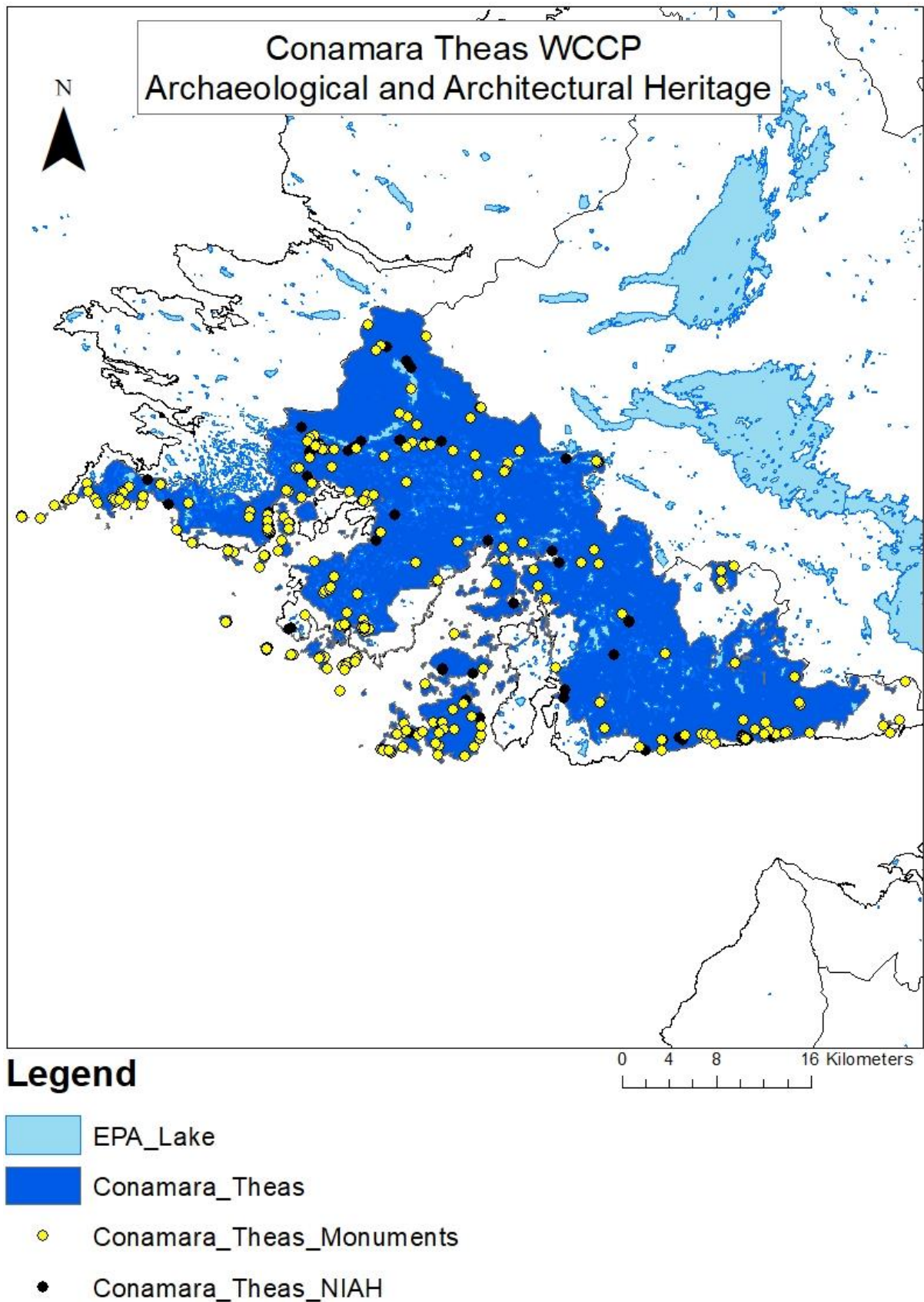


Figure 46: Map of Archaeological and architectural heritage sites in the Conamara Theas ACRES West Connacht cooperation zone.

9. Hydrology

The ACRES West Connacht Cooperation Project lies within the Western River Basin District and is incorporated across several WFD catchments as outlined in Table. The Conamara CP is incorporated into the Galway Bay North Hydrological catchment. Galway Bay North catchment includes all rivers entering the sea between Nimmo's Pier and Slyne Head, Co Galway. Galway city is the main urban area in the catchment. There are 9 sub-catchments with 43 rivers and 146 lakes.

Under the WFD water body classification, in this catchment there are 10 high status waters, 30 good status, 8 moderate status and 2 at poor status. There are 188 waterbodies currently un-assigned a status in 2018. There are 9 rivers currently classified as 'at-risk' of not achieving the WFD objective of Good or High ecological status (44 lakes and 14 rivers are under review). For the 'at risk' rivers and lakes, morphology and excess nutrients impacts are significant in this region, with chemical, hydrological, sediment and others also impacting surface water (Table 14). Forestry and Agriculture were identified as the main pressures impacting watercourses in the catchment. Organic pollution and chemical pollution have also been attributed to agricultural practices. Additional pressures have been attributed to peat extraction resulting in an increase in sediment and nutrients released, Hydromorphology, domestic wastewater, Industry and unknown anthropogenic pressures.

Table 14: List of waterbodies at risk of not achieving WFD good or high ecological status in the Galway Bay North Catchment.

Sub-catchment code	Waterbody name	Waterbody type	WDF Status	Significant Pressure
31.8	Cashla_010	River	At Risk	For, Other, Peat
31_4	Gowlabeg_010	River	At Risk	Agri
31_3	Invermore_010	River	At Risk	For
31_3	Invermore_020	River	At Risk	For, DWW, Peat
31_8	Knockadoagh_020	River	At Risk	M+Q, Other, Peat
31_4	Owengowla	River	At Risk	Agri
31_5	Polleen_010	River	At Risk	Hymo
31_2	Recess_010	River	At Risk	Agri
31_2	Tooreenacoona_010	River	At Risk	For

*Other, is classified in the 3rd WFD RBMP as abstraction, anthropogenic pressure, historical pollution, invasive species, atmospheric, waste treatment.

10. Priority Area of Action and Blue Dot

There are one GWS and two small lakes and a number of rivers that are designated as supplying drinking water in the Conemara Theas region. There are a number of Blue Dot sites, this programme ensures the protection, maintenance and conserve High Status water quality.

Corrib and Mask CP encompasses the Corrib Catchment.

The Corrib and Mask CP is surrounded by Party Mountain to the West, Binn Dhleibhe (416m) down to Maumturk Mountain (700m) to Tí na Cille Theas (630m), to Shannawona (342m) to Cloghermore (280m) to N59 into the banks of the Lough Corrib to the Quincentennial Bridge in Galway City and then back out along the N84 running parallel to Lough Corrib and Lough Mask.

1. Bedrock Geology

The underlying bedrock of the Corrib and Mask CP is diverse and includes numerous geological formations which consist of mainly Limestone to the east and southeast and Schist to the West and southwest of the CP. Limestone is a sedimentary rock and the solubility of limestone in water and weak acid leads to a karst landscape. Karst areas that have these soils can have high infiltration rates into the bedrock aquifer, high groundwater flow speeds and a lower capacity to filter contaminants in the water. In the South of the Corrib Mask CP, at the lower Corrib there are large slabs of Viséan Limestone, Coranellistrum Formation, with ribbons of Illaunagappal Formation, Old Chapel Limestone Formation, Waterfall Member of Dolomitic Limestone shale and Owenriff member of a dark Limestone with shale and Ballynakill Schist running from east to west across Lough Corrib. There are large areas of Oughterard Granit and Cashel Schist formation to the west. Between Lough Corrib and Lough Mask there are areas of Cong Limestone and Cong Canal Formation and along the south of Lough Mask. The bedrock geology to the west is Mweelree Formation of sandstone, Kilbride Formation, Lough Mask Formation and Tonweereo Formation to the North of the Lough (Figure 47).

2. Aquifer

The different bedrock in the Corrib Mask CP gives rise to various aquifer types (Figure 48). There are two dominant aquifer types, a poor aquifer – Bedrock which is generally unproductive except in Local Zones to the west of the CP zone and a Regionally important aquifer – Karstified (conduit) to the east. There are veins of Locally important aquifers to the north of Lough Mask and in the middle of Lough Corrib. The regionally Important aquifer classification corresponds with the limestone along the east of the Corrib.

3. Groundwater Vulnerability

Groundwater vulnerability is associated to the likelihood of surface water contaminants entering groundwater stores. The groundwater vulnerability within the Corrib Mask CP is complex with E (rock at/near surface) and Extreme and High groundwater classifications dominating (Figure 49). There are areas of Low and Moderate to the north of Mask and southeast of the of Corrib.

4. Soil

The soil structure within is divided by Lough Mask and Corrib. To the West there is predominantly Blanket bog with deep poorly draining soils and veins of Mineral Alluvium soils (Figure 50). To the east there are shallow well drained mineral soils, and deep well drained mineral soil derived from mainly basic parent rock with a Peal /Loamy structure. There are large areas classified as 'Cut' on the west and east of lower Lough Corrib and to the northeast of Lough Mask.

Corrib Mask Bedrock

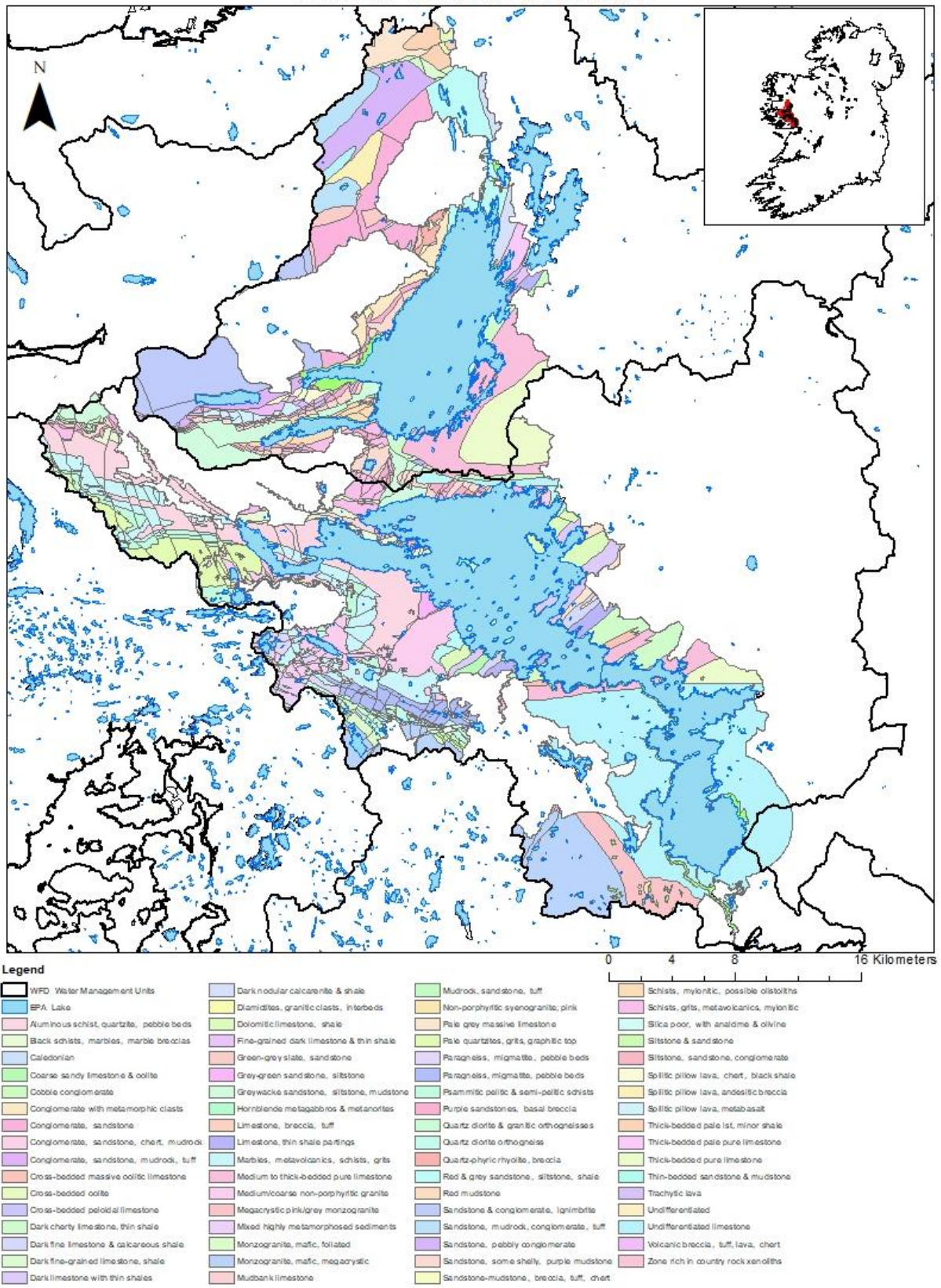


Figure 47: Bedrock geology of the Corrib Mask ACRES West Connacht Cooperation.

Corrib Mask Aquifer

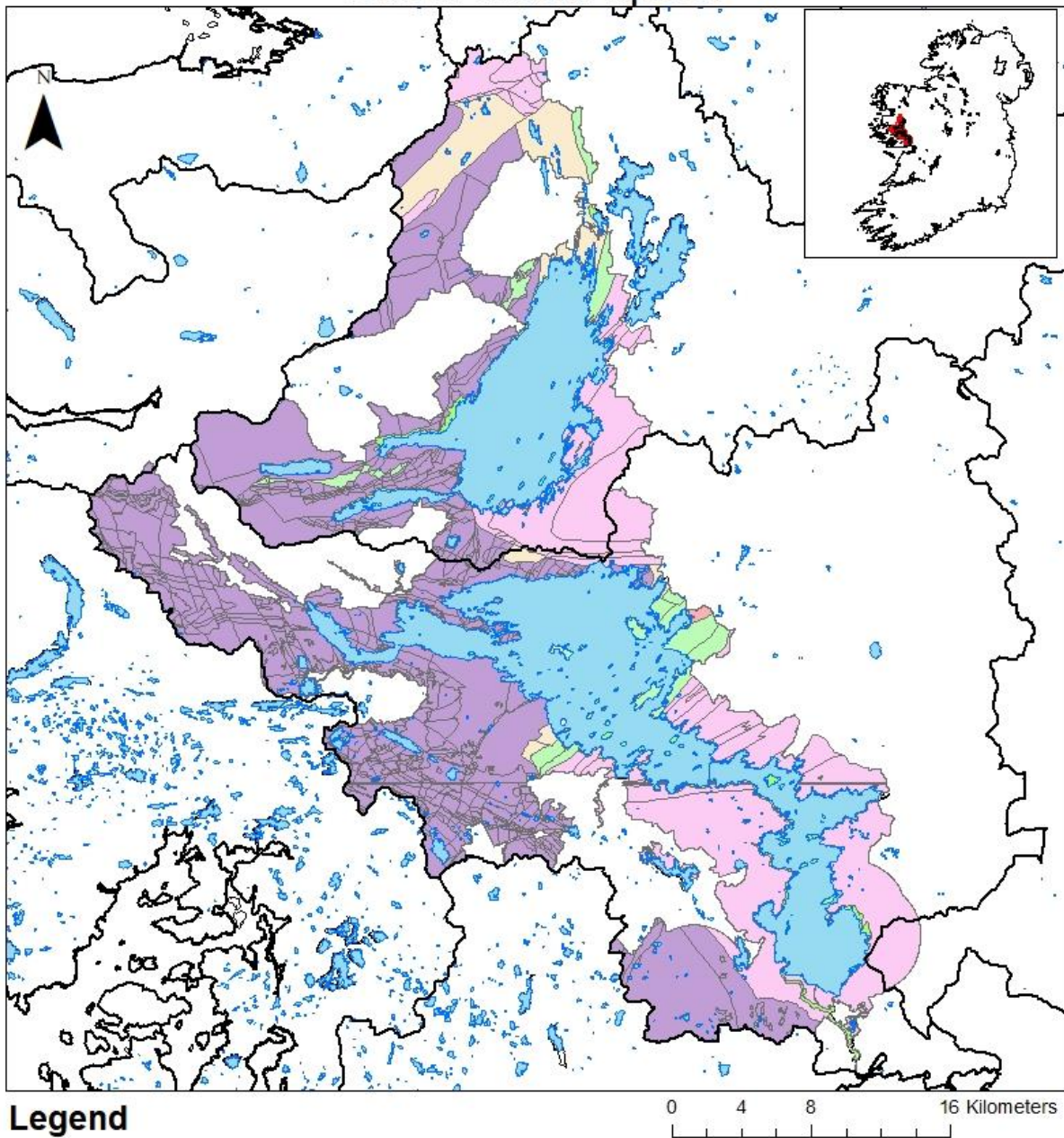
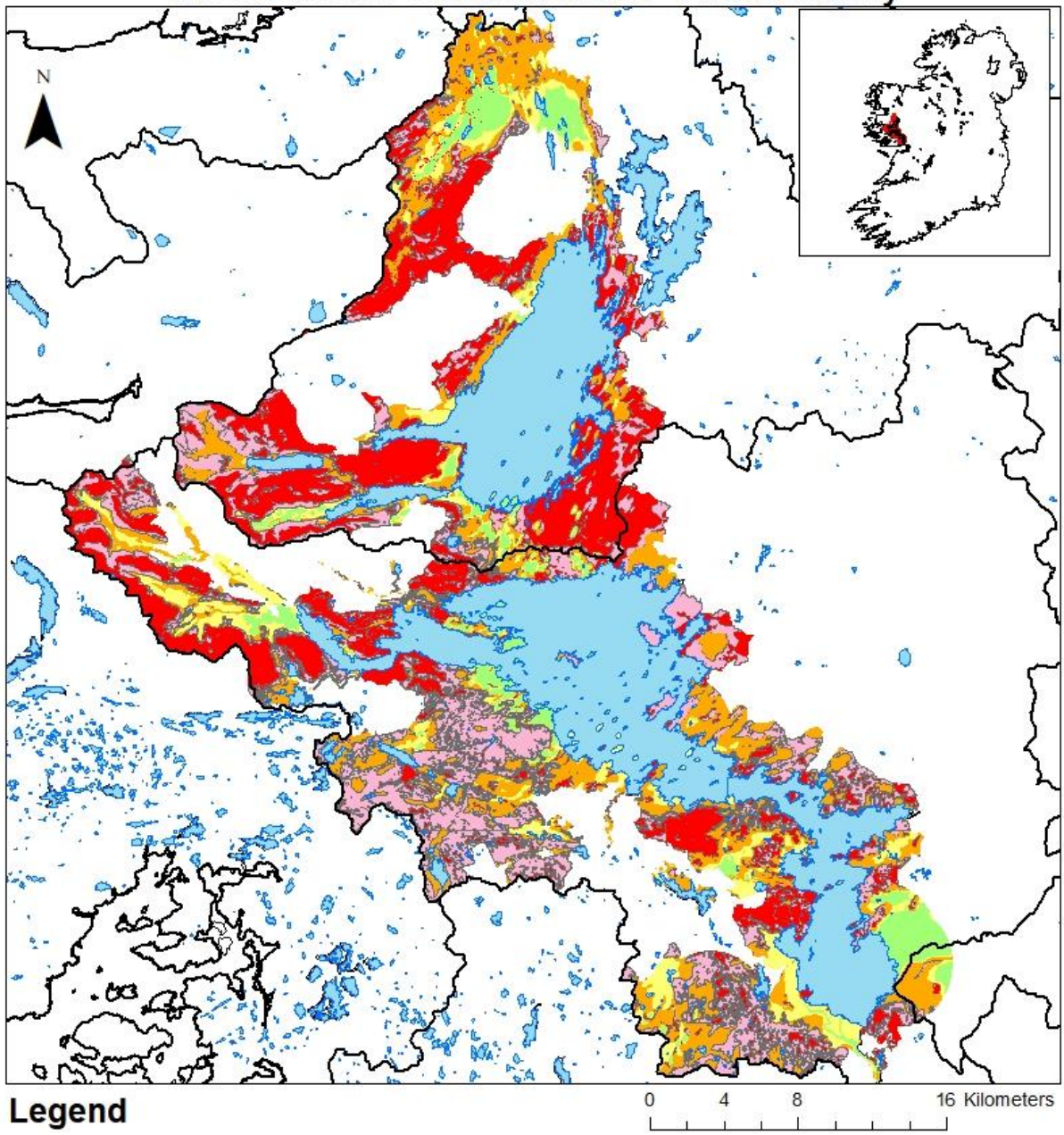


Figure 48: Aquifer description within the Corrib Mask ACRES West Connacht Cooperation.

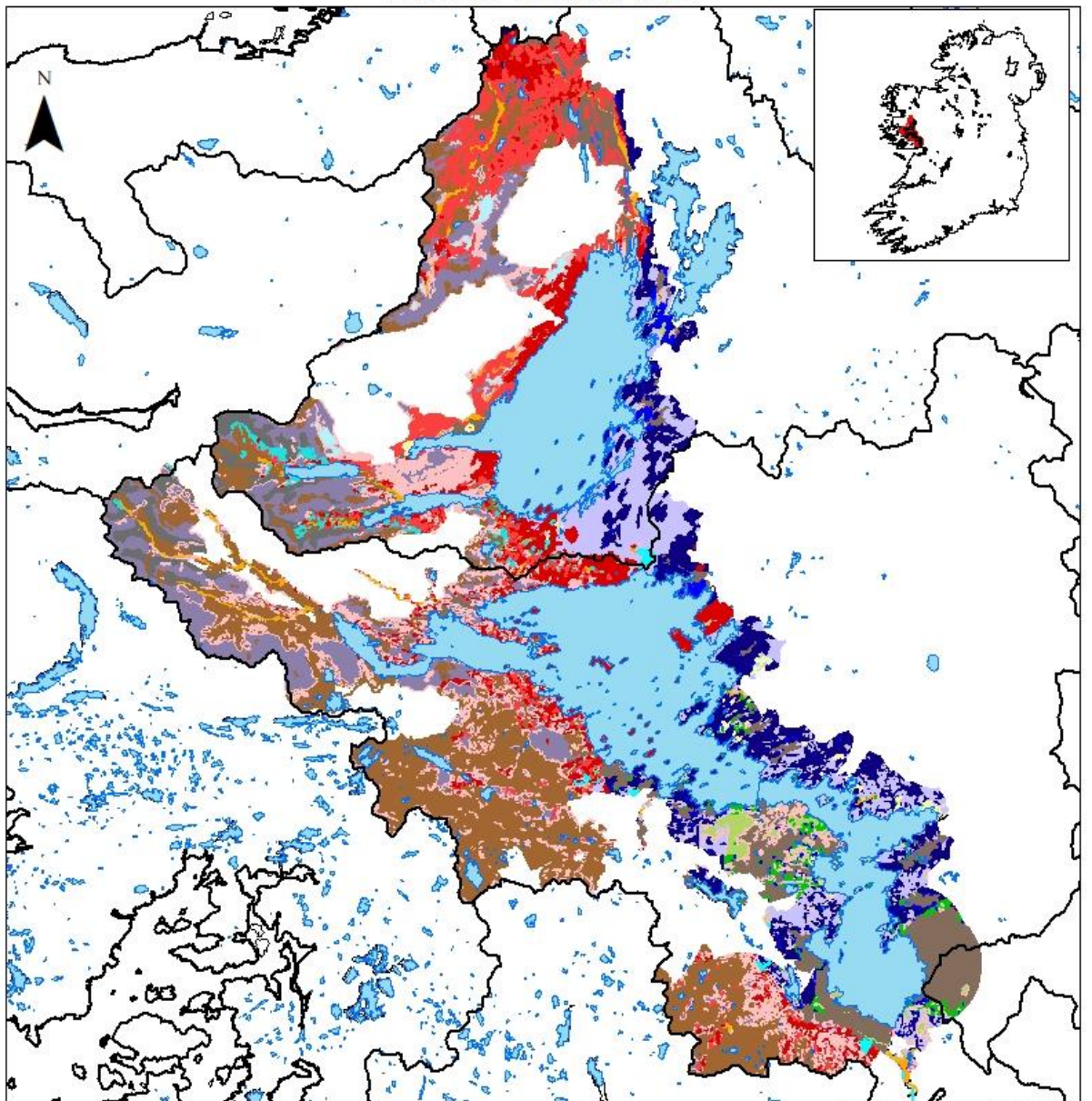
Corrib Mask Groundwater Vulnerability



- Legend**
- WFD_Water Management Units
 - EPA_Lake
 - E(Rock at/near surface or karst)
 - Extreme
 - High
 - Moderate
 - Low

Figure 49: Groundwater Vulnerability within the Corrib Mask ACRES West Connacht Cooperation.

Corrib Mask Soil



Legend

- | | |
|---|---|
| WFD_Water Management Units | BminPD - Surface water Gleys / Ground water Gleys Basic |
| EPA_Lake | BminPDPT - Peaty Gleys Basic Parent Materials Basic |
| Corrib_Mask_Soil | |
| AlluvMIN - Mineral alluvium | BminSP - Surface water Gleys / Ground water Gleys Shallow |
| AlluvMRL - Marl type soils | BminSPPT - Peaty Gleys Shallow |
| AminDW - Acid Brown Earths / Brown Podzolics | BminSRPT - Lithosols Peats |
| AminPD - Surface water Gleys / Ground water Gleys Acidic | BminSW - Renzinas / Lithosols |
| AminPDPT - Peaty Gleys Acidic | Cut - Raised Bog outaway/outover |
| AminSP - Surface water Gleys / Ground water Gleys Shallow | FenPT - Fen peat |
| AminSPPT - Peaty Gleys Shallow | Lac |
| AminSRPT - Podzols Peaty | Made |
| AminSW - Lithosols / Regosols | MarSed |
| BktPt - Blanket peat | RsPt - Raised bog |
| BminDW - Grey Brown Podzolics / Brown Earths Basic | Soree |
| | Reed Swamp / Marsh |

Figure 50: Soil within the Corrib Mask ACRES West Connacht Cooperation.

5. Corine land cover, Commonage and Agriculture land parcels

The main land cover in the Corrib and Mask CP is Peat bog to the west and Pasture and Land principally occupied by agriculture to the east. Along the banks of lower Lough Corrib there are areas of Inland marsh and pasture and land principally occupied by agriculture (Figure 51). There are patches of Broadleaved woodland and Transitional woodland along the western shore of Lough Corrib. Peatland is extensive to the west of Lough Corrib and all the way up to the west of Lough Mask, with pasture, Land principally occupied by agriculture evident in the North and along the east of Lough Mask. There are small pockets of Inland marshes in the northeast of Mask. The main land use is agriculture and to a lesser extent to the other CP areas commonage farming. There are 2039 herd numbers, on 12598 parcels of 43815ha of land attributed to the Corrib and Mask CO area, with 31% participating in GLAS. There are 331 Commonages of 3402ha of which 66% are currently participating in GLAS. The other land use denotes accounts for private land ownership and forestry.

6. Characteristics of farms Socio-economic

The Corrib and Mask area is located within 34 Electoral Districts (EDs), 14 in Mayo and 20 in Galway. Except for EDs in Connemara, these are mainly located around the two lakes and with very small areas overlapping the CP project area. Within the core set of the 29 EDs, there are 2,030 farm holdings over a total farmed area of 57,789 ha, 99.7% of which is reported as grassland/forage. The average farm size is 31.7 ha, with largest sized holdings are found in Connemara of 87.2 and 126.9 ha attributed to commonage. The median age of farm holders in this area is 59 years. Sheep are the predominant livestock, accounting for 80% of total animals (175,801 animals), and cattle the remaining 20% (43,737 animals). Only four EDs reported to contain dairy cattle, all of which are located on the east of the project area. One ED in Connemara (Letterbrickaun) did not report any cattle, and on the other hand, three EDs near Galway City did not report the presence of any sheep (www.cso.ie).

Corrib Mask Corine

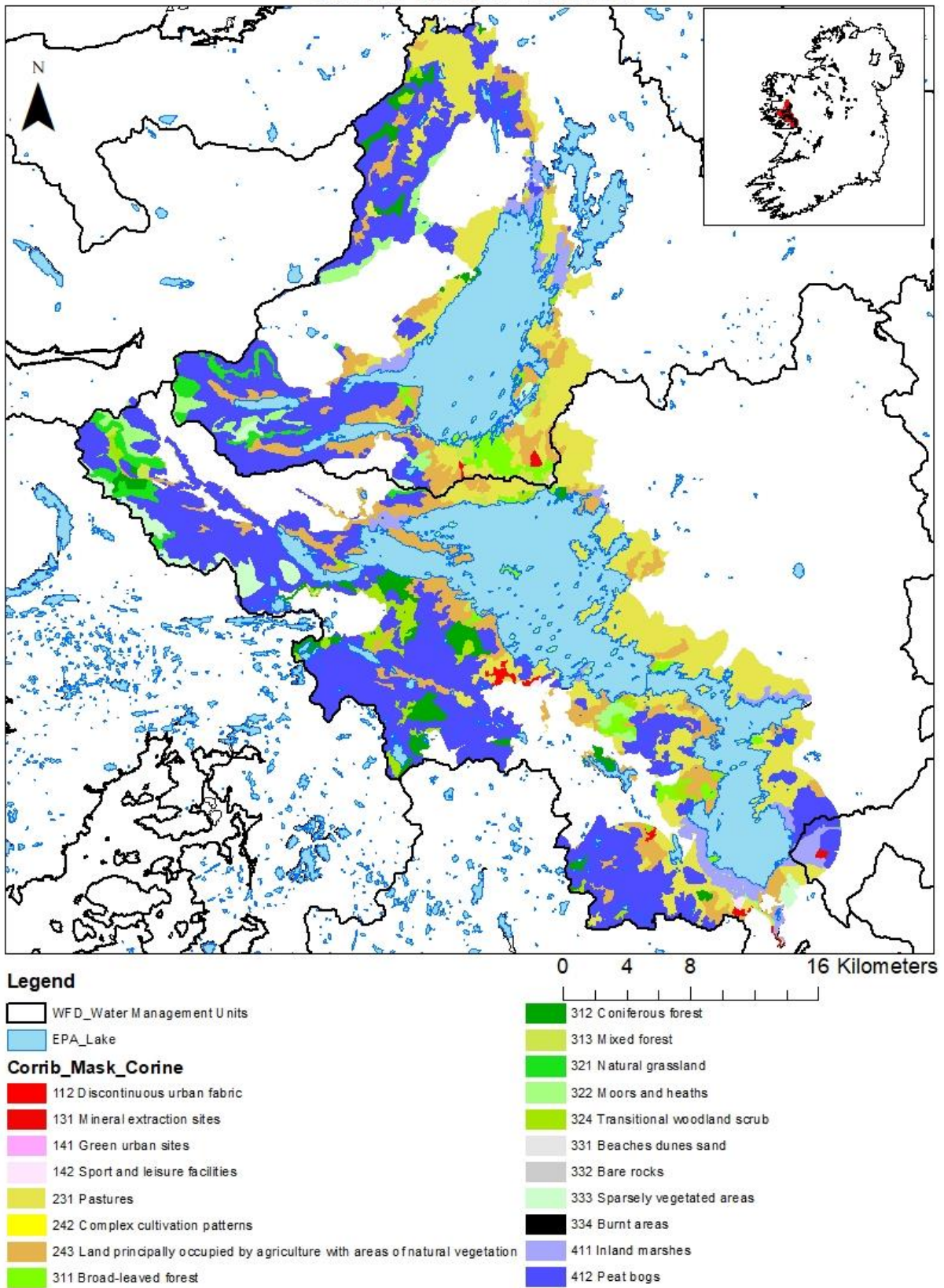
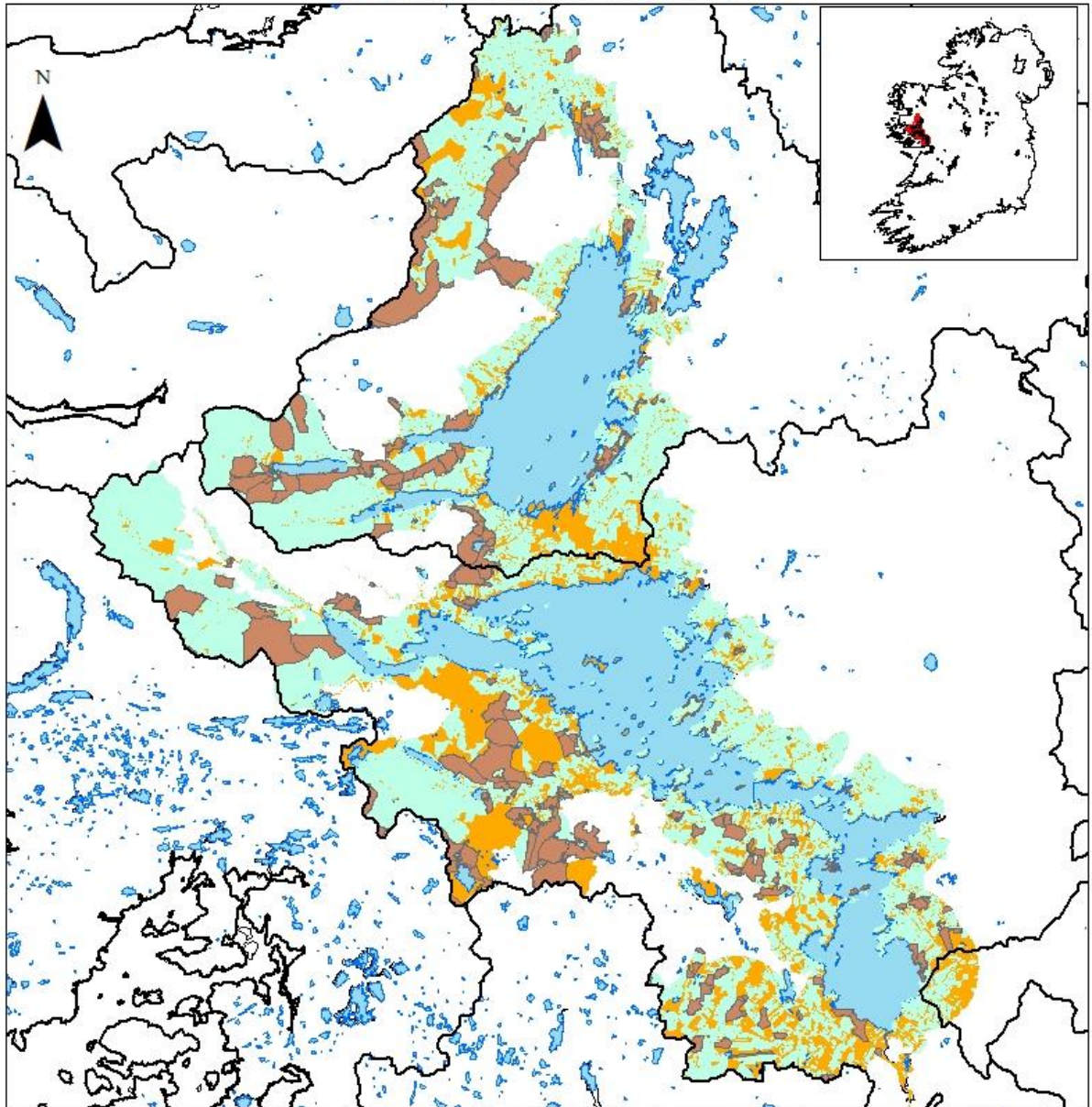


Figure 51: Corine within the Corrib and Mask ACRES West Connacht Cooperation.

Corrib Mask Landuse



Legend

- WFD_ Water Management Units
- Corrib_Mask_Commonage
- Corrib_Mask_All_Parcels
- EPA_Lake
- Corrib_Mask_Other

0 4 8 16 Kilometers

Figure 52: Landuse within the Corrib and Mask ACRES West Connacht Cooperation.

7. SAC/SPA/NHA

In the Corrib and Mask CP there are 10 SAC, 3 SPA, 1 NHA and 14 pNHA. There is a full description of all the habitats, birds, Qualifying interest, and pollinators provided in Appendices (III Species, IV Birds, V Habitats, VI Bryophytes, VII Bee, VIII Butterflies).

Table 15: List of habitats, flora, fauna and bird's species protected in Conamara Theas CP area under Natura 2000. A full list is presented in Appendix 1.

Habitat	Flora	Fauna	Birds
Caves	Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>)	Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	Common Gull (<i>Larus canus</i>)
Limestone Pavement	Slender Naiad (<i>Najas flexilis</i>)	Otter (<i>Lutra lutra</i>)	Gadwall (<i>Anas strepera</i>)
Siliceous Rocky Slopes	Petalwort (<i>Petalophyllum ralfsii</i>)	Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Shoveler (<i>Anas clypeata</i>)
Vegetated sea cliffs of the Atlantic and Baltic coasts		White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	Pochard (<i>Aythya ferina</i>)
Calcareous Rocky Slopes		Sea Lamprey (<i>Petromyzon marinus</i>)	Tufted Duck (<i>Aythya fuligula</i>)
Atlantic Salt Meadows		Brook Lamprey (<i>Lampetra planeri</i>)	Common Scoter (<i>Melanitta nigra</i>)
Mediterranean Salt Meadows		Atlantic Salmon (<i>Salmo salar</i>)	Hen Harrier (<i>Circus cyaneus</i>)
Turloughs		Geyer's Whorl Snail (<i>Vertigo geyeri</i>)	Coot (<i>Fulica atra</i>)
Juniper Scrub		Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>)	Golden Plover (<i>Pluvialis apricaria</i>)
Orchid-rich Calcareous Grassland		Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Black-headed Gull (<i>Chroicocephalus ridibundus</i>)
Cladium Fens			Common Gull (<i>Larus canus</i>)
Alkaline Fens			Common Tern (<i>Sterna hirundo</i>)
Oligotrophic Waters containing very few minerals			Arctic Tern (<i>Sterna paradisaea</i>)
Oligotrophic to Mesotrophic Standing Waters			Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)
Hard Water Lakes			Lesser Black-backed Gull (<i>Larus fuscus</i>)
Dry Heath			
Alluvial Forests			
Floating River Vegetation			
Molinia Meadows			
Raised Bog (Active)			
Degraded Raised Bog			
Rhynchosporion Vegetation			
Petrifying Springs			
Old Oak Woodlands			
Bog Woodland			
Wet Heath			
Alpine and Subalpine Heaths			
Blanket Bogs (Active)			
Siliceous Rocky Slopes			
Annual Vegetation of Drift Lines			
Mediterranean Salt Meadows			
Embryonic Shifting Dunes			
Marram Dunes (White Dunes)			
Fixed Dunes (Grey Dunes)			

Decalcified Dune Heath			
Dunes with Creeping Willow			
Humid Dune Slacks			
Machairs			
Dystrophic Lakes			
Hydrophilous Tall Herb Communities			
Transition Mires			
Siliceous Scree			

8. Archaeology

A total of 886 sites of national archaeological and architectural importance have been established as occurring within the Lough Corrib and Lough Mask CP zone (Figure 54) and include settlement remains, burial sites, and associated features from the neolithic period, the early and late bronze age, early and post medieval and early modern Ireland. These include megalithic tombs, standing stones, stone circles, field enclosures, souterrains, ringforts, fulacht fias, cránnogs, castles, ecclesiastical sites, and burial grounds. There is a heavy concentration of settlements, and their associated sites in the lowland areas where the land is fertile and close to resources such as Lough Corrib and Lough Mask. The preservation of the rich prehistoric archaeological remains in these areas are due to the use of stone as the main building material, which has been used in an array of monuments including the earliest neolithic structures to the early Christian ecclesiastical monasteries and later in the medieval period in castles and towers. The most common monuments recorded in this cp zone were enclosures at 112 sites, ringforts at 71 sites and cránnogs at 45 sites. The cránnogs used at different periods during the first millennium, are semi-artificial islands in lakes made with timber, sods and stone used for habitation and accessed by boat or an artificial causeway. There are the remains of 24 castles in this area the earliest dating back to the c. 1200's which are predominantly in the tower house style of construction. Along the shores of Lough Corrib are Aughnamure Castle, Castlekirk, Annaghkeen Castle and Carraign Castle. There are 159 post 1700 architectural structures in the zone consisting of buildings, churches, bridges, schools, and Ashford Castle is one of the most renowned of them all, attracting thousands of visitors each year.

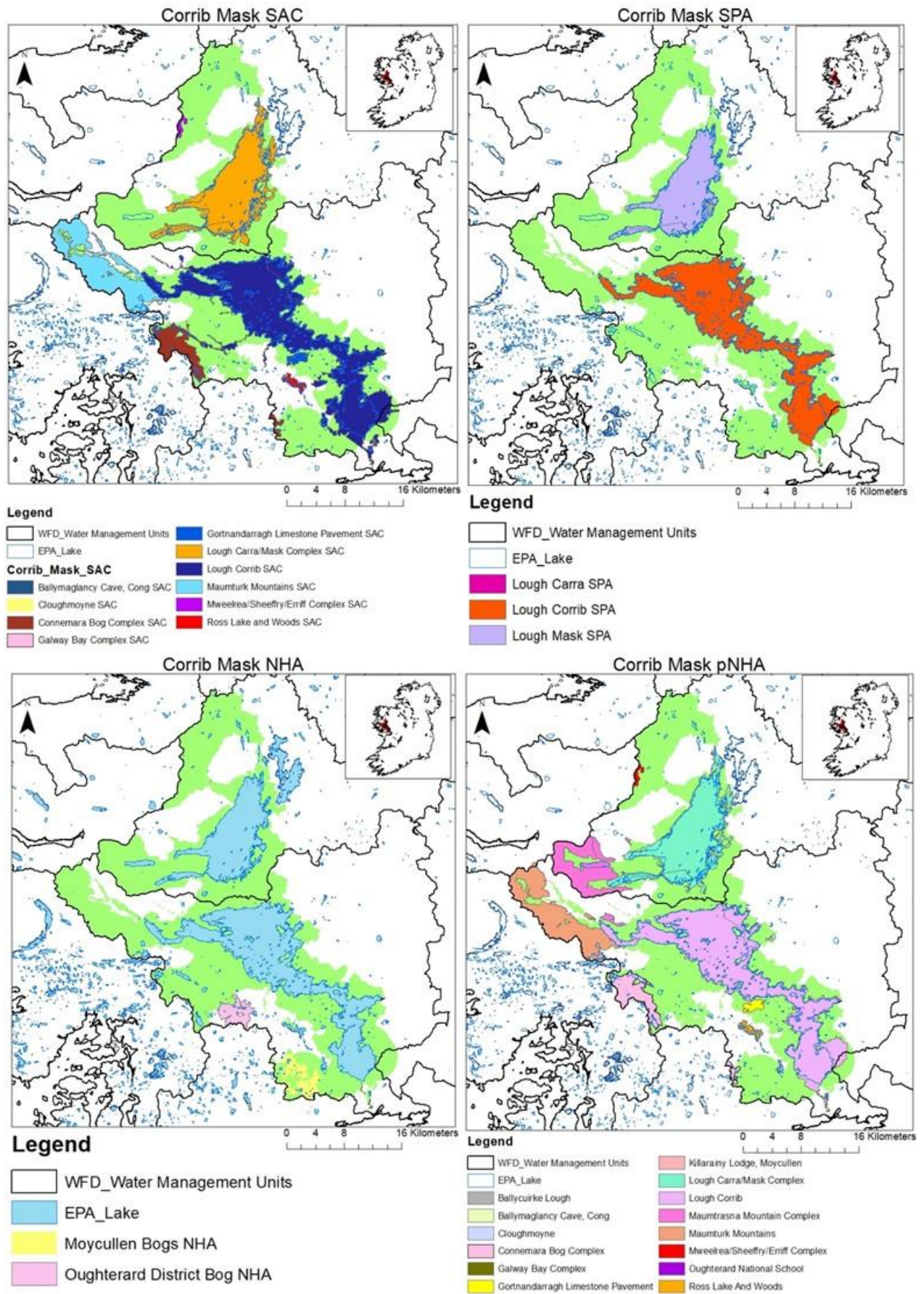


Figure 53: Map of SAC, SPA, NHA and pNHA within the Corrib and Mask ACRES West Connacht Cooperation area.

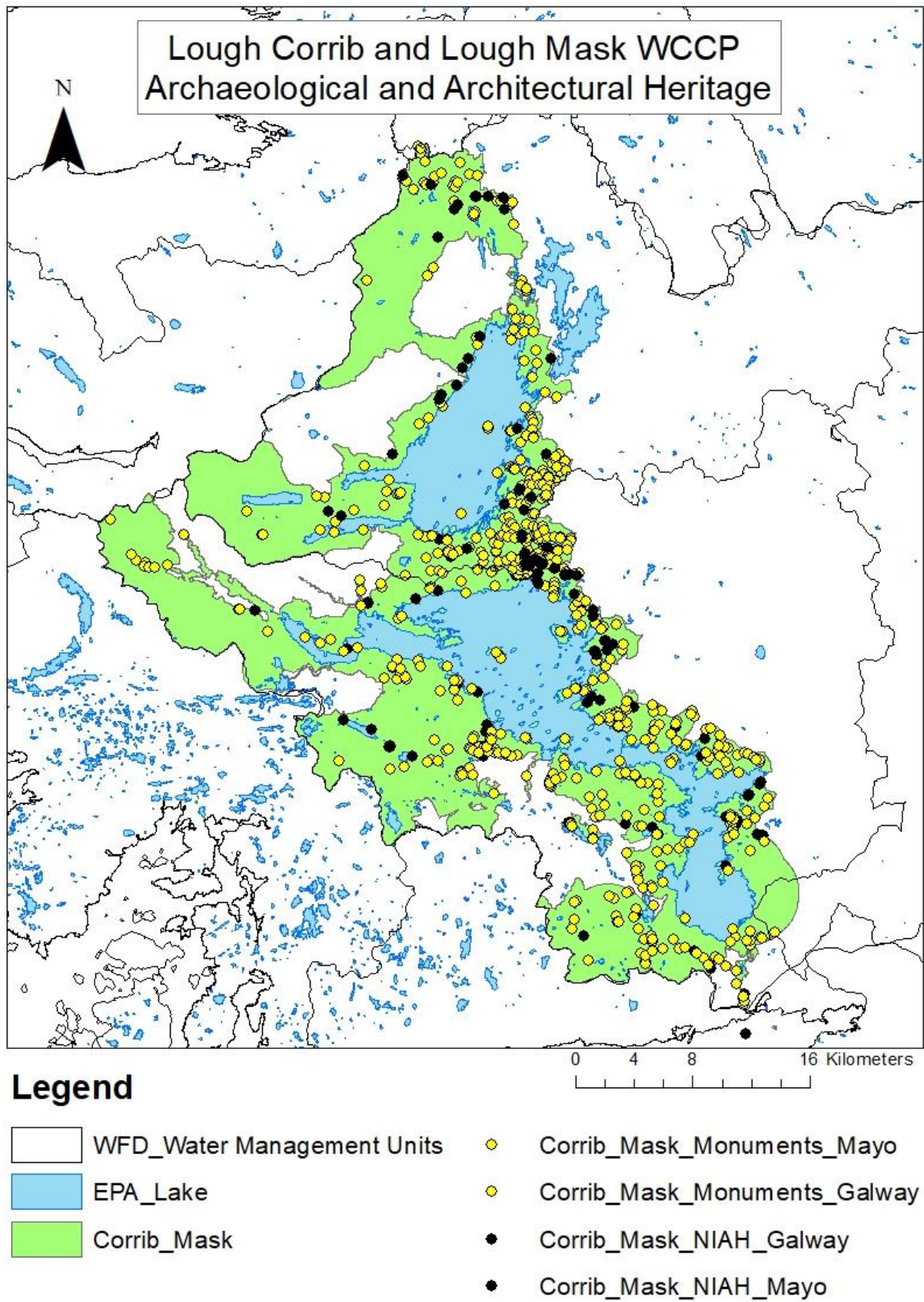


Figure 54: Map of Archaeological and architectural heritage sites in the Corrib Mask ACRES West Connacht cooperation zone.

9. Hydrology

The ACRES West Connacht Cooperation Project lies within the Western River Basin District and is incorporated across several WFD catchments as outlined in Table 5. The Corrib and Mask CP is incorporated into the Corrib catchment and within the Corrib and Mask Water Management Unit. The Corrib Catchment includes all rivers draining the River Corrib, entering between Renmore Point and Nimmo's Pier in Galway. Galway city is the main urban area in the catchment. There are 19 sub-catchments with 97 and rivers 30 lakes. Under the WFD water body classification, in this catchment there are 4 high status waters, 89 good status, 24 moderate status, 5 poor status and there are 2 bad status waterbodies. There are 35 waterbodies currently un-assigned a status. There are 9 surface waters identifies as drinking water protected.

There are 4 lakes and 10 rivers currently classified as 'at-risk' of not achieving the WFD objective of Good or High ecological status (Table 16). For the 'at risk' rivers and lakes, morphology impacts and excess nutrients are significant impacts in the Corrib catchment, additional impacts are from hydrology, organic pollution and sediment. Hydromorphology was identified as a pressure particularly in Maunwee and Loughanillaun Maam Cross lakes, directly related to extensive modification as a result of a drainage scheme. Agriculture represents a significant pressure for Mask, with phosphorus loss, point source and non-point source from poorly drained soils. Sediment from drainage to surface water and through bank erosion and animal is also an issue in the catchment. Invasive, species, unknown anthropogenic pressure, domestic wastewater and forestry activities and peat extraction directly impacting surface waters in the catchment.

Table 16: List of waterbodies at risk of not achieving WFD good or high ecological status in the Corrib Catchment.

Sub-catchment code	Waterbody name	Waterbody type	WDF Status	Significant Pressure
30_7	Aille(Mayo)_010	River	At Risk	Other
30_7	Aille (Mayo)_030	River	At Risk	Argi, For
30_3	Aghinish_010	River	At Risk	Agri, Hymo
30_10	Clare (Galway)_010	River	At Risk	Agri, Hymo, Peat
30_13, 30_19	Clare (Galway)_060	River	At Risk	Hymo
30_13, 30_4	Clare (Galway)_080	River	At Risk	Hymo
30_13, 30_4	Clare (Galway)_090	River	At Risk	Hymo
30_13	Cregg_010	River	At Risk	Hymo
30_16	Cammanagh-010	River	At Risk	Hymo
30_10	Finny_010	River	At Risk	Hymo
30_14	Glengawbeg_010	River	At Risk	Hymo
30_13	Headford Stream_020	River	At Risk	Agri
30_16	Owenbrin_020	River	At Risk	For, Hymo
30_14	Owenriff_Corrib)_010	River	At Risk	Hymo
30_14	Owenriff (Corrib)_020	River	At Risk	Hymo, Other
30_15	Maumwee	Lake	At Risk	Hymo
30_14	Ross GY	Lake	At Risk	Other
30_15	Loughanillaun Maan Cross	Lake	At Risk	Hymo
30_18	Mask	Lake	At Risk	Agri, DWW, Other

*Other, as classified in the 3rd WFD RBMP as abstraction, anthropogenic pressure, historical pollution, invasive species, atmospheric, waste treatment.

10. Blue dot/PAA

Lough Corrib and Lough Mask are significant drinking water resource for the whole Western region, there are also six small GWS and a number of rivers that are designated as supplying drinking water

in the region. There are a number of Blue Dot sites, this programme ensures the protection, maintenance and conserve High Status water quality. One of the “Top 8” Freshwater Pearl Mussel (FPM) catchments occur within Owenriff in Oughterard. These river waterbodies (Glengawbeg_010, Owenriff (Corrib)_010 and Owenriff (Corrib)_020) have with FWPM habitats, one of which (Owenriff (Corrib)_010) had achieved the required macroinvertebrate standard as set out in the FWPM Regulations.

4. Evaluation and Rational for Management

1. Threats In the Erris CP

Pressures from Agriculture was identified as the dominant pressure in the 3rd cycle for the WFD, directly related to phosphorus loss to surface water and sedimentation through bank erosion and animal access or stream crossing and chemical pollution from sheep dipping (cyermethrin). Invasive species (Gunnera) and anthropogenic was cited as a predominant pressure in some areas and a decrease on salmonid populations due to siltation at Glenamoy rivers. Hydromorphology and altered morphology due to modification of existing drainage was a significant pressure in the Glenamoy river. Forestry represented a significant pressure in the Carrowmore lake and Glenamoy river. The pressures related to impacts from landslides, ground instability and nutrient inputs from aerial forestry fertilising methods. Waterbodies were also impacted by other forestry related activities such as clearfelling, thinning and replanting in the region. The final pressure cited in the WFD report was peat drainage and extraction that impacts two rivers, resulting in sedimentation and elevated nutrient input to the waterbodies.

Forestry plantations present threats to water quality when the plantation is being established and during clearfelling. In Ireland forestry has historically been planted on poor/marginal lands along the west coast of Ireland throughout the 1960's to 1980's with Coillte currently owning 200,000 ha of forestry in western regions. In recent decade there has been increasing pressure from the policy makers to increase forestry areas in Ireland and private landowners have been incentivised to lease land over 30 years to forestry production. Other pressures within the Erris CP zone are peat extraction, wind farm, establishing native woodland on peatland sites, Invasive species predominately rhododendron.

2. Threats in Ox Mountain CP area

Hydromorphology impacts rivers and lake in the Moy and Killala bay catchment as a result of extensive modification and arterial drainage in the catchment. Pressures from Agriculture was identified as another pressure for rivers and lakes, directly related to phosphorus loss, point source and non-point source, sedimentation from drainage to surface water and sedimentation through bank erosion and animal access or stream crossing and chemical pollution including MCPA. Forestry pressure affects waterbodies and as a result of clearfelling there is an increase in sediment runoff and nutrients. Anthropogenic pressure is cited as a predominant pressure impacting the Deel and Glenree, mainly due to a decrease in salmonid populations in these rivers. Of the surface waters identified in the 3RD Cycle of the WFD as being at risk of not Achieving 'Good Water Quality Status' 1 river and 2 lakes are located within the Ox Mountain and Lough Conn Cooperation Project area.

There are records of recent fires within the Ox Mountains and Lough Conn CP zone. Recent fires include ones in 2022, 2018, 2017 as well as more historic fires including in 2007.

Forestry plantations, Coillte owns a variety of forestry parcels within the Ox Mountains and Lough Conn CP zone. According to the Coillte Northwest BAU - Five Year Forest Plan 2021-2025, there is

3,271ha of Coillte forestry within the Ox Mountains. According to the Coillte plan, clearfell areas of 94ha (2021), 46ha (2022), 4ha (2023), 17ha (2024) and 36ha (2025) are scheduled for the 2021-2025 period.

The landscape within the Ox Mountains and Lough Conn CP varies from upland mountains to lowland lakeside habitats with steep slopes, according to the GSI landslide susceptibility maps, approximately 2,986Ha of land within the Ox Mountains and Lough Conn CP is classed as at high risk of landslides, with a further 8,229Ha classed as of moderately high risk. According to the GSI database, there has been 21 recorded landslide events within the Ox Mountain and Lough Conn CP, with a further 6 landslides recorded close to, but not within the CP zone. Most of these reported landslide events are located on sloping ground close to the Sligo/ Mayo County boundary with a further concentration of landslide events along the steep ground around Glendaduff Lough.

Invasive Species.

3. Threats in Achill Nephin CP area

Pressures from Agriculture was identified as the dominant pressure in the 3rd cycle for the WFD and results in the phosphorus loss, sediment from drainage to surface waters. Other known issues are related to chemical issues (Cypermethrin) were also noted to be related with sheep dipping, Invasive species (Gunnera) has been identified as a significant pressure in one river waterbody (Dooega_010) and Hydromorphology, peat extraction and burning.

Fires

4. Threats in North Connemara and Erriff

Main pressures identify is Agriculture, forestry, hydromorphological in this zone,

Blue Dot High status water Bodies there is already of work under way in this region through the Fresh Water Pearl Mussel project to work with farmers in the region to protect the Pearl Mussel habitats and the surrounding peatlands with the main pressures identify is forestry, hydromorphological and management of erosion along banks, sedimentation, Invasive species encroachment, overgrazing. Other pressures are associated with management of septic tanks, tourism in the region – correct capacity for wastewater treatment. Freshwater Pearl Mussel are found in 8 waterbodies in the Erriff Clew Bay catchment, including the Bundorragh_010, Bundorraght_020, Newport (Mayo)_010 and Newport (Mayo)_030. Bundorragha waterbody unknown anthropogenic impacts from bank erosion from anglers and creation of weirs for anglers. Industry was also noted as a potential pressure for the Bundorragha and Dawros and highlight a concern of nutrients being the main issue of concerns a direct result of tourism. Communication with local communities.

5. Threats in the Conamara Theas CP area.

Forestry was identified as a significant pressure particularly associated with activities and ground preparation for clearfelling including drainage, which have resulted in excess nutrients in surface water bodies, alterations to aquatic habitats due morphological. Agriculture was also highlighted is a significant pressure, Organic pollution chemical pollution has been attributed agricultural practices particularly sheep dip activity. Other pressured include hydromorphological and peat extraction and domestic wastewater. Illegal dumping is an issue in some regions in Conamara Theas, due to the vast and rural nature of the particularly with sites close to urban centres. It is an environmental hazard and causes serious problems to habitats, species, and human health. It can pollute rivers and drinking water sources, damage biodiversity.

6. Threats in the Corrib Mask CP area.

Source protection of Drinking water supply is one of the priorities of WCCP in this region. Other pressures include Hydromorphology, Agriculture, invasive species spreading, Forestry was identified as a significant pressure particularly associated with activities and ground preparation for clearfelling including drainage, which have resulted in excess nutrients in surface water bodies, alterations to aquatic habitats due morphological. Agriculture was also highlighted is a significant pressure, Organic pollution chemical pollution has been attributed agricultural practices particularly sheep dip activity and a local oil spill into the Owenriff. Other pressured include peat extraction and domestic wastewater.

5. Management

There is a full description and management expectations of all the habitats, birds, Qualifying interest, and pollinators provided in Appendices (III Species, IV Birds, V Habitats, VI Bryophytes, VII Bee, VIII Butterflies).

Archaeology

Archaeology and National Monuments are scattered across all habitats within the WCCP area including Grassland, Peatlands and Machair. The management and protection focus of Archaeology and National Heritage included the implementation of two possible NPI'S actions available for the protection of archaeology and national heritage, 1. *Conservation of Culture Heritage sites on Grassland* and 2. *Conservation of Cultural Heritage sites on Arable lands*. Other practical mentorship provided to farmer and advisors are similar to previous agri-environmental schemes will be communicated to farmers to ensure there is no re-wilding, minimum tillage and reducing stock numbers on/near a monument. NPI such as *scrub removal*, and *electric fencing* may support the management of this important sites.

Management requirement:

Grazing: Nearly all monuments, particularly earthworks, benefit from a light grazing regime. The grass on monuments should be grazed down at least once a year but preferably several times a year, and ideally in dry ground conditions. The use of lighter stock is preferable, but if that is not possible, a reduced number of cattle in good soil conditions is a good option. Ideally, the monument should not be permanently fenced, but depending on the site that may or may not be necessary for long term protection. If there is erosion on a monument, the area should be rested to let the grass recover. Permanent wooden stakes should not be used for resting archaeology. Temporary electric fencing can be used, as can non-ground intrusive fencing such as tyres filled with concrete, smaller buckets filled with concrete, and even water-filled barrels with attached wire.

Reseeding: monuments with purchased/introduced grass seed is not allowed without National Monument Service approval, and under no circumstances should there be any tilling or levelling of the surface. Any loose rocks should be left where they are, even if they are obviously displaced from the monument.

Scrub control: Prevention of scrub establishment by regular grazing is the preferred method of scrub control. Small scrub/seedlings should be removed as soon as they appear on the monument to prevent issues in the future. However, once established only small scrub should be removed if they are deemed to be endangering the monument or if they might spread to cause further issues. Scrub should be removed by hand at ground level, no digging should take place, and can be spot treated directly on the stump with fungicide if necessary.

Trees: Established large trees should not be removed as they are of a great environmental value, and any damage caused by growing roots will already have taken place. They should, however, be regularly monitored for any risk of falling. If they are unstable, or dying, they should immediately be removed as they can cause severe damage to the archaeology if they fall and displace parts of the monument.

Persistent non-woody vegetation such as rushes and brambles are unlikely to cause major issues to the structure of the archaeology but are visually distracting and might reduce grass cover. The removal of these are only recommended if they are taking over the site and reducing grass growth, and are generally of low priority for archaeological management.

Masonry monuments: Livestock grazing should not be allowed inside the masonry monument and access to the monument should be blocked off in a non-ground intrusive manner. If there is poaching around the monument due to livestock sheltering, temporary or non-ground intrusive fencing could be considered if it is deemed to be endangering the structural integrity of the monument. If the monument is partly collapsed or displaced, there should be no attempt to repair it, to replace stones, or to reinsert loose stones.

If there is encroaching vegetation around the monument, there is a possibility of removing scrub by hand, cutting above ground. However, if there is encroaching scrub growing right beside or on the monument (such as ivy) these should be left until assessed by an archaeologist.

Burrowing animals: There are several animals that can cause damage, particularly to earthwork archaeology, by burrowing into banks. Foxes are attracted to areas with dense, low scrub and can cause damage by burrowing into archaeology under these. If the scrub is removed, foxes will often move on to other, preferable sites. Rabbits have been known to be an issue for earthworks and has been identified as risk factors for famous archaeology such as Hadrian's wall in the UK. Apart from population control, if the rabbit dens have been identified these can be blocked off to encourage relocation of the animals. Badgers can be quite destructive to archaeology and tend to remain in the same area, and sometimes dens for many years. They are protected by law and should not be interfered with, including blocking entrances, even if causing damage.

Placements of water troughs, feeders and other farm fixtures: The placements of farm fixtures, such as water troughs and feeders, will strongly influence the movement of livestock in the field. The same thing is true for placements of gates and cattle crushes. If possible, moving water troughs and feeders away from archaeology and ideally out of the archaeological zone of notification, will be a aid greatly in preventing livestock damage. Gates should never be placed near to archaeology, and if there is associated poaching and wheel ruts, relocation of the gate is advisable.

Machinery use: The use of heavy machinery near archaeology should be avoided if at all possible, however, there are sites that can handle machinery in good weather conditions. Driving on archaeological monuments should be avoided in poor ground conditions.

In the west of Ireland, it is not always possible to avoid damp soil conditions, particularly when relying on contractors for work such as slurry spreading, cutting silage and hedge cutting. In these cases, mitigating damage as much as possible is advised. Depending on the farm, this includes slurry spreading using an umbilical cord instead of a tank, use of floatation tyres, or adjusting the tyre pressure in owned machinery. If there are wheel ruts forming in the field, there is a high risk of archaeological damage.

Archaeology and National Monuments are scattered across all habitats within the WCCP area including Grassland, Peatlands and Machair. The management and protection focus of Archaeology

and National Heritage included the implementation of two possible NPI'S actions available for the protection of archaeology and national heritage, 1. *Conservation of Culture Heritage sites on Grassland* and 2. *Conservation of Cultural Heritage sites on Arable lands*. Other practical mentorship provided to farmer and advisors are similar to previous agri-environmental schemes will be communicated to farmers to ensure there is no re-wilding, minimum tillage and reducing stock numbers on/near a monument. NPI such as *scrub removal*, and *electric fencing* may support the management of this important sites.

Peatland Management:

Peatlands habitats dominate a large proportion of WCCP. The management of these habitats will focus on and include restoration of peatlands to stop the loss of carbon. Management of invasive species. Initially focusing on immature patches of invasives to reduce the further loss of habit. Remove forestry from peatland. Manage peatland as a habitat, restore to peatland. Education around wildfires, burning and habitat destruction. LA : *Removal of Confier Trees, Drain Blocking, Drain blocking an with Timber Dams* to slow the flow and reduce sedimentation of nearby watercourses and *Peatland Restoration*.

Commonages Management

ACRES WCCP CP programme will continue with all positive management implementation on commonage from previous Agri-environment schemes and EIP projects in direct consultation with all stakeholders involves to improving and continue to benefit, habitats, biodiversity, water quality and climate. This will be done through the implementation of NPI including *invasive species follow up, Bracken Management and Scrub removal*. The LA include, *Invasive species control, drain blocking on peat, peat restoration, enclosures, Decommissioning of old sheep dipping stations, Wildfire Resilience, Targeted grazing measures – (Bovines on Molinia, Equines on gorse, equines on autumn gorse/Molinia, goats on scrub) Machine scrub removal, Virtual fencing, Specialist training, and Commonage Governance*.

Wildfires

The approach the ACRES WCCP CP are taken including preparation for fire prevention in the high ignition areas. Screen and target relevant appropriate NPI and LA for regions with evidence of recent illegal fires. These actions include fire resilience measures to minimise the area burnt and encourage the recovery of habitats post fire incidents and outreach and education within these regions. The NPI include *Bracken Management and Scrub removal*. The LA include *Permanent vegetation change, Wildfire Resilience, Targeted grazing measures – (Bovines on Molinia, Equines on gorse, equines on autumn gorse/Molinia, goats on scrub) Machine scrub removal and Commonage Governance*.

Peat extract and Turf Cutting

ACRES WCCP CP will target and communication best habitat management that can benefit these areas and the wider peatland habitats, biodiversity, water quality and climate. This will be done through the implementation of NPI including *invasive species follow up, Bracken Management and Scrub removal*. The LA include, *Invasive species control, drain blocking on peat, peat restoration, enclosures, Decommissioning of old sheep dipping stations, Wildfire Resilience, Targeted grazing measures – (Bovines on Molinia, Equines on gorse, equines on autumn gorse/Molinia, goats on scrub) Machine scrub removal, Virtual fencing, Specialist training, and Commonage Governance*.

Invasive Species: Data from the scorecards will provide a greater understanding of the extent of the issue of invasive species present across all habitats within the Cooperation zone and what specific specie present. This will enable the CP team to target management recommendations to these fields

in consultation with the Farmer and Farm advisor. The LA available *Japanese Knotweed Control, Rhododendron/Cherry Laurel Management, Salmonberry Management, Himalayan Balsam Management, Giant Hogweed Management, Gunnera Management, Permanent Vegetation Change,* and NPI include.

Biodiversity and Pollinators

ACRES WCCP CP will support and collaborate with existing pollinator programmes including and have developed a full distribution map for rare pollinators within the region. This will inform known foraging distances to target actions within suitable distance from known bee locations (Appendix VII and VIII). WCCP will continue to engage and collaborate with The Great Yellow Bumble Bee programme which will continue their important work under Life on Machair.

We will target communication efforts and management advice to limit the use of fertilisers which reduces floral diversity and limit, reduce or eliminate the use of insecticides which can directly kill pollinators, and herbicides which can reduce floral diversity. This will be done through the implementation of NPI including *Repair of stone walls, Planting New Hedgerows, Hedge Rejuvenation, Planting Trees, Planting Traditional Orchards, Field Margins, Over Winter Stubble* to help improve and fill in hedges that have been damaged or mismanaged so that the structure of the hedge is enhanced, improving pollinator forage areas, biodiversity and carbon storage. Establish *Wild Bird Strips and Plots* help support pollinator, provide an ideal habitat for insects and birds and small mammals, acting as a wildlife corridor and may turn provide hunting opportunities for larger predators such as Barn Owl and Kestrel. Additional NPI suitable to complement Biodiversity and Pollinators providing co benefits to other species such as the addition of *Barn Owl/Kestrel Nest Boxes, Bat Boxes, Swallow Nest Boxes, Swift Nest Boxes*. Another important NPI to reduce the impact of larger predators such as Barn Owl include *Rodenticide-free rodent Control*. The LA important to reduce the loss of habitat important for pollinators include *Invasive Specie Control, Specialist Training*.

Breeding Wader LA include Ditch reprofiling, Sluices removal, Predator-Proof Fencing at Wader Nest Sites, Scrub Removal, Specialist Training, Fencing to reduce disturbance on waders / to reduce predation on waders, Habitat improvement relating to waders and pollinators and Invasive species control.

Corncrake

LA: Wildlife Friendly Mowing, Delayed Mowing/Grazing, Early Late Cover for Corncrakes Natural and Crop, Specialist training, Invasive species control although in Belmullet New Zealand Flax has been planted to provide shelter in some areas.

Grassland: LA, Wildlife friendly Mowing, Delayed Mowing and Grazing,

Invasive Species: Data from the scorecards will provide a greater understanding of the extent of the issue of invasive species present across all habitats within the Cooperation zone and what specific specie present. This will enable the CP team to target management recommendations to these fields in consultation with the Farmer and Farm advisor. The LA available *Japanese Knotweed Control, Rhododendron/Cherry Laurel Management, Salmonberry Management, Himalayan Balsam Management, Giant Hogweed Management, Gunnera Management, Permanent Vegetation Change,* and NPI include

Freshwater Habitats (Rivers and Lakes)

Reduction of nutrients from point and diffuse sources and the reduction of sedimentation of nearby water courses, the LA available to help improve water quality included, Check Dams Leaky dams,

Engineered Ditches, In-Ditch Wetlands, Swales, LA Decommission of Old Sheep Dipping Stations, Fencing,

Machair and Salt Marshes

LA: Enclosures, Management of grazing, Specialist Training, Commonage Governance

6. West Connacht Project Action Plan:

Communication Plan

- WCCP plan to disseminate the information we obtain on our web site (<https://www.acreswestconnacht.ie/>) and on other social media platforms such as facebook (ACRES West Connacht) and twitter (@ACRESWestConn).
- Establish the West Connacht Local Action Plan Steering Committee, to include local representation from NPWS, DAFM, Department of Housing, Local Government and Heritage, Teagasc, ACA, IFI, IFA, INHFA, EPA, LAWPRO, County Councils, Marine Institute as well as individual's farmers and local communities' representatives.
- WCCP anticipate the outputs of all research and surveys to be reported in the important drivers for government policy and NGO certification with respect to the agri-environmental management and mitigation development, operation, risk assessment planning.
- The key performance indicator will be to reported annual as the methodological developments and implemented.

DAFM and Department of Housing, Local Government and Heritage other government agencies:

- Open communication with the DAFM and Department of Housing and other government agencies through frequent meetings, calls and emails.
- Communication with all stakeholders that have contributed data and expert advice to the WCCP Local Action Plan.
- Participation in DAFM/ACRES weekly online meetings.
- Participation and present ACRES CP information at a local, regional and national meeting and conferences.
- Participation and developing resources for all training information and online webinars events.
- Engage with all relates stakeholders to ensure targeting and zoning of appropriate Landscape Action - ensuring the right priorities are addressed on any farm and in any sub-region of the CP area.

Farming communication:

- WCCP are committed to engage and meet the needs of all farmer participants at an individual, community level in a professional, informed and flexible manner.
- Ongoing communication will take place with farmers involved, through organised information and knowledge exchange events, organised training, in person conservation, email, letters, phone conservation and text messages.
- Planning the implementation of appropriate Landscape Action and Non-Productive Investment within field parcels.

Farm advisor communication:

- Online webinars
- Mandatory scorecard training events and specialised scorecard training events.
- Ongoing communication will take place with all ACRES WCCP advisors, through organised information and knowledge exchange events, organised training, in person conservation, email, letters, phone conservation and text messages.
- Communicate with Advisors request additional information and support before fielding scoring.
- Communicate with advisors once fields have been scored and commence the planning for the implementation of appropriate Landscape Action and Non-Productive Investment.

Targeting and screening NPI/LA - ensuring the right priorities are addressed on any farm and in any sub-region of the CP area. In Development

Monitoring

Monitoring undertaken through scorecards - Ongoing.

WCCP additional programmes – Ongoing.

- Bursary Programme
- Work Placement students
- Continued contribution to Pearl Mussel monitoring, Great Yellow Bumble Bee, Machair, Corncrake Life and Wild Atlantic Nature.

Appendix I: WCCP Socio-economic characteristics

Description of farming in the CP and electoral division areas.

WEST CONNACHT COOPERATION PROJECT ZONE	ELECTORAL AREA	POP. CENSUS 2016	NO. HOLDINGS	AVG SIZE HOLDING (Ha)	MEDIAN AGE OF HOLDER	LIVESTOCK UNITS	AREA FARMED (Ha)	AREA GRASSLAND	NO. CATTLE	NO. SHEEP
Erris	Deel	481	103	26.7	59	2,261	2,746.80	2,723.30	2824	4,088
Erris	Kilfian East	240	61	33.1	55	2,500	2,016.30	1,994.30	3451	811
Erris	Kilfian South	250	61	37.8	57	1,451	2,306.30	2,292.50	1995	1,198
Erris	Crossmolina North	1061	70	23	58	1,665	1,610.10	1,595.40	2229	1,609
Erris	Fortland	564	77	27.9	56	2,766	2,144.60	2,137.80	3681	2,669
Erris	Kilfian West	109	45	47.5	55	941	2,138.80	2,138.70	1240	1,253
Erris	An Geata Mor Thuaidh	939	154	20	60	2,446	3,076.20	3,073.90	2559	7,440
Erris	An Geata Mor Theas	980	160	16.3	63	2,009	2,607.80	2,602.10	2880	1,313
Erris	Barroosky	100	48	39.7	54	759	1,906.50	1,903.60	313	5,408
Erris	Belmullet	1954	128	16.8	61	1,792	2,147.00	2,126.60	1375	8,826
Erris	Glenamoy	215	63	24.2	56	627	1,524.40	1,524.40	193	4,901
Erris	Bangor	467	35	41.4	58	523	1,448.00	1,436.40	287	3,002
Erris	Glencastle	493	76	18.7	59.5	899	1,423.30	1,414.20	980	2,552
Erris	Goolamore	135	41	23.7	64	439	969.70	968.60	423	1,598
Erris	Knockadaff	337	87	11.5	62	799	997.50	997.50	104	7,166
Erris	Knocknalower	757	163	14.1	62	1,551	2,291.30	2,285.90	797	10,414
Erris	Muingnabo	241	81	19.8	57	857	1,601.20	1,601.20	374	5,967
Erris	Muings	221	63	22.7	55	695	1,430.30	1,430.30	352	4,595
Erris	Rathhill	712	115	16.8	65	963	1,927.50	1,908.10	1249	1,440
Erris	Ballycastle	615	94	31.2	60	1,733	2,930.50	2,921.50	2070	3,630
Erris	Beldergmore	157	64	34.7	53	1,442	2,223.90	2,223.90	987	7,692
Achill Nephin/Erris	Derry	175	63	49.9	56	1,316	3,080.83	3,080.80	857	7,364
Achill Nephin/Erris	Glenco/Sheskin	91	54	68.6	53	1,274	3,704.00	3,702.60	646	8,044
Achill Nephin/Erris	Bunaveela (Mayo)	81	32	55.9	58	643	1,788.20	1,784.60	117	5,643
Achill Nephin/Erris	Srahmore (Mayo)	142	54	43.6	59.5	1391	2,356.30	2,355.00	409	11,240
Achill Nephin/Erris	Ballycroy North	303	84	36.2	58	1,358	3,043.50	3,041.30	780	8,465
Achill Nephin/Erris	Ballycroy South (Mayo)	333	94	34.8	58.5	1660	3270.5	3456.9	911	10,640
Achill Nephin	Letterbrick	125	43	39.7	50	859	1,705.20	1,703.90	479	5,338
Achill Nephin	Corraun (Achill)	673	121	9.8	64	1,124	1,184.70	1,184.70	160	10,134
Achill Nephin	Derryloughan (Mayo)	690	87	20.9	61	1,431	1,824.60	1,808.30	1,367	5,197

Achill Nephin	Dooega (Mayo)	623	62	6.8	53	427	422.5	422.5	0	4,204
Achill Nephin	Ballynagoraher (Mayo)	354	82	32.3	60	1,751	2,647.10	2,635.50	1,400	8,355
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Achill Nephin	Glenhest (Mayo)	248	60	33.4	59.5	1,196	2,007.00	2,003.80	584	8,117
Achill Nephin	Burren	312	62	23.7	59	902	1,467.20	1,467.20	915	3,140
Achill Nephin	Islandeady	1001	119	24.1	60	2,094	2,872.30	2862.8	2,292	5,585
Achill Nephin	Kilmaclasser	639	74	22.2	61	1,352	1,641.10	1,632.70	1,288	5,004
Achill Nephin	Croaghmoyle (Mayo)	172	41	30.2	63	557	1,238.00	1,238.00	2,821	428
Achill Nephin	Newport East (Mayo)	1,164	77	22.5	60	1,157	1,732.40	17,020.20	693	7,112
Achill Nephin	Newport West (Mayo)	810	97	19.7	58	1359	1912.9	1912.9	503	10,273
Achill Nephin	Slievemore	991	141	6.2	61	1249	878.7	867.2	144	11,442
Achill Nephin	Achill (Mayo)	845	98	8	62	565	781.1	780	197	4,319
Achill Nephin/North Connemara Erriff	Kilmeena	1512	96	21.3	60	1,864	2,049.10	2,033.70	1,847	6,212
Ox Mountain and Lough Conn	Ballina Rural	2985	117	22.8	58	3,097	2,668.00	265.90	4254	1,703
Ox Mountain and Lough Conn	Carrowmore	909	84	20.4	60	1,912	1,716.40	1,700.70	2598	1,722
Ox Mountain and Lough Conn	Crossmolina South	824	88	23.3	57.5	2,045	2,049.90	2,020.60	2406	3,853
Ox Mountain and Lough Conn	Kilgarvan	747	131	19.4	61	2266	2538.2	2534.6	2844	3,719
Ox Mountain and Lough Conn	Killala	1256	129	25.4	61	3,631	3,276.70	3,253.20	4989	1,812
Ox Mountain and Lough Conn	Crossmolina North	1061	70	23	58	1,665	1,610.10	1,595.40	2229	1,609
Ox Mountain and Lough Conn	Sallymount	480	80	19	59.5	1,679	1,522.10	1,522.10	2135	2,444
Ox Mountain and Lough Conn	Sraheen	1145	50	10.9	65	369	546.90	546.80	534	0
Ox Mountain and Lough Conn	Mount Falcon	1259	120	13.8	61.5	2,117	1,654.40	1,642.50	2900	954
Ox Mountain and Lough Conn	Addergoole	837	107	20.3	60	1,868	2,166.80	2,155.10	1728	7,190
Ox Mountain and Lough Conn	Ardagh	359	56	24.3	57.5	1,492	1,360.80	1,353.20	1845	2,594
Ox Mountain and Lough Conn	Ardnaree North	966	59	20.7	59	1,607	1,224.10	1,221.20	2119	1,216
Ox Mountain and Lough Conn	Ardnaree South Rural	3084	70	16.6	63	1,233	1,158.80	1,155.10	1771	702
Ox Mountain and Lough Conn	Attymass East	383	50	15.3	58.5	668	766.00	766.00	892	836
Ox Mountain and Lough Conn	Attymass West	236	44	17.3	63	631	760.80	753.10	908	0
Ox Mountain and Lough Conn	Killaraght	426	84	56.4	61	1,643	2,220.80	211.60	2369	621
Ox Mountain and Lough Conn	Coolaney	1331	51	21.9	59	773	1,114.70	1,114.70	689	2,988
Ox Mountain and Lough Conn	Glendarragh	204	40	37.3	62	753	1,490.70	1,490.70	637	3,200
Ox Mountain and Lough Conn	Kilmacteige	224	53	23.1	56	927	1,223.70	1,223.70	930	3,295
Ox Mountain and Lough Conn	Kilturra	223	44	27.2	63	1,200	1,197.80	1,195.70	1643	992
Ox Mountain and Lough Conn	Leitrim (Sligo)	365	80	25.6	57.5	1,810	2,048.50	2,036.10	2351	2,540
Ox Mountain and Lough Conn	Loughil (Sligo)	352	62	53.7	62.5	1,530	3,327.90	3,307.20	737	10,066

Ox Mountain and Lough Conn	Buncrowey	286	47	27.7	63	1,098	1,301.00	1,292.10	1191	2,759
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Ox Mountain and Lough Conn	Castleconor East	214	61	26.2	58	1,289	1,598.70	1,585.10	1788	1,046
Ox Mountain and Lough Conn	Streamstown	269	52	32.1	58	1,609	1,667.00	1,663.50	2083	2,111
Ox Mountain and Lough Conn	Dromard West	197	34	25.6	60	897	869.20	858.90	627	4,615
Ox Mountain and Lough Conn	Tobercurry	2827	101	23.6	60	2,588	2,383.60	2,372.20	3140	3,891
Ox Mountain and Lough Conn	Dromore	469	48	25.7	62.5	1,262	1,231.20	1,226.80	1339	3,151
Ox Mountain and Lough Conn	Rathmacurkey	564	109	17.7	59	1,784	1,933.10	1,924.50	2457	1,403
Ox Mountain and Lough Conn	Skreen	167	29	62.9	56	1,257	1,823.20	1,820.70	1023	5,003
Ox Mountain and Lough Conn	Mullagheruse	211	54	70.6	56	1,683	3,812.40	3,810.50	1211	8,563
Ox Mountain and Lough Conn	Achonry East	485	69	20.7	58	1,131	1,425.50	1,417.20	1676	374
Ox Mountain and Lough Conn	Achonry West	752	92	18.9	62.5	1,354	1,740.40	1,736.30	1877	1,285
Ox Mountain and Lough Conn	Aclare	257	39	24.3	60	566	946.10	946.10	729	788
Ox Mountain and Lough Conn	Coolavin	456	65	22.9	58	961	1,490.60	1,469.30	1365	659
Ox Mountain and Lough Conn	Cuilmore	491	71	23.3	59	1,570	1,657.00	1,651.50	2340	470
Ox Mountain and Lough Conn	Banada	597	97	21.3	60	1,631	2,068.60	2,063.90	2109	2,567
Ox Mountain and Lough Conn	Kilfree	538	46	24.9	60.5	625	1,145.20	1,139.80	969	0
Ox Mountain and Lough Conn	Branchfield/Carrownaskeagh	162	47	33.4	64	971	1,568.10	1,568.10	806	4,551
Ox Mountain and Lough Conn	Breencorragh	114	45	37.8	54	803	1,699.20	1,690.20	650	3,498
Ox Mountain and Lough Conn	Cartron	173	49	36.1	59	1,612	1,767.00	1,759.50	1633	5,031
Ox Mountain and Lough Conn	Swineford	2527	144	15.7	63	1,941	2,254.60	2,247.30	2838	617
Ox Mountain and Lough Conn	Tumgesh	366	76	20.6	59.5	1,045	1,569.30	1,565.60	1514	295
Ox Mountain and Lough Conn	Buckill	334	57	22.9	59	1,137	1,302.60	1,296.00	1642	347
Ox Mountain and Lough Conn	Edmondstown	418	61	27	59	1,229	1,645.80	1,618.10	1751	748
Ox Mountain and Lough Conn	Frenchpark	897	83	23.5	62	1,685	1,950.70	1,939.80	2266	914
Ox Mountain and Lough Conn	Loughglinn	689	91	20.8	59	1,748	1,895.10	1,846.60	2649	218
Ox Mountain and Lough Conn	Ballagherreen	2726	128	20.5	62	2,057	2,618.50	2,603.80	3030	498
Ox Mountain and Lough Conn	Ballynagoraher	354	82	32.3	60	1,751	2,647.10	2,635.50	1400	8,355
Ox Mountain and Lough Conn	Bellavary	1038	126	16.9	61.5	1,901	2,133.30	2,121.00	2590	1,845
Ox Mountain and Lough Conn	Castlebar Rural	7308	112	15.9	63	1,267	1,786.00	1,782.50	1723	1,322
Ox Mountain and Lough Conn	Burren	312	62	23.7	59	902	1,467.20	1,467.20	915	3,140
Ox Mountain and Lough Conn	Strade	602	95	22.7	62	2,201	2,156.10	2,143.70	2915	2,415
Ox Mountain and Lough Conn	Turlough	1446	114	18.8	63	1,671	2,142.80	2,135.70	2108	2,487
Ox Mountain and Lough Conn	Callow	397	71	23.5	60	1,070	1,670.40	1,670.40	1429	1,010
Ox Mountain and Lough Conn	Cloonmore	438	63	19.3	67	808	1,218.40	1,215.00	1238	0

Ox Mountain and Lough Conn	Pontoon	486	71	21	63	993	1,491.80	1,491.80	1033	3,121
WEST CONNACHT COOPERATION PROJECT ZONE	ELECTORAL AREA	POP. CENSUS 2016	NO. HOLDINGS	AVG SIZE HOLDING (Ha)	MEDIAN AGE OF HOLDER	LIVESTOCK UNITS	AREA FARMED (Ha)	AREA GRASSLAND	NO. CATTLE	NO. SHEEP
Ox Mountain and Lough Conn	Cuildoe	349	64	21.3	59	925	1,365.40	1,359.20	1350	430
Ox Mountain and Lough Conn	Doocastle	366	72	20.4	65	1,040	1,467.00	1,459.50	1567	1,040
Ox Mountain and Lough Conn	Kilbeagh	1006	106	20.6	61.5	1,485	2,185.60	2,183.20	2230	311
Ox Mountain and Lough Conn	Kilmovee	654	92	22.3	60.5	1,366	2,055.60	2,043.90	2003	389
Ox Mountain and Lough Conn	Sonnagh	1166	117	19.1	58	1,636	2,235.40	2,227.80	2395	242
Ox Mountain and Lough Conn	Toomore	1591	101	19.6	66	1,897	1,982.80	1,955.00	2549	856
North Connemara Erriff	Ballinchalla	220	57	27.7	58	1,007	1,577.70	1,574.70	394	7,549
North Connemara Erriff	Cappaghduff	372	45	27.3	53	910	1,228.50	1,228.30	354	6,813
North Connemara Erriff	Ross	93	40	87.5	59	1,255	3,486.20	3,484.90	49	12,202
North Connemara Erriff	Ballynakill	439	50	58.5	63.5	578	2,923.60	2,922.00	480	2,620
North Connemara Erriff	Cleggan	279	31	34.8	57	423	1,078.00	1,078.00	317	2,207
North Connemara Erriff	Clifden	2159	66	24.9	61.5	564	1,641.20	1,641.20	499	2,287
North Connemara Erriff	Cushkillary	318	47	69.5	56	1,199	3,267.00	3,267.00	99	11,337
North Connemara Erriff	Doonloughan	82	29	23.6	61	277	683.50	683.50	340	486
North Connemara Erriff	Inishbofin	175	35	12.8	59	341	447.90	447.90	102	2,757
North Connemara Erriff	Rinvyle	1226	117	15.6	62	1,259	1,819.70	1,819.70	801	7,396
North Connemara Erriff	Sillerna	389	64	15.5	60.5	507	991.60	991.60	589	1,253
North Connemara Erriff	Clare Island	210	58	15.7	60	734	908.70	908.60	59	6,942
North Connemara Erriff	Croaghpatrick	578	61	26.8	55	1,271	1,632.50	1,632.50	378	10,198
North Connemara Erriff	Aillemore	355	67	26.7	60	1,554	1,786.50	1,784.30	717	10,805
North Connemara Erriff	Drummin	181	55	58.6	53	1,584	3,221.00	3,220.00	309	13,866
North Connemara Erriff	Emlagh	325	63	30.8	60	1,197	1,938.40	1,929.30	759	6,887
North Connemara Erriff	Kilgeever	108	42	43.6	53	1,489	1,829.20	1,829.00	747	8,284
North Connemara Erriff	Kilsallagh	531	77	20.2	63	1,444	1,554.10	1,554.10	353	8,332
North Connemara Erriff	Knappagh	766	77	24.6	53	1,453	1,895.20	1,889.40	912	8,628
North Connemara Erriff	Owennadornaun/Bundorragha	180	44	29.9	54	1,153	1,317.10	1,234.60	181	10,308
North Connemara Erriff	Westport Rural	1521	40	16.5	63	726	659.40	659.40	717	2,344
North Connemara Erriff/Corrib Mask/Conamara Theas	Letterbrickaun	220	39	126.9	54	1,303	4,950.40	4,950.40		12,399
North Connemara Erriff/Corrib Mask/Conamara Theas	Louisburgh	958	68	20.1	64.5	1,065	1,369.80	1,368.30	929	4,626
North Connemara Erriff/Corrib Mask/Conamara Theas	Bencorr	226	43	65.2	55	1,229	2,804.30	2,804.30	280	103,122
North Connemara Erriff/Conamara Theas	Errislannan	215	31	23	62	255	711.80	711.80	323	435

North Connemara Erriff/Conamara Theas	Derrycunlagh/Derrylea	313	69	45.2	54	859.00	3,120.80	3,120.80	518.00	5,186
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North Connemara Erriff/Conamara Theas	Bunowen	413	60	14.2	64.5	486	849.80	849.80	474	1,747
North Connemara Erriff/Conamara Theas	Roundstone	425	43	15	66	574	644.90	644.90	281	3,866
Conamara Theas	Kilcummin	149	44	73.8	58.5	990	3,245.50	3,245.50	557	6,198
Conamara Theas	Killannin	1044	55	12.6	65	335	693.5	693.5	476	335
Conamara Theas	Camus	316	53	15.2	65	407	805.5	805.4	419	407
Conamara Theas	Crumpaun	2472	94	7.3	62	309	688.7	688.7	449	181
Conamara Theas	Gorumna	1283	126	9.1	64.5	400	1,141.50	1,141.50	582	148
Conamara Theas	Knocknacarragh	1490	0	0	0	0	0.00	0.00	0	0
Conamara Theas	An Chorr/CUR	172	41	66.3	60	665	2719.9	2719.9	90	6052
Conamara Theas	Lettermore	835	80	9.1	67	285	725.2	725.2	419	0
Conamara Theas	Turlough	546	90	15.5	65	694	1,399.10	1,399.10	721	2,240
Conamara Theas	Doonloughan	82	29	23.6	61	277	683.50	683.50	340	486
Conamara Theas	Illion	97	32	21	60.5	577	670.70	670.60	158	4,657
Conamara Theas	Knockboy	810	124	14.5	61.5	704	1,800.70	1,794.50	853	1,443
Conamara Theas	Moyrus	354	88	13.8	61.5	1,054	1,217.50	1,217.50	429	7,715
Conamara Theas	Owengowla	261	63	26.4	63	615	1,662.30	1,661.90	741	1,174
Conamara Theas	Skannive	612	66	15.2	67	471	1,001.90	1,001.90	563	894
Conamara Theas	Barna (Bearna)	15185	16	11.3	72	116	180.20	180.20	171	0
Conamara Theas/ Corrib Mask	Cushkillary	318	47	69.5	56	1,199	3,267.00	3,267.00	99	11,337
Conamara Theas/ Corrib Mask	Barna (Part Rural)	3727	38	21.4	58.5	571	812.90	811.80	869	0
Conamara Theas/ Corrib Mask	Rahoon	3076	7	9.3	78	49	64.80	64.80	70	0
Conamara Theas/Corrib Mask	Kilcummin Cill Chuimin	1314	102	11.7	64.5	635	1,200.90	1,200.90	912	461
Conamara Theas/ Corrib Mask	Selerna	1453	76	17.2	63	536	1,304.50	1,304.50	662	1,105
Conamara Theas/ Corrib Mask	Slieveaneena	763	91	26.5	63	1,014	2,409.80	2,261.90	1,264	1,700
Conamara Theas/ Corrib Mask	Spiddle	1443	71	19.3	63	524	1,368.10	1,368.10	747	354
Conamara Theas/ Corrib Mask	Letterfore	264	57	50.5	54	883	2,878.50	2,878.50	474	5,868
Conamara Theas/ Corrib Mask	Oughterard	2625	132	22.5	62.5	1,921	2,972.30	2,968.40	1,803	7,108
Conamara Theas/ Corrib Mask	Moycullen	2142	47	21.7	60	513	1,019.00	1,016.40	755	159
Conamara Theas/ Corrib Mask	Furbogh	1415	44	22.3	61	451	979.6	979.6	640	0
Corrib Mask	Ballinchalla	220	57	27.7	58	1,007	1,577.70	1,574.70	394	7,549
Corrib Mask	Cong	864	64	21.4	61.5	1,784	1,372.70	1,366.60	1,930	4,098
Corrib Mask	Houndswood	646	92	23.3	57	2,785	2,139.90	2,127	2,920	7,199

WEST CONNACHT COOPERATION PROJECT ZONE	ELECTORAL AREA	POP. CENSUS 2016	NO. HOLDINGS	AVG SIZE HOLDING (Ha)	MEDIAN AGE OF HOLDER	LIVESTOCK UNITS	AREA FARMED (Ha)	AREA GRASSLAND	NO. CATTLE	NO. SHEEP
Corrib Mask	Ballinrobe	3770	127	21.9	60	3,627	2,776.10	2,743.90	4,107	8,297
Corrib Mask	Shrule	1159	125	27.4	58	4,967	3,425.70	3,401.70	5,825	8,268
Corrib Mask	Cappaghduff	372	45	27.3	53	910	1,228.50	1,228.30	354	6,813
Corrib Mask	Neale	786	107	27	56	4,297	2,884.60	2,874.50	3,852	11,421
Corrib Mask	Portroyal	561	68	21.9	55.5	1,393	1,487.50	1,484.40	1,336	5,142
Corrib Mask	Ballinduff	738	39	20.2	59	956	789.00	781.50	1,154	1,398
Corrib Mask	Headford	1531	62	22.5	59	1,995	1,394.80	1,368.30	2,046	5,684
Corrib Mask	Killeany	613	45	29.8	64	1,590	1,342.50	1,331.60	19	2,500
Corrib Mask	Killursa	1144	96	22.6	62.5	3,068	2,174.30	2,166.30	3,473	4,933
Corrib Mask	Galway Rural	149	14	15.7	57.5	271	219.30	219.30	342	0
Corrib Mask	Cong (Galway)	517	93	35.3	64	1,686	3,279.70	3,279.60	750	11,959
Corrib Mask	Ross	93	40	87.5	59	1,255	3,486.20	3,484.90	49	12,202
Corrib Mask	Wormhole	2376	141	12.8	63	1610	1,810.30	1,806.90	2324	1,074
Corrib Mask	Cloonbur	1120	97	19.4	61	1,782	1,879.10	1,877.50	1124	10,452
Corrib Mask	Tullokyne	2075	56	18.6	59	857	1,041.90	1,041.90	1245	209
Corrib Mask	Illion	97	32	21	60.5	577	670.70	670.70	158	4,657
Corrib Mask	Annaghdown	1372	96	18.5	60	2,034	1,776.20	1,755.30	2626	1,688
Corrib Mask	Claddagh	2593	0	0	0	0	0.00	0.00	0	0
Corrib Mask	Dangan	4132	0	0	0	0	0.00	0.00	0	0
Corrib Mask	Eyre Square	4108	0	0	0	0	0.00	0.00	0	0
Corrib Mask	Menlough	5118	12	17.1	64.5	200	205.20	205.20	266	0
Corrib Mask	Carrowbrowne	984	40	19.2	63	610	766.40	755.40	931	0
Corrib Mask	Claregalway	2124	66	22.4	56	2,140	1,477.90	1,446.80	2846	1,026
Corrib Mask	Newcastle	1895	0	0	0	0	0.00	0.00	0	0
Corrib Mask	Nuns Island	1474	0	0	0	0	0.00	0.00	0	0
Corrib Mask	Renmore	1319	0	0	0	0	0.00	0.00	0	0
Corrib Mask	St. Nicholas	2394	0	0	0	0	0.00	0.00	0	0
Corrib Mask	Islandeady	1001	119	54.1	60	2,094	2,872.30	2,862.80	2292	5,585
Corrib Mask	Cloonkeen	795	83	19.8	64	1,492	1,646.20	1,645.00	1701	3,757
Corrib Mask	Killavally	485	59	30.3	60	2,150	1,787.80	1,786.10	2318	5,124
Corrib Mask	Tawnynagry	352	77	24.5	60	1,720	188.70	1,883.20	1106	9,740
Corrib Mask/North Connemara Erriff	Slievemahanagh	454	82	40.9	54	1,814	3,350.20	3,346.20	454	15,168

WEST CONNACHT COOPERATION PROJECT ZONE	ELECTORAL AREA	POP. CENSUS 2016	NO. HOLDINGS	AVG SIZE HOLDING (Ha)	MEDIAN AGE OF HOLDER	LIVESTOCK UNITS	AREA FARMED (Ha)	AREA GRASSLAND	NO. CATTLE	NO. SHEEP
Corrib Mask/North Connemara Erriff	Aghagower North	1008	80	16.9	62	1,339	1,354.00	1,348.60	1370	4,117
Corrib Mask/North Connemara Erriff	Aghagower South	108	41	45.2	56	916	1,854.90	1,852.40	238	7,564
Corrib Mask/North Connemara Erriff	Erriff	122	45	86.8	52	1,973	3,906.00	3,867.10	433	16,665
Corrib Mask/ North Connemara Erriff	Ballyovey	206	59	26.7	60	1,114	1,574.80	1,570.50	229	9,688
Corrib Mask/ North Connemara Erriff	Owenbrin	200	65	36.6	58	1,715	2,380.80	2,380.80	537	13,643

*Shaded data indicates shared Electoral Divisions

Appendix II Protection of Archaeological Sites

All recorded archaeological sites are protected by the National Monuments Act 1930 – 2014, which extends an overarching monument protection that renders it illegal to damage, destroy or alter any recorded archaeological site. There are several layers of protection afforded to archaeology, which have different legal implications for landowners, listed below in order of increasing protection:

1. *Recorded Archaeological Monument.* These archaeological sites are owned by the landowner but afforded complete protection. Any work taking place on or near to these monuments, or within a Zone of Notification (see below), must be notified to the National Monument Service at least 8 weeks in advance using a Section 12 Notification of Works on/near Archaeology form.
2. *National Monuments.* ‘National Monuments’ are defined in Section 2 of the National Monuments Act (1930) as a monument that ‘the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto...’ and is afforded the highest legal protection. Any works on or near a National Monument must receive written consent from the Minister for Housing, Local Government and Heritage and the National Museum of Ireland.
3. National Monuments are in ownership or guardianship of the state, and the protection, maintenance and upkeep of these are the responsibility of the State. The owner of these monuments is National Monument Service, but the Office of Public Works is responsible for the upkeep, monitoring and maintenance of these. National Monuments are often located on privately owned farmland and farmers are often unaware of the lack of ownership of the land and buffer zone. This can mostly, but not always, be identified on the online map viewer on Land Registry Ireland website.

Zones of Notification: are areas identified by the National Monument Service as archaeologically sensitive with the potential for below-ground archaeological features. These areas are afforded the same legal protection as recorded monuments and any ground-intrusive works or soil removal in these areas must be notified to the National Monument Service at least 8 weeks in advance. These zones are often located around registered archaeological monuments and define the legal buffer zone for these but can on occasion extend several hundred metres from archaeological sites or cover a full agricultural field. Farmers are rarely aware of these zones and legal issues can arise from common agricultural practises in these zones, such as introduction of drainage or hedge/tree planting, if National Monument Service has not been adequately notified.

Protection of Architectural Heritage: The National Inventory of Architectural Heritage (NIAH) has an inventory of items, monuments, buildings and sites that are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and therefore qualify as architectural heritage. The inventory of architectural heritage is focused on structures and sites post-1700 and is broadly classified into Monument, Groups of Building and Sites.

The presence on NIAH inventory list does not extend statutory protection. Each local authority is required to maintain a Record of Protected Structures, which extend the sites/structures/monuments on this list protection via the Planning and Development Act 2000, Section 5

Appendix III list of SAC Annex I and II species

Article 17 data, list of SAC Annex I and II species present in the six West Connacht Acres Cooperation zones.

Site Name	SAC Habitat/Species in Erris ACRES CP
Bellacorick Bog Complex (001922).	[3160] Dystrophic Lakes [4010] Wet Heath [7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation [7230] Alkaline Fens [1013] Geyer's Whorl Snail (<i>Vertigo geyeri</i>) [1528] Marsh Saxifrage (<i>Saxifraga hirculus</i>)
Inishkea Islands SAC 000507	[21A0] Machairs [1395] Petalwort (<i>Petalophyllum ralfsii</i>)
Bellacorick Iron Flush SCA (000466).	[1528] Marsh Saxifrage (<i>Saxifraga hirculus</i>)
Carrowmore Lake Complex SAC (000476).	[7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation [1393] Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>) [1528] Marsh Saxifrage (<i>Saxifraga hirculus</i>)
Erris Head SAC (001501).	[1230] Vegetated Sea Cliffs [4060] Alpine and Subalpine Heaths
Glenamoy Bog Complex SAC (000500).	[1230] Vegetated Sea Cliffs [21A0] Machairs [3160] Dystrophic Lakes [4010] Wet Heath [5130] Juniper Scrub [7130] Blanket Bogs (Active) [7140] Transition Mires [7150] Rhynchosporion Vegetation [1106] Atlantic Salmon (<i>Salmo salar</i>) [1393] Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>) [1395] Petalwort (<i>Petalophyllum ralfsii</i>) [1528] Marsh Saxifrage (<i>Saxifraga hirculus</i>)
Lough Dahybaun SAC (002177). Area 62ha	[1833] <i>Najas flexilis</i> (Slender Naiad)
Mullet/Blacksod Bay Complex (000470).	[2120] Marram Dunes (White Dunes) [2130] Fixed Dunes (Grey Dunes) [2150] Decalcified Dune Heath* [21A0] Machairs [3150] Natural Eutrophic Lakes [7230] Alkaline Fens
Owenduff/Nephin Complex SAC (000534). Area 27052ha	[3110] Oligotrophic Waters containing very few minerals [3160] Dystrophic Lakes [3260] Floating River Vegetation [4010] Wet Heath [4060] Alpine and Subalpine Heaths [5130] Juniper Scrub [7130] Blanket Bogs (Active) [7140] Transition Mires [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>) [1393] Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>) [1528] Marsh Saxifrage (<i>Saxifraga hirculus</i>)
River Moy SAC (002298)	[6510] Lowland Hay Meadows [7110] Raised Bog (Active) [7120] Degraded Raised Bog [7150] Rhynchosporion Vegetation [7230] Alkaline Fens [91A0] Old Oak Woodlands [91E0] Alluvial Forests [1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>) [1095] Sea Lamprey (<i>Petromyzon marinus</i>)

	[1096] Brook Lamprey (<i>Lampetra planeri</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>)
Slieve Fyagh Bog SAC (000542).	[7130] Blanket Bogs (Active)
Site Name	SAC Habitat/Species in Ox Mountain ACRES CP
Callow Bog SAC (000595)	[7110] Raised Bog (Active) [7120] Degraded Raised Bog [7150] Rhynchosporion Vegetation
Cloonakillina Lough SAC (001899)	[7140] Transition mires and quaking bogs
Flughany Bog SAC (000497)	[7110] Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration [7150] Depressions on peat substrates of the Rhynchosporion
Knockalongy and Knockachree Cliff SAC (001669)	[1421] Killarney Fern (<i>Trichomanes speciosum</i>)
Lough Hoe Bog SAC (000633)	[3110] Oligotrophic Waters containing very few minerals [7130] Blanket Bogs (Active)* [1013] Geyer's Whorl Snail (<i>Vertigo geyeri</i>) [1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>)
Lough Nabrickkeagh Bog SAC (000634)	[7130] Blanket Bogs (Active)
River Moy SAC (002298)	[6510] Lowland Hay Meadows [7110] Raised Bog (Active) [7120] Degraded Raised Bog [7150] Rhynchosporion Vegetation [7230] Alkaline Fens [91A0] Old Oak Woodlands [91E0] Alluvial Forests [1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>) [1095] Sea Lamprey (<i>Petromyzon marinus</i>) [1096] Brook Lamprey (<i>Lampetra planeri</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>)
Tullaghanrock Bog SAC (002354)	[7110] Raised Bog (Active) [7120] Degraded Raised Bog [7150] Rhynchosporion Vegetation
Unshin River SAC (001898)	[3260] Floating River Vegetation [6210] Orchid-rich Calcareous Grassland [6410] Molinia Meadows [91E0] Alluvial Forests [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>)
Ox Mountain Bog SAC	[3110] Oligotrophic Waters containing very few minerals [3160] Dystrophic Lakes [4010] Wet Heath [4030] Dry Heath [7130] Blanket Bogs (Active) [7140] Transition Mires [7150] Rhynchosporion Vegetation [1013] Geyer's Whorl Snail (<i>Vertigo geyeri</i>) [1528] Marsh Saxifrage (<i>Saxifraga hirculus</i>)
Site Name	SAC Habitat/Species in Achill Nephin ACRES CP
Bellacragher Salt March SAC (002005)	[1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows
Clew Bay Complex SAC (001482)	[1210] Annual Vegetation of Drift Lines [1220] Perennial Vegetation of Stony Banks [1330] Atlantic Salt Meadows [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [21A0] Machairs (* in Ireland) [91A0] Old Oak Woodlands [1355] Otter (<i>Lutra lutra</i>)
Corraun Plateau SAC (00485)	[4010] Wet Heath [4030] Dry Heath

	[4060] Alpine and Subalpine Heaths [5130] Juniper Scrub [8110] Siliceous Scree [8220] Siliceous Rocky Slopes
Croaghau/Slievemore SAC (001955)	[4010] Wet Heath [4030] Dry Heath [4060] Alpine and Subalpine Heaths [7130] Blanket Bogs (Active) [8110] Siliceous Scree [8220] Siliceous Rocky Slopes
Doogort Machair/Lough Doo SAC (001497)	[21A0] Machairs [1395] Petalwort (<i>Petalophyllum ralfsii</i>)
Keel Machair/Menaun Cliff SAC (001513)	[1220] Perennial Vegetation of Stony Banks [21A0] Machairs [4060] Alpine and Subalpine Heaths [1395] Petalwort (<i>Petalophyllum ralfsii</i>)
Lough Gall Bog SAC (000522)	[7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation
Newport River SAC (002144)	[1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>)
Owenduff/Nephin Complex SAC (000534)	[3110] Oligotrophic Waters containing very few minerals [3160] Dystrophic Lakes [3260] Floating River Vegetation [4010] Wet Heath [4060] Alpine and Subalpine Heaths [5130] Juniper Scrub [7130] Blanket Bogs (Active) [7140] Transition Mires [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>) [1393] Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>) [1528] Marsh Saxifrage (<i>Saxifraga hirculus</i>)
Site Name	SAC Habitat/Species North Connemara and Erriff ACRES CP
Augrushbeg Machair and Lake SAC (001228)	[3110] Oligotrophic Waters containing very few minerals [4010] Wet Heath
Barnahallia Lough SAC (000231)	[3130] Oligotrophic to Mesotrophic Standing Waters [1833] Slender Naiad (<i>Najas flexilis</i>)
Brackloon Woods SAC (000471)	[91A0] Old Oak Woodlands
Clare Island SAC (002243)	[1230] Vegetated Sea Cliffs [8210] Calcareous Rocky Slopes [8220] Siliceous Rocky Slopes
Clew Bay Cliffs SAC (001482)	[1210] Annual Vegetation of Drift Lines [1220] Perennial Vegetation of Stony Banks [1330] Atlantic Salt Meadows [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [21A0] Machairs [91A0] Old Oak Woodlands [1355] Otter (<i>Lutra lutra</i>) [1365] Common (Harbour) Seal (<i>Phoca vitulina</i>)
Connemara Bog Complex SAC (002034)	[1150] Coastal Lagoons [1170] Reefs [3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3160] Dystrophic Lakes [3260] Floating River Vegetation [4010] Wet Heath [4030] Dry Heath [6410] Molinia Meadows [7130] Blanket Bogs (Active) [7140] Transition Mires [7150] Rhynchosporion Vegetation

	[7230] Alkaline Fens [91A0] Old Oak Woodlands [1065] Marsh Fritillary (<i>Euphydryas aurinia</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>)
Cross Lough (Killadoon) SAC (000484)	[1220] Perennial Vegetation of Stony Banks
Inishbofin and Inishshark SAC (000278)	[1150] Coastal Lagoons [3110] Oligotrophic Waters containing very few minerals [4010] Wet Heath [4030] Dry Heath
Lough Cahasy, Lough Baun and Roonah Lough SAC (001529)	[1220] Perennial Vegetation of Stony Banks [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [2130] Fixed Dunes (Grey Dunes) [21A0] Machairs
Maumturk Mountain SAC (002008)	[3110] Oligotrophic Waters containing very few minerals [4010] Wet Heath [4060] Alpine and Subalpine Heaths [7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation [8220] Siliceous Rocky Slopes [1106] Atlantic Salmon (<i>Salmo salar</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
Mweelrea/Sheeffrt/Erriff Complex SAC (001932)	[1210] Annual Vegetation of Drift Lines [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [2130] Fixed Dunes (Grey Dunes) [2150] Decalcified Dune Heath [2170] Dunes with Creeping Willow [2190] Humid Dune Slacks [21A0] Machairs [3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3160] Dystrophic Lakes [3260] Floating River Vegetation [4010] Wet Heath [4030] Dry Heath [4060] Alpine and Subalpine Heaths [5130] Juniper Scrub [6430] Hydrophilous Tall Herb Communities [7130] Blanket Bogs (Active) [7140] Transition Mires
Oldhead Woods SAC (000532)	[4030] Dry Heath [91A0] Old Oak Woodlands
Omey Island Machair SAC (001309)	[21A0] Machairs [3140] Hard Water Lakes [1395] Petalwort (<i>Petalophyllum ralfsii</i>)
Rusheenduff Lough SAC (001311)	[3130] Oligotrophic to Mesotrophic Standing Waters [1833] Slender Naiad (<i>Najas flexilis</i>)
Slyne Head Peninsula SAC (002074)	[1210] Annual Vegetation of Drift Lines [1220] Perennial Vegetation of Stony Banks [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [21A0] Machairs [3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3140] Hard Water Lakes [4030] Dry Heath [5130] Juniper Scrub

	[6210] Orchid-rich Calcareous Grassland [6410] Molinia Meadows [6510] Lowland Hay Meadows [7230] Alkaline Fens [1395] Petalwort (<i>Petalophyllum ralfsii</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
The Twelve Bens/Garraun Complex SAC (002031)	[3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [4060] Alpine and Subalpine Heaths [7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation [8110] Siliceous Scree [8210] Calcareous Rocky Slopes [8220] Siliceous Rocky Slopes [91A0] Old Oak Woodlands [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
Tully Lough SAC (002130)	[3130] Oligotrophic to Mesotrophic Standing Waters [1833] Slender Naiad (<i>Najas flexilis</i>)
Tully Mountain SAC (000330)	[4030] Dry Heath [4060] Alpine and Subalpine Heaths
Site Name	SAC within the Conamara Theas
Connemara Bog Complex SAC (002034)	[3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3160] Dystrophic Lakes [3260] Floating River Vegetation [4010] Wet Heath [4030] Dry Heath [6410] Molinia Meadows [7130] Blanket Bogs (Active) [7140] Transition Mires [7150] Rhynchosporion Vegetation [7230] Alkaline Fens [91A0] Old Oak Woodlands [1065] Marsh Fritillary (<i>Euphydryas aurinia</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>)
Cregduff Lough SAC (001251)	[7140] Transition Mires [1833] Slender Naiad (<i>Najas flexilis</i>)
Dog's Bay SAC (001257)	[1210] Annual Vegetation of Drift Lines [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [2130] Fixed Dunes (Grey Dunes) [4030] Dry Heath
Galway Bay Complex SAC (000268)	[1220] Perennial Vegetation of Stony Banks [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts [1310] Salicornia Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3180] Turloughs [5130] Juniper Scrub [6210] Orchid-rich Calcareous Grassland* [7210] Cladium Fens [7230] Alkaline Fens [8240] Limestone Pavement [1355] Otter (<i>Lutra lutra</i>)
Kilkieran Bay and Islands SAC (002111)	[1410] Mediterranean Salt Meadows [21A0] Machairs [3130] Oligotrophic to Mesotrophic Standing Waters [6510] Lowland Hay Meadows

	[1355] Otter (<i>Lutra lutra</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
Lough Nageeron SAC (002119)	[3130] Oligotrophic to Mesotrophic Standing Waters [1833] Slender Naiad (<i>Najas flexilis</i>)
Maumturk Mountain SAC (002008)	[3110] Oligotrophic Waters containing very few minerals [4010] Wet Heath [4060] Alpine and Subalpine Heaths [7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation [8220] Siliceous Rocky Slopes [1106] Atlantic Salmon (<i>Salmo salar</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
Murvey Machair SAC (002129)	[21A0] Machairs [1395] Petalwort (<i>Petalophyllum ralfsii</i>)
Rosroe Bog SAC (000324)	[7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation
Slyne Head Peninsula SAC (002074)	[1210] Annual Vegetation of Drift Lines [1220] Perennial Vegetation of Stony Banks [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [21A0] Machairs [3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3140] Hard Water Lakes [4030] Dry Heath [5130] Juniper Scrub [6210] Orchid-rich Calcareous Grassland [6410] Molinia Meadows [6510] Lowland Hay Meadows [7230] Alkaline Fens
The Twelve Ben/Garraun Complex SAC (002031)	[3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [4060] Alpine and Subalpine Heaths [7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation [8110] Siliceous Scree [8210] Calcareous Rocky Slopes [8220] Siliceous Rocky Slopes [91A0] Old Oak Woodlands [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
Name	SAC habitats within the Corrib and Mask CP
Ballymaglancy Cave, Conn SAC (000474)	[8310] Caves [1303] Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)
Cloughmoyne SAC (000479)	[8240] Limestone Pavement
Galway Bay Complex SAC (000268)	[1220] Perennial Vegetation of Stony Banks [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts [1310] Salicornia Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3180] Turloughs [5130] Juniper Scrub [6210] Orchid-rich Calcareous Grassland [7210] Cladium Fens [7230] Alkaline Fens [8240] Limestone Pavement [1355] Otter (<i>Lutra lutra</i>)

Gortnandarragh Limestone Pavement SAC (001271)	[8240] Limestone Pavement
Lough Carra/Lough Mask Complex SAC (001774)	[3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3140] Hard Water Lakes [4030] Dry Heath [6210] Orchid-rich Calcareous Grassland [7210] Cladium Fens [7230] Alkaline Fens [8240] Limestone Pavement [91E0] Alluvial Forests [1303] Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) [1355] Otter (<i>Lutra lutra</i>) [1393] Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>)
Lough Corrib SAC (000297)	[3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3140] Hard Water Lakes [3260] Floating River Vegetation [6210] Orchid-rich Calcareous Grassland [6410] Molinia Meadows [7110] Raised Bog (Active) [7120] Degraded Raised Bog [7150] Rhynchosporion Vegetation [7210] Cladium Fens [7220] Petrifying Springs [7230] Alkaline Fens [8240] Limestone Pavement [91A0] Old Oak Woodlands [91D0] Bog Woodland [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>) [1095] Sea Lamprey (<i>Petromyzon marinus</i>) [1096] Brook Lamprey (<i>Lampetra planeri</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1303] Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) [1355] Otter (<i>Lutra lutra</i>) [1833] Slender Naiad (<i>Najas flexilis</i>) [6216] Slender Green Feather-moss (<i>Hamatocaulis vernicosus</i>)
Maumturk Mountain SAC (002008)	[3110] Oligotrophic Waters containing very few minerals [4010] Wet Heath [4060] Alpine and Subalpine Heaths [7130] Blanket Bogs (Active) [7150] Rhynchosporion Vegetation [8220] Siliceous Rocky Slopes [1106] Atlantic Salmon (<i>Salmo salar</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
Mweelrea/Sheffry/Erriff Complex SAC (001932)	[1210] Annual Vegetation of Drift Lines [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [2130] Fixed Dunes (Grey Dunes) [2150] Decalcified Dune Heath [2170] Dunes with Creeping Willow [2190] Humid Dune Slacks [21A0] Machairs [3110] Oligotrophic Waters containing very few minerals [3130] Oligotrophic to Mesotrophic Standing Waters [3160] Dystrophic Lakes [3260] Floating River Vegetation [4010] Wet Heath [4030] Dry Heath [4060] Alpine and Subalpine Heaths [5130] Juniper Scrub

	[6430] Hydrophilous Tall Herb Communities [7130] Blanket Bogs (Active) [7140] Transition Mires [7150] Rhynchosporion Vegetation [7220] Petrifying Springs [7230] Alkaline Fens [8110] Siliceous Scree [8210] Calcareous Rocky Slopes [8220] Siliceous Rocky Slopes [1013] Geyer's Whorl Snail (<i>Vertigo geyeri</i>) [1014] Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>) [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>) [1395] Petalwort (<i>Petalophyllum ralfsii</i>) [1833] Slender Naiad (<i>Najas flexilis</i>)
Ross Lake and Woods SAC (001312)	[3140] Hard Water Lakes [1303] Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)

*The SAC's associated with the following habit and/or species listed on Annex I / II of the E.U. Habitats Directive are not included in the CP zones list, these include 1140 Tidal Mudflats and Sandflats, 1150 Coastal Lagoons, 1160 Large shallow inlet and bays, 1170 Reefs, 1330 and Salicornia Mud.

Appendix IV Birds

List of all birds protected under The Birds Directive (Directive 2009/147/EC) know to be located within the WCCP is described in appendix IV.

Appendix V Habitat

There is a full description of all habitats and Site Specific Conservation Objectives (SSCO) for WCCP outlined in Appendix V.

Appendix VI WCCP Bryophyta

Appendix VII WCCP Bee specie profile

Appendix VIII WCCP Butterfly specie profile

Appendix IX: List of NHA and designated sites present in the Erris ACRES Cooperation.

Site Name	NHA Habitat of specific interest in Erris ACRES CP
Banger Erris Bog NHA (001473)	[4] Peatland
Ederglen Bog NHA (002446)	[4] Peatland
Forrew Bog NHA (002432)	[4] Peatland
Glenturk More Bog NHA (002419)	[4] Peatland
Inagh Bog NHA (002391)	[4] Peatland
Pollatomish Bog NHA (001548)	[4] Peatland
Tristia Bog NHA (001566)	[4] Peatland
Tullaghan Nay and Bog NHA (001567)	[4] Peatland
Ummerantarry Bog NHA (001570)	[4] Peatland
Banger Erris Bog NHA (001473)	[4] Peatland
Ederglen Bog NHA (002446)	[4] Peatland
Site Name	NHA Habitat of specific interest in Ox Mountain ACRES CP
Cunnagher More Bog (002420)	[4] Peatland
Site Name	NHA Habitat of specific interest in Achill Nephin ACRES CP
Croaghmoyle Mountain NHA (002383)	[4] Peatland
Doogort East Bog NHA (002381)	[4] Peatland
Sraheens Bog NHA (002403)	[4] Peatland
Tullaghan Bay and Bog NHA (001567)	[4] Peatland
Site Name	NHA Habitat of specific interest in North Connemara and Erriff ACRES CP
Cloon and Laghtanabba Bog NHA (002374)	[4] Peatland
Lough Greney Bog NHA (002455)	[4] Peatland
Tawntmackan Bog NHA (000548)	[4] Peatland
Tooreen Bog NHA (002436)	[4] Peatland
Site Name	NHA Habitat of specific interest in North Connemara and Erriff ACRES CP
Carna Heath and Bog NHA (001241)	[4] Peatland
Moycullen Bog NHA (002364)	[4] Peatland
Oughterard District Bog NHA (002431)	[4] Peatland
Site Name	NHA Habitat of specific interest in Corrib and Mask ACRES CP
Moycullen Bog (002364)	[4] Peatland
Oughterard District Bog NHA (002431)	[4] Peatland

APPENDIX X - SCORECARDS

For field delineation, the Cooperation Project teams will delineate fields based on aerial photography using the filling rules:

- Only digitise eligible fields, exclude ineligible parts of the farm i.e. parcels that are listed as buildings or forestry O=MEA.
- A field may be an entire parcel or a parcel may contain multiple fields.
- Fields should be as homogenous as possible. Land with clearly different management regimes and/or habitat types should be in separate fields. For example, an area used for silage should not be part of the same assessment unit as a significant area of bog /heath area or rough grassland.
- Recommended minimum area of 0.5ha
- If parcels are being divided, they should be split along an existing boundary, e.g. hedgerow, stream, fence lines. The boundary between habitat types, e.g. woodland interface with grassland is also a boundary i.e. treeline.
- For mosaic fields scorecards should be assigned based on the dominant habitat type. In most cases the advisor can change this in the field where necessary. It may (very occasionally) be necessary to divide a parcel along a notional boundary where one habitat grades into another, e.g. grassland transitioning to bog/ heath. This should be kept to a minimum and only used where the daughter fields will be at least 0.2ha. Otherwise, the field should be treated as a mosaic.

ACRES scorecards have been developed to reward and incentivise ecosystem services delivery on farmland. There are ten scorecards in the ACRES Co-operation (CP) zones, 7 are habitat-focused (a habitat is a place where plants and animals live), while 3 are species-specific. The winterage scorecards will be assigned by the Burren CP team only and is not included here. The scorecards are outlined as follows:

- **Grassland:** This scorecard is to be used for permanent pasture grassland unless there is a clear reason to use another grassland scorecard.
- **Peatland:** The peatland scorecard is to be used in fields where peatland habitats such as wet heath, dry heath, blanket bog, raised bog, or a mosaic of habitats such as heath, bog and or grassland are present.
- **Rough Grazing:** The rough grazing scorecard is to be used in fields with tall vegetation such as rushes and patches of established scrub throughout. It is suited for enclosed land that is important for ground nesting birds, small mammals and raptors particularly. WCCP is restricting application of Rough Grazing scorecard to grassland fields in the Hen Harrier winter roost sites and SPA, Lough Corrib SPA (004042)/ (Corrib & Mask CP Zone).
- **Scrub/Woodland:** The scrub and woodland scorecard is to be used in fields where scrub (shrubs, stunted trees or brambles) or woodland dominate.
- **Low Input Peat Grassland (LIPG):** The LIPG scorecard is to be used in fields of transitional grassland next to raised bog habitats. Low input peat scorecard should be assigned in very specific circumstances i.e. on parcels that intersect with a defined buffer of 250m from a raised bog.
- **Coastal Grassland:** The coastal grassland scorecard is to be used in fields close to the coast where dune grassland, machair or saltmarshes are present. Important that dunes that have been converted to improved pasture are assigned coastal habitat scorecard. Topography and contour lines of 0 to <20 metre above sea level and the upper limits of spring and neap tide marks may help with coastal scorecard assignment.

- **Chough:** This scorecard is to be used in grassland fields within Chough SPAs, coastline/cliff 300m buffer in areas of known Chough Breeding distribution. WCCP Chough SPA: Termoncarragh Lake & Annagh Machair SPA (004093)/ (Erris CP Zone) and Clare Island SPA (004136)/ (North Connemara and Erriff CP Zone).
- **Breeding Wader:** This scorecard is to be used in open aspect grassland fields that lack scrub, trees, dense thatched vegetation and dense rush coverage within 100m of Breeding Wader SPA, known breeding wader hotspots (top three of five categories) with in a 250m buffer and known Breeding Wader locations outside the hotspot data. Breeding wader SPA: **Curlew**, Blacksod Bay Broadhaven SPA (004037)/ (Erris CP Zone), Blacksod Bay/Broad Haven SPA (00437)/ (Achill Nephin CP Zone), Inner Galway Bay SPA (Conamara Theas CP Zone). **Dunlin** Blacksod Bay Broad haven SPA (004037)/ (Erris CP Zone), Blacksod Bay Broad haven SPA (004037)/ (Erris CP Zone), Termoncarragh Lake & Annagh Machair SPA (004093)/ (Erris CP Zone), Blacksod Bay/Broad Haven SPA (00437)/ (Achill Nephin CP Zone), Blacksod Bay/Broad Haven SPA (00437)/ (Achill Nephin CP Zone) Doogort Machair SPA (004235)/ (Achill Nephin CP Zone) and Inner Galway Bay SPA (Conamara Theas CP Zone). **Lapwing** Termoncarragh Lake & Annagh Machair SPA (004093)/(Erris CP Zone) and Inner Galway Bay SPA (Conamara Theas CP Zone). **Redshank:** SPA: Inner Galway Bay SPA (Conamara Theas CP Zone).
- **Corncrake:** This scorecard is to be used in fields within Corncrake SPAs and other fields important for Corncrake (Corncrake Life data). It applies to hay and silage fields in these areas but can also apply to fields with delayed grazing. Corncrake SPA include Mullet Peninsula SPA (004227) (Erris CP Zone), Termoncarragh Lake & Annagh Machair SPA (004093) (Erris CP Zone) and Inishbofin, Omev Island & Turbot Island SPA (004231) (North Connemara & Erriff CP Zone).

Table 1. ACRES scorecards and alternative scorecards available for selection.

Habitat	Scorecard assigned	Alternatives available (unless the assigned scorecard has been locked down by the CP team)
Peatland	Peatland	Scrub/woodland; Grassland; Rough grazing
Scrub/woodland	Scrub/woodland	Peatland; Grassland; Rough grazing
Grassland	Grassland	Peatland; Scrub/woodland; Rough grazing
Grassland	Rough grazing	No alternative. Assigned to Hen Harrier winter roosts sites.
Grassland	Low input peat grassland	No alternative. Assigned to raised bog sites.
Grassland	Winterage	Not assigned in WCCP
Grassland	Coastal	No alternative
Grassland	Chough	No alternative. Delineation was based on 300m buffer from cliff/extensive low input grassland and know SPA sites.
Grassland	Breeding wader	No alternative. Delineation was based on BWI hotpop data
Grassland	Corncrake	No alternative
None	Area not scoreable	Peatland; Scrub/woodland; Grassland; Rough grazing

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