

**PROPOSED VARIATION No. 5
OF
CASTLEBAR & ENVIRONS
DEVELOPMENT PLAN
2008-2014**

Screening for Appropriate Assessment Report

In accordance with Article 6(3) and 6(4) of the Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna (Habitats Directive)



**MAYO COUNTY COUNCIL
COMHAIRLE CONTAE MHAIGH EO
MAY 2017**

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Glossary and acronyms

GIS: Geographical Information System

HDA: Habitats Directive Assessment, an assessment undertaken in accordance with Article 6(3) and 6(4) of the Habitats Directive (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora) of the implications of a plan or project, either on its own or in combination with other plans or projects, on the integrity of a Natura 2000 site in view of the conservation objectives of that site

LBA: Local Biodiversity Areas

Natura 2000 Network: The assemblage of sites which are identified as Special Areas of Conservation (SAC) under the Habitats Directive or classified as Special Protection Areas (SPAs) under the Birds Directive 2009/147/EC, or a Site of Community Importance (SCI)

NHA: Natural heritage area(s); an area which has been designated as such by way of a Natural Heritage Order under Section 18 of the Wildlife (Amendment) Act 2000, or that, pending a decision by the Minister under section 17 or 18 of the Act, is subject of a notice under Section 16 of that Act

NIR: Natura Impact Report; the report prepared following Appropriate Assessment of Natura 2000 sites as required under the Habitats Directive which presents information on the assessment and the process of collating data on a **plan** and its potential significant impacts on Natura 2000 site(s).

NIS: Natura Impact Statement; the statement prepared following Appropriate Assessment of Natura 2000 sites as required under the Habitats Directive which presents information on the assessment and the process of collating data on a **project** and its potential significant impacts on Natura 2000 site(s).

RAL: Remedial Action List for the purpose of identifying issues to be remedied within public water supplies

SEA: Strategic environmental assessment; a systematic process of predicting and evaluating the likely environmental effects of implementing a plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic and social considerations

WFD: Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (the Water Framework Directive)

WRBD: Western River Basin District; one of eight River Basin Districts which have been designated as hydrological or geographical units for Ireland (Ecoregion 17) using a spatial management system.

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1. Introduction.

1.1 Background.

This Screening for Appropriate Assessment Report pertains to the proposal to make a variation number 5 to the Castlebar & Environs Development Plan 2008-2014. The Castlebar & Environs Development Plan 2008-2014 was adopted in on 1st May 2008 and took effect from 29th June 2008. The Plan, as adopted, addressed the proper planning and sustainable development of the town and was envisaged to operate for a period of six years from the date it came into force. (this period has been extended to 2020.) The Plan sets out a strategy and framework for the future development of the town and provides the overall policies of the County Council with regard to the future of the town, in addition to more detailed objectives and standards for development control.

Mayo County Council proposes to vary the Castlebar & Environs Development Plan 2008-2014 to to:

- make provision for housing development on lands zoned as Residential Phase 2 in order to meet housing targets set out in the Core strategy of Mayo County Development Plan 2014-2020
- make provision Regional Outdoor Training Facility for outdoor training programmes which is a necessary expansion to the existing Regional Training Facilities offered in Castlebar at Lisnakirka Castlebar by re-zoning land from 'Medium Density Residential Phase 3' to 'Community / Institutional'.
- make provision for social housing on lands at Lisnakirka by changing the phasing of these lands from 'Medium Density Residential Phase 3' to 'Medium Density Residential'.

1.2 Legislation and biodiversity impact assessment.

Mayo County Council has determined that in accordance with Articles 6(3) and 6(4) of the EU Habitats Directive 92/43/EEC, a Screening for Appropriate Assessment must be undertaken. This Screening Report is prepared to ensure that the proposed project and particulars, alone or in-combination with other plans or projects, will not have significant impacts on the integrity of designated habitats and species within or adjacent to the project area, with respect to their specific conservation objectives and, consequently, will determine whether or not a full Appropriate Assessment is required.

From a legislative viewpoint, the Councils Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (henceforth referred to as the Habitats Directive) was introduced, primarily, to promote sustainable development within EU member states while concurrently maintaining, or whenever necessary, restoring the favourable conservation status of natural habitats and species as defined within the legislation.

The Habitats Directive was transposed into Irish legislation by the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94/1997) and subsequently amended in 1998 and 2005. However, in order to address transposition issues raised in judgements of the ECJ against Ireland in 2008 and to clarify the obligations of planning authorities under the Birds and Habitats Directives, the European Communities (Birds and Natural Habitats) Regulations, 2011 were introduced and now provide the legislative framework in Ireland on the protection of designated habitats and species.

The designation or classification of sites are done so under the provision of the Natura 2000 network; essentially a list of sites which are deemed of particular importance in terms of rare, endangered or vulnerable habitats and / or species. In Ireland, Natura 2000 sites include candidate Special Areas of Conservation (cSAC)¹, Special Protection Areas (SPA), and proposed

Special Protection Areas (pSPA). cSACs pertain to qualifying interests which are habitats in Annex I and species listed in Annex II of the Habitats Directive, while SPAs are selected for special conservation interests including regularly occurring migratory bird species and Annex I bird species and their habitats. The conservation objectives of particular Natura 2000 sites have been assigned by the National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht; these are the objectives or aims which have been put in place in order to maintain or restore the favourable conservation status or condition of the Annex I habitat or Annex I or II species for which the designated or classified site has been selected.

From the viewpoint of appropriate assessment, Articles 6(3) and 6(4) of the Habitats Directive subsumes assessment responsibility for the Birds Directive (2009/147/EC) under the umbrella of Natura 2000 sites (European sites or sites within the Natura 2000 network), which include both Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), while nationally, appropriate assessment is dealt with in Part 5 of the European Communities (Birds and Natural Habitats) Regulations, 2011.

1.3 Appropriate Assessment.

The Habitats Directive introduced the concept of appropriate assessment which is essentially the assessment of the implications of a plan or project, either on its own or in combination with other plans or projects, on the integrity of a Natura 2000 site in view of the conservation objectives of that site. Specifically Article 6(3) and 6(4) of the aforementioned directive govern the particulars of the concepts and terminology of appropriate assessments as follows:

*Article 6(3) – Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to **appropriate assessment** of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

*Article 6(4) - If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for **imperative reasons of overriding public interest**, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.*

¹ It should be stated at this point that all SACs in Ireland are currently candidate SACs but this does not alter or influence the sites' full protection by law

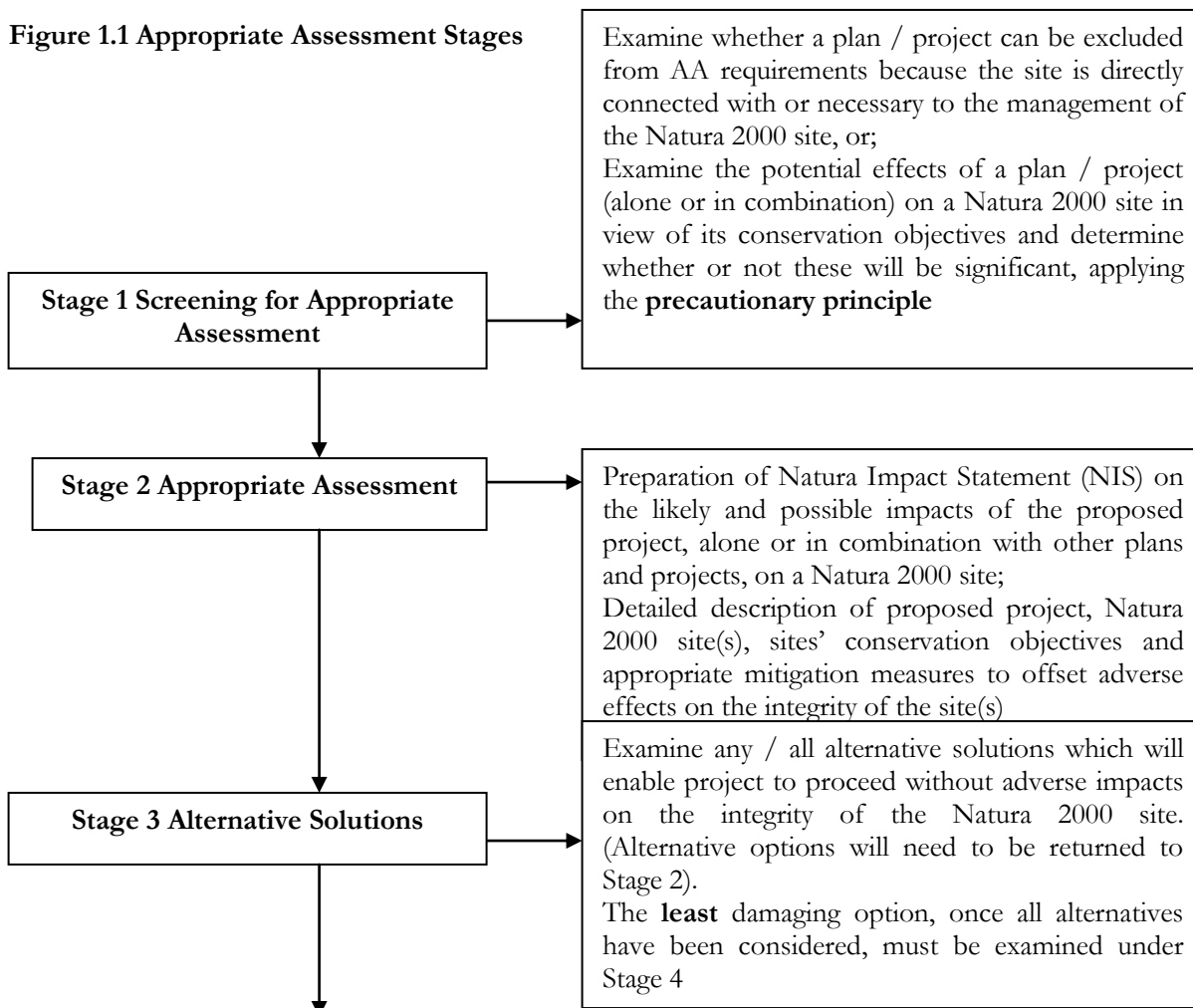
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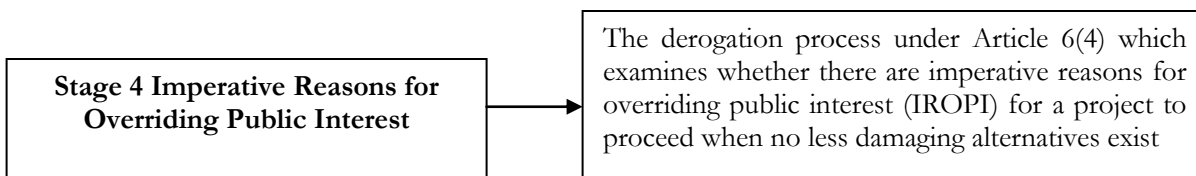
This Screening for Appropriate Assessment was carried out on the proposed variation of the Castlebar & Environs Development Plan 2008-2014 with reference to the following European, national and DEHLG guidance documents on Habitats Directive Assessment:

- *Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities.* DoEHLG, 2009;
- *Assessment of plans and projects significantly affecting Natura 2000 sites; Methodological Guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission, 2002;
- Department of Environment, Heritage and Local Government Circular Letter PD 2/07 and NPWS 1/07, 2007;
- Department of Environment, Heritage and Local Government Circular Letter SEA 1/08 and NPWS 1/08, February 2008;
- Department of Environment, Heritage and Local Government Circular NPW 1/10 & PSSP 2/10, 2010;
- EPA, 2010. *Integrated Biodiversity Impact Assessment; Streamlining AA, SEA and EIA process.* Best Practice Guidance 2010-B-DS-4 STRIVE Report;
- *Managing Natura 2000 Sites, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.* European Commission, 2000.

The following flow diagram summarises the principle stages involved in the appropriate assessment process and follows the commission's methodical guidance which promotes a four-stage process:

Figure 1.1 Appropriate Assessment Stages





Essentially, the appropriate assessment process is an iterative one and the outcome at each successive stage determines whether a further stage in the process is required. To summarise, while the first two stages (1 and 2) focus on the draft plan or project and its potential adverse effects on the conservation objectives of a proximate Natura 2000 Network, Stage 3 examines alternative solutions to prevent adverse impacts on the integrity of Natura 2000 sites. Stage 4 of appropriate assessment, also deemed a derogation process, is employed when it has been established that the draft plan or project will have adverse impacts on the Natura 2000 sites, but no less damaging alternative solution exists.

2. Methodology.

2.1 Stages of screening.

Forming the basis of an Appropriate Assessment (AA), screening is the introductory stage which yields important information regarding the project or plan and whether it, during its various phases and on its own or in combination with other plans or projects has the capacity to impact on the integrity of one or more Natura 2000 sites in by virtue of their conservation objectives. Screening, then, is an integral part of the AA process since it, applying the precautionary principle and utilising existing information, in addition to advice from relevant statutory bodies, is the decision stage for continuation with a full AA or the termination of the process at the screening stage due to a finding of no significant effects.

The screening process, as documented in this screening document, consists of four separate steps, with each step following into the next. The steps include:

1. A determination of whether the project or plan is directly connected with or necessary to the management of the site;
2. A Description of the proposed project and the description and characterisation of other projects or plans that in combination have the potential for having significant effects on the Natura 2000 site(s);
3. Identification of the potential effects on the Natura 2000 site(s); and
4. An assessment of the significance of any effects on the Natura 2000 site(s).

2.2 Is the proposed project or plan directly connected to the Natura 2000 site(s).

The proposed variation to the development plan is not deemed to be directly connected with or necessary to the management of the Natura 2000 site(s) it will not include management measures specifically for conservation purposes that are solely conceived for the conservation management of a Natura 2000 site(s) and not direct or indirect consequences of other activities.

As a consequence of this conclusion, this screening assessment advances to Step 2.

2.3 Description of the Proposed Variation No. 5.

The Proposed Variation No.5 of the Castlebar & Environs Development Plan 2008-2014 is required to:

- Update Housing Objective HO-4 of Castlebar & Environs Development Plan 2008-2014 as a consequence of the Core Strategy of Mayo County Development Plan 2014-2020.
- Update the data presented in the Core Strategy of Castlebar & Environs Development Plan 2008-2014 to ensure consistency with the Core Strategy of Mayo County Development Plan 2014-2020.
- Update Section 5 of the Castlebar & Environs Development Plan 2008-2014 to ensure consistency with the Core Strategy of Mayo County Development Plan 2014-2020.
- Amend Zoning Map 1 as shown below from Medium Density Residential Phase 3 to Community/Institutional
- Amend Zoning Map 1 as shown below from Medium Density Residential Phase 3 to Medium Density Residential



The Proposed Variation No. 5 of the Castlebar & Environs Development Plan 2008-2014 is not directly connected with or necessary to the management of any Natura 2000 sites, therefore consideration was given to whether it has the potential to have significant effects on any European Site and what the implications for the conservation objectives of the site would be.

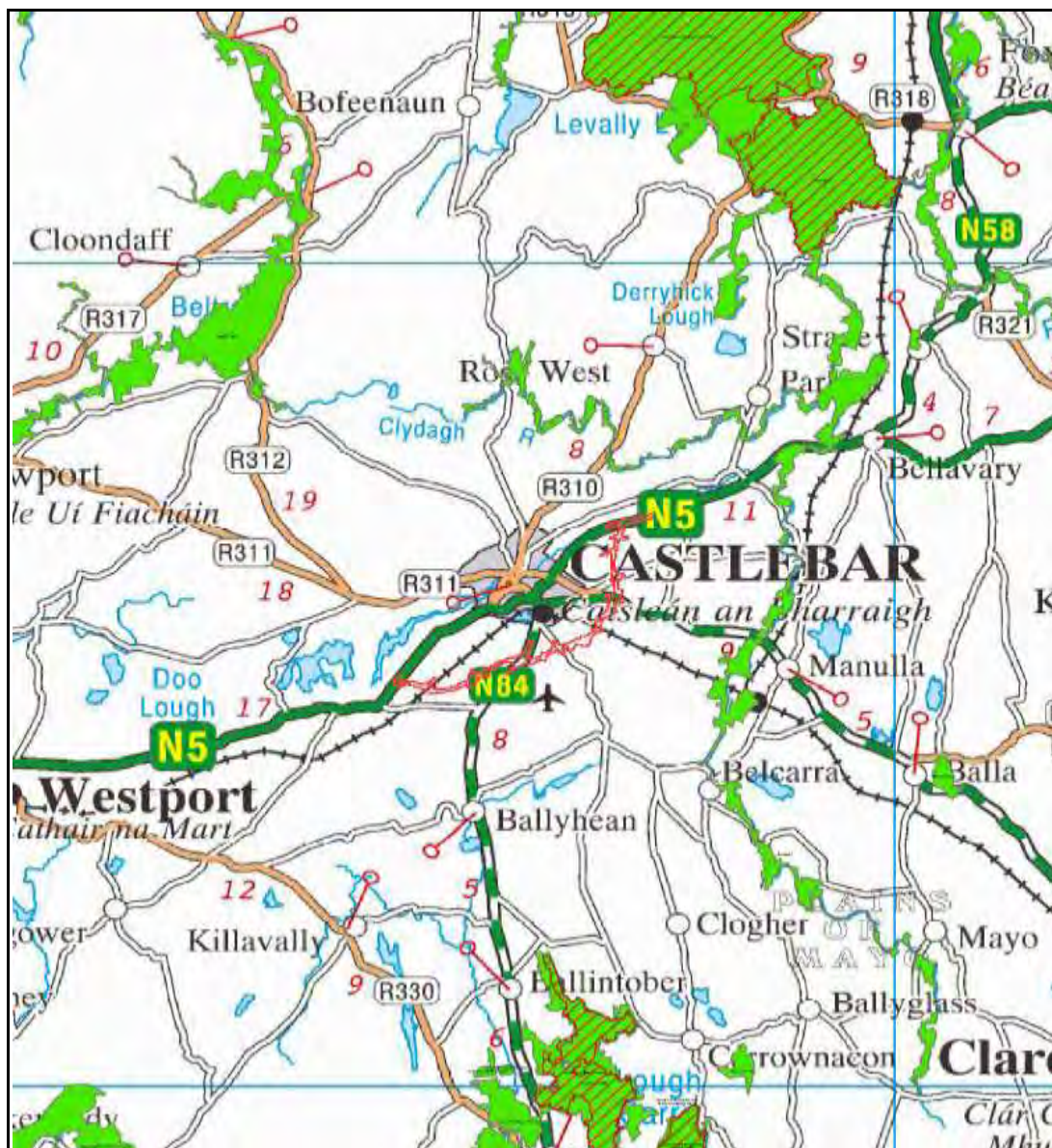
All elements of the Proposed Variation are examined to assess whether, in view of best scientific knowledge, the Proposed Variation No. 5 of the Plan individually or in combination with another plan or project is likely to have a significant effect on one or more European sites.

3 Background Information on Natura 2000 Sites.

3.1 Introduction.

For the purpose of this assessment, and in consideration of the 2009 DoEHLG guidelines on *Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities* and expert judgement², a 15 km buffer / zone of influence was assigned around the proposed project location and a total of seven Natura 2000 sites are identified within the 15 km zone of influence. These are shown in Figure 3.1.

Figure 3.1 Natura 2000 sites within 15Km of Castlebar



² A distance of 15 km is currently recommended in the case of plans, derived from UK guidance and general methodology.

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3.2 Description of Natura 2000 Sites.

There are a total of seven Natura 2000 sites within the proposed project 15 km buffer zone, five candidate Special Areas of Conservation and two Special Protection Areas, all designated in consideration of Habitats Directive Annex I habitats and Annex II species for SACs or, in the case of SPAs, special conservation interests in accordance with the EU Birds Directive. The following table illustrates the Natura 2000 sites considered for the purpose of this assessment which may be potentially affected by the proposed variation.

Table 3.1 Information pertaining Natura 2000 sites within 15 km of the proposed variation to the Castlebar & Environs Plan.

Site code	Natura 2000 Site Name	Qualifying interests (qualifying interest / special conservation interest code in square brackets [], * denotes priority habitat)
002298	River Moy cSAC	[1092] <i>Austropotamobius pallipes</i> [1095] <i>Petromyzon marinus</i> [1096] <i>Lampetra planeri</i> [1106] <i>Salmo salar</i> (only in fresh water) [1355] <i>Lutra lutra</i> [7110] * Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration [7150] Depressions on peat substrates of the <i>Rhynchosporion</i> [7230] Alkaline fens [91A0] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91E0] * Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno - Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)
000463	Balla Turlough cSAC	[3180] * Turloughs
002144	Newport River cSAC	[1029] <i>Margaritifera margaritifera</i> [1106] <i>Salmo salar</i>
002081	Ballinafad cSAC	[1303] <i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat)
001774 004051	Lough Carra/Mask Complex cSAC Lough Carra SPA	[3110] Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3130] Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea

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		<p>uniflorae and/or Isoeto-Nanojuncetea</p> <p>[3140] Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.</p> <p>[4030] European dry heaths</p> <p>[6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (* important orchid sites)*</p> <p>[7210] Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae*</p> <p>[7230] Alkaline fens</p> <p>[8240] Limestone pavements*</p> <p>91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)*</p> <p>[1303] <i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat)</p> <p>[1355] <i>Lutra lutra</i> (Otter)</p> <p>[1393] <i>Drepanocladus vernicosus</i> (Slender Green Feather-moss)</p> <p>[A182] <i>Larus canus</i> (Common Gull)</p>
004228	Lough Conn/Lough Cullin SPA	<p>[A061] <i>Aythya fuligula</i> (tufted duck)</p> <p>[A065] <i>Melanitta nigra</i> (common scoter)</p> <p>[A182] <i>Larus canus</i> (common gull)</p> <p>[A395] <i>Anser albifrons flavirostris</i> (Greenland white-fronted goose)</p> <p>[A999] Wetlands and Waterbirds</p>
002179	Towerhill House cSAC	<p>[1303] <i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat)</p>

3.3 Conservation Objectives .

The assessment of all seven Natura 2000 sites and impacts thereon as a consequence of the proposed project necessitates examination of the qualifying interests and special conservation interests for which the Natura 2000 sites have been designated or classified.

The conservation objectives of all Natura 2000 sites are for the maintenance or restoration of qualifying interests or special conservation interests species at favourable conservation status.

The favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is it likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

4 Identification of Effects.

4.1 Potential effects on Natura 2000 sites as a consequence of the proposed project.

As shown in Table 3.1, a number of qualifying interests and special conservation interests which may be adversely impacted by environmental change or deterioration as a consequence of the proposed project are identified in this assessment. These include terrestrial, aquatic and water-dependant habitats and species.

The following screening matrices have been completed with reference to the format of Figure 1, Annex 2 of *Assessment of plans and projects significantly affecting Natura 2000 sites; Methodological Guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC, 2002) to illustrate the assessment of potential significant effects on the integrity of Natura 2000 sites by virtue of the proposed variation.

Table 4.1, 4.2 and 4.2 describes the effects on the integrity of each of the Natura 2000 sites as a consequence of the proposed variation, at all stages and Table 4.3 describes the likely changes to the integrity of the Natura 2000 sites, by virtue of the proposed variation.

The purpose of Variation No.5 to the Castlebar & Environs Development Plan 2008 – 2014 as proposed is to ensure that sufficient existing zoned land is available to allow Mayo County Council meet the population and housing targets set out in the West Regional Planning Guidelines 2010-2022 and the Core Strategy of Mayo County Development Plan 2014-2020. The variation will also provide for the re-zoning of certain lands at Lisnakirka to allow for social housing and a Regional Outdoor Training Facility. The proposed variation, being confined to existing zoned land will generally assist

in the betterment and sustainable development of urban areas by ensuring that vacant or underutilised land in urban areas is brought into beneficial use, and to counter unsustainable urban sprawl.

While the Proposed Variation would therefore appear to be very positive from the perspective of the environment, it is still necessary to identify any significant effects as a consequence of making the variation. This section examines each change to the adopted Plan in a bid to identify any potential significant effects on any European site, individually or in combination with another plan or project.

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Table 4.1 Identification of Effects on one or more European site.

Ref. no. ³	Text Changes in the plan as adopted	Are Significant Effects on European sites envisaged? Y/N? Explain.
VC.T1	<p>Page 24/Castlebar & Environs Development Plan (CDP), Core Strategy.</p> <p>Add the following wording to Section 4.3 Core Strategy</p> <p>4.3 Core Strategy</p> <p>As the lifespan of the Plan has been extended to 2020 under Section 11A of the Planning and Development Act 2000-2016 inserted by the Electoral, Local Government and Planning and Development Act 2013, the data presented in the Core Strategy below is outdated. The data presented in the Core Strategy as part of the Mayo County Development 2014-2020 is the relevant data relating to the provision of housing and zoning for the lifetime of this Plan.</p> <p>The aim of the Core Strategy is to show that the development objectives in the Development Plan are consistent, as far as practicable, with national and regional development objectives set out in the NSS and RPG's, with particular reference to the following:</p> <ul style="list-style-type: none"> Housing and Zoning <p>In order to accommodate the growth outlined above, it will be necessary to ensure that adequate provision is made for zoned residential/mixed use land. Section 5 sets out in detail the availability of land for housing development, which is summarised as follows:</p>	<p style="text-align: center;">No.</p> <p>The Variation applies to existing zoned land and simply allows residential development to take place on Phase 2 lands in order to provide sufficient lands to meet the population and housing targets set by measures set out in Mayo County Development 2014-2020 and the regional Planning Guidelines for the West Region 2010-2022.</p> <p>The variation will ensure that vacant or underutilised land in urban areas is brought into beneficial use, while also ensuring a more efficient return on State investment in enabling infrastructure and helping to counter unsustainable urban sprawl.</p> <p>The development of sustainable urban settlements will reduce pressures on infrastructure including water, wastewater and roads in rural areas which would otherwise be likely to indirectly adversely affect European sites.</p>

³ Where V refers to text changes in Mayo County Development Plan 2014-2020 Volume 1 and M refers to changes to Maps.

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	<p>a) Population in the Development Plan area is projected to grow to a total of 15290 in 2020 (within the lifetime of the extended Development Plan);</p> <p>b) It is estimated that the projected population targets will generate a requirement of 2184 new housing units between 2016 and 2020;</p> <p>c) There are currently 23 hectares of undeveloped Phase 1 lands in the Development Plan area resulting in a potential housing yield of 224 housing units.</p> <p>d) There are estimated 840 housing units vacant in the Development Plan area;</p> <p>e) Using the above figures in b), c) and d) it is calculated that there are insufficient housing units (1120) available for the plan period to meet the projected demand of 2184 to the year 2020.</p>	
VC.T2	<p>Page 29/Castlebar & Environs Development Plan (CDP), Housing</p> <p>Add additional text to General Housing Objective HO4</p> <p>HO-4 It is an objective of the council to ensure that housing policies and objectives are consistent with the requirements of the Core Strategy of the Mayo County Development Plan 2014-2020</p>	<p style="text-align: center;">No.</p> <p>The Variation applies to existing zoned land and simply allows residential development to take place on Phase 2 lands in order to provide sufficient lands to meet the population and housing targets set by measures set out in Mayo County Development 2014-2020 and the regional Planning Guidelines for the West Region 2010-2022.</p> <p>The variation will ensure that vacant or underutilised land in urban areas is brought into beneficial use, while also ensuring a more efficient return on State investment in enabling infrastructure and helping to counter unsustainable urban sprawl.</p> <p>The development of sustainable urban settlements will reduce pressures on infrastructure including water, wastewater and roads in rural areas which would otherwise</p>

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		be likely to indirectly adversely affect European sites.
VC.T3	<p>Page 31-32/Castlebar & Environs Development Plan (CDP), Housing (Housing Projections)</p> <p>Section 5.5 Housing Projections shall be altered as follows.</p> <p>5.5 Housing Projections</p> <p>As the period of the Plan has been extended to 2020, the core strategy adopted as part of Variation No. 2 is now outdated. The data of the Core Strategy of the Mayo County Development Plan, which was updated using population targets set out in the Regional Planning Guidelines 2010-2022, indicates that Castlebar will require an additional 2184 housing units to meet population targets for the extended period of the Plan.</p> <p>Currently, if all lands zoned Phase 1 were developed, this would yield a total of 224 housing units. The 2016 Census indicates that there were 840 vacant housing units in Castlebar at that time. If all lands zoned in Phase 1 were developed to capacity and all vacant units were occupied, there would be a shortfall of 1120 housing units required in Castlebar for the period of the extended Plan. In order to provide for the housing requirements of the Core Strategy, Phase 1 and Phase 2 lands should be considered for residential development.</p>	<p style="text-align: center;">No.</p> <p>The Variation applies to existing zoned land and simply allows residential development to take place on Phase 2 lands in order to provide sufficient lands to meet the population and housing targets set by measures set out in Mayo County Development 2014-2020 and the regional Planning Guidelines for the West Region 2010-2022.</p> <p>The variation will ensure that vacant or underutilised land in urban areas is brought into beneficial use, while also ensuring a more efficient return on State investment in enabling infrastructure and helping to counter unsustainable urban sprawl.</p> <p>The development of sustainable urban settlements will reduce pressures on infrastructure including water, wastewater and roads in rural areas which would otherwise be likely to indirectly adversely affect European sites.</p>
VC.T4	<p>Page 34-35/Castlebar & Environs Development Plan (CDP), Housing (Supply of Housing Land)</p> <p>Section 5.6 Supply of Housing Demand shall be altered as</p>	<p style="text-align: center;">No.</p> <p>The Variation applies to existing zoned land and simply allows residential development to take place on Phase 2</p>

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	<p>follows.</p> <p>5.5 Supply of Housing Land</p> <p>In order to meet the requirement of providing 2184 housing units for the extended period of the Castlebar and Environs Development Plan, the development of residential units on lands zoned Phase 1, Phase 2 and Phase 3 Residential lands shall be considered as follows:</p> <p>Phase 1 Residential Land All land in Phase 1 shall be developed in compliance with their current zoning as indicated on the Map 1, Zoning / Objective Map and/or in compliance with the existing planning permission (where relevant). Revised proposals for appropriate development on these lands may be considered subject to the requirements of this plan</p> <p>Phase 2 Residential Land All land in Phase 2 shall be developed in compliance with their current zoning as indicated on the Map 1, Zoning / Objective Map. All residential development proposals will be considered subject to the requirements of this Plan.</p> <p>Phase 3 Residential Land Phase 3 residential lands comprises of all serviced residentially zoned land located along the urban fringe. Phase 3 residential lands shall not be considered for development until such time as 70% of the land in Phase 1 and Phase 2 has been fully developed. Single houses may be considered where it has been established that the lands in question are part of the overall family holding and that there are no other lands appropriately zoned within the Plan boundary for the development of a single house for the landowners immediate family.</p>	<p>lands in order to provide sufficient lands to meet the population and housing targets set by measures set out in Mayo County Development 2014-2020 and the regional Planning Guidelines for the West Region 2010-2022.</p> <p>The variation will ensure that vacant or underutilised land in urban areas is brought into beneficial use, while also ensuring a more efficient return on State investment in enabling infrastructure and helping to counter unsustainable urban sprawl.</p> <p>The development of sustainable urban settlements will reduce pressures on infrastructure including water, wastewater and roads in rural areas which would otherwise be likely to indirectly adversely affect European sites.</p>
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VC.M1	Amend Zoning Map 1 as shown below from Medium Density Residential Phase 3 to Community/Institutional	<p style="text-align: center;">No.</p> <p>The Variation applies to existing zoned land and simply allows residential development to take place on Phase 2 lands in order to provide sufficient lands to meet the population and housing targets set by measures set out in Mayo County Development 2014-2020 and the regional Planning Guidelines for the West Region 2010-2022.</p> <p>The variation will ensure that vacant or underutilised land in urban areas is brought into beneficial use, while also ensuring a more efficient return on State investment in enabling infrastructure and helping to counter unsustainable urban sprawl.</p> <p>The development of sustainable urban settlements will reduce pressures on infrastructure including water, wastewater and roads in rural areas which would otherwise be likely to indirectly adversely affect European sites.</p>
VC.M2	Amend Zoning Map 1 as shown below from Medium Density Residential Phase 3 to Medium Density Residential	<p style="text-align: center;">No.</p> <p>The Variation applies to existing zoned land and simply allows residential development to take place on Phase 2 lands in order to provide sufficient lands to meet the population and housing targets set by measures set out in Mayo County Development 2014-2020 and the regional Planning Guidelines for the West Region 2010-2022.</p> <p>The variation will ensure that vacant or underutilised land in urban areas is brought into beneficial use, while also ensuring a more efficient return on State investment in enabling infrastructure and helping to counter unsustainable urban sprawl.</p>

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		The development of sustainable urban settlements will reduce pressures on infrastructure including water, wastewater and roads in rural areas which would otherwise be likely to indirectly adversely affect European sites.
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Table 5.1

Table 5.1															
ASSESSMENT OF ZONING FOR RESIDENTIAL USE: Population Targets and Land Requirements for the period 2011-2020 along with an assessment of residential zoning in the current Castlebar & Environs Development Plan 2010-2014 and current housing supply (2016)															
Settlement Hierarchy	Population Targets			Population Increase From 2016 to 2020	Residential Units Required including 50% Headroom	Existing Residential Units 2010	No of Residential Units that could be provided from :			Potential Yield Total ¹	Res. Units Shortfall / Excess (-/+) to 2020	Residential Zoning for 2016 based on shortfall or excess in Res Units (HA)			
Linked Hub	2011	2016	2020	3204	2184		VU ¹	UFE ²	LPP ³	994	-1190	Ph 1 ⁴	Ph 2 ⁵	R ⁶	E ⁷
Castlebar	12318	12086	15290			5362	840	49	105			224	1550	1774	-410

¹ VU= Estimated number of Vacant Units 2016

² UFE= Unfinished Housing Estate

³ LPP= Number of units permitted (2+) but not yet developed 2010

⁴ Potential Housing Yield Total = VU+UFE+LPP

⁵ Ph 1= Housing Yield Phase 1 Lands

⁶ Ph 2 = Housing Yield Phase 2 Lands

⁷ R = Total Yield Ph 1 + Ph 2

⁸ E = Shortfall /Excess Housing Units (-/+) to 2020

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Table 4.2 Potential significant impacts on the integrity of Natura 2000 site(s) arising from the proposed project

Natura 2000 Site	Direct impacts	Indirect / secondary	Size / scale	Land-take	Distance from site	Resource requirements	Emissions	Excavation requirements	Transportation	Duration of construction, & operation
River Moy cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Balla Turlough cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Newport River cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Ballinafad cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Lough Carra/ Mask Complex cSAC Lough Carra SPA	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Lough Conn/ Lough Cullin SPA	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Towerhill House cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged

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Table 4.2 Likely changes to the integrity of Natura 2000 site(s) by virtue of the proposed project

Site name	Reduction of habitat area	Disturbance to key species	Habitat or species fragmentation	Reduction in species density	Changes in key indicators of conservation value	Climate change
River Moy cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Balla Turlough cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Newport River cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Ballinafad cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Lough Carra/Mask Complex cSAC Lough Carra SPA	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Lough Conn/Lough Cullin SPA	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged
Towerhill House cSAC	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged	None envisaged

From the analysis of effects on all seven Natura 2000 sites in addition to an examination of likely changes as a consequence of the proposed variation, it was concluded that there is no conceivable likelihood of the, River Moy cSAC, Balla Turlough cSAC, Newport River cSAC, Ballinafad cSAC, Lough Carra/Mask Complex cSAC & Lough Carra SPA, Lough Conn/Lough Cullin SPA, Towerhill House cSAC, being affected by the proposed variation. This is due to the nature of the proposed amendments to the Castlebar Plan and in addition to the distance of the plan area to these Natura 2000 sites. Hence, the only identified ecological receptor for the purpose of this assessment is the River Moy cSAC, due to its location, partly within the Plan area boundary.

Site-specific conservation objectives for the River Moy cSAC were published in August 2016. The following table illustrates the examination of site-specific conservation objectives for the qualifying interests of the River Moy cSAC and considers the likelihood of adverse effects.

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Table 4.3 Examination of site-specific conservation objectives (SSCOs) for qualifying interests of the River Moy cSAC

Qualifying interests	Site-specific conservation objectives (SSCO)	Likelihood of significant effects from proposed project alone and in combination, in view of SSCI targets and attributes for qualifying interests
[1092] <i>Austropotamobius pallipes</i>	To maintain the favourable conservation condition of White-clawed Crayfish in River Moy SAC.	The proposed variation to the Castlebar and Environs Plan 2008-2014, due to the nature of the amendments is highly unlikely to affect the habitat or water quality of the River Moy, which may indirectly adversely affect the conservation status of this aquatic species
[1095] <i>Petromyzon marinus</i>	To maintain the favourable conservation condition of Sea Lamprey in River Moy SAC.	The proposed variation to the Castlebar and Environs Plan 2008-2014, due to the nature of the amendments is highly unlikely to affect the habitat or water quality of the River Moy which may indirectly adversely affect the conservation status of this aquatic species
[1096] <i>Lampetra planeri</i>	To maintain the favourable conservation condition of Brook Lamprey in River Moy SAC.	The proposed variation to the Castlebar and Environs Plan 2008-2014, due to the nature of the amendments is highly unlikely to affect the habitat or water quality of the River Moy which may indirectly affect the conservation status of this aquatic species
[1106] <i>Salmo salar</i> (only in fresh water)	To maintain the favourable conservation condition of Salmon in River Moy SAC.	The proposed variation to the Castlebar and Environs Plan 2008-2014, due to the nature of the amendments is highly unlikely to affect the habitat or water quality of the River Moy which may indirectly affect the conservation status of this aquatic species
[1355] <i>Lutra lutra</i>	To maintain the favourable conservation condition of Otter in River Moy SAC.	The proposed variation to the Castlebar and Environs Plan 2008-2014, due to the nature of the amendments is highly unlikely to affect the habitat or water quality of the River Moy or cause additional disturbance by human presence which may indirectly affect the conservation status of this water-dependant species
[7110] * Active raised bogs	To restore the favourable conservation condition of Active raised bogs in River Moy SAC.	There is no link between the proposed variation and this Annex I habitat which would result in potential for significant effects.
[7120] Degraded raised bogs still capable of natural regeneration	Not currently available.	There is no link between the proposed variation and this Annex I habitat which would result in potential for significant effects.
[7150] Depressions on peat substrates of the <i>Rhynchosporion</i>	Not currently available.	There is no link between the proposed variation and this Annex I habitat which would result in potential for significant effects

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[7230] Alkaline fens	To maintain the favourable conservation condition of alkaline fens in River Moy SAC.	There is no link between the proposed variation and this Annex I habitat which would result in potential for significant effects.
[91A0] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	To maintain the favourable conservation condition of Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles in River Moy SAC.	There is no link between the proposed variation and this Annex I habitat which would result in potential for significant effects.
[91E0] * Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno - Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	To maintain the favourable conservation condition of Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno - Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) in River Moy SAC.	There is no link between the proposed variation and this Annex I habitat which would result in potential for significant effects.

It is not envisaged that the Annex I habitats for which the River Moy cSAC is designated will be affected by the proposed amendments to the Castlebar & Environs Development Plan outlined in the proposed variation document.

The Annex II species for which the Natura 2000 site was designated are all aquatic or water-dependant so their disturbance or negative effects would in general have to follow an aquatic route from proposed plan variation location to the nearest water course that is linked to the River Moy cSAC. It is not considered probable, by virtue of the nature of the amendments proposed to the Castlebar & Environs Plan, that the proposed variation will impact negatively on the integrity of the River Moy cSAC in view of its conservation objectives.

4.2 Significance of effects on Natura 2000 sites

A significant effect of a plan on a Natura 2000 site according to national guidance on Appropriate Assessment (DoEHLG, 2009) is one which is likely to undermine any of the site's conservation objectives and typical examples of significant impacts include:

- Loss of Annex I habitat area;
- Disturbance to species population density;
- Direct / indirect damage to the physical quality of the environment;
- Causing serious / ongoing disturbance to habitats for which the Natura 2000 site was selected; and
- Reduction / fragmentation of the habitat area.

The proposed variation, as indicated previously and shown in Tables 4.1, 4.2 and 4.3 was described as not likely to result in changes to the integrity of the seven Natura 2000 sites considered in this assessment. In terms of significant effects, none were deemed likely, but in order to rule out the possibility of indirect effects on one Natura 2000 site, further examination of the conservation objectives of the qualifying interests of the River Moy were undertaken. Upon further examination, as outlined in Section 4.1 and particularly Table 4.3 the likelihood of significant effects on the integrity of the River Moy cSAC, in view of the site's conservation objectives are not considered likely by virtue of the nature of the proposed amendments to the Ballina Plan.

A Stage 2 Appropriate Assessment is therefore not considered necessary.

5. Conclusion of Stage 1 Screening.

5.1 Introduction.

It has been demonstrated that the proposed variation will not impact the River Moy SAC due to its location partially within the Castlebar and Environs Plan boundary. No other SACs are predicted to be affected by the proposed variation, due to the nature of the proposed amendments, distance from the Natura 2000 sites, size and scale of the proposal or the type of qualifying interests associated with each site. The River Moy SAC, occupying a large area of Mayo and Sligo 154 km² has been designated in consideration of five Annex II species and six Annex I habitats.

As a consequence of the modest nature of the proposed amendments, absence of any Annex I habitats/Annex II species, the distance from Natura 2000 sites and indirect links to Natura 2000 sites, modest emissions and the absence of resources, it is not envisaged that there will be significant adverse effects on the integrity of the River Moy cSAC, in view of the site's conservation objectives.

5.2 Finding of No Significant Effects Matrix.

The following table has been prepared with reference to the format *Assessment of plans and projects significantly affecting Natura 2000 sites; Methodological Guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC, 2002) to illustrate the detailed assessment of the Findings of No Significant Effects (FONSE) on the integrity of Natura 2000 sites by virtue of the proposed variation.

Table 5.1 Finding of No Significant Effects Matrix

Name of project or plan	Proposed Variation No. 4 of the Castlebar & Environs Development Plan 2008-2014
Name and location of Natura 2000 sites	Full list of Natura 2000 sites illustrated in Figure 3.1, and listed in Table 3.1
Description of the project or plan	The variation of the Castlebar & Environs Development Plan 2008-2014 ⁴ applies to existing zoned land and simply allows residential development to take place on Phase 2 lands in order to provide sufficient lands to meet the population and housing targets set by measures set out in Mayo County Development 2014-2020 and the regional Planning Guidelines for the West Region 2010-2022
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No, the proposed variation is not directly connected with or necessary to the management of any Natura 2000 site
Are there other projects or plans that together with the	It is not envisaged that any other plan or project will result in negative cumulative or in-combination effects on any of the

⁴ Section 177R (1) of the Planning and Development Act, 2000 (as amended)

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project or plan being assessed could affect the site(s) (provide details)?	Natura 2000 sites within 15 km of the proposed variation which is deemed very modest in nature.
Assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.	It is considered that the proposed variation (alone or in combination) <u>will not</u> affect any Natura 2000 site(s) in a negative way, by virtue of nature of the proposed amendments.
Explain why these effects are not considered significant.	Minor effects envisaged on the surrounding environment are not considered to impact on the Natura 2000 network as no land-take, loss, fragmentation, reduction in species density or habitat reduction or fragmentation is predicted as a consequence of the proposed variation, alone or in-combination with other plans and projects.
Data collected to carry out the Screening Assessment	
Who carried out the Assessment	Iain Douglas Forward Planning Section Mayo County Council
Sources of data	Guidance documents listed in Section 1.3 in addition to assessment of National Biodiversity Data Centre (DoAHtG) species mapping, NPWS database (Natura 2000 site synopses, Standard Data Form and conservation objectives), Mayo County Council GIS data (NPWS/EPA species records, OSi and Western River Basin District) and other documents / papers as listed in References Section
Level of assessment	Desktop study
Where can the full results of the Assessment Screening be accessed and viewed?	Forward Planning Section, Mayo County Council
Overall Conclusion	

There is one Natura 2000 site considered, the River Moy cSAC, but it is not envisaged that the proposed variation of the Castlebar & Environs Plan 2008-2014 will give rise to significant adverse impacts on the integrity of the Natura 2000 sites, alone and in combination with other plans and projects, in view of the site's conservation objectives. Adverse effects on the River Moy SAC are not envisaged as a consequence of the proposed variation due to the nature of the amendments which are considered minor.

It is not considered necessary to proceed to a Stage 2 Appropriate Assessment.

References

- Fossitt, J.A., 2000. *A Guide to Habitats in Ireland*. The Heritage Council
- James J. King (2006) The status and distribution of lamprey in the River Barrow SAC. *Irish Wildlife Manuals* No. 21. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland
- NPWS, 2008. *The Status of EU-protected Habitats and Species in Ireland; Conservation Status in Ireland of Habitats and Species listed in the European Council Directive on the Conservation of Habitats, Flora and Fauna 92/43/EEC*
- NPWS, 2010. *River Moy cSAC (002298) Site Synopsis*
- NPWS (2011) Conservation Objectives: River Barrow and River Nore SAC 002162. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Galway Bay Complex SAC 000268. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- O'Connor, W. (2007) A Survey of Juvenile Lamprey Populations in the Corrib and Suir Catchments. *Irish Wildlife Manuals* No. 26. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

Appendix I

Site Synopsis – River Moy cSAC

Site Name: River Moy SAC

Site Code: 002298

This site comprises almost the entire freshwater element of the River Moy and its tributaries including both Loughs Conn and Cullin. The system drains a catchment area of 805 sq. km. Most of the site is in Co. Mayo, though parts are in west Sligo and north Roscommon. Apart from the Moy itself, other rivers included within the site are the Deel, Bar Deela, Castlehill, Addergoole, Clydagh and Manulla on the west side, and the Glenree, Yellow, Strade, Gweestion, Trimogue, Sonnagh, Mullaghanoe, Owengarve, Eighnagh and Owenaher on the east side. The underlying geology is Carboniferous Limestone for the most part, though Carboniferous Sandstone is present at the extreme west of the site, with Dalradian Quartzites and schists at the south-west. Some of the tributaries at the east, the south of Lough Conn and all of Lough Cullin are underlain by granite. There are many towns adjacent to but not within the site. These include Ballina, Crossmolina, Foxford, Swinford, Kiltimagh and Charlestown.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- | |
|--|
| <p>[7110] Raised Bog (Active)*
[7120] Degraded Raised Bog
[7150] Rhynchosporion Vegetation
[7230] Alkaline Fens
[91A0] Old Oak Woodlands
[91E0] Alluvial Forests*</p> <p>[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>)</p> |
|--|

On the slopes and rising ground around the southern shores of Loughs Conn and Cullin, oak woodlands are found. Sessile Oak (*Quercus petraea*) is the dominant tree species, with an understorey of Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Downy Birch (*Betula pubescens*), with some Ash (*Fraxinus excelsior*). Additional species are associated with the lakeshore such as Rock Whitebeam (*Sorbus rupicola*), Aspen (*Populus tremula*), Silver Birch (*B. pendula*) and the shrubs Guelder-rose

(*Viburnum opulus*), Buckthorn (*Rhamnus catharticus*) and Spindle (*Euonymus europaeus*). The ground flora is usually composed of Bilberry (*Vaccinium myrtillus*), Great Wood-rush (*Luzula sylvatica*), Wood-sorrel (*Oxalis acetosella*), buckler-ferns (*Dryopteris aemula* and *D. dilatata*), Hard Fern (*Blechnum spicant*), Common Cow-wheat (*Melampyrum pratense*) and Bracken (*Pteridium aquilinum*). The rare Narrow-leaved Helleborine (*Cephalanthera longifolia*), protected under the Flora (Protection) Order, 1999, occurs in association with the woodlands. Also found in these woodlands is the snail *Spermodea lamellata*, a species associated with old natural woodlands.

Alluvial woodland occurs at several locations along the shores of the lakes but is particularly well developed along the river at Coryosla Bridge. Principal tree species are willows (including *Salix cinerea* subsp. *oleifolia*) and Alder (*Alnus glutinosa*). Herbaceous species include Royal Fern (*Osmunda regalis*), Meadowsweet (*Filipendula ulmaria*) and Reed Canary-grass (*Phalaris arundinacea*). The woods are flooded by seasonal fluctuations in lake level.

On higher ground adjacent to the woodlands is blanket bog with scattered shrubs and trees on the drier areas. The rocky knolls often bear Juniper (*Juniperus communis*) or Gorse (*Ulex europaeus*), with some unusual rare herb species such as Intermediate Wintergreen (*Pyrola media*) and Lesser Twayblade (*Listera cordata*).

Within the site are a number of raised bogs including those at Kilgarriff, Gowlaun, Derrynabrock, Tawnaghbeg and Cloongoonagh. These are examples of raised bogs at the north-western edge of the spectrum and possess many of the species typical of such in Ireland, including an abundance of Bog Asphodel (*Narthecium ossifragum*), Carnation Sedge (*Carex panicea*) and the moss *Campylopus atrovirens*. Some of the bogs include significant areas of active raised bog habitat. Well developed pool and hummock systems with quaking mats of bog mosses (*Sphagnum* spp.), Bog Asphodel and White Beaked-sedge (*Rhynchospora alba*) are present. Many of the pools contain a diversity of plant species, including Bogbean (*Menyanthes trifoliata*), the bog moss *Sphagnum cuspidatum*, *Campylopus atrovirens*, Common Cottongrass (*Eriophorum angustifolium*), Great Sundew (*Drosera anglica*) and occasional Lesser Bladderwort (*Utricularia minor*). Several of the hummock-forming mosses (*Sphagnum fuscum* and *S. imbricatum*) which occur here are quite rare in this region and add to the scientific interest of the bogs within the overall site.

Depressions on the bogs, pool edges and erosion channels, where the vegetation is dominated by White Beaked-sedge comprise the habitat 'Rhynchosporion vegetation'. Associated species in this habitat at the site include Bog Asphodel, sundews, Deergrass (*Scirpus cespitosus*) and Carnation Sedge.

Degraded raised bog is present where the hydrology of the uncut bogs has been affected by peat cutting and other land use activities in the surrounding area, such as afforestation and associated drainage, and also the Moy arterial drainage. Species typical of the active raised bog habitat may still be present but the relative abundances differ. A typical example of the degraded habitat, where drying has

occurred at the edge of the high bog, contains an abundance and more uniform cover of Heather (*Calluna vulgaris*), Carnation Sedge, Deergrass and sometimes Bog-myrtle (*Myrica gale*). Occurring in association with the uncut high bog are areas of wet regenerating cutover bog with species such as Common Cottongrass, bog mosses and sundew, while on the drier areas, the vegetation is mostly dominated by Purple Moor-grass (*Molinia caerulea*). Natural regeneration with peat-forming capability will be possible over time with some restorative measures.

Alkaline fen is considered to be well developed within the site. An extensive stand occurs as part of a wetland complex at Mannin and Island Lakes on the Glore River. Key diagnostic species of the *Schoenus* association characteristic of rich fens include the bryophytes *Campylium stellatum*, *Aneura pinguis* and *Scorpidium scorpioides*, and the herbaceous species Long-stalked Yellow-sedge (*Carex lepidocarpa*), Grass-of-parnassus (*Parnassia palustris*) and Common Butterwort (*Pinguicula vulgaris*). Other fen species include Black Bog-rush (*Schoenus nigricans*), Purple Moor-grass, Marsh Helleborine (*Epipactis palustris*), Meadow Thistle (*Cirsium dissectum*) and Blunt-flowered Rush (*Juncus subnodulosus*). The rare moss *Bryum uliginosum* occurs on exposed marl at a ditch to the east of Island Lake.

The open water of Loughs Conn and Cullin is moderately hard with relatively low colour and good transparency. The phytoplankton of the lake is dominated by diatoms and blue-green algae and there is evidence that the latter group is more common now than in former years. This indicates that nutrient inflow is occurring. The changes in Lough Conn appear to represent an early phase in the eutrophication process. Stoneworts still present include *Chara aspera*, *C. delicatula* and *Nitella cf. opaca*. Other plants found in the shallower portions include pondweed species (*Potamogeton* spp.). Where there is a peat influence Intermediate Bladderwort (*Utricularia intermedia*) is characteristic, while Water Lobelia (*Lobelia dortmanna*) often grows in sand. Narrow reedbeds and patches of Yellow Water-lily (*Nuphar lutea*) occur in some of the bays.

Drainage of the Moy in the 1960s lowered the level of the lakes, exposing wide areas of stony shoreline and wet grassland, which are liable to flooding in winter. This increased the habitat diversity of the shoreline and created a number of marginal wetlands, including fens and marshes. Plant species of note in the lake-margin include Heath Cudweed (*Omalotheca sylvatica*), Great Burnet (*Sanguisorba officinalis*) and Irish Lady's-tresses (*Spiranthes romanzoffiana*). These three species are listed on the Irish Red Data list and are protected under the Flora (Protection) Order, 1999.

Other habitats present within the site include wet grassland dominated by rushes (*Juncus* spp.) grading into species-rich marsh in which sedges are common. Among the other species found in this habitat are Yellow Iris (*Iris pseudacorus*), Water Mint (*Mentha aquatica*), Purple Loosestrife (*Lythrum salicaria*) and Soft Rush (*Juncus effusus*).

Rusty Willow (*Salix cinerea* subsp. *oleifolia*) scrub and pockets of wet woodland dominated by Alder (*Alnus glutinosa*) have become established in places throughout the site. Ash (*Fraxinus excelsior*) and Downy Birch (*Betula pubescens*) are common in

the latter and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Yellow Iris, horsetails (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

Small pockets of conifer plantation, close to the lakes and along the strip both sides of the rivers, are included in the site.

The Moy system is one of Ireland's premier salmon waters and it also encompasses two of Ireland's best lake trout fisheries in Loughs Conn and Cullin. Although the Atlantic Salmon (*Salmo salar*) is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the E.U. Habitats Directive. The Moy is a most productive catchment in salmon terms and this can be attributed to its being a fingered system with a multiplicity of 1st to 5th order tributaries which are large enough to support salmonids < 2 years of age while at the same time being too small to support significant adult trout numbers and are therefore highly productive in salmonid nursery terms.

Salmon run the Moy every month of the year. Both multi-sea-winter fish and grilse are present. The salmon fishing season is 1st February to 30th September. The peak of the spring fishing is in April and the grilse begin running in early May. The average weight of the spring fish is 9 lb and the grilse range from about 3-7 lb. In general spring fish are found more frequently in the rivers at the western extent of the Moy system.

The Arctic Char (*Salvelinus alpinus*), an interesting relict species from the last ice age, which is listed as threatened in the Irish Red Data Book has been recorded from Lough Conn and in only a few other lakes in Ireland. The latest reports suggest that it may now have disappeared from the site.

The site is also important for the presence of four other species listed on Annex II of the E.U. Habitats Directive, namely Sea Lamprey, Brook Lamprey, Otter and White-clawed Crayfish. The Sea Lamprey is regularly encountered in the lower stretches of the river around Ballina, while the Otter and White-clawed Crayfish are widespread throughout the system. In addition, the site also supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger, Irish Hare and Daubenton's Bat. Common Frog, another Red Data Book species, also occurs within the site.

Loughs Conn and Cullin support important concentrations of wintering waterfowl and both are designated Special Protection Areas (SPAs). A nationally important population of the Annex I species Greenland White-fronted Goose (average 113 over 6 winters 1994/95 to 1999/00) is centred on Lough Conn. Whooper Swans also occur (numbers range between 25 to 50), along with nationally important populations of Tufted Duck 635, Goldeneye 189 and Coot 464. A range of other species occur on the lakes in regionally important concentrations, notably Wigeon 303, Teal 154, Mallard 225, Pochard 182, Lapwing >1,000 and Curlew 464. Golden Plover also frequent the lakes, with numbers ranging between 700 and 1,000.

Loughs Conn and Cullin are one of the few breeding sites for Common Scoter in Ireland. Breeding has occurred on Lough Conn since about the 1940s when about 20-30 pairs were known. A census in 1983 recorded 29 pairs. Breeding was first proved on Lough Cullin in 1983 when 24 pairs were recorded. In 1995, 24-26 pairs were recorded at Lough Conn and 5 pairs at Lough Cullin. The latest survey in 1999 gives a total of 30 birds for both lakes, comprising only 5 pairs, 18 unpaired males and 2 unpaired females. The reason for the decline is not known but may be due to predation by mink, possible changes in food supply and/or redistribution to other sites. The Common Scoter is a Red Listed species.

Agriculture, with particular emphasis on grazing, is the main land use along the Moy. Much of the grassland is unimproved but improved grassland and silage fields are also present. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the large lakes. Fishing is the main tourist attraction on the Moy and there are a large number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The North Western Regional Fishery Board have erected fencing along selected stretches of the river as part of their salmonid enhancement programme. Other aspects of tourism are concentrated around Loughs Conn and Cullin.

Afforestation has occurred in the past around the shores of Loughs Conn and Cullin. The coniferous trees are due for harvesting shortly. It is proposed to replant with native tree species in this area. Forestry is also present along many of the tributaries and in particular along the headwaters of the Deel. Forestry poses a threat in that sedimentation and acidification can occur. Sedimentation can cover the gravel beds resulting in a loss of suitable spawning grounds. The Moy was arterially dredged in the 1960s. Water levels have been reduced since that time. This is particularly evident along the shores of Loughs Conn and Cullin and in the canal-like appearance of some river stretches. Ongoing maintenance dredging is carried out along stretches of the river system where the gradient is low. This is extremely destructive to salmonid habitat in the area.

The site supports populations of several species listed on Annex II of the E.U. Habitats Directive, and habitats listed on Annex I of this Directive, as well as examples of other important habitats. The presence of a fine example of broadleaved woodland in this part of the country increases the overall habitat diversity and adds to the ecological value of the site, as does the presence of the range of nationally rare and Red Data Book plant and animal species.

Appendix II
Conservation Objectives – River Moy cSAC

National Parks and Wildlife Service

Conservation Objectives Series

River Moy SAC 002298



An Roinn Ealaíon, Oidhreachta,
Gnóthaí Réigiúnacha, Tuaithe agus Gaeltachta

Department of Arts, Heritage,
Regional, Rural and Gaeltacht Affairs



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Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

* indicates a priority habitat under the Habitats Directive

002298 River Moy SAC

1092	White-clawed Crayfish <i>Austropotamobius pallipes</i>
1095	Sea Lamprey <i>Petromyzon marinus</i>
1096	Brook Lamprey <i>Lampetra planeri</i>
1106	Salmon <i>Salmo salar</i>
1355	Otter <i>Lutra lutra</i>
7110	Active raised bogs*
7120	Degraded raised bogs still capable of natural regeneration
7150	Depressions on peat substrates of the Rhynchosporion
7230	Alkaline fens
91A0	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)*

Please note that this SAC overlaps with Killala Bay/Moy Estuary SPA (004036) and Lough Conn and Lough Cullin SPA (004228). It is adjacent to Killala Bay/Moy Estuary SAC (000458), Lough Hoe Bog SAC (000633), Bellacorick Bog Complex SAC (001922) and Ox Mountains Bogs SAC (002006). See map 2. The conservation objectives for this site should be used in conjunction with those for overlapping and adjacent sites as appropriate.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	1998
Title :	Conservation management of the white-clawed crayfish, (<i>Austropotamobius pallipes</i>)
Author :	Reynolds, J.D.
Series :	Irish Wildlife Manual No. 1
Year :	2004
Title :	The status and distribution of lamprey and shad in the Slaney and Munster Blackwater SACs
Author :	King, J.J.; Linnane, S.M.
Series :	Irish Wildlife Manuals No. 14
Year :	2004
Title :	A survey of juvenile lamprey populations in the Moy catchment
Author :	O'Connor, W.
Series :	Irish Wildlife Manuals No. 15
Year :	2006
Title :	Otter survey of Ireland 2004/2005
Author :	Bailey, M.; Rochford, J.
Series :	Irish Wildlife Manual No. 23
Year :	2006
Title :	Assessment of impacts of turf cutting on designated raised bogs
Author :	Fernandez Valverde, F.; MacGowan, F.; Farrell, M.; Crowley, W.; Croal, Y.; Fanning, M.; McKee, A-M.
Series :	Unpublished report to NPWS
Year :	2007
Title :	Supporting documentation for the Habitats Directive Conservation Status Assessment - backing documents. Article 17 forms and supporting maps
Author :	NPWS
Series :	Unpublished report to NPWS
Year :	2008
Title :	National survey of native woodlands 2003-2008
Author :	Perrin, P.M.; Martin, J.; Barron, S.; O'Neill, F.H.; McNutt, K.E.; Delaney, A.
Series :	Unpublished Report to NPWS
Year :	2010
Title :	A provisional inventory of ancient and long-established woodland in Ireland
Author :	Perrin, P.M.; Daly, O.H.
Series :	Irish Wildlife Manual No. 46
Year :	2010
Title :	A technical manual for monitoring white-clawed crayfish (<i>Austropotamobius pallipes</i>) in Irish lakes
Author :	Reynolds, J., O'Connor, W., O'Keeffe, C.; Lynn, D.
Series :	Irish Wildlife Manual No.45
Year :	2012
Title :	Killala Bay/Moy Estuary SAC (00458) Coastal Supporting doc V1
Author :	NPWS
Series :	Conservation objectives supporting document

Year :	2012
Title :	Killala Bay/Moy Estuary SAC (000458) Marine supporting doc v.1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2013
Title :	National otter survey of Ireland 2010/12
Author :	Reid, N.; Hayden, B.; Lundy, M.G.; Pietravalle, S.; McDonald, R.A.; Montgomery, W.I.
Series :	Irish Wildlife Manual No. 76
Year :	2014
Title :	Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland, Version 2.0
Author :	Perrin, P.M.; Barron, S.J.; Roche, J.R.; O'Hanrahan, B.
Series :	Irish Wildlife Manual No. 79
Year :	2014
Title :	Raised Bog Monitoring and Assessment Survey 2013
Author :	Fernandez, F.; Connolly K.; Crowley W.; Denyer J.; Duff K.; Smith G.
Series :	Irish Wildlife Manual No. 81
Year :	2014
Title :	National raised bog SAC management plan
Author :	Department of Arts, Heritage and the Gaeltacht
Series :	Draft for consultation. 15 January 2014
Year :	2014
Title :	Derrynabrock Bog (SAC 002298), Co.Roscommon/Mayo, Site Report
Author :	Fernandez, F.; Connolly, K.; Crowley, W.; Denyer J.; Duff K.; Smith G.
Series :	Raised bog monitoring and assessment survey 2013
Year :	2014
Title :	Tawnaghbeg Bog (SAC 002298), Co. Mayo, Site Report
Author :	Fernandez, F.; Connolly, K.; Crowley, W.; Denyer J.; Duff K.; Smith G.
Series :	Raised bog monitoring and assessment survey 2013
Year :	2016
Title :	River Moy SAC (site code: 2298) Conservation objectives supporting document- raised bog habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	1982
Title :	Otter survey of Ireland
Author :	Chapman, P.J.; Chapman, L.L.
Series :	Unpublished report to Vincent Wildlife Trust
Year :	2002
Title :	Reversing the habitat fragmentation of British woodlands
Author :	Peterken, G.
Series :	WWF-UK, London

Year :	2003
Title :	Monitoring the river, sea and brook lamprey, <i>Lampetra fluviatilis</i> , <i>L. planeri</i> and <i>Petromyzon marinus</i>
Author :	Harvey, J.; Cowx, I.
Series :	Conserving Natura 2000 Rivers Monitoring Series No. 5. English Nature, Peterborough
Year :	2003
Title :	Identifying lamprey. A field key for sea, river and brook lamprey
Author :	Gardiner, R.
Series :	Conserving Natura 2000 rivers, Conservation techniques No. 4. English Nature, Peterborough
Year :	2007
Title :	Evolutionary history of lamprey paired species <i>Lampetra fluviatilis</i> L. and <i>Lampetra planeri</i> Bloch as inferred from mitochondrial DNA variation
Author :	Espanhol, R.; Almeida, P.R.; Alves, M.J.
Series :	Molecular Ecology 16, 1909-1924
Year :	2010
Title :	Otter tracking study of Roaringwater Bay
Author :	De Jongh, A.; O'Neill, L.
Series :	Unpublished draft report to NPWS
Year :	2015
Title :	Behaviour of sea lamprey (<i>Petromyzon marinus</i> L.) at man-made obstacles during upriver spawning migration: use of telemetry to assess efficacy of weir modifications for improved passage
Author :	Rooney, S.M.; Wightman, G.D.; O Conchuir, R.; King, J.J.
Series :	Biology and Environment: Proc. R. Ir. Acad. 115 B, 1-12
Year :	2015
Title :	River engineering works and lamprey ammocoetes; impacts, recovery, mitigation
Author :	King, J.J.; Wightman, G.D.; Hanna, G.; Gilligan, N.
Series :	Water and Environment Journal, 29, 482-488
Year :	2016
Title :	The status of Irish salmon stocks in 2015 with precautionary catch advice for 2016
Author :	Standing Scientific Committee on Salmon
Series :	Independent scientific report to Inland Fisheries Ireland

Spatial data sources

Year :	2014
Title :	Scientific Basis for Raised Bog Conservation in Ireland
GIS Operations :	RBSB13_SACs_ARB_DRB dataset, RBSB13_SACs_2012_HB dataset, RBSB13_SACs_DrainagePatterns_5k dataset and RBSB13_SAC_LIDAR_DTMs dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	Potential 7110; digital elevation model; drainage patterns (maps 3 and 5)
Year :	2013
Title :	Raised Bog Monitoring and Assessment Survey 2013
GIS Operations :	RBMA13_ecotope_map dataset clipped to SAC boundary. Appropriate ecotopes selected and exported to new dataset. Expert opinion used as necessary to resolve any issues arising
Used For :	7110 ecotopes (map 4)
Year :	Digitised 2003
Title :	Raised Bog Restoration Project 1999
GIS Operations :	Ecotope dataset clipped to SAC boundary. Appropriate ecotopes selected and exported to new dataset. Expert opinion used as necessary to resolve any issues arising
Used For :	7110 ecotopes (map 4)
Year :	Revision 2010
Title :	National Survey of Native Woodlands 2003-2008. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	91A0, 91E0 (map 6)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	Creation of a 10m buffer on the terrestrial side of river banks data; creation of 20m buffer applied to canal centreline data. Creation of a 20m buffer applied to river and stream centreline data; These datasets combined with the derived OSI 1:5000 vector lake buffer data. Overlapping regions investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1355 (no map)
Year :	2010
Title :	OSi 1:5000 IG vector dataset
GIS Operations :	Creation of 80m buffer on the aquatic side of lake data; creation of 10m buffer on the terrestrial side of lake data. These datasets combined with the derived OSi Discovery Series river and canal datasets. Overlapping regions investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising. Creation of 250m buffer on aquatic side of the lake boundary to highlight potential commuting points
Used For :	1355 (map 8)
Year :	2016
Title :	NPWS rare and threatened species database
GIS Operations :	Dataset created from spatial references in database records. Expert opinion used as necessary to resolve any issues arising
Used For :	1092 (map 7)

Conservation Objectives for : River Moy SAC [002298]

7110 Active raised bogs

To restore the favourable conservation condition of Active raised bogs in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Restore area of active raised bog to 132.4ha, subject to natural processes	There are five raised bogs listed for River Moy SAC. The total area of Active Raised Bog (ARB) habitat for these five bogs was mapped at 45.3ha. Area of Degraded Raised Bog (DRB) on the High Bog (HB) has been modelled as 152.4ha. See map 3. However, it is estimated that only 82.1ha is potentially restorable to ARB by drain blocking. The total potential ARB on the HB is therefore estimated to be 127.4ha. Eco-hydrological assessments of the cutover estimates that an additional 5.0ha of bog forming habitats could be restored. The long term target for ARB is therefore 132.4ha. See raised bog supporting document for further details on this and following attributes
Habitat distribution	Occurrence	Restore the distribution and variability of active raised bog across the SAC. See map 4 for most recently mapped distribution	ARB occurs on most of the bogs in the River Moy SAC. DRB occurs on all five bogs in the River Moy SAC. There is also potential for ARB restoration on cutover areas surrounding the bogs (see area target above)
High bog area	Hectares	No decline in extent of high bog necessary to support the development and maintenance of active raised bog. See map 3	The area of high bog within the five raised bogs listed for River Moy SAC in 2012 (latest figure available) was 498.4ha (DAHG 2014)
Hydrological regime: water levels	Centimetres	Restore appropriate water levels throughout the site	For ARB, mean water level needs to be near or above the surface of the bog lawns for most of the year. Seasonal fluctuations should not exceed 20cm, and should only be 10cm below the surface, except for very short periods of time. Open water is often characteristic of soak systems
Hydrological regime: flow patterns	Flow direction; slope	Restore, where possible, appropriate high bog topography, flow directions and slopes. See map 5 for current situation	ARB depends on mean water levels being near or above the surface of bog lawns for most of the year. Long and gentle slopes are the most favourable to achieve these conditions. Changes to flow directions due to subsidence of bogs can radically change water regimes and cause drying out of high quality ARB areas and soak systems
Transitional areas between high bog and adjacent mineral soils (including cutover areas)	Hectares; distribution	Restore adequate transitional areas to support/protect active raised bog and the services it provides	ARB is threatened due to effects of past drainage and peat-cutting around the margins of the bogs within the River Moy SAC. Natural marginal habitats no longer exist. Eco-hydrological assessments have evaluated the potential for ARB restoration on cutover areas (see note for habitat area attribute above)
Vegetation quality: central ecotope, active flush, soaks, bog woodland	Hectares	Restore 66.2ha of central ecotope/active flush/soaks/bog woodland as appropriate	At least 50% of ARB habitat should be high quality (i.e. central ecotope, active flush, soaks, bog woodland). Target area of active raised bog for the site has been set at 132.4ha (see area target above)
Vegetation quality: microtopographical features	Hectares	Restore adequate cover of high quality microtopographical features	High quality microtopography (hummocks, hollows and pools) is well developed in less disturbed parts of the bogs in River Moy SAC
Vegetation quality: bog moss (<i>Sphagnum</i>) species	Percentage cover	Restore adequate cover of bog moss (<i>Sphagnum</i>) species to ensure peat-forming capacity	<i>Sphagnum</i> cover varies naturally across Ireland with relatively high cover in the east to lower cover in the west. Hummock forming species such as <i>Sphagnum austinii</i> are particularly good peat formers. <i>Sphagnum</i> cover and distribution also varies naturally across a site

Typical ARB species: flora	Occurrence	Restore, where appropriate, typical active raised bog flora	Typical flora species include widespread species, as well as those with more restricted distributions but typical of the habitat's subtypes or geographical range
Typical ARB species: fauna	Occurrence	Restore, where appropriate, typical active raised bog fauna	Typical fauna species include widespread species, as well as those with more restricted distributions but typical of the habitat's subtypes or geographical range
Elements of local distinctiveness	Occurrence	Maintain features of local distinctiveness, subject to natural processes	An important feature of interest in relation to the raised bogs in the River Moy SAC is the fact that they occur at the north-western edge of the geographic range of the habitat in Ireland
Negative physical indicators	Percentage cover	Negative physical features absent or insignificant	Negative physical indicators include: bare peat, algae dominated pools and hollows, marginal cracks, tear patterns, subsidence features such as dry mineral mounds/ridges emerging or expanding and evidence of burning
Vegetation composition: native negative indicator species	Percentage cover	Native negative indicator species at insignificant levels	Disturbance indicators include species indicative of conditions drying out such as abundant bog asphodel (<i>Narthecium ossifragum</i>), deergrass (<i>Trichophorum germanicum</i>) and harestail cotton-grass (<i>Eriophorum vaginatum</i>) forming tussocks; abundant magellanic bog-moss (<i>Sphagnum magellanicum</i>) in pools previously dominated by <i>Sphagnum</i> species typical of very wet conditions (e.g. feathery bog-moss (<i>S. cuspidatum</i>)); and indicators of frequent burning events such as abundant <i>Cladonia floerkeana</i> and high cover of carnation sedge (<i>Carex panicea</i>) (particularly in true midlands raised bogs)
Vegetation composition: non-native invasive species	Percentage cover	Non-native invasive species at insignificant levels and not more than 1% cover	Most common non-native invasive species include lodgepole pine (<i>Pinus contorta</i>), rhododendron (<i>Rhododendron ponticum</i>), and pitcherplant (<i>Sarracenia purpurea</i>)
Air quality: nitrogen deposition	kg N/ha/year	Air quality surrounding bog close to natural reference conditions. The total N deposition should not exceed 5kg N/ha/yr	Change in air quality can result from fertiliser drift; adjacent quarry activities; or other atmospheric inputs. The critical load range for ombrotrophic bogs has been set as between 5 and 10kg N/ha/yr (Bobbink and Hettelingh, 2011). The latest N deposition figures for the area around the bogs in River Moy SAC suggests that the current level is approximately 8.5kg N/ha/yr (Henry and Aherne, 2014)
Water quality	Hydrochemical measures	Water quality on the high bog and in transitional areas close to natural reference conditions	Water chemistry within raised bogs is influenced by atmospheric inputs (rainwater). However, within soak systems, water chemistry is influenced by other inputs such as focused flow or interaction with underlying substrates. Water chemistry in areas surrounding the high bog varies due to influences of different water types (bog water, regional groundwater and run-off from surrounding mineral lands)

Conservation Objectives for : River Moy SAC [002298]

7120 Degraded raised bogs still capable of natural regeneration

The long-term aim for Degraded raised bogs still capable of natural regeneration is that its peat-forming capability is re-established; therefore, the conservation objective for this habitat is inherently linked to that of Active raised bogs (7110) and a separate conservation objective has not been set in River Moy SAC

Attribute	Measure	Target	Notes
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Conservation Objectives for : River Moy SAC [002298]

7150 Depressions on peat substrates of the Rhynchosporion

Depressions on peat substrates of the Rhynchosporion is an integral part of good quality Active raised bogs (7110) and thus a separate conservation objective has not been set for the habitat in River Moy SAC

Attribute	Measure	Target	Notes
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7230 Alkaline fens

To maintain the favourable conservation condition of Alkaline fens in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	The full extent of of this habitat within the SAC is unknown. An extensive area is known to occur as part of a wetland complex on the Glone River, north-west of Ballyhaunis but there are likely to be other areas present in the SAC
Habitat distribution	Occurrence	No decline, subject to natural processes	Full distribution of the habitat in this SAC is currently unknown- see note above
Hydrological regime	Metres	Appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	Maintenance of groundwater, surface water flows and water table levels within natural ranges is essential for this wetland habitat
Peat formation	Flood duration	Active peat formation, where appropriate	In order for peat to form, water levels need to be slightly below or above the soil surface for c.90% of the time (Jim Ryan, pers. comm.)
Water quality: nutrients	Water chemistry measures	Appropriate water quality to support the natural structure and functioning of the habitat	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus with the latter tending to be the limiting nutrient
Vegetation structure: typical species	Percentage	Maintain vegetation cover of typical species including brown mosses and vascular plants	Mosses listed for fen in this SAC include <i>Campyllum stellatum</i> , <i>Aneura pinguis</i> and <i>Scorpidium scorpioides</i> while vascular plants include long-stalked yellow sedge (<i>Carex lepidocarpa</i>), black bog rush (<i>Schoenus nigricans</i>), blunt-flowered rush (<i>Juncus subnodulosus</i>), purple moor-grass (<i>Molinia caerulea</i>), grass of Parnassus (<i>Parnassia palustris</i>), butterwort (<i>Pinguicula vulgaris</i>), marsh helleborine (<i>Epipactis palustris</i>) and meadow thistle (<i>Cirsium dissectum</i>) (internal NPWS files)
Vegetation composition: trees and shrubs	Percentage	Cover of scattered native trees and shrubs less than 10%	Scrub and trees will tend to invade if fen conditions become drier. Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., 2014)
Physical structure: disturbed bare ground	Percentage	Cover of disturbed bare ground less than 10%. Where tufa is present, disturbed bare ground less than 1%	While grazing may be appropriate in this habitat, excessive areas of disturbed bare ground may develop due to unsuitable grazing regimes. Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., 2014)
Physical structure: drainage	Percentage	Areas showing signs of drainage as a result of drainage ditches or heavy trampling less than 10%	Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., 2014)

Conservation Objectives for : River Moy SAC [002298]

91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

To maintain the favourable conservation condition of Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	Old sessile oakwoods are likely to occur as mosaics with other woodland types and the total extent within the SAC is unknown. Two sites (1763, 1800) in the SAC were surveyed as part of the the National Survey of Native Woodlands (NSNW) (Perrin et al., 2008). Site 1763 (Pontoon) is an extensive area of woodland and 106.3ha was mapped as this Annex I habitat type (or mosaics containing it). See map 6. NB further areas are likely to be present within the SAC
Habitat distribution	Occurrence	No decline. Woodlands surveyed as part of the NSNW are shown on map 6	The main location of this woodland type in the SAC is Pontoon Woods. See note on area above
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large"; woods at least 25ha in size and "small" woods at least 3ha in size	The sizes of at least some of the existing woodlands need to be increased in order to reduce habitat fragmentation and benefit those species requiring "deep" woodland conditions (Peterken, 2002). Topographical and land ownership constraints may restrict expansion
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi-mature trees and shrubs; and well-developed herb layer	Described in Perrin et al (2008)
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Described in Perrin et al. (2008)
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	Oak (<i>Quercus</i> spp.) regenerates poorly. In suitable sites ash (<i>Fraxinus excelsior</i>) can regenerate in large numbers although few seedlings reach pole size
Woodland structure: dead wood	m ³ per hectare; number per hectare	At least 30m ³ /ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Woodland structure: veteran trees	Number per hectare	No decline	Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources
Woodland structure: indicators of local distinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands, archaeological and geological features as well as red-data and other rare or localised species. Perrin and Daly (2010) list Pontoon Wood as possible ancient woodland
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	Species reported in Perrin et al. (2008)

Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including oak (<i>Quercus petraea</i>) and birch (<i>Betula pubescens</i>)	Species reported in Perrin et al. (2008)
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	The following are the most common invasive species in this woodland type: beech (<i>Fagus sylvatica</i>), sycamore (<i>Acer pseudoplatanus</i>), rhododendron (<i>Rhododendron ponticum</i>) and cherry laurel (<i>Prunus laurocerasus</i>)

Conservation Objectives for : River Moy SAC [002298]

91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)

To maintain the favourable conservation condition of Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	Total extent of this habitat within the SAC is unknown and it may occur in mosaics with other woodland types. Two sites (1763, 1800) within the SAC were surveyed as part of the the National Survey of Native Woodlands (NSNW) (Perrin et al., 2008). Map 6 shows surveyed woodlands including areas classified as 91E0 (2.76ha). NB areas mapped as other wet woodland types may also correspond with this Annex I woodland type. There are also likely to be additional areas of this Annex I woodland type within the SAC
Habitat distribution	Occurrence	No decline. Woodlands surveyed as part of the NSNW are shown on map 6	The area of this habitat identified by the NSNW occurs at Prospect (site 1800) on the western shore of Lough Conn. See note on area above
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	The sizes of at least some of the existing woodlands need to be increased in order to reduce habitat fragmentation and benefit those species requiring 'deep' woodland conditions (Peterken, 2002). Topographical and land-ownership constraints may restrict expansion
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi-mature trees and shrubs; and well-developed herb layer	Described in Perrin et al. (2008)
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Described in Perrin et al. (2008)
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	Alder (<i>Alnus glutinosa</i>) and oak (<i>Quercus</i> spp.) regenerate poorly. Ash (<i>Fraxinus excelsior</i>) often regenerates in large numbers although few seedlings reach pole size
Hydrological regime: Flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	Periodic flooding is essential to maintain alluvial woodlands along river floodplains and lakeshores
Woodland structure: dead wood	m ³ per hectare; number per hectare	At least 30m ³ /ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder)	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Woodland structure: veteran trees	Number per hectare	No decline	Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources
Woodland structure: indicators of local distinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands, archaeological and geological features as well as red-data and other rare or localised species

Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	Species reported in Perrin et al. (2008)
Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including including alder (<i>Alnus glutinosa</i>), willows (<i>Salix</i> spp.), oak (<i>Quercus robur</i>) and ash (<i>Fraxinus excelsior</i>)	Species reported in Perrin et al. (2008)
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	The following are the most common invasive species in this woodland type: sycamore (<i>Acer pseudoplatanus</i>) and Himalayan balsam (<i>Impatiens glandulifera</i>). The NSNW notes rhododendron (<i>Rhododendron ponticum</i>) clearance in site 1800

Conservation Objectives for : River Moy SAC [002298]**1092 White-clawed Crayfish *Austropotamobius pallipes***

To maintain the favourable conservation condition of White-clawed Crayfish in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Occurrence	No reduction from baseline. See map 7	The general distribution of white-clawed crayfish in the SAC is that it is widespread in the upper tributaries of the River Moy and the rivers which feed Loughs Conn and Cullin. It is absent from the main River Moy. The named tributaries that it is recorded from are the following: Upstream of Lough Conn: River Deel and its tributaries of the Torean River, Rathnamagh River and Rappa Stream; Fiddaunglass; Addergoole River. Upstream of Lough Cullin: Tobergal River; Clydagh; tributaries of the Toormore and Manulla Rivers. Moy tributaries: Gweeston River; tributaries of the Pollagh, Glore, Yellow and Geestaun Rivers; Killeen River; Spaddagh River; Sonnagh River; Owenaher River; Owengarve River
Population structure: recruitment	Occurrence of juveniles and females with eggs	Juveniles and/or females with eggs in all occupied tributaries	See Reynolds et al. (2010) for further details
Negative indicator species	Occurrence	No alien crayfish species	Alien crayfish species are identified as a major direct threat to this species and as a disease vector. See Reynolds (1998) for further details. Ireland is currently free of non-native invasive crayfish species
Disease	Occurrence	No instances of disease	Crayfish plague is identified as major threat and has occurred in Ireland even in the absence of alien vectors. See Reynolds (1998) for further details. Disease can in some circumstances be introduced through contaminated equipment and water in the absence of vector species
Water quality	EPA Q value	At least Q3-4 at all sites sampled by EPA	Target taken from Demers and Reynolds (2002). Q values based on triennial water quality surveys carried out by the EPA
Habitat quality: heterogeneity	Occurrence of positive habitat features	No decline in heterogeneity or habitat quality	Crayfish need high habitat heterogeneity. Larger crayfish must have stones to hide under, or an earthen bank in which to burrow. Hatchlings shelter in vegetation, gravel and among fine tree-roots. Smaller crayfish are typically found among weed and debris in shallow water. Larger juveniles in particular may also be found among cobbles and detritus such as leaf litter. These conditions must be available on the whole length of occupied habitat

Conservation Objectives for : River Moy SAC [002298]**1095 Sea Lamprey *Petromyzon marinus***

To maintain the favourable conservation condition of Sea Lamprey in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: extent of anadromy	Percentage of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	This SAC only covers the freshwater portion of the River Moy. The adjacent Killala Bay/Moy Estuary SAC (site code: 000485) encompasses the estuarine elements of sea lamprey habitat. Artificial barriers can block or cause difficulties to lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas (Rooney et al. 2015), however, there are no artificial barriers in the Moy catchment limiting lamprey access
Population structure of juveniles	Number of age/size groups	At least three age/size groups present	Attribute and target based on Harvey and Cowx (2003) and O'Connor (2007)
Juvenile density in fine sediment	Juveniles/m ²	Mean catchment juvenile density at least 1/m ²	Juveniles burrow in areas of fine sediment in still water. Attribute and target based on Harvey and Cowx (2003)
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Attribute and target based on spawning bed mapping by Inland Fisheries Ireland (IFI). Lampreys spawn in clean gravels
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	Silting habitat is essential for larval lamprey and they can be severely impacted by sediment removal. Recovery can be rapid and newly-created habitat can be rapidly colonised (King et al., 2015). However, it is vital that such sedimenting habitats are retained. Occupancy in excess of 50% of sites would be 'reasonable' for the Irish catchments examined to date. (King and Linnane, 2004; King et al., unpublished data)

Conservation Objectives for : River Moy SAC [002298]**1096 Brook Lamprey *Lampetra planeri***

To maintain the favourable conservation condition of Brook Lamprey in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Percentage of river accessible	Access to all watercourses down to first order streams	Artificial barriers can block lampreys' migration both up- and downstream, thereby possibly limiting species to specific stretches, restricting access to spawning areas and creating genetically isolated populations (Espanhol et al., 2007). However, there are no artificial barriers in the Moy catchment limiting lamprey access
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	Attribute and target based on data from Harvey and Cowx (2003). It is impossible to distinguish between brook and river lamprey juveniles in the field (Gardiner, 2003), hence they are considered together in this target
Juvenile density in fine sediment	Juveniles/m ²	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Juveniles burrow in areas of fine sediment in still water. Attribute and target based on data from Harvey and Cowx (2003) who state 10/m ² in optimal conditions and more than 2/m ² on a catchment basis
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Attribute and target based on spawning bed mapping by Inland Fisheries Ireland (IFI). Lampreys spawn in clean gravels
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	Silting habitat is essential for larval lamprey and they can be severely impacted by sediment removal. Recovery can be rapid and newly-created habitat can be rapidly colonised (King et al., 2015). However, it is vital that such sedimenting habitats are retained. Occupancy in excess of 50% of sites would be 'reasonable' for the Irish catchments examined to date. (King and Linnane, 2004; King et al., unpublished data)

Conservation Objectives for : River Moy SAC [002298]

1106

Salmon *Salmo salar*

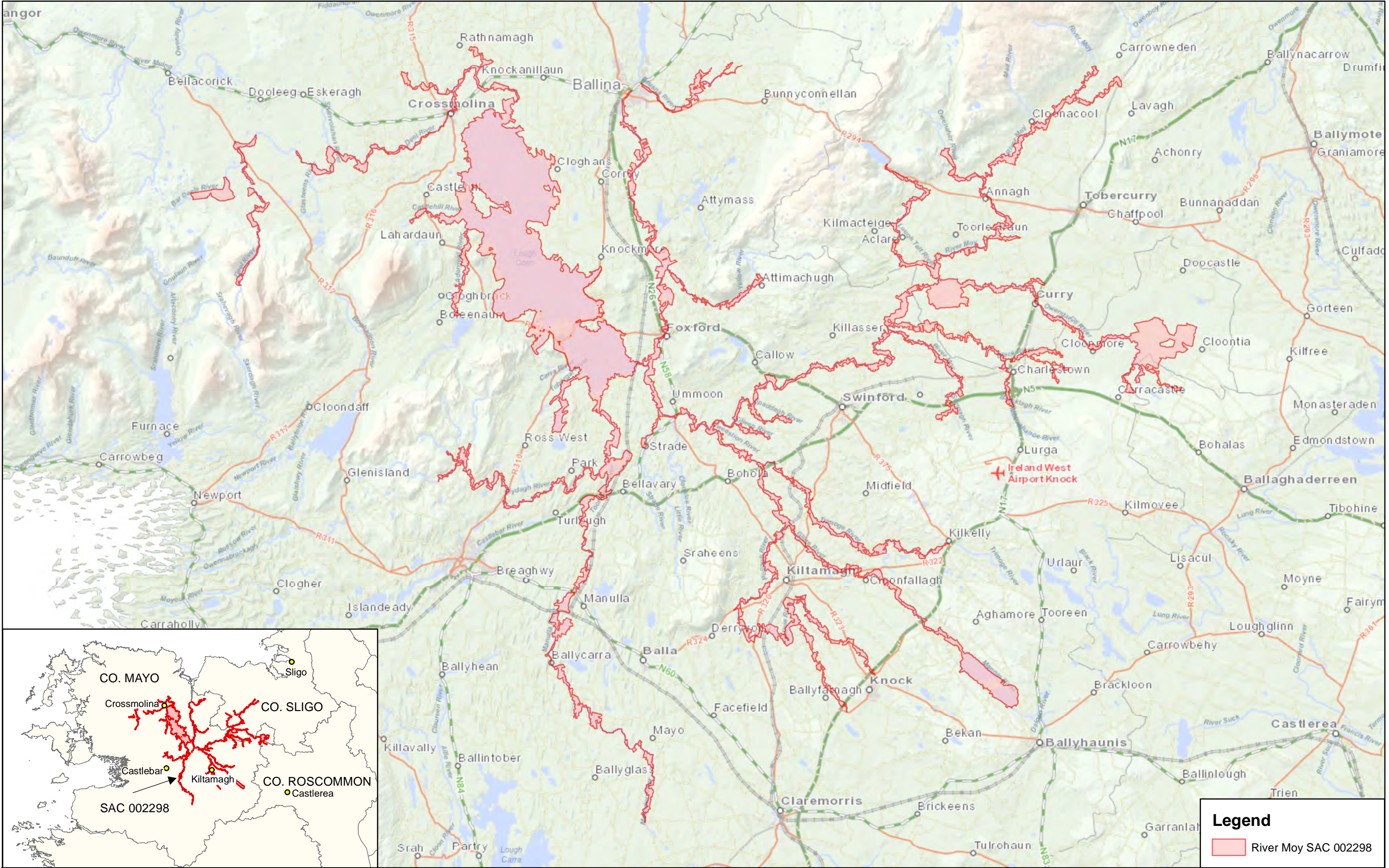
To maintain the favourable conservation condition of Salmon in River Moy SAC, which is defined by the following list of attributes and targets:

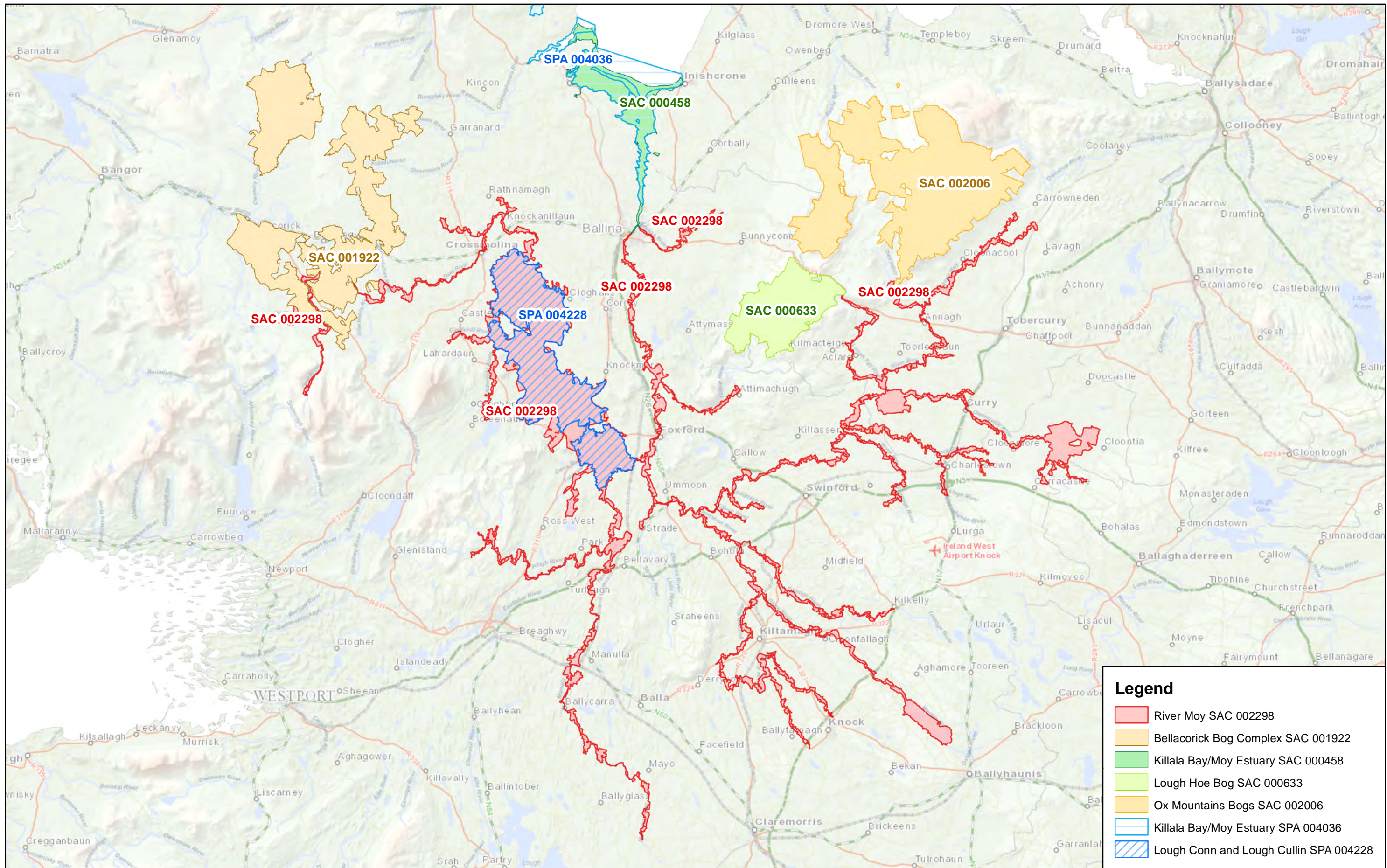
Attribute	Measure	Target	Notes
Distribution: extent of anadromy	Percentage of river accessible	100% of river channels down to second order accessible from estuary	Artificial barriers block salmon's upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. There are no artificial barriers on the Moy catchment limiting salmon access
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded	A conservation limit is defined by the North Atlantic Salmon Conservation Organisation (NASCO) as "the spawning stock level that produces long-term average maximum sustainable yield as derived from the adult to adult stock and recruitment relationship". The target is based on the Standing Scientific Committee of the National Salmon Commission's annual model output of CL attainment levels. See SSC (2016). Stock estimates are either derived from direct counts of adults (rod catch, fish counter) or indirectly by fry abundance counts. For the 2016 SSC advice, the Moy is currently exceeding its CL by 19,012 salmon
Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 minutes sampling	Target is threshold value for rivers currently exceeding their conservation limit (CL)
Out-migrating smolt abundance	Number	No significant decline	Smolt abundance can be negatively affected by a number of impacts such as estuarine pollution, predation and sea lice (<i>Lepeophtheirus salmonis</i>)
Number and distribution of redds	Number and occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes	Salmon spawn in clean gravels. There are no artificial barriers preventing salmon from accessing suitable spawning habitat in this SAC
Water quality	EPA Q value	At least Q4 at all sites sampled by EPA	Q values based on triennial water quality surveys carried out by the Environmental Protection Agency (EPA)

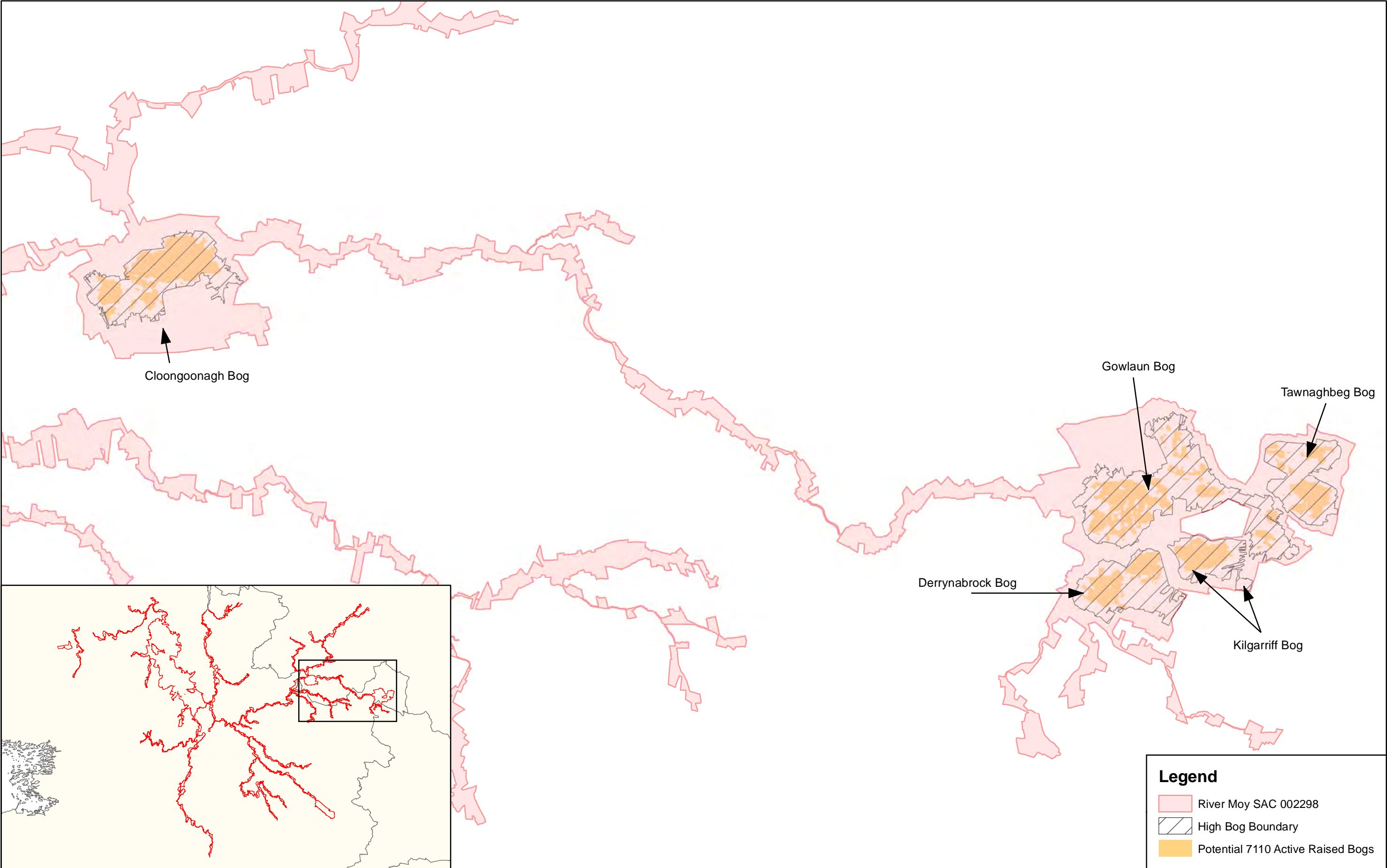
Conservation Objectives for : River Moy SAC [002298]**1355 Otter *Lutra lutra***

To maintain the favourable conservation condition of Otter in River Moy SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. FCS target, based on 1980/81 survey findings, is 88% in SACs. Current range is estimated at 93.6% (Reid et al., 2013)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 1068.8ha	No field survey. Areas mapped to include 10m terrestrial buffer along lake shorelines and along river banks identified as critical for otters (NPWS, 2007)
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 479.4km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake) habitat	Hectares	No significant decline. Area mapped and calculated as 1248.2ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006; Reid et al., 2013)
Barriers to connectivity	Number	No significant increase. For guidance, see map 8	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed

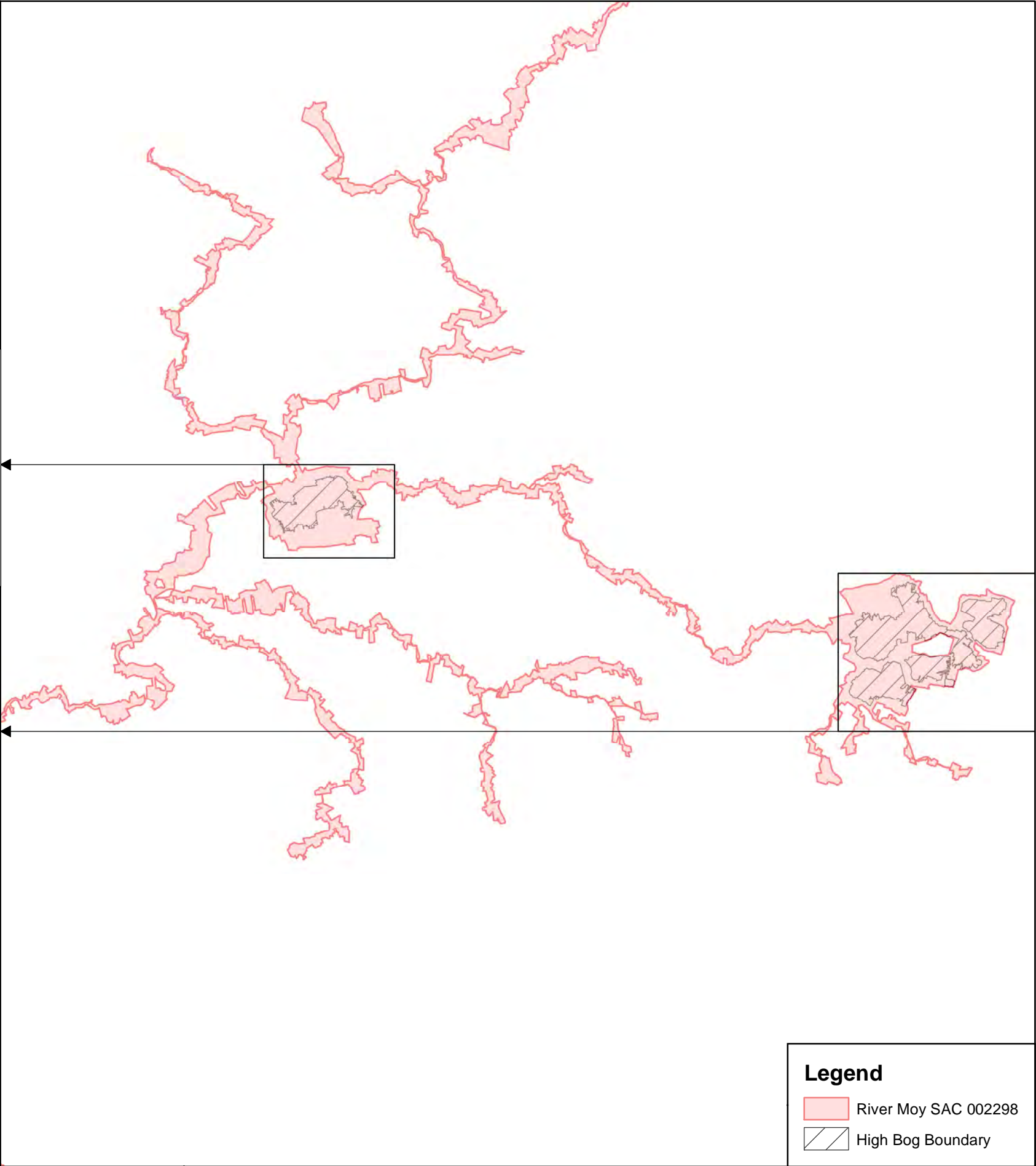
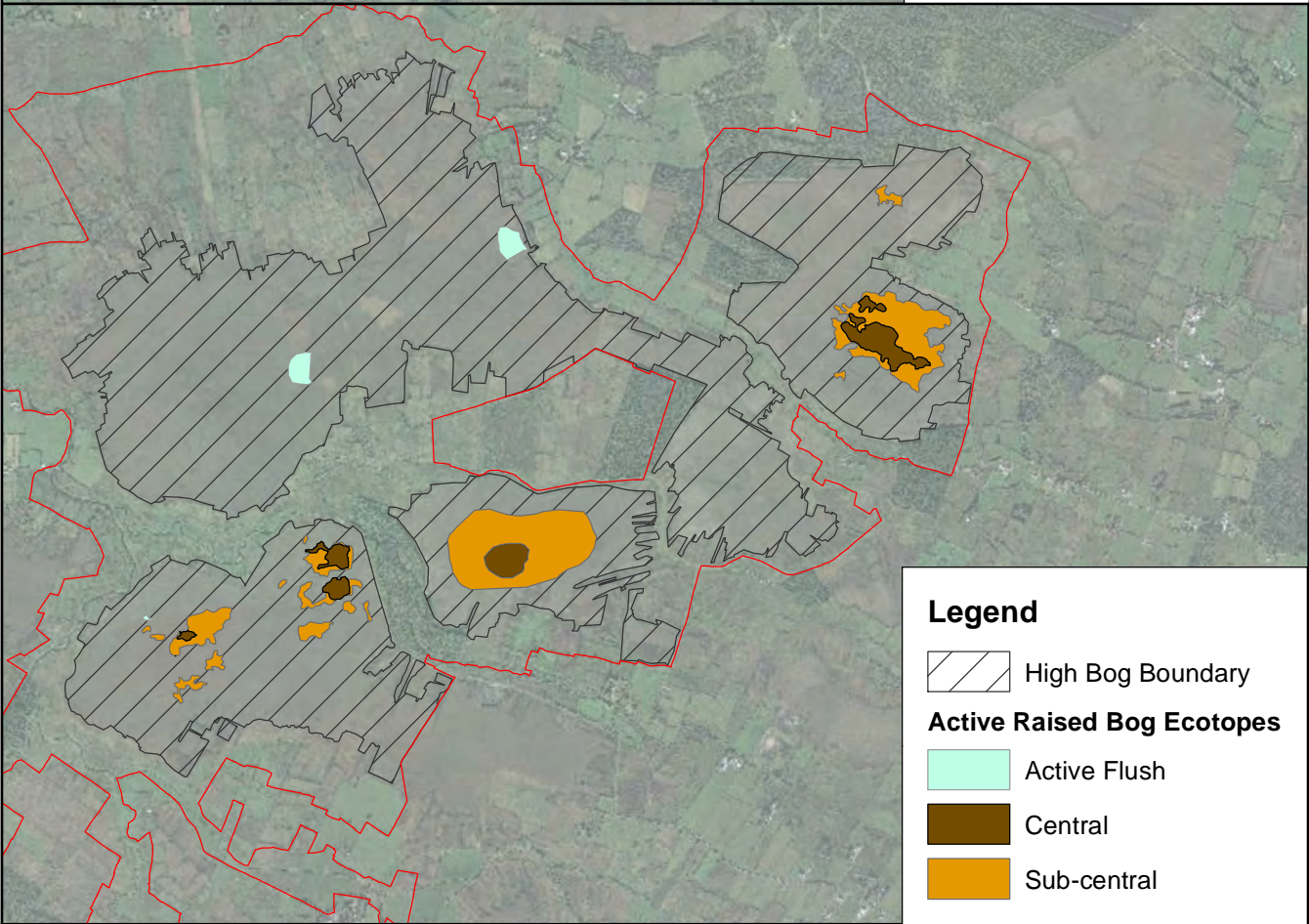
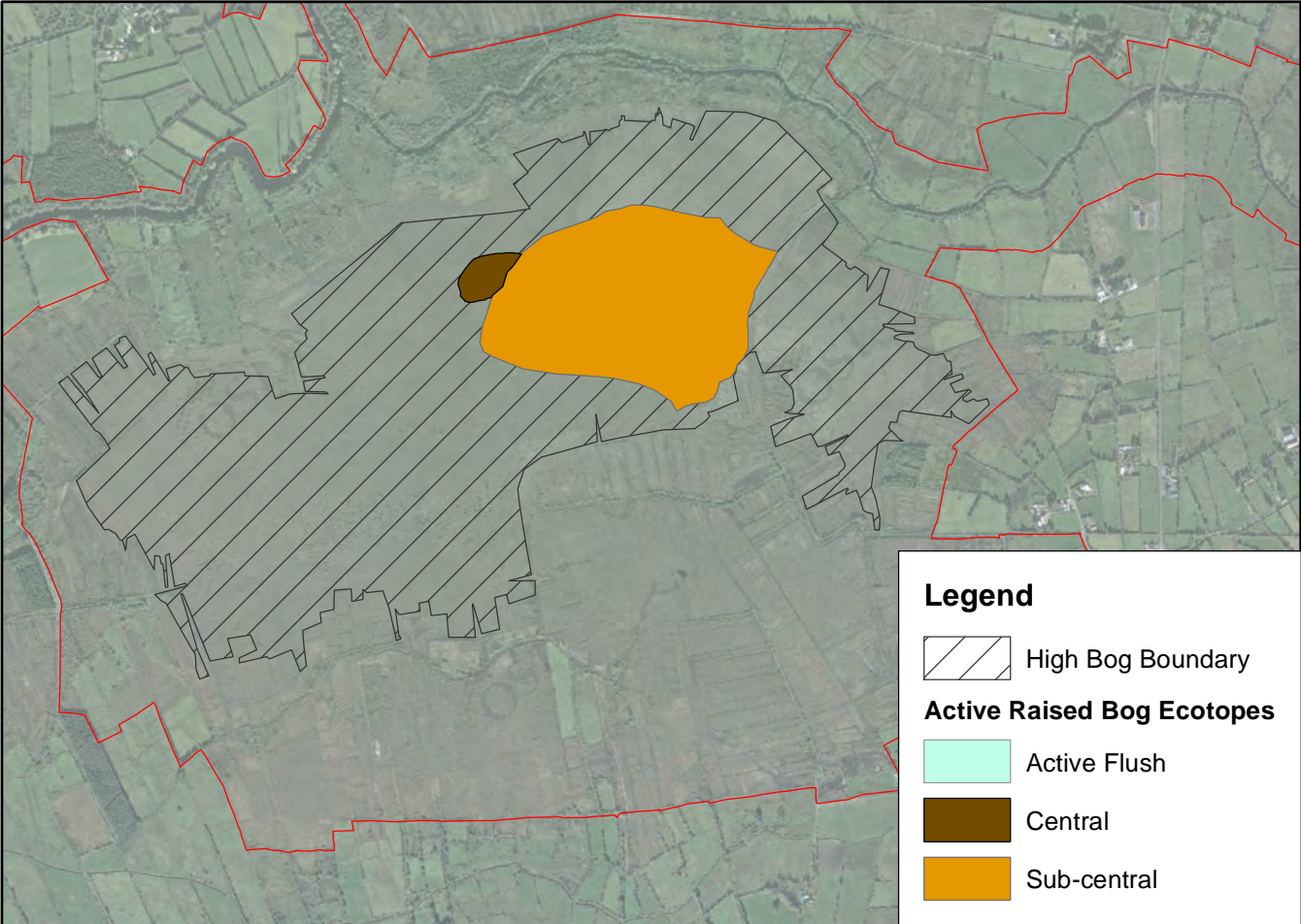


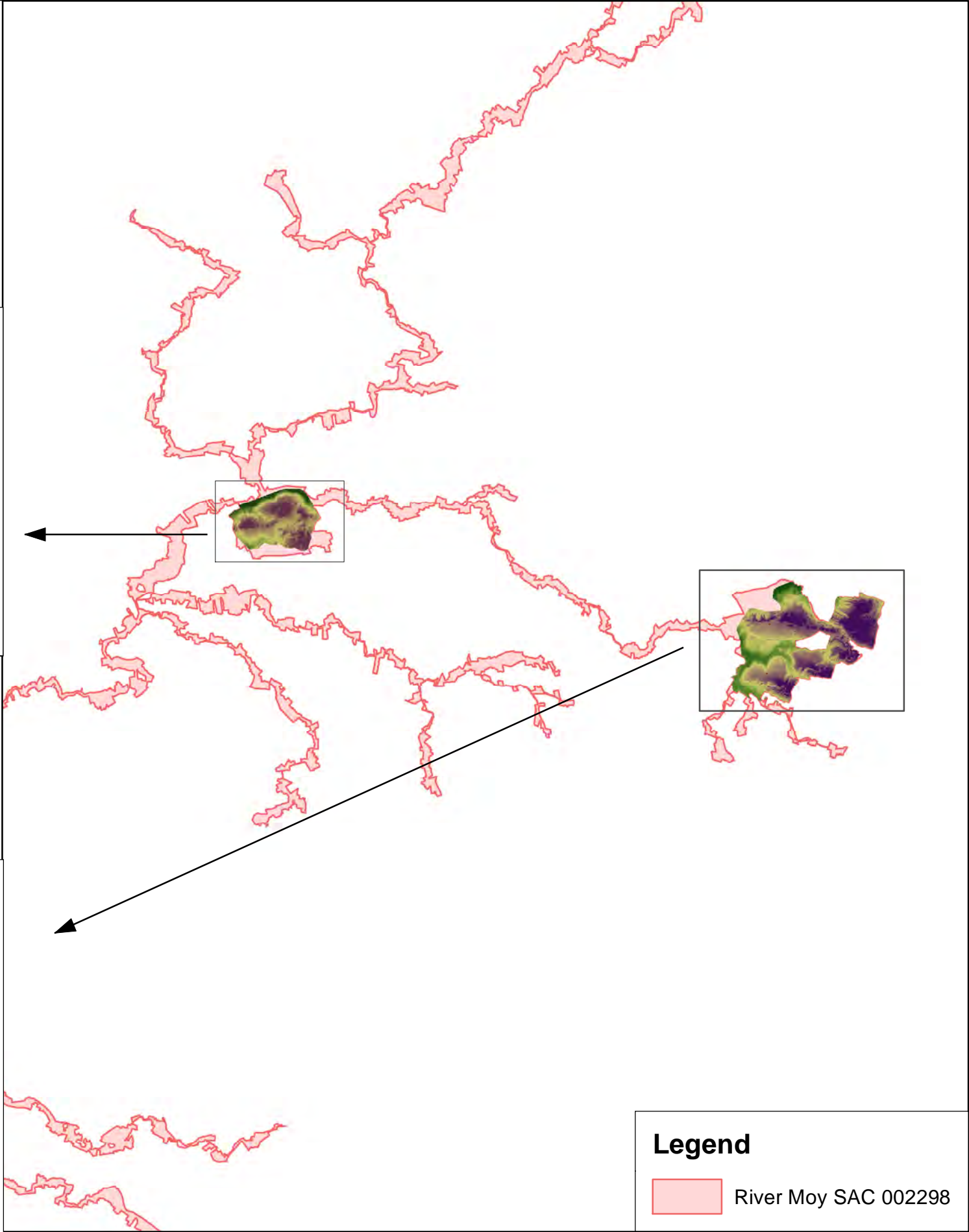
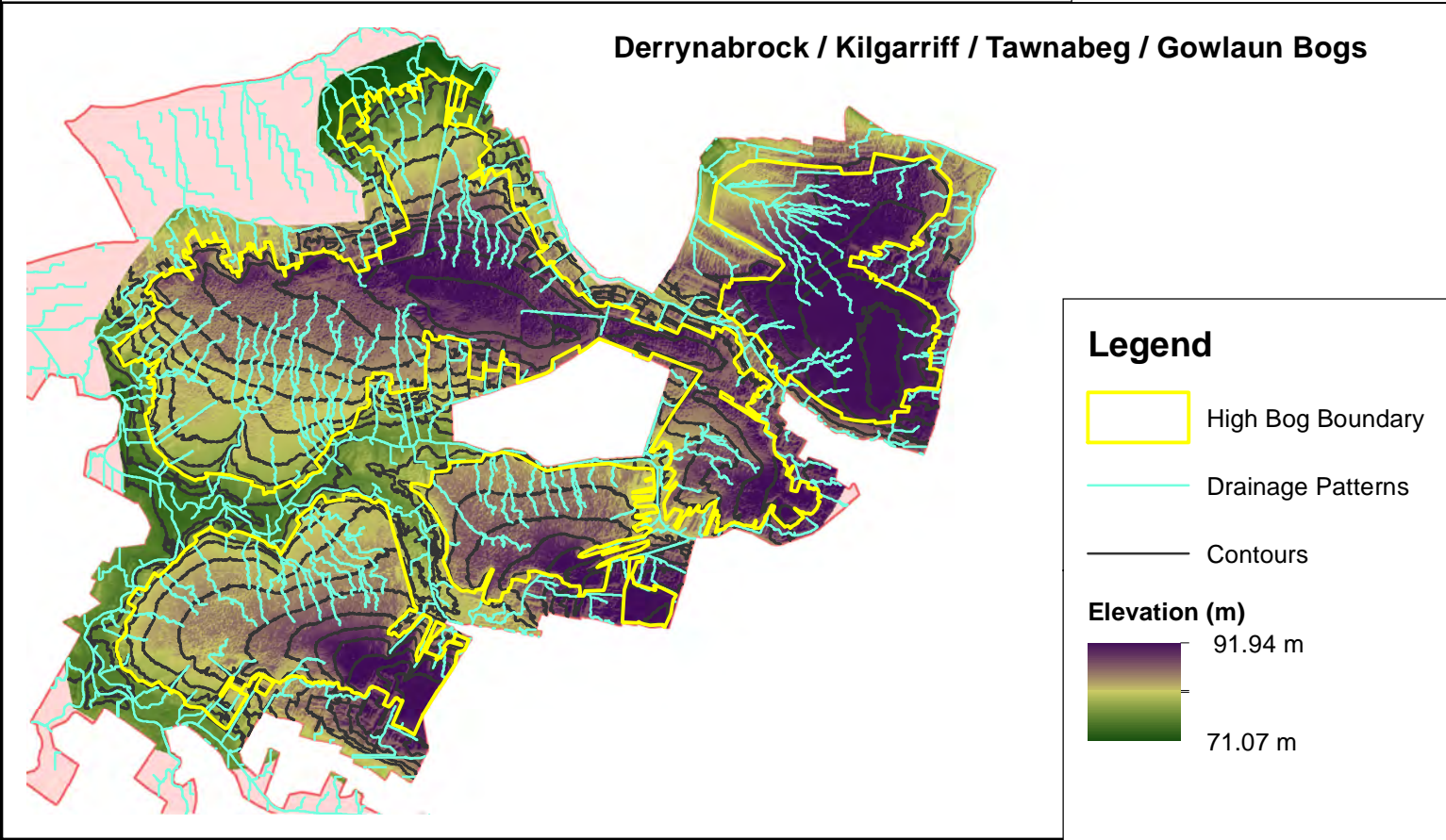
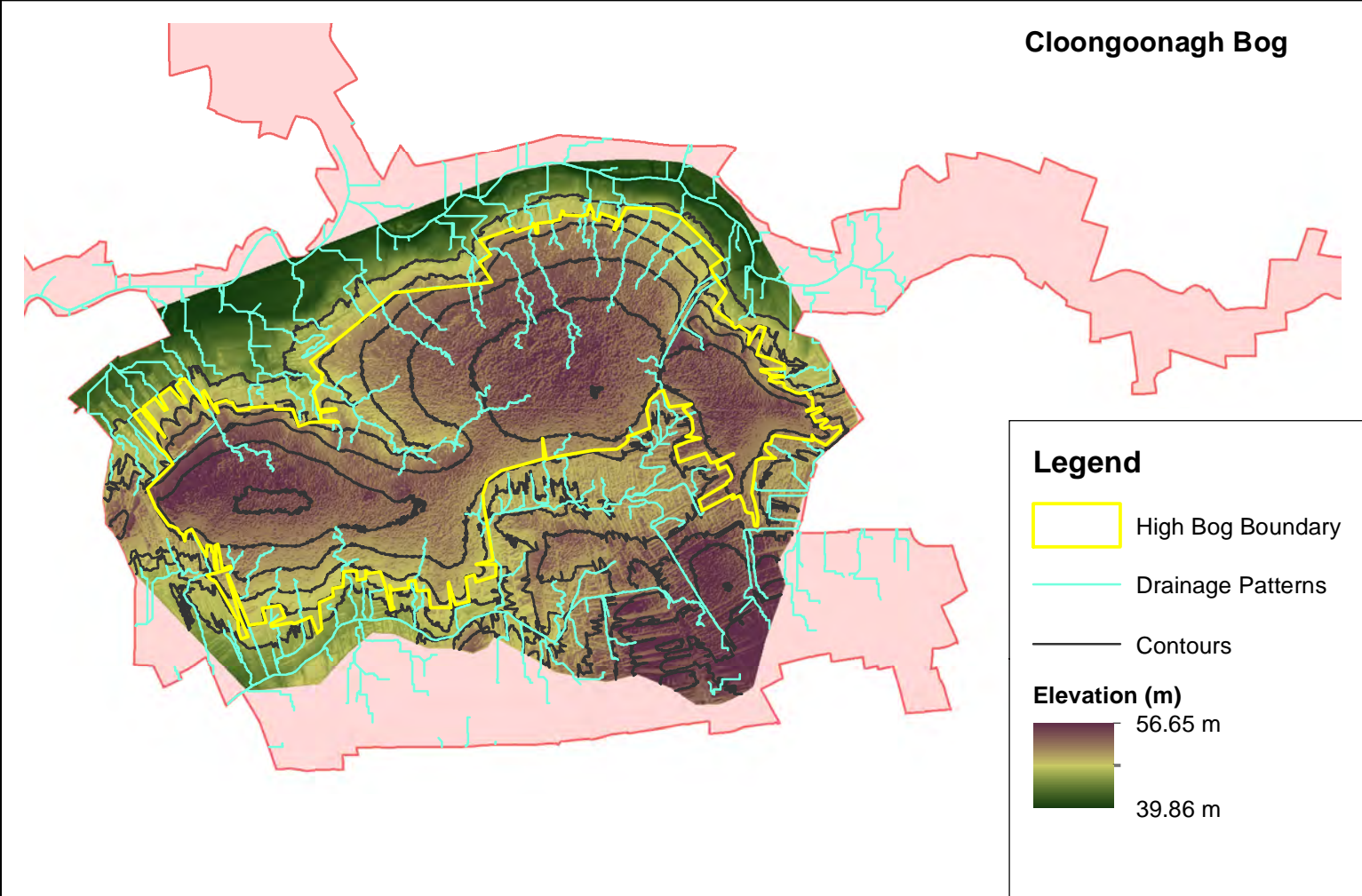


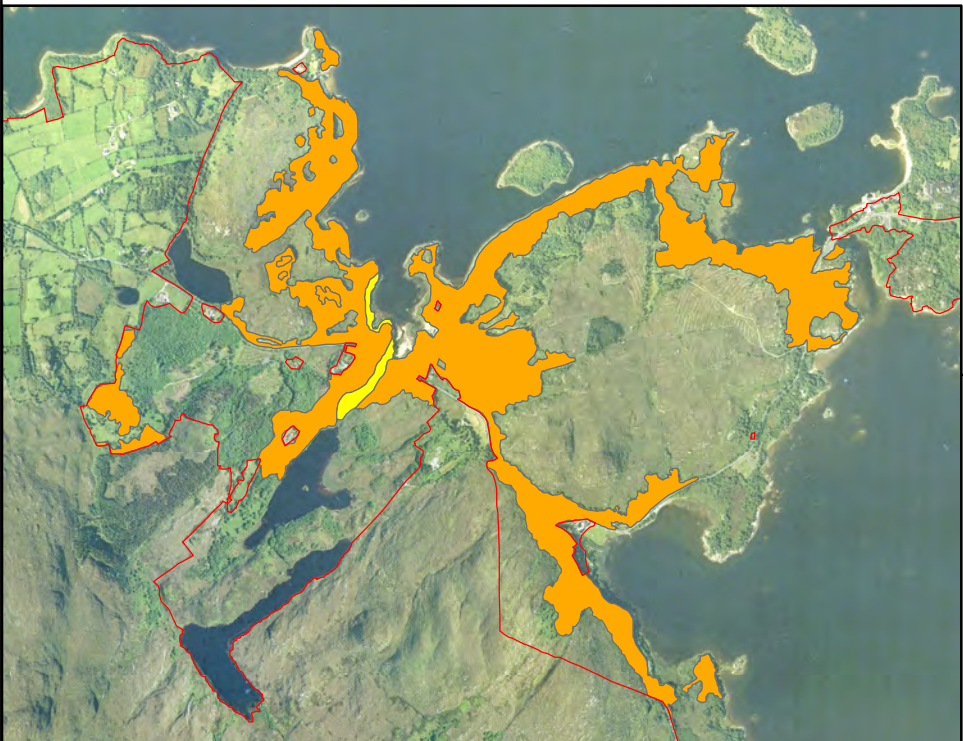
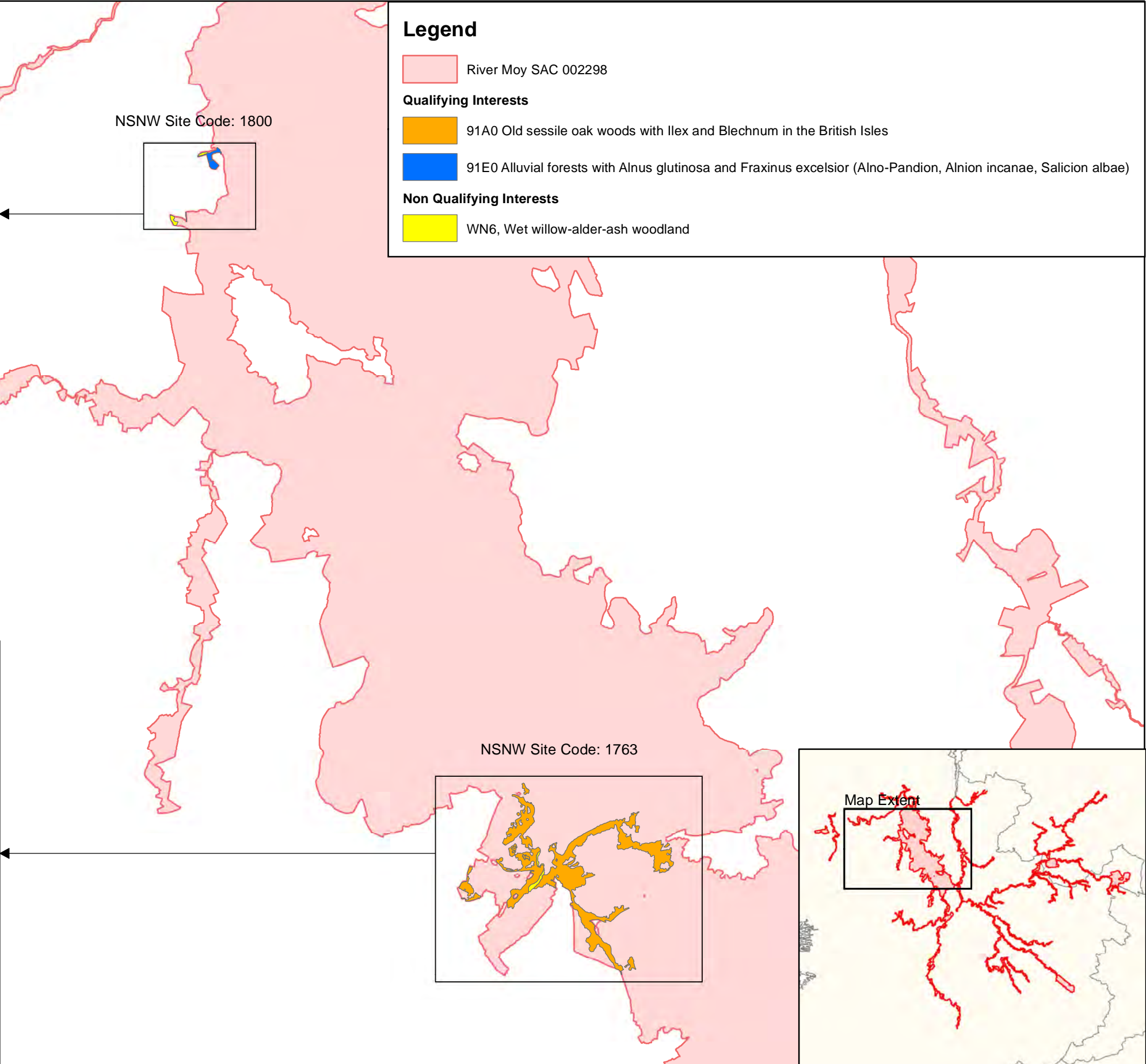


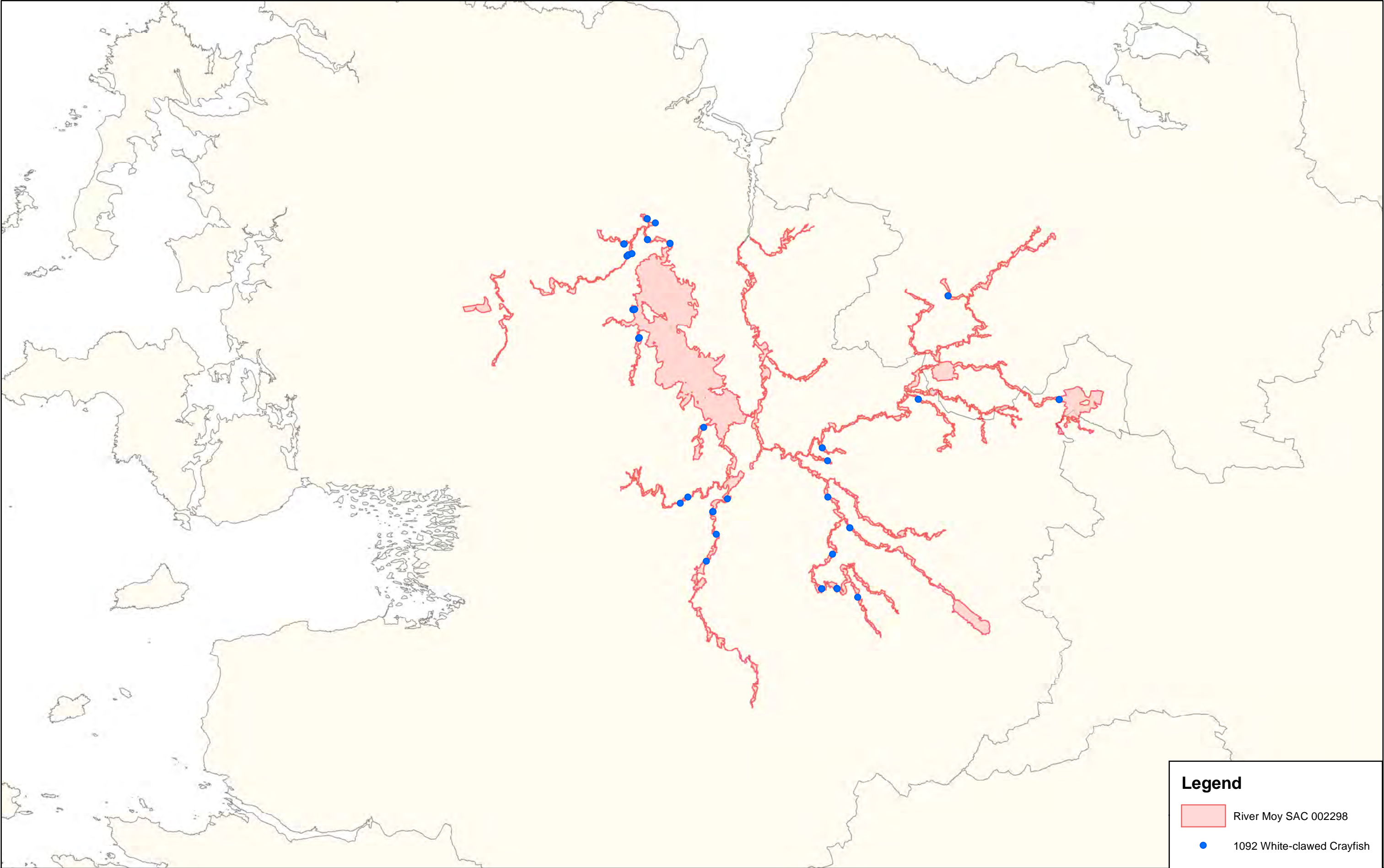
Legend

- River Moy SAC 002298
- High Bog Boundary
- Potential 7110 Active Raised Bogs





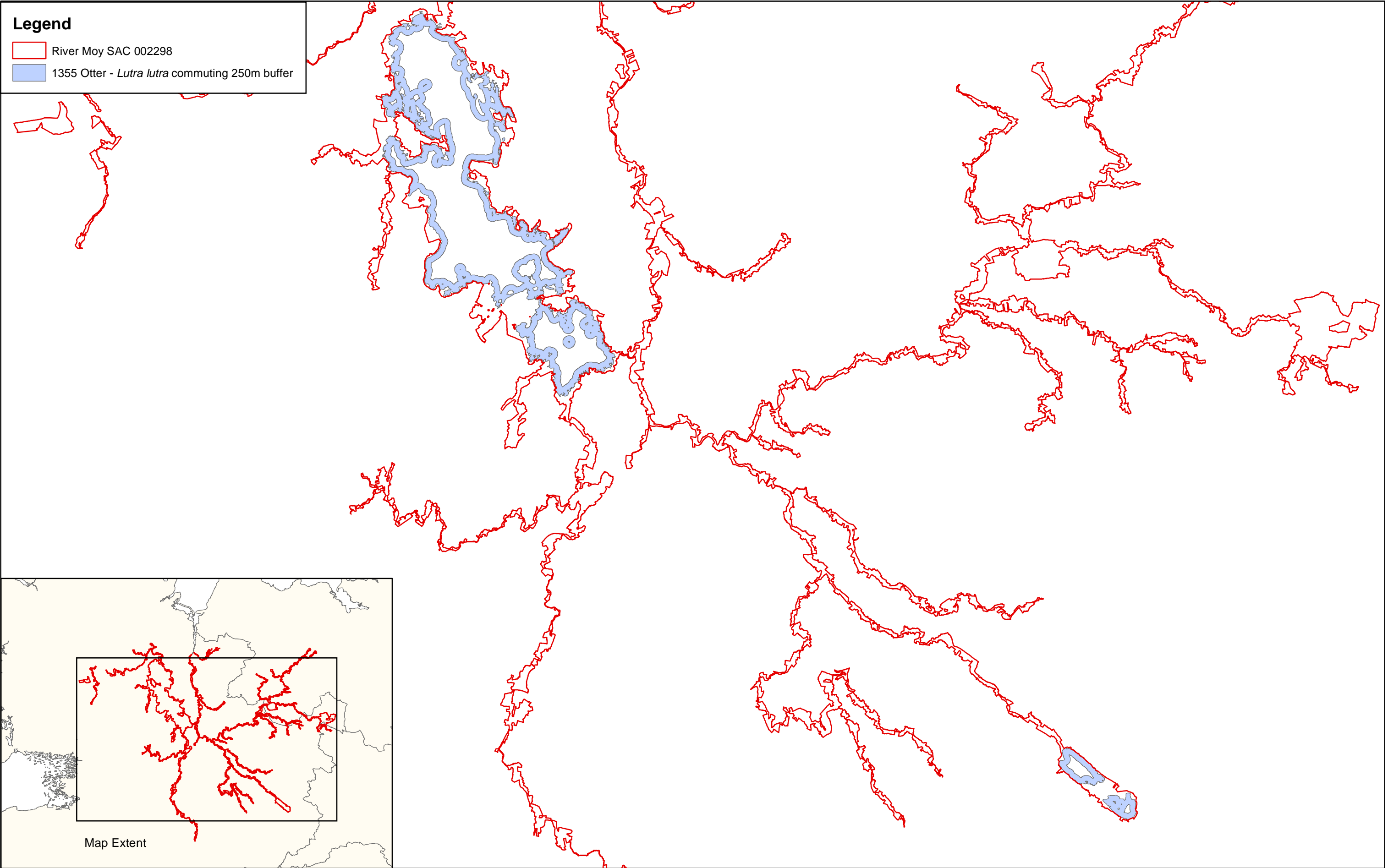




Legend

River Moy SAC 002298

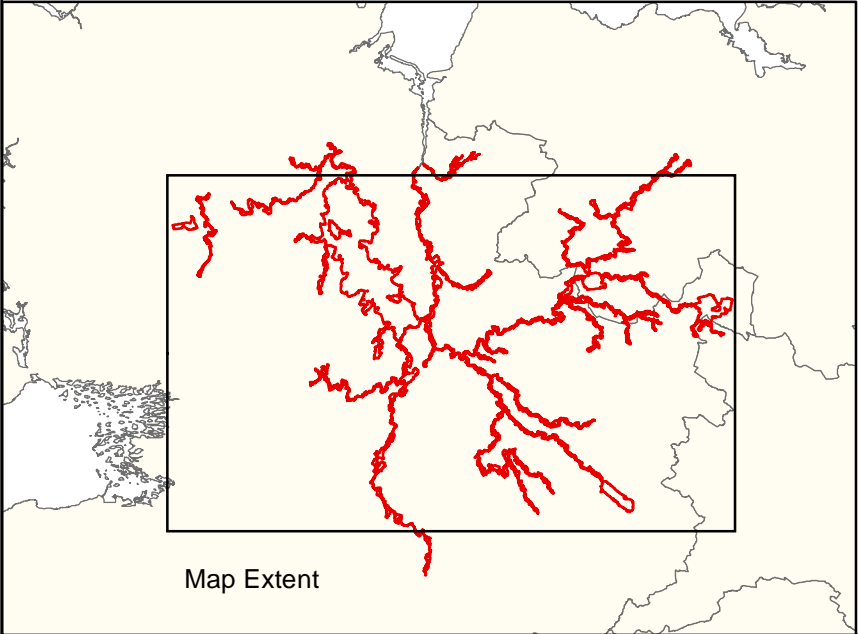
1092 White-clawed Crayfish




Legend

River Moy SAC 002298

1355 Otter - *Lutra lutra* commuting 250m buffer





An tOifig Ealaíon, Oidhreachta,
Gnóthaí Réigiúnacha, Tuaithe agus Gaeltachta

Department of Arts, Heritage,
Regional, Rural and Gaeltacht Affairs

MAP 8:

RIVER MOY SAC

CONSERVATION OBJECTIVES

OTTER COMMUTING

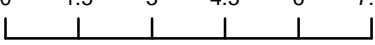
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:

SAC 002298; version 3.01. CO. MAYO,

CO. SLIGO & CO. ROSCOMMON

0 1.5 3 4.5 6 7.5 km



The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas



Map Version 1

Date: July 2016