

Appendix 14.1

Ecology Tables

TABLE 1 - SITE EVALUATION SCHEMEFrom NRA (2006) *Guidelines for Assessment of Ecological Impacts of National Road Schemes*

Rating	Criteria for assessing ecological importance of sites
A	<p>Internationally important</p> <p>Sites designated (or qualifying for designation) as SAC* or SPA* under the EU Habitats or Birds Directives. Undesignated sites containing good examples of Annex I priority habitats under the EU Habitats Directive. Major salmon river fisheries. Major salmonid lake fisheries.</p>
B	<p>Nationally important</p> <p>Sites or waters designated or proposed as NHA's* or statutory Nature Reserves. Undesignated sites containing good examples of Annex I habitats (under EU Habitats Directive). Undesignated sites containing significant populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Major trout river fisheries. Waters with major amenity fishery value. Commercially important coarse fisheries.</p>
C	<p>High value, locally important</p> <p>Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species. Small water bodies with known salmonid populations or with good potential salmonid habitat. Sites containing any listed Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive. Large water bodies with some coarse fisheries value.</p>
D	<p>Moderate value, locally important</p> <p>Sites containing some semi-natural habitat or locally important for wildlife. Small water bodies with some coarse fisheries value or some potential salmonid habitat. Any stream with an unpolluted Q-value rating.</p>
E	<p>Low value, locally important</p> <p>Artificial or highly modified habitats with low species diversity and low wildlife value. Water bodies with no current fisheries value and no significant potential fisheries value.</p>

*SAC = Special Area of Conservation. SPA= Special Protection Area. NHA= Natural Heritage Area

TABLE 2 - CRITERIA FOR ASSESSING IMPACT SIGNIFICANCEFrom NRA (2006) *Guidelines for Assessment of Ecological Impacts of National Road Schemes***TABLE 2(A) TERRESTRIAL SITES**

<i>Site category* ▶</i>	<i>A sites Internationally important</i>	<i>B sites Nationally important</i>	<i>C Sites High value, locally important</i>	<i>D sites Moderate value, locally important</i>	<i>E sites Low value, locally important</i>
<i>Impact level ▼</i>					
Severe negative	Any permanent impacts	Permanent impacts on a large part of a site			
Major negative	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site		
Moderate negative	Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site	
Minor negative		Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site

<i>Site category*</i> ▶ <i>Impact level</i> ▼	<i>A sites</i> <i>Internationally important</i>	<i>B sites</i> <i>Nationally important</i>	<i>C Sites</i> <i>High value, locally important</i>	<i>D sites</i> <i>Moderate value, locally important</i>	<i>E sites</i> <i>Low value, locally important</i>
<i>Neutral</i>	No impacts	No impacts	No impacts	No impacts	Permanent impacts on a small part of a site
<i>Minor positive</i>				Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site
<i>Moderate positive</i>			Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site	
<i>Major positive</i>		Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site		

TABLE 2 (B) AQUATIC SITES

Site Category*

A Sites

	Temporary	Short-term	Medium-term	Long-term
Extensive	Major	Severe	Severe	Severe
Localised	Major	Major	Severe	Severe

B Sites

	Temporary	Short-term	Medium-term	Long-term
Extensive	Major	Major	Severe	Severe
Localised	Moderate	Moderate	Major	Major

C Sites

	Temporary	Short-term	Medium-term	Long-term
Extensive	Moderate	Moderate	Major	Major
Localised	Minor	Moderate	Moderate	Moderate

D Sites

	Temporary	Short-term	Medium-term	Long-term
Extensive	Minor	Minor	Moderate	Moderate
Localised	Not significant	Minor	Minor	Minor

E Sites

	Temporary	Short-term	Medium-term	Long-term
Extensive	Not significant	Not significant	Minor	Minor
Localised	Not significant	Not significant	Not significant	Not significant

In line with the EPA guidelines (EPA 2002), the following terms are defined when quantifying duration:

- Temporary: up to 1 year,
- Short-term: from 1-7 years,
- Medium-term: 7-15 years. Long-term: 15-60 years. Permanent: over 60 years.

Table 3 (a) Description and evaluation of ecological sites within the study area, including those that are intersected by August 2008 route options (highlighted in blue). For details of site ratings see Table 1, Appendix 14.1.

Site Code	Site Description/Habitats	Rating
1	(Shean Upper) Area of wet alder/ash woodland WN6 adjacent to the N20 and section of mature broadleaved/conifer woodland WD2 on adjacent hilltop. Also includes narrow band of young planted WD1 along road and areas of improved agricultural grassland GA1 and arable crops BC1 .	C
2	(Curraghnalaght) Complex of semi-natural grassland including areas of rush dominated wet grassland GS4 amongst sections of willow and gorse scrub WS1 .	D
3	(Ballynaraha/Ballygibbon) Complex of riparian woodland WN5 , conifer and mixed conifer and broadleaved woodland WD2/WD4 , gorse scrub WS1 and some semi-natural grassland along an unnamed tributary of the River Martin.	D

Site Code	Site Description/Habitats	Rating
4	(River Martin Valley, Grenagh-Garrycloyne) Woodland complex along the slopes of the River Martin valley. Habitats present include riparian woodland WN5 , oak-ash-hazel woodland WN2 and wet grassland GS4 along the floodplain. Also potential for wet willow-alder-ash woodland WN6 in waterlogged areas.	C
5	(Glencam) Steep sided river valley with areas of mixed broadleaved woodland WD1 and scrub WS1 . Also with small strips of semi-natural grassland along the river banks and dense bracken HD1 cover in places.	D
6	(Lyradane Stream) The southern valley slopes east of the Pound Br. are planted with young ash WD1/WS2 . The rest of the site consists of willow scrub WS1 grading to willow woodland and potentially wet woodland WN6 at the base of the slope.	C
7	(Carrigcleena) Block of young conifer plantation WD4 .	E
8	(Knockaugarrif – River Clyda valley) Mosaic of grassland, bracken HD1 and gorse scrub WS1 along the valley sides with wet grassland GS4 and willow scrub present along the river banks. Ash and alder woodland along the river banks and the valley sides in places WD1/WN5 .	C
9	(Leapford Stream) At the red crossing point there are areas of oak dominated woodland WN2 , alder dominated and spring fed wet woodland WN6 and riparian woodland WN5 . At the yellow crossing point are areas of young planted broadleaved woodland, mature mixed broadleaved woodland and treelines WD1/WL2 and riparian woodland WN5 along the valley/stream.	C
10	(Shinagh Stream, Nursetown) Section of conifer plantation WD4 .	E
11	(River Clyda, Garrynagearagh-Mourneabbey) Mosaic of semi-natural oak and ash woodland WN2 , mixed broadleaved woodland WD1 and mature treelines WL2 along the river valley. Semi-natural grassland (including wet grassland GS4) along the river along with patches of willow/gorse scrub WS1 and bracken HD1 .	C
12	(River Lyre, Casey's Bridge) Mosaic of mixed broadleaved woodland and riparian woodland WD1/WN5 along the river valley with areas of willow scrub WS1 and rush dominated wet grassland GS4 .	C
13	(River Lyre, Lyre Bridge) Mosaic of mixed broadleaved woodland and riparian woodland WD1/WN5 along the river valley with areas of willow scrub WS1 , wet grassland GS4 and bracken HD1 .	C
14	(Castlebarret) Complex of willow scrub/woodland WS1/WD1 and gorse scrub. Site not visited.	D
15	(Abbey Stream, Clogheen-Mourneabbey) The red crossing area is predominantly scrub WS1 and bracken HD1 on the valley slopes with some wet grassland GS4 along the field margins by the stream. Further north along the valley are areas of broadleaved woodland and scrub along the stream with sections of wet woodland WN6 .	D
16	(Abbey Stream, Monee West) Mosaic of willow scrub WS1 and bracken HD1 grading to willow woodland WD1 . Potential for wet woodland WN6 . Occasional mature oak trees present. Surrounded by rush dominated wet grassland GS4 fields.	C
17	(Dromore North) Site contains areas of mature broadleaved woodland and treelines WD1/WL2 and mixed broadleaved/conifer woodland WD2 . Area of predominantly young planted WD1 in the west of the site and an area of oak-birch woodland WN1 at the northern end.	
18	(Dromore) Block of mature oak-ash woodland WN2 within the red route corridor. Also sections of mature broadleaved WD1 and broadleaved/conifer woodland WD2 to the south of the site along road and property boundary.	C
19	(Bearforest) River valley of unnamed tributary of the River Blackwater. Habitats present include mature mixed broadleaved woodland and treelines WD1/WL2 , scattered trees and parkland WD5 and sections of ash dominated woodland WN2 .	D

Site Code	Site Description/Habitats	Rating
20	(Fiddane Stream Valley) Oak-hazel woodland WN2 in the southern portion of the site with areas of gorse scrub WS1 and bracken HD1 further north. Also areas of mixed broadleaved woodland WD1 and mature broadleaved treelines.	C
21	(Lavally Upper) Young conifer and broadleaved plantation with dense cover of gorse scrub WS1 and bracken HD1 .	E
22	(Ballynafeaha) Complex of mixed broadleaved woodland WD1 and improved agricultural fields GA1 .	D
23	(Scarteen) Mosaic of woodland habitats including oak-holly woodland WN1 , wet woodland WN6 and mixed broadleaved woodland WD1 . In the north-east of the site is some wet grassland GS4 around field margins along with willow scrub WS1 grading to willow/birch woodland.	C
24	(Mallow) Mature mixed broadleaved woodland WD1 along N72 and residential property boundaries.	D
25	(Annabella) Mature oak woodland WN1/WN2 and mixed broadleaved woodland WD1 .	C
26	(Finnow Stream, Ballyclough) Sections of oak-ash woodland WN2 and mature mixed broadleaved woodland WD1 along the Finnow Stream valley. Also riparian woodland WN5 and wet grassland fields along the river corridor.	C
27	(Lodge) Broadleaved woodland/riparian woodland WD1/WN5 along an unnamed tributary of the River Blackwater with areas of scrub WS1 and wet grassland GS4 also present.	D
28	(Ballysheehan) Stream valley of unnamed tributary of the River Blackwater. Ash dominated broadleaved woodland and mixed broadleaved woodland WN2/WD1 .	C
29	(Mountnorth) Ash-alder-willow WD1 and WN5 along unnamed stream. Areas of wet grassland GS4 and a section of planted conifers along part of southern boundary.	C
30	(Twopothouse) Network of mature broadleaved woodland, treelines and mature parkland trees WD1/WL2 /WD5 .	D
31	(Twopothouse) Network of mature broadleaved woodland, treelines and mature parkland trees WD1/WL2 /WD5 .	D
32	(Twopothouse) Network of mature broadleaved woodland, treelines and mature parkland trees WD1/WL2 /WD5 .	D
33	(Ballybeg West) Area of mixed broadleaved woodland WD1 and mixed broadleaved and conifer woodland WD2 .	D
34	(Tullig/Dunbarry/Currymount) Network of mature broadleaved woodland WD1 and treelines WL2 with sections of ash and oak woodland WN2 . Areas of semi-natural grassland present. Site drained by a number of small streams FW1 (tributaries of the Awbeg River)	C
35	(Egmont) Mature broadleaved woodland WD1 .	D
36	(Ballynamuck) Mature broadleaved woodland and treelines WD1/WL2 along an unnamed tributary of the Awbeg River.	D
37	(Velvetstown) Mixed broadleaved woodland WD1 with sections of mature oak-ash woodland WN2 .	C/D
38	(Ardeen) Block of semi-mature mixed broadleaved woodland WD1 .	D

Site Code	Site Description/Habitats	Rating
39	(Burton Park, Churchtown) Areas of mature mixed broadleaved woodland WD1 and treelines WL2 around the village including meadows and improved agricultural fields GA1 . Block of ash and oak woodland WN2 in the east of the site.	D
40	(Ballyhoura) Complex of ash-oak woodland WN2 and mixed broadleaved woodland WD1 .	C
41	(Rath) Beech dominated broadleaved woodland WD1 .	D
42	(Ballycoskery) Mosaic of mature mixed broadleaved and broadleaved/conifer woodland WD1/WD2 , conifer plantation WD4 , heath HH and bracken HD1 . Within yellow corridor is a narrow band of oak-ash woodland along stream gully WN2 with some birch and beech also present.	C
43	(Ballynaboola West) Mosaic of mixed broadleaved woodland WD1 , mixed broadleaved and conifer woodland WD2 and conifer woodland WD3 on the north-eastern slopes of the Ballyhoura Mountains.	D
44	(Ardglass) Mixed broadleaved woodland WD1 and wet grassland GS4 drained by a tributary of the River Awbeg.	C/D
45	(Cloghanughera) Dense patches of scrub WS1 with some areas of mixed broadleaved woodland WD1 .	D
46	(Ardnacarle) Mature mixed broadleaved woodland, treelines and scattered parkland trees WD1/WL2/WD5 with areas of conifer woodland WD3 around agricultural fields GA1 .	D
47	(Garryfine) Area of rush dominated wet grassland GS4 .	D
48	(Derraulin South) Mosaic of scrub WS1 , conifer woodland/plantation WD2/WD4 , mixed broadleaved woodland and treelines WD1/WL2 and wet grassland GS4 .	D
49	(Derraulin North) Complex of mixed broadleaved woodland WD1 and wet grassland GS4 along an unnamed tributary of the River Maigue.	D
50	(Ballinleeny Quarry) Active working quarry with areas of mixed broadleaved woodland WD1 and scrub WS1 around its boundary.	D
51	(Kilmore Desmesne) Steep sided river valley (unnamed tributary of the River Maigue) with improved agricultural fields GA1 , species poor wet grassland GS4 and a strip of beech dominated broadleaved woodland WD1 along the eastern valley slopes.	D
52	(River Maigue, Glenma) Mixed broadleaved and ash dominated woodland WD1/WN2 along the eastern bank of the river. Also areas of gorse scrub WS1 and bracken HD1 .(Refer to Figure No. 14.58)	C
53	(Athlacca) Network of mature mixed broadleaved woodland and treelines WD1/WL2 around church and adjacent property.	D
54	(Tullerboy) Network of mature mixed broadleaved woodland and treelines WD1/WL2 around improved agricultural fields GA1 .	D
55	(Tullovin) Scrub WS1 and bracken HD1 covered hill surrounded by improved agricultural fields GA1 .	D
56	(Croom) Site contains areas of mature mixed broadleaved woodland WD1 and riparian woodland WN5 along the Rivers Maigue and Camoge amongst improved agricultural fields GA1 . Floating aquatic vegetation (links to Annex I habitat) present in the Camoge River.	C

Site Code	Site Description/Habitats	Rating
57	(Ballymacradden) Mosaic of mixed broadleaved/riparian woodland WD1/WN5 , scrub WS1 and rush dominated wet grassland GS4 along the Camoge River. Floating aquatic vegetation (links to Annex I habitat) present in the Camoge River.	C
58	(Carrigeen/Ballynahown) Block of hawthorn dominated scrub/woodland WS1/WD1 .	D
59	(Cahirduff) Wet grassland complex GS4 .	C
60	(River Maigue, Ballynahown Ford) Sections of riparian and mixed broadleaved woodland WN5/WD1 along the banks of the River Maigue (some areas with potential links to Annex 1 habitat Residual Alluvial Woodland). Floating aquatic vegetation (links to Annex I habitat) present in the river at this location.	C
61	(Garranroe) Block of semi-natural oak-ash-hazel woodland WN2	C
62	(Ballycahane Lower) Complex of scrub WS1 , mixed broadleaved woodland WD1 , conifer plantation WD4 and species poor wet grassland GS4 .	D
63	(Ballygeale) Mosaic of willow scrub WS1 , hedgerows WL1 and wet grassland GS4 .	C/D
64	(Ballybronoge South) Wet grassland complex GS4 with patches of gorse and willow scrub WS1 amongst a network of hawthorn/willow hedgerows.	C
65	(Attyfin) Mature mixed broadleaved woodland WD1 and mature parkland trees WD5 .	D
66	(Patrickswell/Greenmount) Network of mature mixed broadleaved woodland WD1 and treelines WL2 around agricultural fields to the north of Limerick Racecourse.	D
67	(Knockantota/Lyradane) Conifer plantation known to support a pair of hen harriers, a species listed under Annex I of the E.U. Birds Directive (79/409/EEC)	B

Table 3 (b) Description and evaluation of designated areas within the study area, including those that are intersected by the route options (highlighted in blue). For details of site ratings see Table 1, Appendix 14.1.

Description of Designated Area/Habitats Present	Rating
<u>Brown/Green</u> crossing of the River Blackwater cSAC at Mourneabbey/ Ballyknockane (Greenhill Stream). Mosaic of riparian woodland WN5 (some with potential links to Annex 1 habitat Residual Alluvial Woodland), mixed broadleaved woodland WD1 and scrub WS1 along the Clyda River valley. Floating aquatic vegetation (links to Annex I habitat) present in the river. Within the boundary of the River Blackwater cSAC.	A
<u>Red/Blue</u> crossing of the River Blackwater cSAC at Ballynefeaha, River Blackwater. Riparian woodland WN5 (some with potential links to Annex 1 habitat Residual Alluvial Woodland) and mixed broadleaved woodland WD1 along the banks of the River Blackwater. Records of the presence of the Annex I species <i>Margaritifera margaritifera</i> (Freshwater pearl mussel) from the river in this area. Within	A

Description of Designated Area/Habitats Present	Rating
the boundary of the River Blackwater cSAC.	
<u>Brown/Yellow/Green</u> crossing of the River Blackwater cSAC at Ballymagooly, River Blackwater. Riparian woodland WN5 (some with potential links to Annex 1 habitat Residual Alluvial Woodland), mixed broadleaved woodland WD1 and wet grassland GS4 along the banks and floodplain of the River Awbeg. Within the boundary of the River Blackwater cSAC.	A
<u>Brown/Yellow/Green</u> crossing of the River Blackwater cSAC at Lag/Knockanare, Awbeg River. Riparian woodland WN5 (some with potential links to Annex 1 habitat Residual Alluvial Woodland), mixed broadleaved woodland WD1 and wet grassland GS4 along the banks and floodplain of the River Awbeg. Floating aquatic vegetation (links to Annex I habitat) present in the river. Within the boundary of the River Blackwater cSAC.	A
(Awbeg Valley (Above Doneraile) pNHA – Site Code 000075) Riparian broadleaved woodland WN5/WD1 along the Awbeg River. Within the boundary of the River Blackwater cSAC.	B
(Lough Eagle pNHA – Site Code 001049) Fluctuating lake on a limestone substrate. Surrounded by agricultural land with some broadleaved woodland around the site margins WD1 . The legally protected plant species <i>Alopecurus aegualis</i> (Orange foxtail) is known from the site.	B
(Kilcolman Bog pNHA/SPA – Site Code 000092/004095) Mosaic of quaking fen PF3 , reed swamp FS1 , freshwater marsh GM1 and wet grassland GS4 . Important site for wintering waterfowl, in particular for whooper swan (Annex I species under the EU Birds Directive).	A
<u>Blue</u> crossing of the River Blackwater cSAC at Listelly, tributary of the Awbeg River.	A
<u>Blue</u> crossing of the River Blackwater cSAC at Velvetstown/Kilbroney, River Awbeg.. Riparian woodland WN5 (some with potential links to Annex 1 habitat Residual Alluvial Woodland), mixed broadleaved woodland WD1 and wet grassland GS4 along the banks and floodplain of the River Awbeg. Floating aquatic vegetation (links to Annex I habitat) present in the river. Within the boundary of the River Blackwater cSAC.	A
(Ballinvonear Pond pNHA – Site Code 000012) The site comprises a field and small pond within which is found the rare plant species <i>Raminucus maritima</i> (Golden dock).	B
(Ballyhoura Mountains pNHA – Site Code 002036) The site is predominantly heath, blanket bog and extensive conifer plantation with some relict oak stands.	B
<u>Red</u> crossing of the River Blackwater cSAC at Ballindillanig, Awbeg River.	A
<u>Red</u> crossing of the River Blackwater cSAC at Caherconnor, Awbeg River.	A
<u>Red</u> crossing of the River Blackwater cSAC at Struhanabally Stream, tributary of the Awbeg River.	A
<u>Brown</u> crossing of the River Blackwater cSAC at Ballynadrideen/Newtown, Awbeg River)	A
(Tory Hill cSAC/pNHA – Site Code 000439) A scrub WS1 , woodland, semi-natural grassland and wetland complex. Contains alkaline and calcareous fen and yew woodland (Annex I habitats under the EU Habitats Directive)	A
(Adare Woodlands pNHA – Site Code 000429) Dry, broadleaved woodlands WD1 , believed to be amongst the oldest in the country	B

Table 3 (c) List of the habitats present within the ecological sites and designated areas and the corresponding habitat codes from Fossitt (2000).

Habitat Type	Habitat Code (Fossitt, 2000)
Arable crops	BC1
Eroding/upland river	FW1
Reed and large sedge swamp	FS1
Improved agricultural grassland	GA1
Wet grassland	GS4
Freshwater marsh	GM1
Dense bracken	HD1
Heath	HH
Transition mire and quaking bog	PF3
(Mixed) broadleaved woodland	WD1
Mixed broadleaved/conifer woodland	WD2
(Mixed) conifer woodland	WD3
Conifer plantation	WD4
Scattered trees and parkland	WD5
Treelines	WL2
Oak-birch-holly woodland	WN1
Oak-ash-hazel woodland	WN2
Riparian woodland	WN5
Wet willow-alder-ash woodland	WN6
Scrub	WS1
Immature woodland	WS2

TABLE 4 – IMPACTS OF THE ROUTE OPTIONS ON THE RIVER BLACKWATER CSAC

Ref No.	Site Name	Impact significance without mitigation	Potential impacts without mitigation	Mitigation measures (note 1)	Residual impacts
1	Greenhill Stream	Severe	Extension of embankment on east side of existing road. Extension of existing culvert. Removal of young trees from foot of embankment. Minor habitat loss on stream bed and adjacent treelines.	Use open-bottom type culvert to protect existing stream bed. Prevent any release of sediment or other pollutants to stream using geotextile and settlement ponds. Salvage of any protected aquatic species from affected area of stream bed. Reinstate embankment and disturbed ground using native tree planting.	Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction. No significant impact on the integrity of cSAC.
2	Blackwater main channel west of Mallow	Severe	Loss of and damage to riparian woodland and other habitats along and adjacent to the river banks. Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works. Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse. Impacts on protected aquatic species (primarily freshwater pearl mussel and lamprey ammocoete beds) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.	High level clear span bridge with abutments set back at least 7m from existing river banks. Avoid impacts on any Annex I habitats present along the river channel. No in-stream works, piers in river channel or modifications to the river banks to avoid impacts on protected aquatic species and fisheries habitat. Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1). Reinstate disturbed ground using appropriate planting and native species.	Minor permanent loss of habitat within cSAC. Risk of indirect impacts on pearl mussel at crossing point. Possible adverse impacts on integrity of cSAC.
3	Blackwater main channel east of Mallow	Severe	Loss of and damage to riparian woodland and other habitats along and adjacent to the river banks. Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works. Impacts on river habitats and protected aquatic	High level clear span bridge with abutments set back at least 7m from existing river banks. Avoid impacts on any Annex I habitats present along the river channel. No in-stream works, piers in river channel or modifications to the river banks to avoid impacts on protected aquatic species and fisheries habitat.	Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction. No significant impact

Ref No.	Site Name	Impact significance without mitigation	Potential impacts without mitigation	Mitigation measures (note 1)	Residual impacts
			species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse. Impacts on protected aquatic species (primarily lamprey ammocoete beds) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.	Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1). Reinstatement of disturbed ground using appropriate planting and native species.	on the integrity of cSAC.
4	Awbeg tributary at Ballindillanig	Severe	Loss of and damage to riparian habitats and of habitats adjacent to the river banks. Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works. Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse. Impacts on protected aquatic species (primarily lamprey ammocoete beds and white-clawed crayfish populations) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.	Use open-bottom type culvert or clear span bridge to protect existing river bed. If bankside vegetation is to be removed then a salvage operation will be required (under licence from the NPWS) in order to avoid impacting on lamprey and crayfish populations. Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1). If required, temporary crossings or any other in-stream works (eg. diversions or channel re-alignment) to be constructed/carried out in accordance with the fisheries board requirements (see Note1). Avoid impacts on any Annex I habitats present along the river channel. Reinstatement of river banks and disturbed ground using appropriate planting and native species.	Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction. No significant impact on the integrity of cSAC.
5	Awbeg tributary at Caherconor	Severe	Loss of and damage to riparian habitats and of habitats adjacent to the river banks. Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works. Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse. Impacts on protected aquatic species (primarily lamprey ammocoete beds and white-clawed crayfish populations) resulting from the removal of riverbanks and bankside silt deposits during	Use open-bottom type culvert or clear span bridge to protect existing river bed. If bankside vegetation is to be removed then a salvage operation will be required (under licence from the NPWS) in order to avoid impacting on lamprey and crayfish populations. Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1). If required, temporary crossings or any other in-stream works (eg. diversions or channel re-alignment) to be constructed/carried out in accordance with the fisheries board requirements (see Note1). Avoid impacts on any Annex I habitats present along the river	Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction. No significant impact on the integrity of cSAC.

Ref No.	Site Name	Impact significance without mitigation	Potential impacts without mitigation	Mitigation measures (note 1)	Residual impacts
			bridge construction.	channel. Reinstate river banks and disturbed ground using appropriate planting and native species.	
6	Struhaneballiv Stream at Coolcaum	Severe	Loss of and damage to riparian habitats and of habitats adjacent to the river banks. Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works. Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse. Impacts on protected aquatic species (primarily lamprey ammocoete beds and white-clawed crayfish populations) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.	Use open-bottom type culvert or clear span bridge to protect existing river bed. If bankside vegetation is to be removed then a salvage operation will be required (under licence from the NPWS) in order to avoid impacting on lamprey and crayfish populations. Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1). If required, temporary crossings or any other in-stream works (eg. diversions or channel re-alignment) to be constructed/carried out in accordance with the fisheries board requirements (see Note1). Avoid impacts on any Annex I habitats present along the river channel. Reinstate river banks and disturbed ground using appropriate planting and native species.	Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction. No significant impact on the integrity of cSAC.
7	Awbeg tributary at Liskelly	Severe	Loss of and damage to riparian habitats and of habitats adjacent to the river banks. Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works. Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse. Impacts on protected aquatic species (primarily lamprey ammocoete beds and white-clawed crayfish populations) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.	Use open-bottom type culvert or clear span bridge to protect existing river bed. If bankside vegetation is to be removed then a salvage operation will be required (under licence from the NPWS) in order to avoid impacting on lamprey and crayfish populations. Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1). If required, temporary crossings or any other in-stream works (eg. diversions or channel re-alignment) to be constructed/carried out in accordance with the fisheries board requirements (see Note1). Avoid impacts on any Annex I habitats present along the river channel. Reinstate river banks and disturbed ground using appropriate	Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction. No significant impact on the integrity of cSAC.

Ref No.	Site Name	Impact significance without mitigation	Potential impacts without mitigation	Mitigation measures (note 1)	Residual impacts
				planting and native species.	
8	Awbeg main channel at Velvetstown	Severe	<p>Loss of and damage to riparian habitats and of habitats adjacent to the river banks.</p> <p>Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works.</p> <p>Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse.</p> <p>Impacts on protected aquatic species (primarily lamprey ammocoete beds and white-clawed crayfish populations) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.</p>	<p>Use clear span bridge to protect existing river bed.</p> <p>If bankside vegetation is to be removed than a salvage operation will be required (under licence from the NPWS) in order to avoid impacting on lamprey and crayfish populations.</p> <p>Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1).</p> <p>If required, temporary crossings or any other in-stream works (eg. diversions or channel re-alignment) to be constructed/carried out in accordance with the fisheries board requirements (see Note1).</p> <p>Avoid impacts on any Annex I habitats present along the river channel.</p> <p>Reinstate river banks and disturbed ground using appropriate planting and native species.</p>	<p>Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction.</p> <p>No significant impact on the integrity of cSAC.</p>
9	Awbeg main channel at Lag/ Knockanare	Severe	<p>Loss of and damage to riparian habitats and of habitats adjacent to the river banks.</p> <p>Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works.</p> <p>Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse.</p> <p>Impacts on protected aquatic species (primarily lamprey ammocoete beds and white-clawed crayfish populations) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.</p>	<p>High level clear span bridge with abutments set back from existing river banks.</p> <p>Avoid impacts on any Annex I habitats present along the river channel.</p> <p>No in-stream works, piers in river channel or modifications to the river banks to avoid impacts on protected aquatic species and fisheries habitat.</p> <p>Implement control measures to prevent the discharge of hazardous materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1).</p> <p>Reinstate disturbed ground using appropriate planting and native species.</p>	<p>Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts during construction.</p> <p>No significant impact on the integrity of cSAC.</p>
10	Awbeg main channel at Ballynadrideen	Severe	<p>Loss of and damage to riparian habitats and of habitats adjacent to the river banks.</p> <p>Potential loss of and damage to river bed habitats and the disruption of fish passage due to in-stream works.</p>	<p>Use clear span bridge to protect existing river bed.</p> <p>If bankside vegetation is to be removed than a salvage operation will be required (under licence from the NPWS) in order to avoid impacting on lamprey and crayfish populations.</p> <p>Implement control measures to prevent the discharge of hazardous</p>	<p>Potential for minor permanent loss of riparian habitat within cSAC and temporary localised impacts</p>

Ref No.	Site Name	Impact significance without mitigation	Potential impacts without mitigation	Mitigation measures (note 1)	Residual impacts
			<p>Impacts on river habitats and protected aquatic species due to discharge of hazardous materials (oils, cement etc.) and silt to the watercourse.</p> <p>Impacts on protected aquatic species (primarily lamprey ammocoete beds and white-clawed crayfish populations) resulting from the removal of riverbanks and bankside silt deposits during bridge construction.</p>	<p>materials and silt to watercourses in line with the fisheries board requirements and NRA guidelines (see Note 1).</p> <p>If required, temporary crossings or any other in-stream works (eg. diversions or channel re-alignment) to be constructed/carried out in accordance with the fisheries board requirements (see Note1).</p> <p>Avoid impacts on any Annex I habitats present along the river channel.</p> <p>Reinstate river banks and disturbed ground using appropriate planting and native species.</p>	<p>during construction.</p> <p>No significant impact on the integrity of cSAC.</p>