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Procedures for the Design of Roads in Harmony with Wildlife

Environmental Legislation and Guidelines

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Harmony

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Harmony

Environmental Legislation & Guidelines

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Executive summary

All European Union (EU) countries carry out Environmental Impact Assessments (EIAs) and Appropriate Assessments (AAs) to comply with the Birds Directive and the Habitats Directive. The objective of this report is to provide insight into the current approach to Environmental Assessment being used in a range of European countries. Based on these findings, guidance is then provided on how the Environmental Assessment procedure could be improved across Europe. The Harmony project focuses on eight 'reference' countries (Ireland, United Kingdom, Netherlands, Belgium, Sweden, Denmark, Hungary and Austria). For the study of EIAs a Mediterranean country (Greece) was added to the list. Following a request from the Programme Executive Board (PEB), it was decided that EIAs and AAs for Germany would also be examined with the same methodology used in Sections 2 and 3 of this report.

The report is divided into three main parts, corresponding to Tasks 1.1, 1.2 and 1.3 of the *Harmony* project. The first part of the report focuses on the EIA procedure in the European countries considered. Firstly, the relevant EIA guidelines in the eight reference countries are analysed and comparisons are made between countries. Following on from this, 87 Environmental Impact Statements (EISs) are analysed across the eight reference countries as well as Greece, to identify the similarities and differences between countries in the implementation of the duties required by their relevant National and EU Environmental Legislation. An audit is then carried out on each of the EISs to identify the degree of implementation on a 5 point scale under the headings of Screening; Scoping; Identification of Habitats; Impact Assessment Methodologies; Mitigation Measures and Monitoring (which is not a legislative requirement of EIA). This audit shows that the degree of implementation under the headings considered varies greatly between countries. A general trend is seen in most countries that EISs appear to carry out little to no monitoring for the assessment of effectiveness of mitigation and predicted impacts. This may be due to the fact that most European countries examined do not have specific monitoring requirements. From the review of the guidelines, it is found that there is a need to standardise guidelines dealing with specific habitats across Europe. It is also found that it would be beneficial to standardise and clearly define the terminology used in the guidelines across Europe to reduce the potential for different interpretations. From the review of the EISs, it is found that cumulative impacts are not suitably addressed in a significant proportion of the EISs examined. It is therefore recommended that clearer EU guidelines should be developed to provide recommendations on how the cumulative effects of a project should be assessed.

The second part of this report consists of a review of AA reports across the eight reference countries. As part of the overall review, three individual reviews are carried out. Firstly, a review is carried out of the guidelines for AAs. Secondly a review of 39 AA reports related to road building and retrofit is carried out, i.e., it is reported how the Habitat and Birds directives are implemented in the reference countries (Section 3.3). Finally, a review of planning approval systems is completed. In general it is found that the reviewers of the AA reports are positive about the quality of the AAs, in particular about the level of knowledge, skills and capacity of those undertaking the AA. On a negative note, most AA reports only describe the presence and distribution of habitat types and species and almost never describe the current state of the habitat type or species in the Natura 2000 site or the importance of the surrounding area for the habitat type or species. This however may often be due to the lack of available information from the state authorities on the current condition of the Natura 2000 sites. Furthermore, in some countries (Sweden, Denmark and Belgium), the field studies

have a lower standard of requirements and do not always provide guidelines for best practice survey methods (e.g. season, minimum number of visits, recommended instruments etc.). It is also found that only the Swedish and Belgian AA reports, as well as a few Danish AA reports, include performance based mitigation measures. It is noted that there is a lack of proposals for monitoring in most AA reports. Monitoring increases our knowledge of the (significance of) effects and of the effectiveness of mitigation measures and therefore it is advised to add a chapter about monitoring to all AA reports. Finally, it is noted that many of the AA reports examined that have compensatory measures due to adverse effects of a project or plan on a Natura 2000 site, do not state alternative proposals or reasons of overriding public interest for the project. This is a requirement according to Article 6(4) but is not being carried out in practice.

The third part of the report consists of a review of relevant court cases across Europe where appeals were made to the courts against road project proposals. The purpose of this is to provide a review of a sample of court cases from the eight reference countries and to draw conclusions on the effectiveness of the EIA/AA process and suggest possible improvements. Eight court cases were chosen from 7 of the reference countries, since it was not possible to find a suitable case from Hungary. One of the main conclusions from this section is that the nomination of a designated Natura 2000 site or extension thereof may be judged by the courts to provide the same level of protection, effective from the time of the proposal as is the case in Ireland where all sites designated under the Habitats Directive are candidate SACs but are afforded the full protection of a SAC. However some EU rulings such as the Dragaggi (C-117/03) and Bund Naturschutz Bayern (C-244/05) cases state a lesser level of protection for sites not yet fully designated. In examining the court cases, it is also found that cumulative effects need to be addressed more clearly in the guidelines to avoid a situation where the plan is appealed and brought to court on these grounds.

1 Introduction

1.1 Background

Development of Road infrastructure has the potential to lead to considerable changes in land use. These changes have the potential to cause habitat fragmentation and ecosystem loss. Biodiversity and the impact incurred by road developments have become one of the central environmental issues when planning for road infrastructure. Planning processes seek to balance the need for transport with the need to minimise environmental impact. Environmental Impact Assessments (EIAs) and Appropriate Assessments (AAs) are important elements in the planning process of many road projects. All European Union (EU) countries carry out Environmental Impact Assessments and Appropriate Assessments to comply with the EIA Directives, the Birds Directive and the Habitats Directive. The directives are transposed into each member state's national legislation. Based on this legislation, guidance is produced in order to provide a practical and systematic approach to carrying out assessment with the environment and biodiversity in mind.

The EIA (Environmental Impact Assessment) Directive 85/337/EEC has been in force since 1985 and has been amended three times (1997, 2003 and 2009); it is now codified into the EIA Directive 2011/92/EU. The directive was developed to cover a wide range of public and private projects and requires them to carry out an assessment of the potential environmental impacts. It is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent.

The EIA Amendment Directive 2014/52/EU will be transposed by the member states into national legislation by May of 2017. This Directive includes changes that have been identified as necessary due to changes throughout Europe, enlargement of the EU, findings of judicial cases and the introduction of other related directives and conventions since the EIA Directive was first written into law 30 years ago.

The Birds and Habitats Directives (Directive 09/147/EC and Directive 92/43/EEC respectively) are the cornerstones of the EU's biodiversity policy. They enable all 28 EU Member States to work together, within a common legislative framework, to conserve Europe's most endangered, rare and representative species and habitat types across their natural range within the EU. Whilst the Birds Directive covers all naturally occurring wild birds present in the EU, the Habitats Directive focuses on a sub-set of ca. 1500 other species, as well as ca. 230 habitat types in their own right.

The two directives require Member States to ensure that the listed species and habitat types are maintained and/or are restored to a favourable conservation status throughout their natural range within the EU.

To achieve this objective, the directives require two types of provision (Sundseth & Roth, 2013):

- Site designation and management measures: aimed at conserving core areas for species listed in Annex I of the Birds Directive and regularly occurring migratory birds, including internationally important wetlands (Special Protection Areas - SPAs) as well as sites for habitat types and species listed in Annexes I and II of the Habitats Directive (Sites of Community Interest – SCIs);

- Species protection measures: involving the establishment of a general system of protection for all wild bird species in the EU and for species of special conservation interest listed in Annex IV and V of the Habitats Directive. These species protection measures apply across the entire natural range of the species in the EU and therefore also outside protected sites.

The first set of provisions has led to the creation of the Natura 2000 Network.

In the Habitats Directive, Article 6 sets out provisions that govern the conservation and management of Natura 2000 sites, and hence applies also to SPAs of the Birds Directive. Article 6 is one of the most important of the 24 articles in the directive, being the one that most determines the relationship between conservation and land use.

Article 6 has four main sets of provisions. Article 6(1) makes provision for the establishment of the necessary conservation measures, and is focused on positive and proactive interventions. Article 6(2) makes provision for the avoidance of habitat deterioration and significant species disturbance. Its emphasis is therefore preventative. These articles apply to all Natura 2000 sites.

On the other hand, Articles 6(3) and 6(4) only come into play if a plan or project is proposed that is likely to have a significant negative effect on a Natura 2000 site, either individually or in combination with other plans or projects.

An important aspect of the Article 6(3) permit procedure is that its outcome is legally binding on the competent authority and conditions its decision. This contrasts with the impact assessments carried out under the EIA and Strategic Environmental Assessment SEA Directives where the findings merely have to be 'taken into account'. Thus, the Article 6(3) procedure is more than just an ecological assessment – it is, in fact, an assessment combined with a legally binding decision-making process. A flow-chart of the decision-making process is shown in Figure 1.

1.2 Report Outline

Environmental Impact Assessments (EIAs) and Appropriate Assessments (AAs) are important elements in the planning process of many road projects. Planning processes seek to balance the need for transport with the need to minimise environmental impact. The goal of this report is to analyse how the EIAs and AAs are being implemented across a range of European countries and how well they are complying with national and EU guidelines. A review of projects across eight 'reference' countries has been carried out to seek commonalities in approaches between them.

The report is divided into three main parts, corresponding to Tasks 1.1, 1.2 and 1.3 of the *Harmony* project. In the first part of the report (Section 2 below), the EIA guidelines in the eight reference countries are analysed and comparisons are made between them. Also in this section, a database of 87 Environmental Impact Statements across the eight reference countries (and one Mediterranean country) is analysed to identify the similarities and differences between countries in the implementation of the duties required by EU Environmental Legislation. The eight reference countries considered for this report (Figure 2) are Ireland, United Kingdom, Netherlands, Belgium, Sweden, Denmark, Hungary and Austria. Greece is also considered as a Mediterranean country to provide regional diversity within the assessment. Following a request from the Programme Executive Board (PEB), it

was decided that EIAs and AAs for Germany would also be examined with the same methodology used in Sections 2 and 3 of this report. On completion, the results of this investigation will be added in Annex E. The other reports published as part of the Harmony project consider Norway as a reference country; however, since Norway is not part of the EU, Denmark is substituted for this report. The countries considered will be referred to as the reference[c] countries from here out. As well as comparing approaches between countries, an audit has been carried out to identify the degree of compliance with the relevant guidelines on a 5 point scale under the headings of Screening; Scoping; Identification of Habitats; Impact Assessment Methodologies; Mitigation Measures and Monitoring.

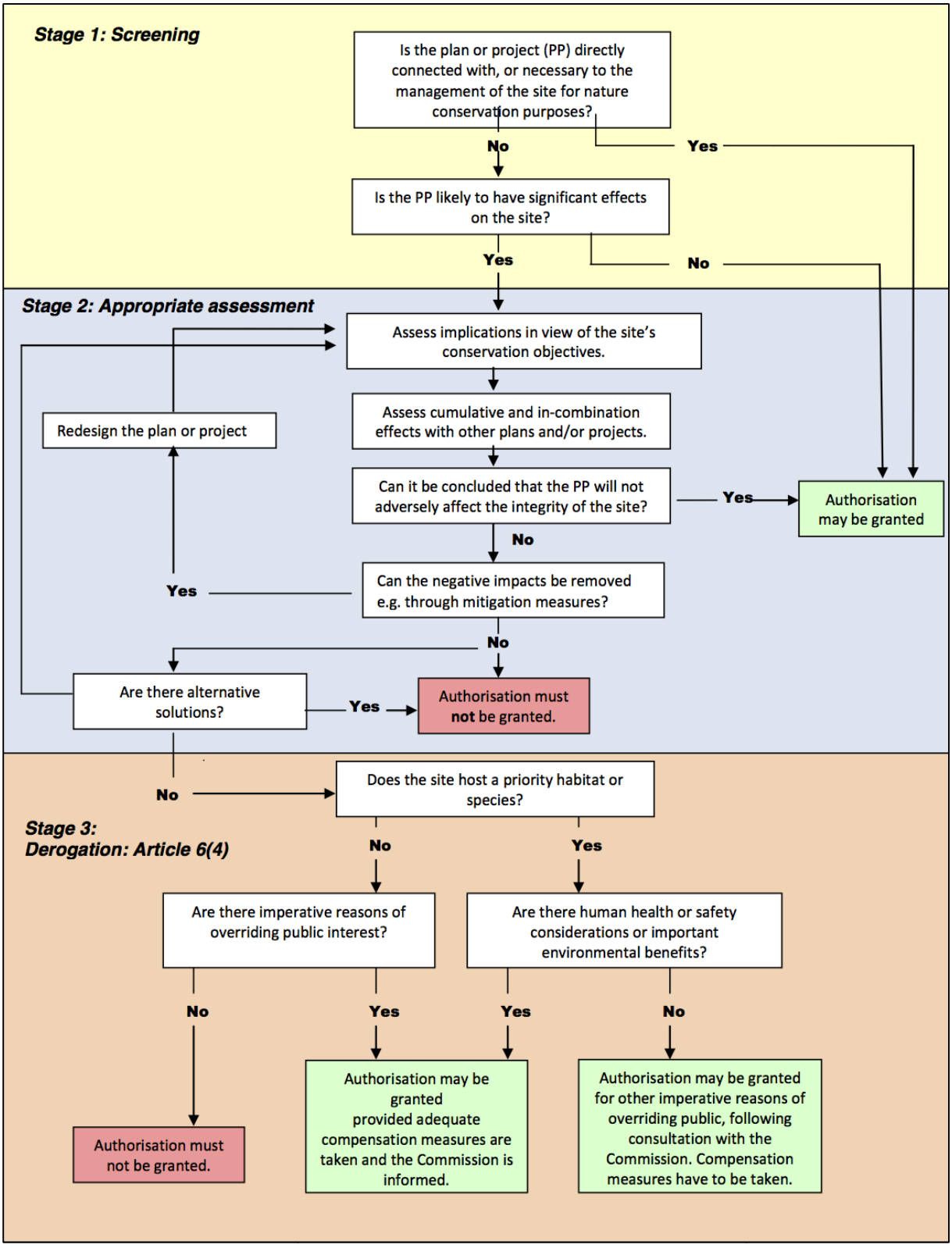


Figure 1 – Flow chart of Article 6(3) and 6(4) procedure (based on Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, EC 2002)

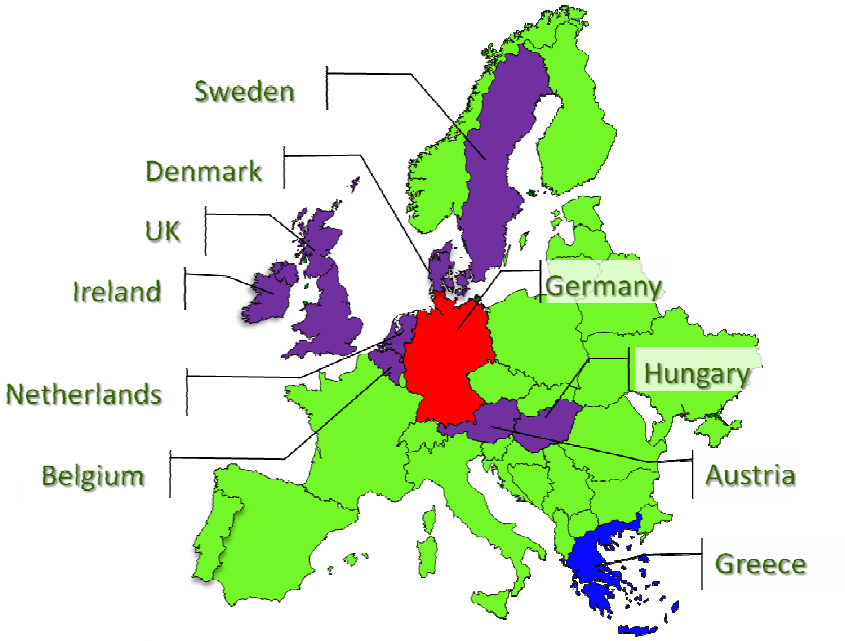


Figure 2 - Reference[c] countries

The second part of this report (Section 3 below) consists of a review of AAs across the eight reference countries. As part of the overall review, three individual reviews are carried out. Firstly, a review is carried out of the guidelines for AAs. Secondly a review of AA reports related to road building and retrofit and finally, a review of planning approval systems is completed.

The third part of the report (Section 4 below) consists of a review of relevant court cases. Project proposals often result in legal questioning such as Judicial Reviews or requests to the European Court of Justice for interpretation of provisions of EU law. While such cases may be rare, they can often have a profound impact on the planning systems of member states. The purpose of this section of the report is to review a sample of court cases from the eight reference[c] countries and to draw conclusions on the effectiveness of the EIA/AA process and suggest possible improvements.

2 Assessment of EIAs and Common Practice

2.1 Review of EIA Guideline Documentation

The first step of this task is to carry out a comparative analysis of the relevant national guidelines from a representative sample of European countries. The eight reference[c] countries included in the analysis are Ireland (IE), United Kingdom (UK), Netherlands (NL), Belgium (BE), Sweden (SE), Denmark (DK), Hungary (HU) and Austria (AT). The reason for this study is to highlight divergence and overlap of guidelines which may be leading to inconsistency in practice. In order to carry out this comparative analysis in a consistent manner, a template for reviewing the EIA guidelines in the reference[c] countries has been produced. This template can be seen in Section A.1 of Annex A. Table 1 shows a summary of the results of the comparative analysis. A list of the general guidelines available in the reference[c] countries can also be seen in Section B.1 of Annex B.

Table 1 - Summary of guideline reviews for eight reference[c] countries

Questions		SE	DK	HU	AT	BE	NL	IE	UK
Q1. Are specific guidelines available in your country for the consideration of flora and fauna during the EIA and construction phases of road schemes?	Yes:	X	X	X	X	X	X	X	X
	No:								
Q 2. Are guidelines available for specific species or habitats?	Yes:	X	X				X	X	X
	No:			X	X	X			
Q 3. Do the general guidelines ensure compliance with EU Guidelines and Legislation?	Yes:	X	X	X	X	X	X	X	X
	No :								
Q 4. Do the guidelines in your country provide specific guidance for the following stages and areas of assessment?	Screening:	X	X	X	X	X	X	X	X
	Scoping:	X	X	X	X	X	X	X	X
	Route selection:	X		X	X			X	X
	Establishing the baseline:	X			X	X		X	X
	Survey methodology:	X			X	X		X	X
	Impact Assessment:	X	X	X	X	X		X	X
	Mitigation:	X	X	X	X	X		X	X
	Construction:	X	X		X	X		X	X
	Monitoring:	X	X		X	X		X	X
Q 5. Is a sample/guide list of consultees that should be contacted provided as part of the guidelines?	Yes:					X	X	X	
	No:	X	X	X	X				X
Q 6. Are seasonal constraints for surveys identified for specific species/habitats/groups of species?	Yes for most species/habitats:	X						X	X
	Yes for some key species:		X		X	X	X		X

Questions		SE	DK	HU	AT	BE	NL	IE	UK
	No:			X					
Q 7. Is the survey footprint relative to works footprint clearly identified for various species/habitats/groups?	Yes for most species/habitats:								
	Yes for some key species:		X		X			X	X
	No:	X		X		X	X		
Q 8. Is the competency requirements of the Ecologist clearly identified in the Guidelines?	Yes the chapter must be completed by a licensed ecologist for EIA:			X		X			
	The ecologist must hold an appropriate academic qualification :			X	X			X	
	The author/surveyor must have relevant experience in similar projects:	X		X	X				
	The ecologist must be a member of a recognised professional body:								
	The ecologist must be a chartered member of a recognised professional body:								
	The Ecologist is part of a statutory/government body:								
	No, there are no specific professional requirements:		X				X		X
Q 9. Is the geographical context for determining the value of a receptor clearly defined (e.g. International importance, national importance, county importance, local importance (higher value), local importance (lower value))?	Yes					X		X	X
	Somewhat	X		X	X				
	No		X				X		
Q 10. Is the likelihood of	Yes				X			X	X

Questions		SE	DK	HU	AT	BE	NL	IE	UK
change/impact clearly defined (e.g. near certain 95%; probable 50-95%; unlikely 5-50%; extremely unlikely <5%)?	Somewhat					X	X		
	No	X	X	X					
Q 11. When describing changes and impact, are the following considered and clearly defined?	Positive and negative impact	X	X	X	X	X	X	X	X
	Magnitude of impact	X	X	X	X	X	X	X	X
	Extent	X		X		X	X	X	X
	Duration	X	X	X	X	X	X	X	X
	Reversibility	X		X	X	X	X	X	X
	Timing and frequency	X			X	X	X	X	X
Q 12. Is the level of impact clearly identified and defined (e.g. profound, significant, moderate, slight, imperceptible)?	Yes	X			X	X		X	X
	Somewhat						X		
	No		X	X					
Q 13. Is the duration of impacts clearly identified (e.g. short term (1-7 years); Medium term (7-15) etc.)?	Yes							X	X
	Somewhat				X				
	No	X	X	X		X	X		
Q 14. Is guidance dealing with inter-relationships between environmental impacts clearly identified and provided (e.g. inter-relationship between noise and ecology)?	Yes				X	X			
	Somewhat	X					X	X	X
	No		X	X					
Q 15. Is guidance provided for the construction of watercourse crossings?	Yes	X	X	X	X		X	X	
	No					X			X
Q 16. Is clear guidance provided for the passage of fish and/or mammals in the design and construction of bridges and culverts (i.e. minimum length, baffles, light openings etc.)?	Mammals	X	X	X	X			X	X
	Fish	X						X	X
Q 17. Is clear guidance provided for diversions of watercourses (temporary or permanent)?	Yes	X	X					X	
	No			X	X	X	X		
Q 18. Is clear guidance provided for pollution prevention prior to and during construction?	Yes	X	X		X		X	X	X
	No			X		X			
Q 19. Are standard mitigation measures available for construction and operation of road schemes for the following?	Habitats	X			X			X	X
	Plants	X			X			X	X
	Large Mammals	X		X	X	X	X	X	X
	Small Mammals	X		X	X	X	X	X	X
	Fish	X			X	X	X	X	X
	Invertebrates					X	X	X	X
	Reptiles					X	X	X	X

Questions		SE	DK	HU	AT	BE	NL	IE	UK
	Amphibians	X		X	X	X	X	X	X
	Birds	X			X	X	X	X	X
Q 20. Is monitoring recommended during and post construction for:	Habitats					X	X		
	Plants					X	X		
	Large Mammals				X	X	X	X	X
	Small Mammals					X	X	X	X
	Fish					X	X		
	Invertebrates					X	X		
	Reptiles					X	X		X
	Amphibians					X	X		X
	Birds					X	X		

According to the responses, it is found that the guidelines in all eight countries ensure compliance with EU Guidelines and Legislation. It is also found that all countries have specific guidelines for the consideration of flora and fauna during the EIA and construction phases of road schemes. On the other hand, only 5 of the 8 countries surveyed have guidelines available for specific species or habitats. It must be noted however that such guidelines will be published in Austria in 2015. The UK guideline review revealed that there are guidelines available both in the DMRB (Design Manual for Roads and Bridges) for certain species and habitats sensitive to road design and also guidelines available for species and habitats for non-road schemes.

When carrying out an EIA, the following stages and areas of assessment are followed: screening, scoping, examination of alternatives, establishing a baseline, survey methodology, impact assessment, mitigation including monitoring and construction. Although these are all necessary elements of an EIA, it is found that not all countries have specific guidelines relating to each stage. Sweden, Austria, Ireland and the UK are the only countries that have specific guidelines for all stages of the assessment. It can be seen from Table 1 that in the Netherlands, there is only specific guidance for screening and scoping. However, it is noted that before an EIA is carried out in the Netherlands, the Commission for Environmental Assessment gives advice about the stages and areas listed above that are project-specific.

From the analysis of the guidelines, it is found that a list of consultees that should be contacted during the EIA is only provided in the UK, Dutch, Belgian and Irish guidelines.

It is important that seasonal constraints are identified at an early stage of the EIA process. Certain specialist flora surveys may only be relevant at certain times of the year and visual impact assessment may require photomontages during both summer and winter (Carroll & Turpin, 2002). Therefore it is important that sufficient time is programmed into the project for such surveys. According to the survey responses, it is found that Denmark and Hungary do not identify seasonal constraints for surveys for any species or habitats. All other countries identify seasonal constraints for surveys for at least some key species.

Another aspect of the guidelines that is investigated is whether the survey footprint relative to the works footprint is clearly identified for specific species or habitats. For example, in Ireland, reptiles generally require a survey distance of no more than 100 metres from the

footprint of the project. It is found that 5 of the 8 countries surveyed do not clearly identify the survey footprint relative to the works footprint required for specific species or habitats in the guidelines.

The competency requirements of the Ecologist set out in the guidelines are also investigated in the study. It can be seen from Table 1 that the competency requirements of the Ecologist vary between countries. The Danish and Belgian guidelines do not specify any professional requirements for the Ecologist.

Questions 10-13 in Table 1 focus on the terminology used within EIA guidelines and whether terms describing the impact of a project are clearly defined. Firstly, it is investigated whether the likelihood of impact is clearly defined in the guidelines. It is found that the majority of countries examined do not precisely define the likelihood. Only Austria, Ireland and the UK provide clear guidelines regarding this aspect of the EIA. When describing the impact of a project, several aspects should be considered and clearly defined. These aspects include whether the impact is positive or negative, the magnitude of the impact, the extent, the duration, the reversibility and the timing and frequency. It is investigated whether these are clearly defined in the eight countries' guidelines and the results can be seen in Table 1. It is found that in general, the guidelines tend to mention the above aspects but do not clearly define them.

The level of impact is found to be clearly identified and defined in the Swedish, Belgian, Austrian, Irish and UK guidelines, with the other countries claiming that they are either not defined or 'somewhat' defined. In terms of the duration of the impact, it is found that only the Irish and UK guidelines clearly define the duration of impacts. The Irish NRA guidelines define short term impacts as 1-7 years, medium term as 7-15 years and long term as greater than 15 years. The results of Questions 10-13 in Table 1 demonstrate that in general, terminology used within the EIS guidelines needs to be standardized.

It is also investigated whether guidance is provided on dealing with the inter-relationships between different environmental impacts, for example, the inter-relationship between noise and ecology. It is found that only Austria and Belgium provide clear guidelines on the inter-relationships between environmental impacts and how these should be dealt with.

It is also investigated whether clear guidance is provided for the construction of watercourse crossings. From Table 1, it can be seen that all countries except Belgium provide guidance on the construction of watercourse crossings. Additionally, it is found that only Sweden, Denmark, the UK and Ireland provide clear guidance on the temporary or permanent diversion of watercourses.

The guidelines are reviewed to establish whether clear guidance is provided for the passage of fish or mammals in the construction of bridges and culverts. For example, guidance should be provided on minimum length, baffles and light openings. The results of this analysis can be seen in Question 16 of Table 1.

Pollution prevention prior to and during the construction of the road project is of great importance to ensure minimal impact of the project on the environment. It is found that all countries except Belgium and Hungary provide clear guidance on pollution prevention. It is noted that in the case of Hungary, pollution prevention is considered in practice; however, no clear guidance is provided in document form.

In terms of mitigation measures, it is investigated which species groups have standard mitigation measures available for the construction and operation of road schemes in the guidelines. The results can be seen in Question 19 of Table 1. From the results, it can be seen that Denmark and Hungary do not have mitigation measures available for many of the groups considered.

Finally, the monitoring of mitigation measures and species groups is investigated to see if it is considered in the guidelines. Question 20 of Table 1 shows the habitats and species groups that have monitoring recommended during and post construction. From the table it can be seen that in general, monitoring is not recommended for habitats or specific species groups. Belgium and the Netherlands are the only countries that recommend monitoring for all habitats and species groups. The length of the monitoring periods recommended is also investigated. In Sweden, Denmark and Hungary it is found that there are no recommendations provided in the guidelines for periods of monitoring. In Austria it is found that monitoring often happens at the same time as the investigation of the infrastructure components, which typically happens every second year. However, it must be noted that these surveys are not carried out by ecologists and are more concerned with evident disturbances and problems with vegetation rather than monitoring ecological impacts. In Belgium, it is found that for vegetation, the recommended monitoring period is 5-10 years. However, there are no recommended monitoring periods for other species groups. In the Netherlands, it is found that most infrastructure projects carry out the monitoring only once, usually one year after construction. In exceptional cases, monitoring for several years (up to seven) is recommended and implemented in the Netherlands. The Dutch guidelines also recommend that if effects at the population level are expected, monitoring should be spread out over several decades. In contrast to most countries, the Irish and UK guidelines provide specific monitoring guidelines for otters, badgers and bats. For otters, monitoring is recommended for one year post construction. For badgers, monitoring of fencing and tunnels is recommended for 2 years after construction. Finally, for bats, monitoring is recommended for 2 years post construction.

2.2 Review of Environmental Impact Statements

For this part of the study, a database of example EISs from nine European countries – the reference[c] countries plus Greece – is analysed to identify similarities and differences between countries in the implementation of the duties required by EU Environmental Legislation. The countries and number of EISs analysed for each can be seen in Table 2. In order to ensure a variety of project scales and habitats, a template was developed to choose the EISs. This template can be seen in Section A.6 of Annex A. A list of the EISs examined can be found in Section C.1 of Annex C. In order to analyse the EIAs, a survey of questions has been developed and can be seen in Section A.2 of Annex A. This section of the report summarises the findings of this analysis; the full set of results can be seen in Section C.2 of Annex C.

Table 2 - Number of EISs analysed

Country	Number of EISs Analysed
Sweden	15
Denmark	6
Hungary	18
Austria	5
Netherlands	14
Belgium	3
Ireland	11
United Kingdom	5
Greece	10
Total	87

The previous section of this report analyses the guidelines available in the eight reference[c] countries. When examining the EISs, it is first established whether the EIS was written following National or EU guidelines. The results of this part of the analysis can be seen in Figure 3, which shows that in general, most countries surveyed used both EU and National Guidelines. Where EU guidelines have not been identified within the report, it should be noted that in many countries the EU guidelines have largely been transcribed into National Guidelines. It is found that Sweden and the UK did not use EU guidelines at all. Following on from this, an audit was carried out of EISs to identify the degree of implementation under the following headings: Screening, Scoping, Identification of Habitats, Impact Assessment Methodologies, Mitigation measures and Monitoring. The degree of implementation varies on a 5 point scale from not implemented to fully implemented. It must be noted that there is a degree of subjectivity involved in this analysis, since these estimates are based on expert opinion. Figure 4 through 12 show the results of this audit for each country and Figure 13 shows the average results for all 9 countries. The data for these figures is summarised in Table 3. From the figures it can be seen that in general, the EISs are shown to carry out little or no monitoring of effects or mitigation. In Hungary, Denmark and Greece, 67%, 57% and 80% respectively of EISs surveyed are found not to implement monitoring. Overall, Austrian EISs show the greatest degree of implementation across the six headings. It is important to note the sample sizes shown on the X-axes of the graphs when reading these results. Some countries have small sample sizes and therefore this may not be representative of the overall situation in the country.

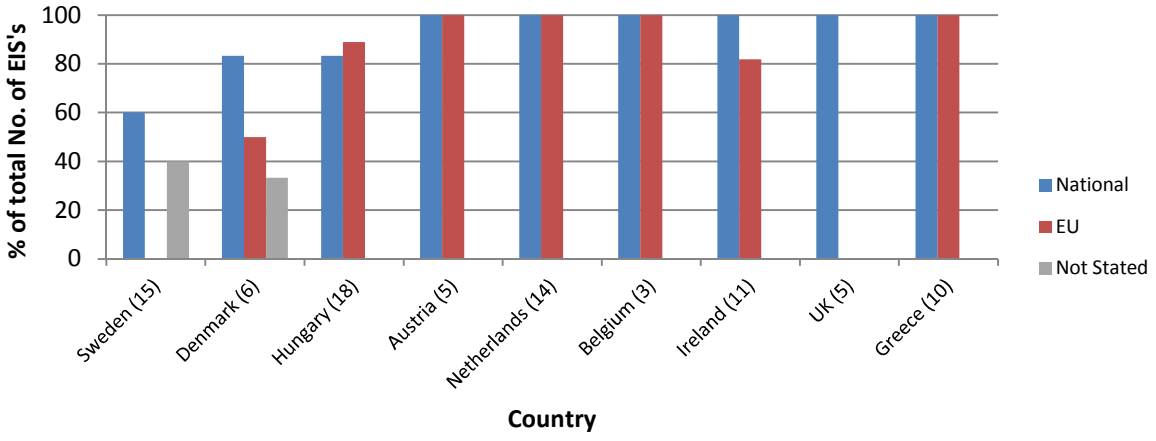


Figure 3 - Use of guidelines for EISs in reference[c] countries and Greece

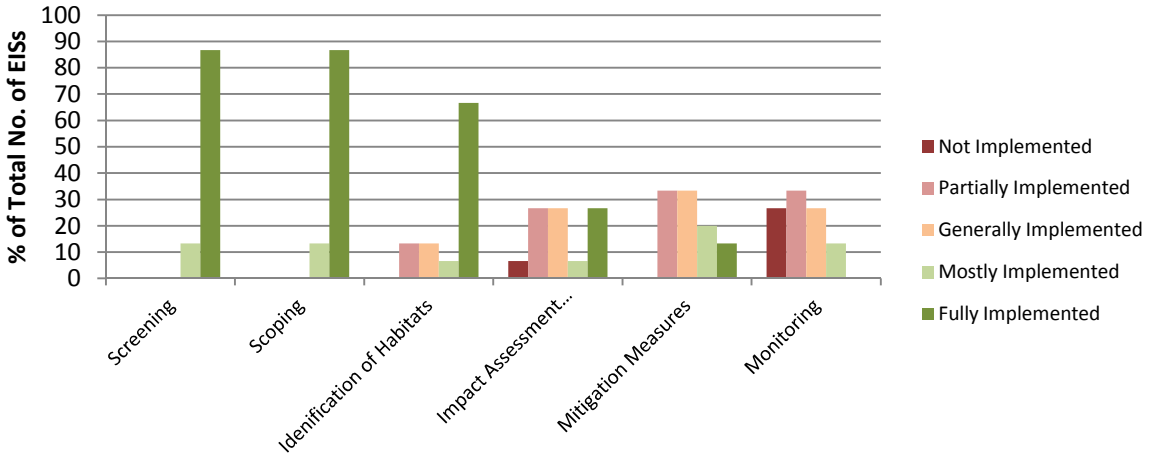


Figure 4 - Degree of compliance between EISs and guidelines for Sweden

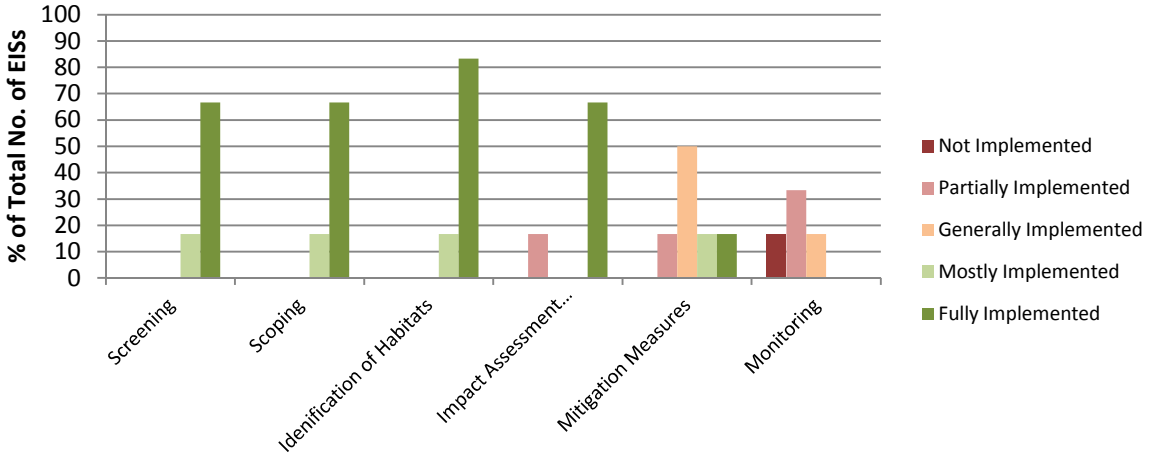


Figure 5 - Degree of compliance between EISs and guidelines for Denmark

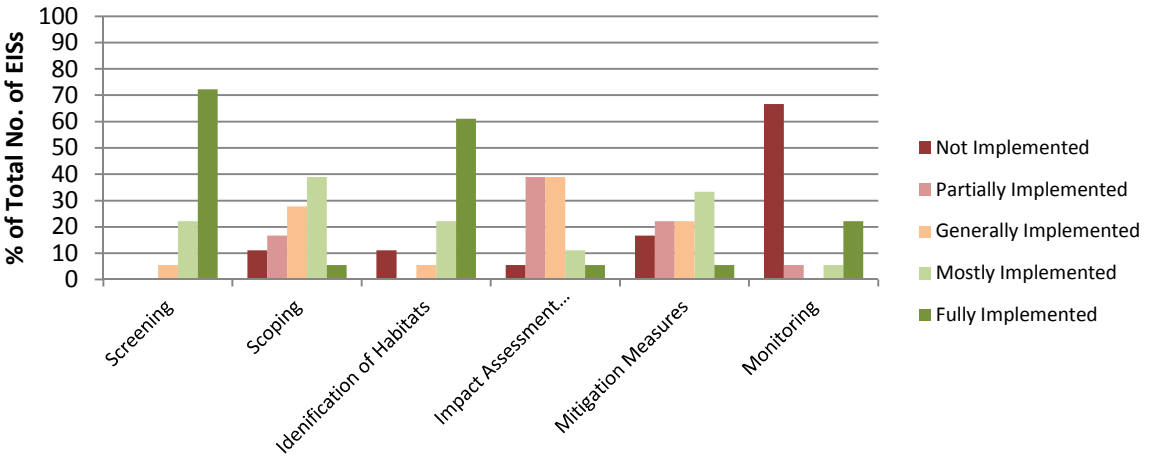


Figure 6 - Degree of compliance between EISs and guidelines for Hungary

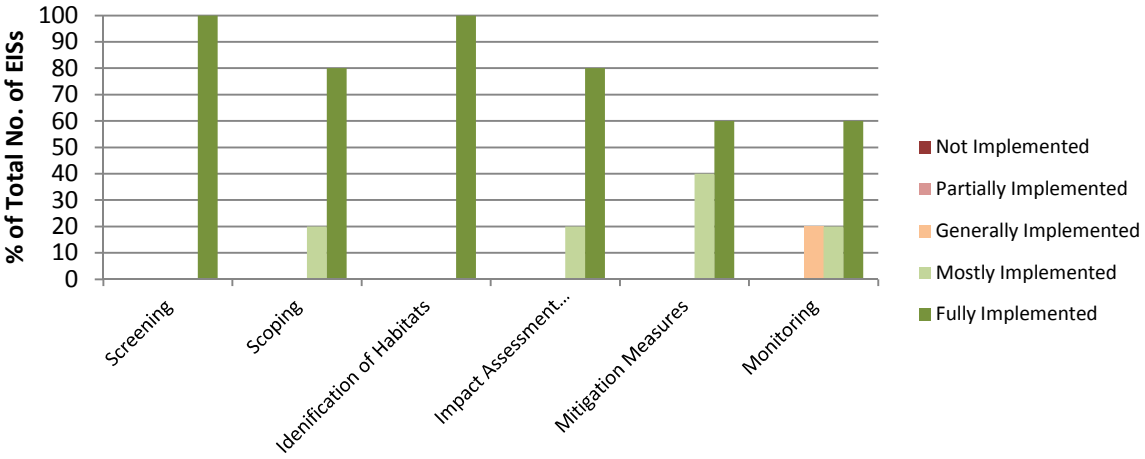


Figure 7 - Degree of compliance between EISs and guidelines for Austria

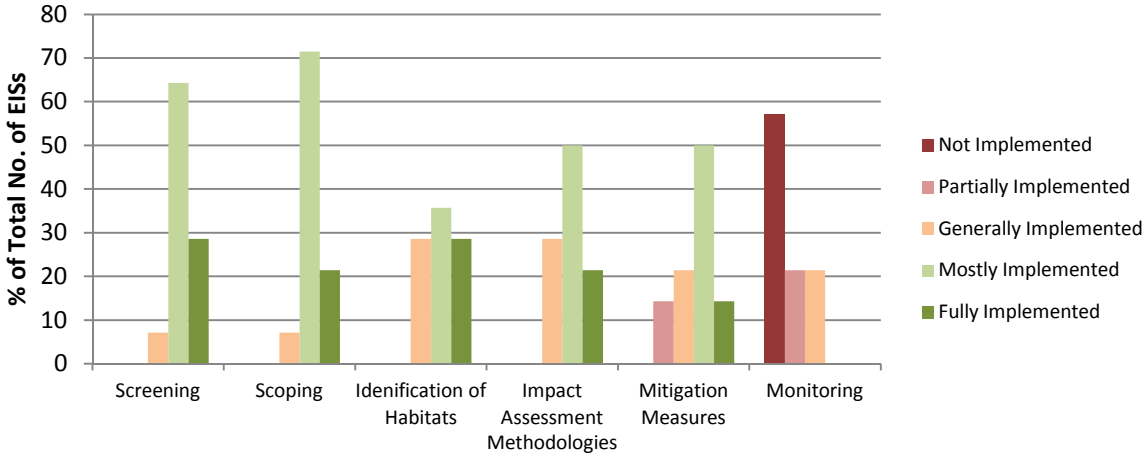


Figure 8 - Degree of compliance between EISs and guidelines for Netherlands

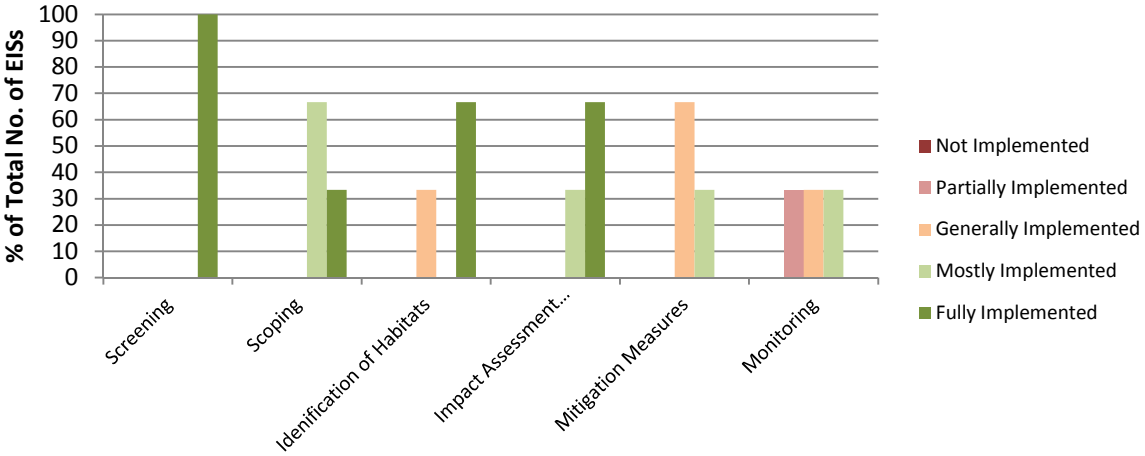


Figure 9 - Degree of compliance between EISs and guidelines for Belgium

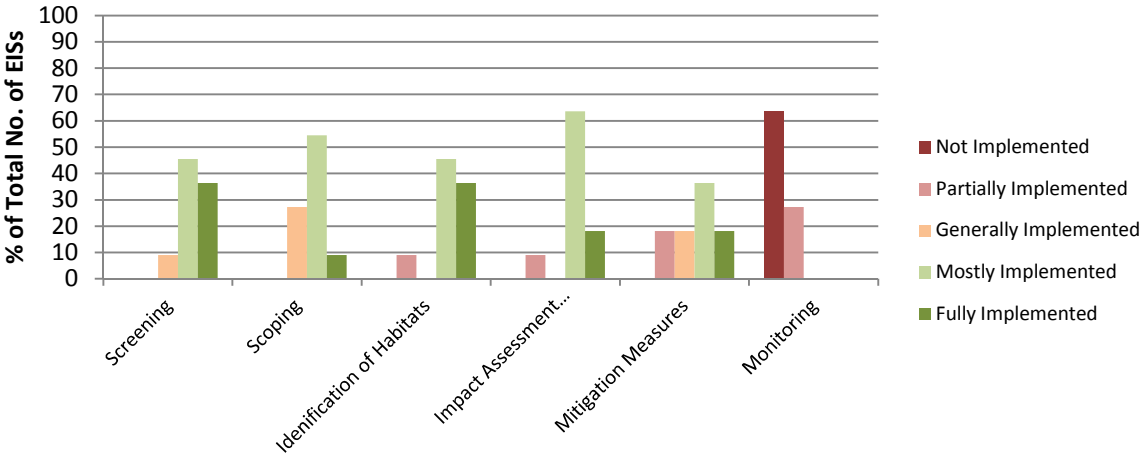


Figure 10 - Degree of compliance between EISs and guidelines for Ireland

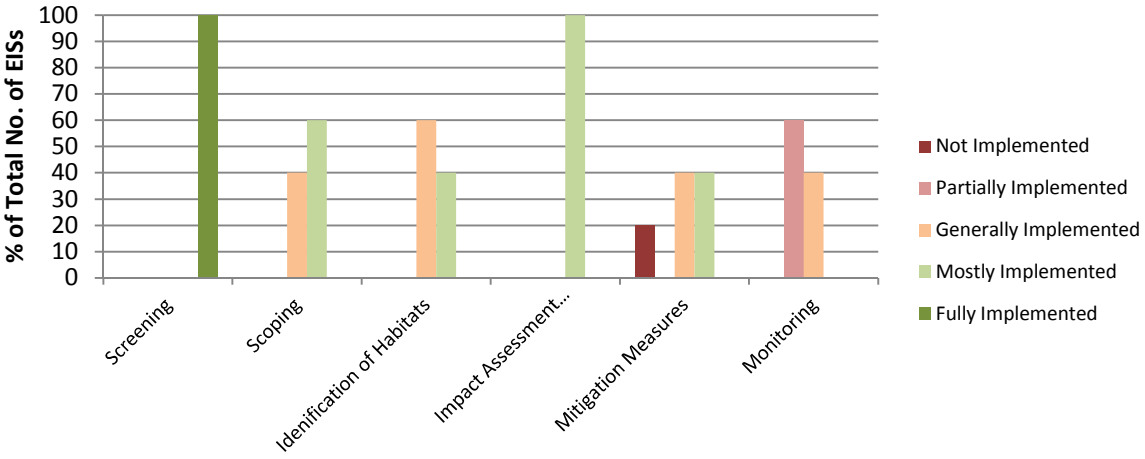


Figure 11 - Degree of compliance between EISs and guidelines for the UK

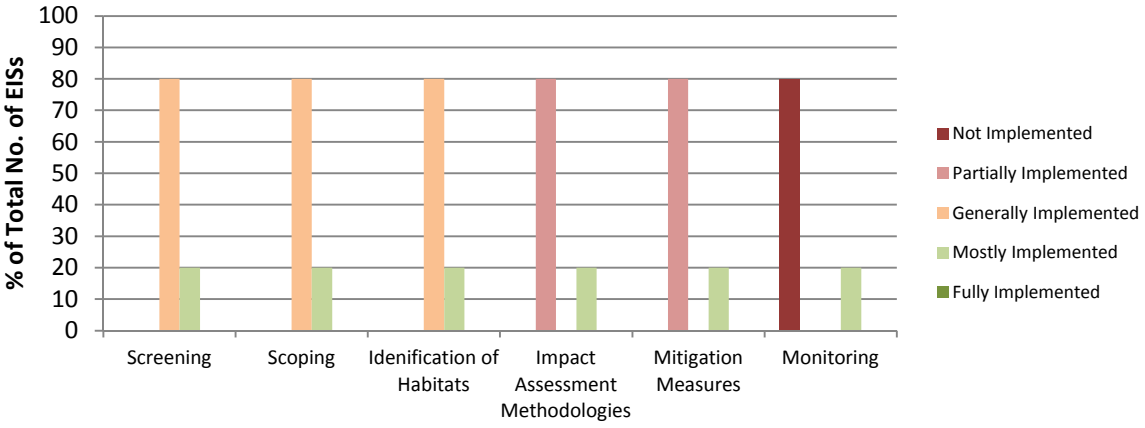


Figure 12 - Degree of compliance between EISs and guidelines for Greece

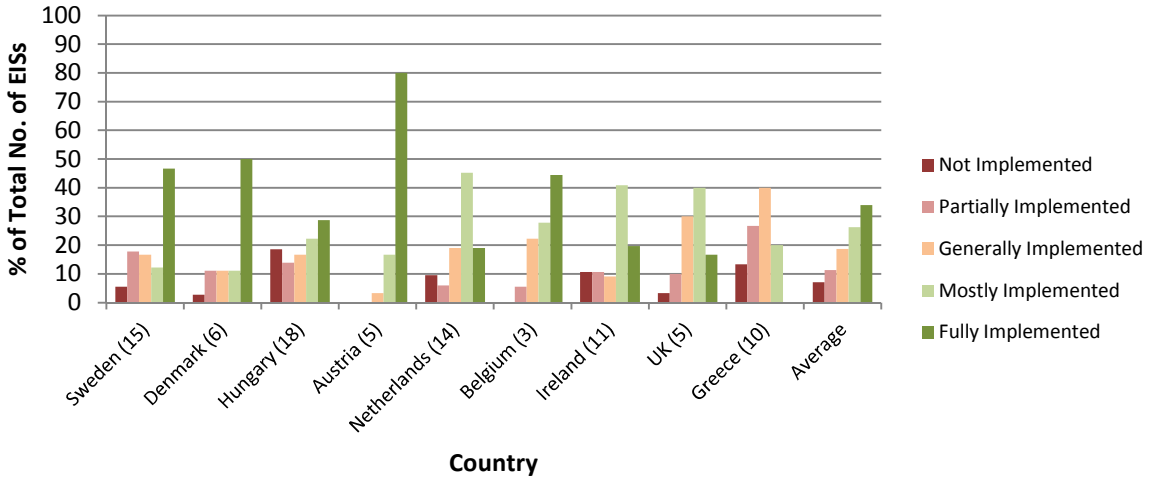


Figure 13 - Degree of compliance between EISs and guidelines averaged across the six headings considered

Table 3 - Degree of compliance between EISs and guidelines averaged across the six headings considered for each country

	Not Compliant	Partially Compliant	Generally Compliant	Mostly Compliant	Fully Compliant
Sweden	6	18	17	12	47
Denmark	3	11	11	11	50
Hungary	19	14	17	22	29
Austria	0	0	3	17	80
Netherlands	10	6	19	45	19
Belgium	0	6	22	28	44
Ireland	11	11	9	41	20
UK	3	10	30	40	17
Greece	13	27	40	20	0
Average	7	11	19	26	34

As mentioned previously, it is important that all surveys are carried out in the appropriate season since certain species or flora surveys may only be relevant at certain times of the year. Therefore, it is investigated whether the surveys are carried out in the optimum season for the EISs considered. The results of this analysis can be seen in Figure 14, which also shows the average results of all nine countries. From the figure it can be seen that for 100% of the Austrian EISs examined, all of the surveys are carried out in the appropriate season. On the other hand, it is found that for 70% of EISs from Greece, none of the surveys are carried out in the appropriate season. A lack of time is cited as the reason for the surveys being carried out in the wrong season. It is found that in Sweden, Denmark, Hungary and the Netherlands a significant proportion of the EISs examined do not state whether the surveys are carried out in the appropriate season. Therefore, it is not possible to draw conclusions on the proportion of surveys being carried out in the correct season for these countries. In some of the cases where not all the surveys have been carried out in the optimum season, it is found that a preliminary survey identifies that the habitats are not deemed sufficiently important to have the surveys carried out in the appropriate season. Land access issues in some countries as well as a lack of time are also cited as reasons for the surveys being carried out in the wrong season.

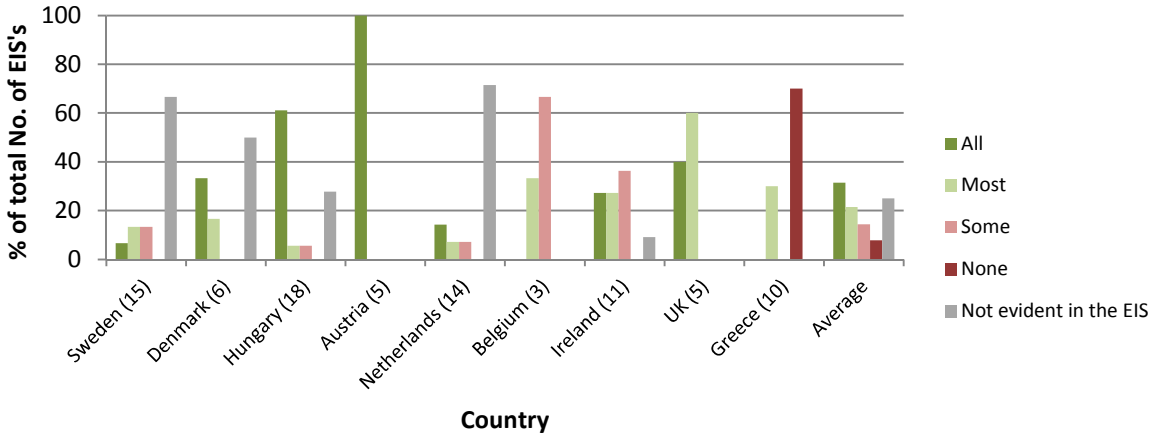


Figure 14 - Percentage of surveys carried out in the optimum season

The age of the ecological surveys at the time of the EIS publication is also investigated. The results of this analysis can be seen in Figure 15. From the figure it can be seen that most of the surveys are less than two years old at the time of publication. However, it is also noted that in Sweden, Denmark and Hungary, a significant proportion of the surveys are over five years old at the time of publication. In many cases, older surveys are used to assess the need for survey and only a resurvey of key areas is carried out for the purpose of assessment.

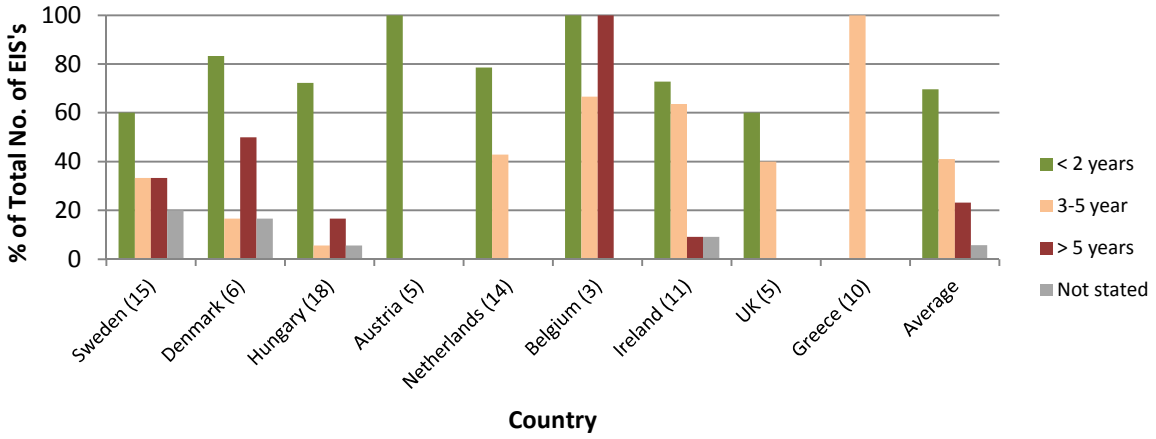


Figure 15 - Age of ecological surveys when the EIS is published

In order to carry out an EIA it is necessary to establish the baseline data. This can be done through online mapping, site visits, existing inventories, databases and scientific literature. Figure 16 shows the sources of data that are used for the EIAs considered across the nine countries. It is found that, for the most part, there is an even spread of sources used for each country. However, it is noted that online mapping is rarely used in Hungary and Austria. Additionally, it is noted that the use of recent site visits is uncommon in the Netherlands.

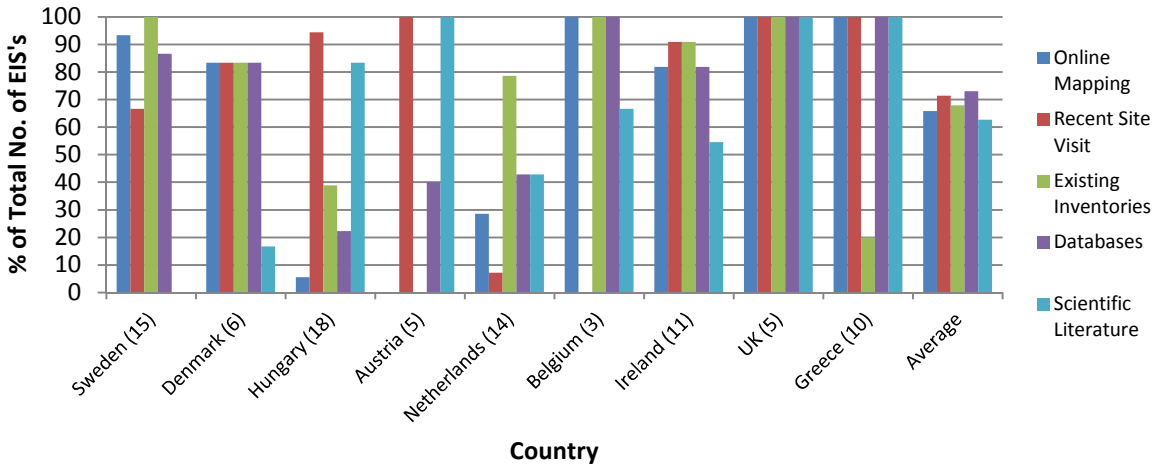
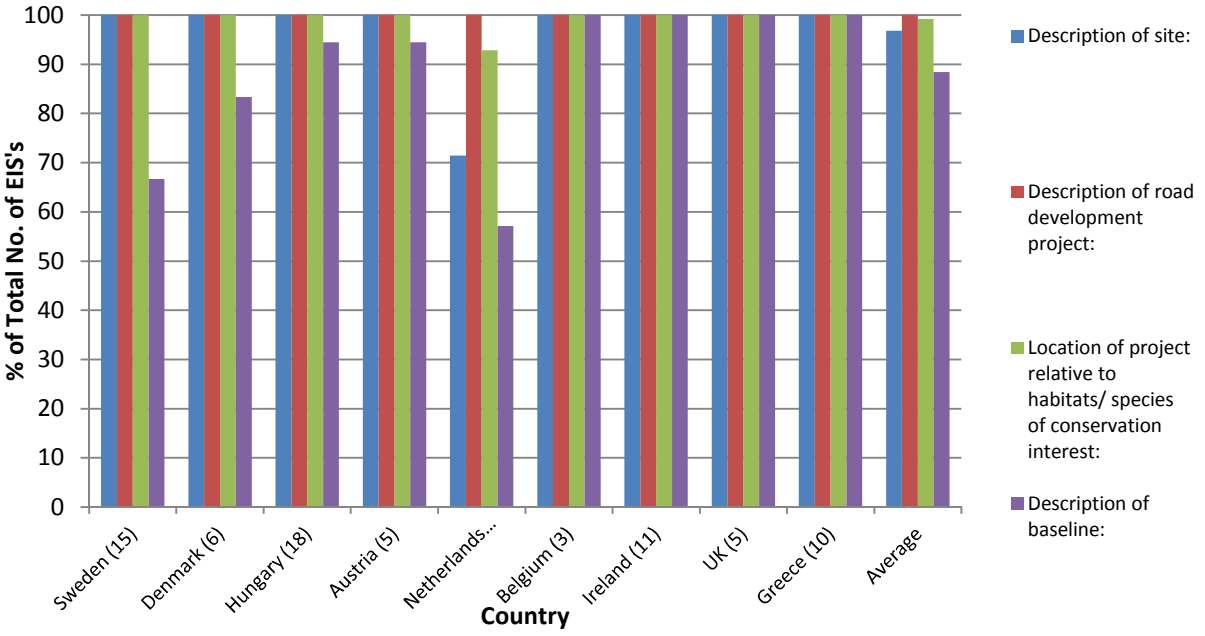


Figure 16 - Sources of baseline data for EIA

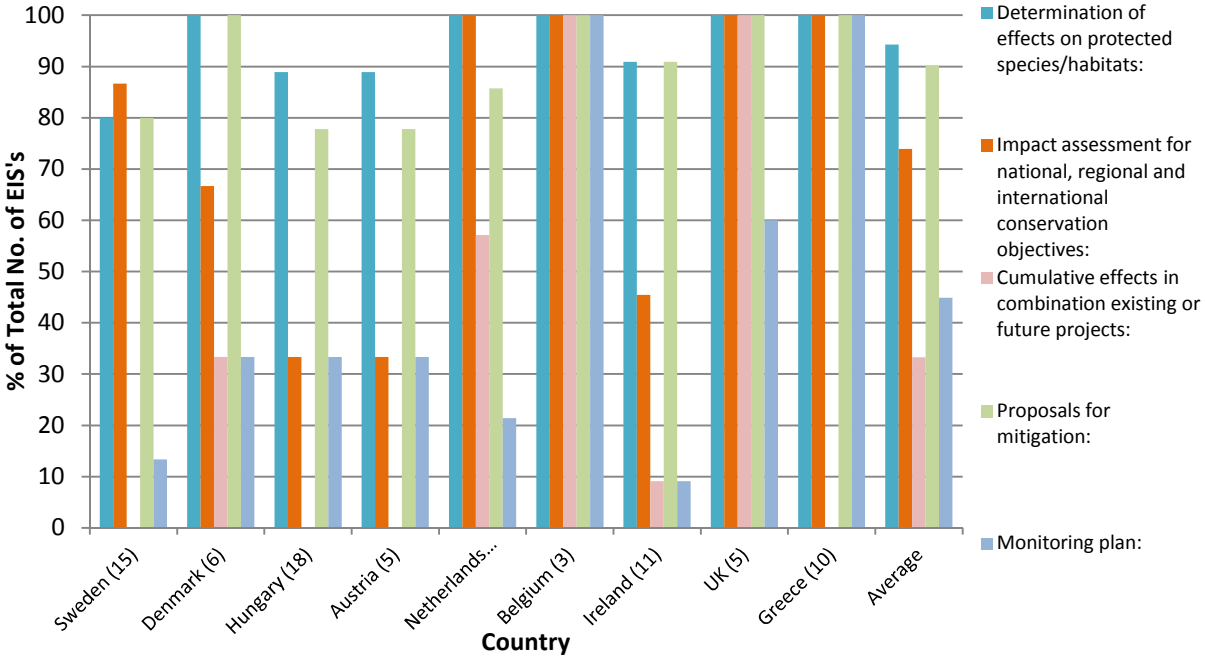
An assessment is made of the topics that are typically addressed within an EIS and it is found that the following topics can be addressed:

- Description of site
- Description of road development project/plan
- Location of project/plan relative to habitats or species of conservation interest
- Description of baseline
- Determination of effects on protected species/habitats
- Impact assessment in light of the national, regional and international conservation objectives
- Cumulative effects in combination with other existing or future projects or plans:
- Proposals for mitigation
- Monitoring plan

The 87 EISs examined are analysed with respect to these nine topics. The results of this analysis can be seen in Figures 17 (a) & (b). From the figures it can be seen that, with the exception of Denmark, Belgium and the UK, countries do not tend to address the cumulative effects of a project in combination with other existing or future projects. It follows that in practice, most EISs do not account for cumulative effects. It can also be seen from Figure 17(b) that few of the EISs examined address the issue of monitoring plans post-construction.



(a)



(b)

Figure 17 – Summary of Planning Approval System for eight reference[c] countries plus Greece

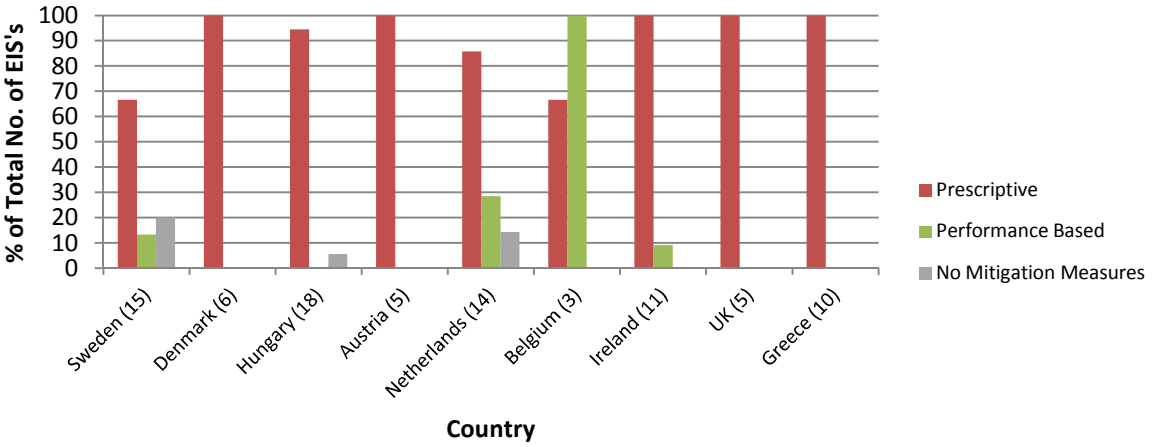
Proposals for mitigation form a large and important part of any EIS. In recent years, there has been a push for more performance based specification of mitigation measures. In a performance based specification, a performance standard is specified rather than prescribing the actual mitigation measure itself. For example, it might be specified to the contractor that the mitigation measure must connect two communities of badgers. If a more prescriptive approach were used on the other hand, the precise number and locations of the badger

passes would be specified. Using a performance based approach should ensure that the required outcome is met while allowing the contractor to achieve this outcome in the most cost efficient manner. However, it must be noted that this would require a greater level of monitoring, post construction, and uncertainties outside the control of the contractor.

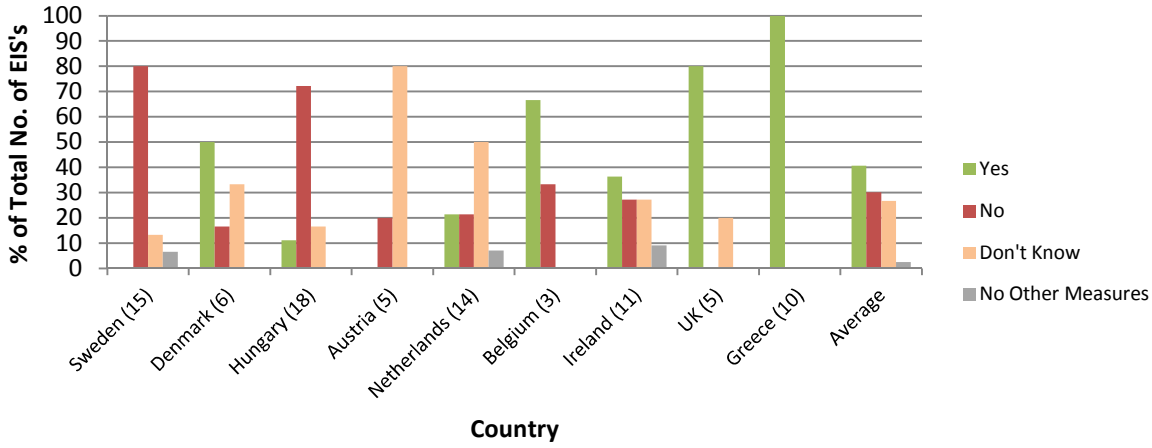
Figure 18(a) shows the percentage of EISs that use performance based and/or prescriptive descriptions of mitigation measures. From the figure, it can be seen that the vast majority of EISs in all countries still use a prescriptive approach. It can be seen that there are examples of performance based specifications of mitigation measures in Sweden, Belgium, the Netherlands and Ireland. A good example of a performance based specification from Ireland relates to water quality for the protection of aquatic organisms by providing threshold levels for release of suspended solids to watercourses of 25mg/l. Table 4 shows the examples of performance based measures found in the EISs examined. Overall, it is found that there is a lack of good examples of performance based mitigation measures. While examining a performance based measure, it is important to consider their effectiveness. Often these measures are vague and open to interpretation by the contractor. For these reasons a combination of performance-based and prescriptive is necessary. That is to say the mitigation should, where possible, be outlined in performance-based terms, but the developer should outline a real way of achieving that performance.

Table 4 – Examples of performance based measures

Country	Example
Sweden	There is a risk that the tunnel proposed as part of the project could lower the groundwater table of the Natura 2000 site to levels harming old oak trees. In collaboration with the County Administrative Board, the Road Administration will decide the groundwater level below which the risk of damage to the oak trees cannot be excluded. Measures will be taken to ensure the ground water level. This could be achieved in a number of ways and that decision remains with the contractor.
Sweden	There is a risk that dust containing nitrogen from tunnel blasting will cause damage to the vegetation in a Natura 2000 site. The level of dust should be reduced. The method used to achieve this can be decided by the contractor.
Sweden	Culverts should be designed to allow the movement of aquatic animals.
Netherlands	Measures should be taken to ensure that additional deposition of NOx is removed from the soil and that the effects of additional deposition are undone. This could be carried out through nature management measures such as removing divots and chopping trees.
Netherlands	Measures should be taken to reduce the barrier effect of the road for bats. The way this is carried out remains the decision of the contractor.
Netherlands	A new habitat must be created for amphibians and fish. No details are given as to the location or size; it is only stated that it should be suitable for amphibians and fish.
Ireland	Measures should be taken to limit the release of suspended solids to watercourses to 25mg/l in order to protect aquatic organisms.



(a) Percentage of EISs that use performance based and/or prescriptive methods to specify mitigation measures



(b) Percentage of EISs that have taken ecological considerations into account when specifying non-ecological environmental mitigation measures

Figure 18 – Analysis of EISs by country

As part of an EIS, non-ecological environmental mitigation measures are typically specified. It is therefore investigated whether ecological considerations have been taken into account in the design of such environmental mitigation measures. The results of this investigation can be seen in Figure 18(b). An example of an environmental mitigation measure that might have ecological effects is if a solid barrier for noise attenuation prevents the passage of animals. It is found that in Greece, all the EISs take ecological considerations into account. In Sweden and Hungary on the other hand, it is found that the majority of EISs do not take ecological considerations into account. It is also noted that in a lot of cases, it is not evident in the EIS whether ecological considerations are taken into account.

The EISs were analysed to identify what types of mitigation measures were used for the different habitat and species groups. The habitat and species groups considered are shown

in Table 5, along with the number of EISs that include mitigation measures for that group. For example, 10 of the Greek EISs include mitigation measures for Habitats and Flora. Figure 19 to Figure 25 show the analysis results for the various types of mitigation measures specified in the EISs. It is important to note that the percentage values shown are not percentages of the total number of EISs, but rather percentages of the number of EISs that considered that species group. It is noted that in general, mitigation measures are broad ranging and cover a large range of species and habitats. Furthermore, it must be noted that some of the mitigation measures specified for larger mammals will also be effective for other species group.

Table 5 - Habitats and species groups considered in EIS samples

	SE	DK	HU	AT	NL	BE	IE	UK	GR
Habitats & Flora	7	4	15	5	7	3	11	5	10
Large Mammals	7	6	8	5	6	2	9	3	4
Small Ground Mammals	6	4	10	5	6	1	4	3	10
Fish	3	3	2	3	7	0	7	3	0
Birds	1	1	13	5	8	3	7	5	2
Bats	1	4	1	4	9	2	8	2	0
Amphibians & Invertebrates	7	6	12	5	7	2	2	3	10

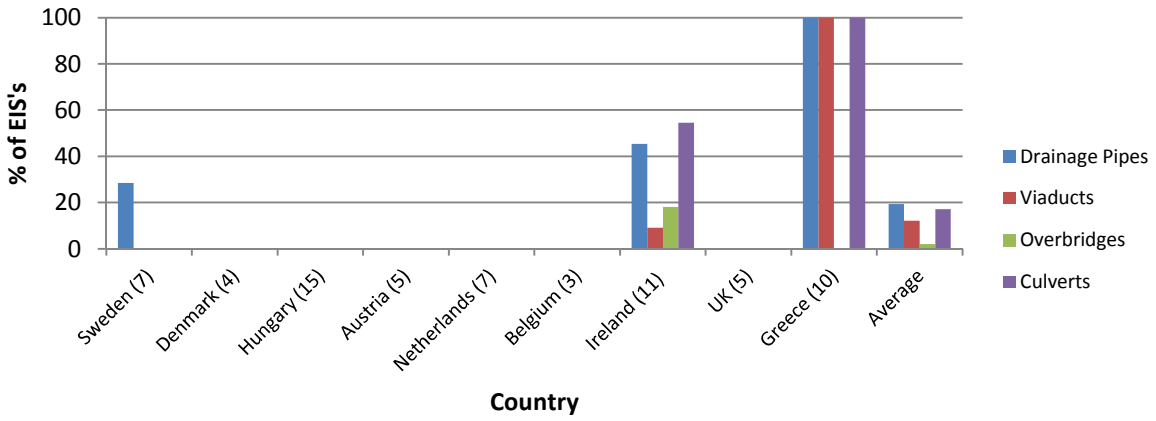


Figure 19 (a) - Mitigation measures for habitats and flora

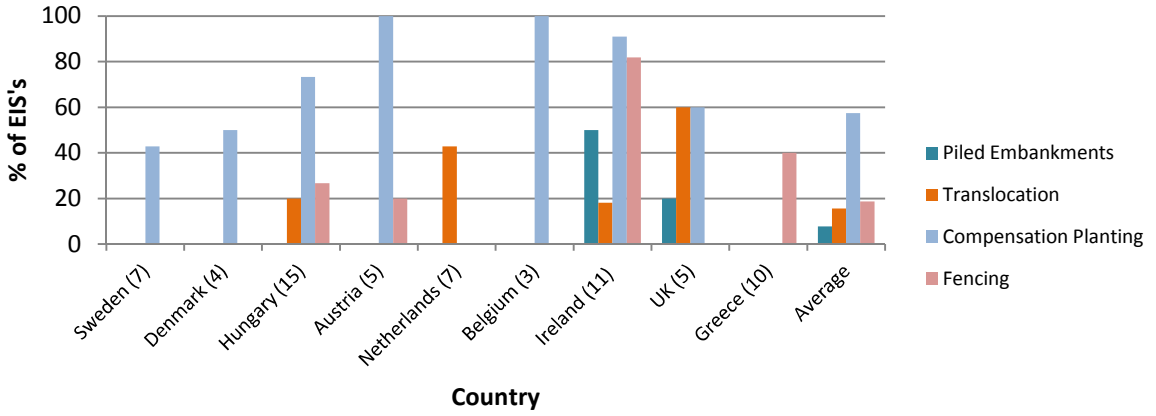


Figure 19 (a) - Mitigation measures for habitats and flora

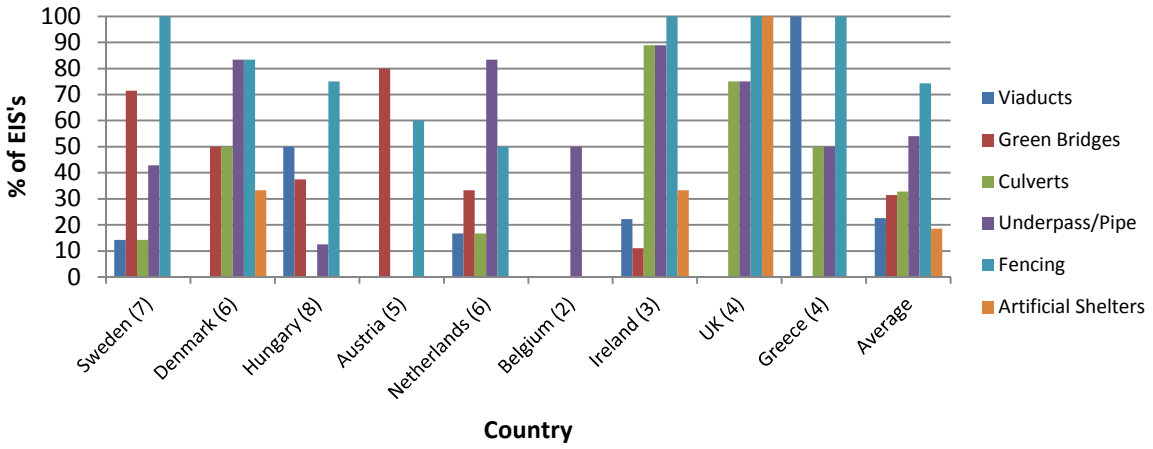


Figure 20 - Mitigation measures for large mammals

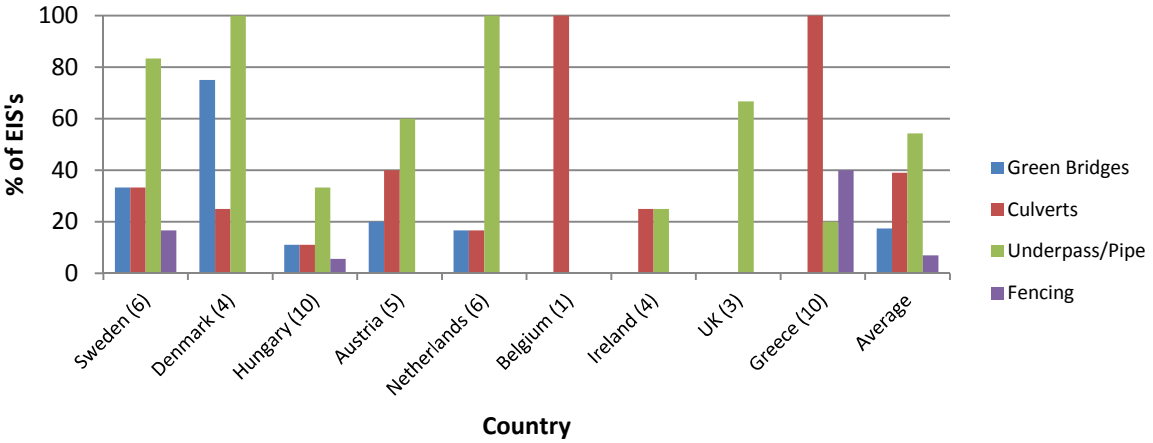


Figure 21 - Mitigation measures for small ground mammals

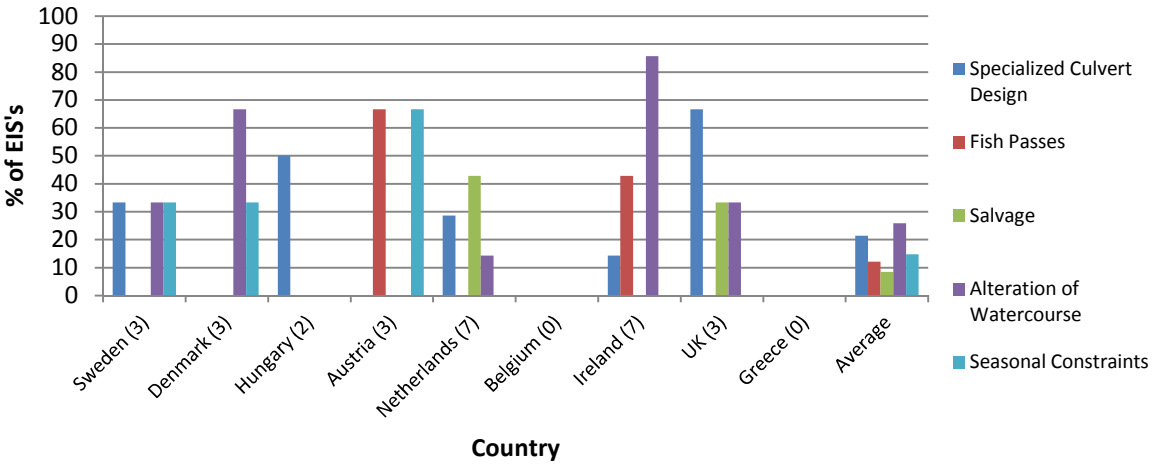


Figure 22 - Mitigation measures for fish

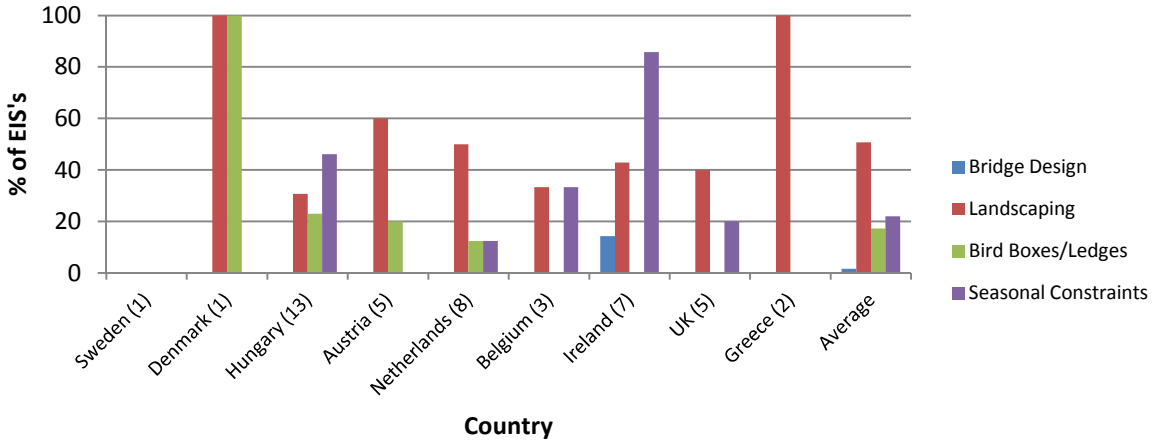


Figure 23 - Mitigation measures for birds

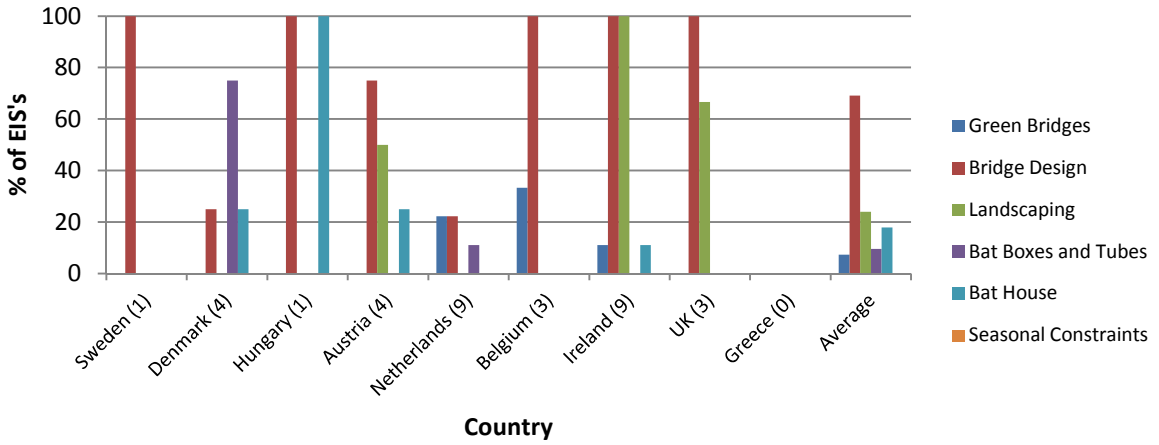


Figure 24 - Mitigation measures for bats

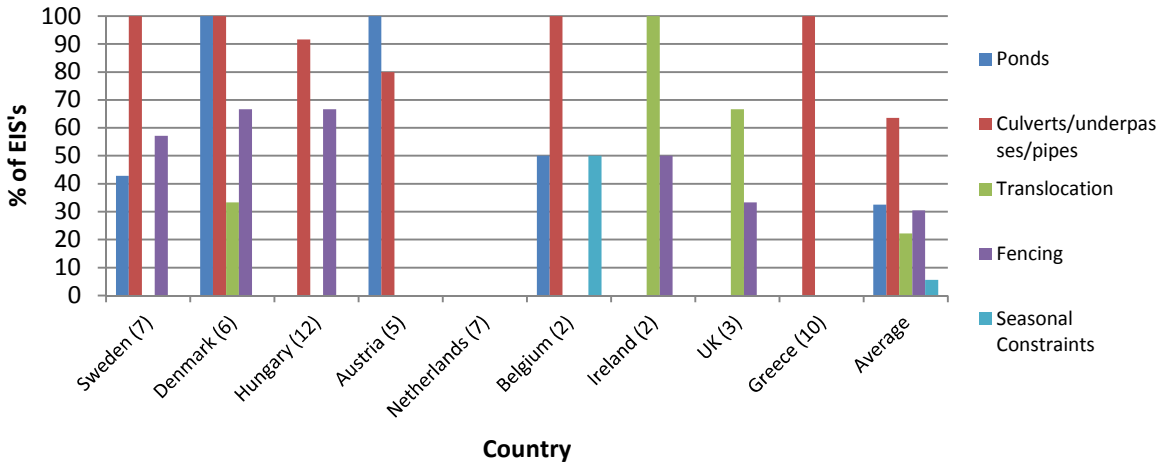


Figure 25 - Mitigation measures for amphibians and invertebrates

2.3 Discussion

The results of the audit carried out to identify the degree of implementation of the EISs under multiple headings show that the degree of implementation varies greatly between countries. A general trend in most countries is that EISs require little or no monitoring to be carried out. When examining the results of this audit, it must be noted that it is very subjective as it depends on the expert opinion of several individuals. Additionally the level of requirement set out in the respective guidelines will impact on the degree of monitoring recommended, e.g. while monitoring is identified within many guidelines the level of detail and clarity on monitoring is limited. Therefore the level of monitoring carried out is reflective of this.

It was found that standardized guidelines are available for ecological assessment in most countries. However, guidelines dealing with specific habitats are less standardized across the countries considered. Only five of the eight countries considered have guidelines available for specific species or habitats. It is noted that in the UK there are guidelines available for certain species or habitats for non-road schemes; however, these are not specific to roads. This presents an opportunity to develop a more standardized approach to guidelines for specific habitats and species.

Another finding of this section of the report is that the terminology used within the EIS guidelines needs to be standardized in some countries. Often there are no clear guidelines in defining measurement of impacts, e.g. short term impact may be subject to the assessor's interpretation of this. It is found that there is no clear definition given for short, medium and long term impacts in six of the eight countries' guidelines. Based on these findings it is noted that there is scope for an EU standard on terminology in order to reduce the potential for different interpretations. It is also found that the competency requirements of an ecologist set out in the guidelines varies from country to country.

A significant proportion of the EISs examined were found not using surveys carried out within the past two years. Field assessments are a fundamental aspect to any EIA and it is important that the information is up to date. Therefore, clear guidelines are required on the timing of surveys for different species and habitats.

One of the most important findings of this section of the report is that cumulative impacts are not suitably addressed in a significant proportion of the EISs examined. Assessment of cumulative effect remains difficult for the developer as there is a great deal of uncertainty and a lack of guidance on how to properly assess the cumulative effect of a project, in particular when it is related to larger plans. While the provision of Strategic Environmental Assessment and Appropriate Assessment Guidelines are available, they appear at times to be at too high a level and difficult to assess within the EIS as part of a cumulative effect. It is therefore recommended that clearer EU guidelines be developed to provide recommendations on how the cumulative effects of a project should be assessed.

It is also found that a large proportion of the EISs examined do not include a plan for monitoring. In general, although it may be included in the guidelines, it is not followed through as part of the EIA. Since it is generally considered good practice to carry out monitoring, it is concluded that clearer and more stringent guidance is required in this area.

3 Review of Appropriate Assessments

3.1 Review of AA Guideline Documentation

The first step of this task is to carry out a comparative analysis of the relevant national guidelines from a representative sample of European countries. The reason for this study is to highlight divergence and overlap of guidelines which may be leading to inconsistency in practice. In order to carry out this comparative analysis in a consistent manner, a template for reviewing the AA guidelines in the eight reference[c] countries was produced. This template can be seen in Section A.4 of Annex A. Table 6 shows a summary of the results of the comparative analysis.

Table 6 - Summary of AA guideline reviews for eight reference countries.

Questions		SE	DK	HU	AT	NL	BE	IE	UK
Q1. Does your country have national guidelines for AA?	Yes	X	X			X	X	X	X
	No			X	X				
Q 2. For which of the following aspects does your country have national guidelines?	Significance (of adverse effects)	X	X	n/a	n/a	X	X	X	X
	Direct and indirect (external) effects	X	X	n/a	n/a	X	X	X	X
	Accumulation of effects	X	X	n/a	n/a	X		X	X
	Mitigation	X	X	n/a	n/a	X	X	X	X
	Monitoring			n/a	n/a				
	Other *	X		n/a	n/a	X	X		
	* How to describe the reference situation (BE); Nature inclusive design and netting (NL); What is a project? (vs plan and other activities) (NL); How to proceed when the designation of a N2000 site is not definitive yet? (NL & SE).								
Q 3. What kind of guidance documents exist in your country?	A simple translation of the EU Article 6 guide	X		n/a	n/a				
	A detailed methodological guide or handbook	X	X	n/a	n/a	X	X	X	X
	Checklists			n/a	n/a	X	X	X	
	Other *			n/a	n/a	X	X		
	* Online tool (BE & NL)								
Q 4. Is a list of possible impacts that must be analysed in an AA available?	Yes	X				X	X	X	X
	No			X	X				
	Unknown		X						
Q 5. Are, in your country, scientifically agreed thresholds or criteria for determining significance available?	Yes								
	No	X	X	X	X	X	X	X	X
Q 6. Is or was assistance available for executers of AAs in	Yes	X	X			X	X	X	X

Questions		SE	DK	HU	AT	NL	BE	IE	UK
the form of non-commercial courses, seminars or workshops?	No			X	X				

According to the responses it is found that all countries, except Hungary and Austria, have national guidelines for the performance of Appropriate Assessments, and that these guidelines are more than just a translation of the Article 6 guide prepared by the European Commission (2002). For Irish, Belgian and Dutch executers of AAs there are also other guidance documents or tools available besides a detailed methodological guide or handbook, such as checklists and online tools.

From Question 2, it can be seen that in all countries with national guidelines, these guidelines treat the significance of adverse effects, the difference between direct and indirect (external) impacts and mitigation. However, none of the guidelines have a chapter or paragraph about monitoring the (absence of) impacts of a project or the effectiveness of mitigation measures. This does not mean that guidelines for monitoring do not exist. Most countries do have guidelines for monitoring changes or trends in flora and fauna that can also be applied for the monitoring of project impacts or the effectiveness of mitigation measures. Also from Question 2, it can be seen that in all countries with national guidelines, Belgium is the only country that does not have guidelines on the subject of accumulation of effects.

Beside guidelines for the aspects mentioned, Sweden, Belgium and the Netherlands have additional guidelines about the description of the reference situation (BE), nature inclusive design (NL), netting (NL), the difference between a project, a plan and other activities (NL) and how to proceed when the designation of a Natura 2000 site is not definitive yet (NL & SE). See the textbox (next page) for an explanation of nature inclusive design and netting.

An Article 6(3) assessment should focus on the implications for the site in the context of the site's conservation objectives. A long list of possible impacts during construction and exploitation of a road can be made. If every executer of an AA were to prepare this list themselves, AAs would not be comparable and possible impacts could be forgotten. From Question 4, it can be seen that in several countries, lists of possible impacts are available, saving time and discussion about what impacts to assess. In the Netherlands the list also mentions which habitat type or species is susceptible to the impacts (Figure 26), however, with progressing knowledge it is always good to use these kinds of lists with extra thought and consideration.

The assessment of significance of adverse effects is the most delicate part of an AA. Essentially, the assessment of the significance is a judgement based on a number of factors. The assessment of significance may be made more objective with the use of criteria and standards. However, from Question 5, it can be seen that none of the countries in the review have scientifically agreed thresholds or criteria for determining significance. Nevertheless, thresholds to assess the significance of effects are used, for example, for the effect of noise on birds or the effect of nitrogen deposition on habitat types and species. In relation to the latter, many countries have developed critical loads for habitat types and protected species (Whitfield & McIntosh, 2014). When the nitrogen deposition exceeds these critical loads, adverse effects cannot be excluded. However there is still a lot of debate about the magnitude of the threshold that is considered safe. The same applies for thresholds used to

assess the effects of noise on birds. Thresholds are often based on research on one or a few bird species in a specific environment. It is unknown if these results can be extrapolated to other bird species and other environments, though this is done in many AAs. As the review of AAs will show (Section 3.2 below) expert judgement about the significance of effects is still indispensable.

Creative solutions to avoid application of Article 6.4
If a plan or project may adversely affect the integrity of a Natura 2000 site, Article 6.4 of the Habitats Directive must be applied. This provision imposes strict conditions for authorising a plan or project that may adversely affect the nature values of a Natura 2000 site. In this context the obligation to take compensation measures is the *ultimum remedium*. Initiators of a plan or project try to avoid the application of the strict conditions of Article 6.4 by mitigating the effects of their plan or project so that the conclusion of the appropriate assessment on the basis of Article 6.3 of the Habitats Directive will be positive. The trick is to find solutions that allow the negative effects of the plan or project, on the one hand, and the positive effects of the nature conservation measures, on the other, to be balanced. Apart from the classic mitigation measures, several creative solutions are applied in the Netherlands in practice. If the nature conservation measures are inextricably linked to the plan or project, these solutions are variations on the theme of mitigating measures, such as nature inclusive design and netting. If the measures are taken independently of the plan or project, they must be classified as autonomous developments. At least this was the idea until the beginning of 2014.

Nature inclusive design and netting
'Nature inclusive design' means that the objectives of the plan or project include nature protection measures. For example, if, after implementing all kinds of mitigation measure to diminish the adverse effect on the quality of a habitat type, some effects remain, an extra measure is proposed at another place in the Natura 2000 site to increase the surface of this habitat type. It must be clear from the project proposal that this extra measure is really going to be implemented as part of the project. In other words, 'nature inclusive design' implies that social, economic and nature conservation objectives are integrated in one project.

Netting or balancing of effects means, briefly, that a project with adverse effects for a Natura 2000 site is licensed because another license is withdrawn, so that, on balance, no significant adverse effects occur. For example, the increase in nitrogen deposits caused by a cattle farm can be balanced by the reduction in nitrogen deposits as a result of the withdrawal of one or several licenses for (an)other cattle farm(s). The granting and withdrawal of licenses must be directly linked and the balancing is only allowed as far as the same habitats of species or habitat types in the same Natura 2000 site are concerned or, depending on the specific circumstances, even the same location thereof in the Natura 2000 site.

Mitigation or compensation?
The Dutch Council of State was not sure about the validity of nature inclusive design as a mitigation measure and asked the European Court of Justice for advice. On May 15, 2014, the Court made clear that nature inclusive design must be interpreted as compensation instead of mitigation (Case C-521/12 Briels and others). According to the Court only diminishing adverse effects on the spot where they occur is considered mitigation. Measures taken at other places are considered compensation. Before compensatory measures are proposed it must first be demonstrated that alternatives for the project do not exist and that imperative reasons of overriding public interest apply (Article 6.4).

Assessing the implications of a project or plan for the integrity of a Natura 2000 site must be objective and reasoned with the best available scientific knowledge. However, because the scientific knowledge about the impacts of a development on flora and fauna is still meagre, this is not an easy task. Therefore it is very important to explicitly clarify in the AA the reasoning, for example what data or criteria are used. It is thought that the chance of

objections to the AA is reduced with an increase in awareness among the executers of AAs about these issues. According to the results of Question 6, in six out of eight countries, the government offers the executers of AAs assistance in the form of non-commercial courses, seminars or workshops.

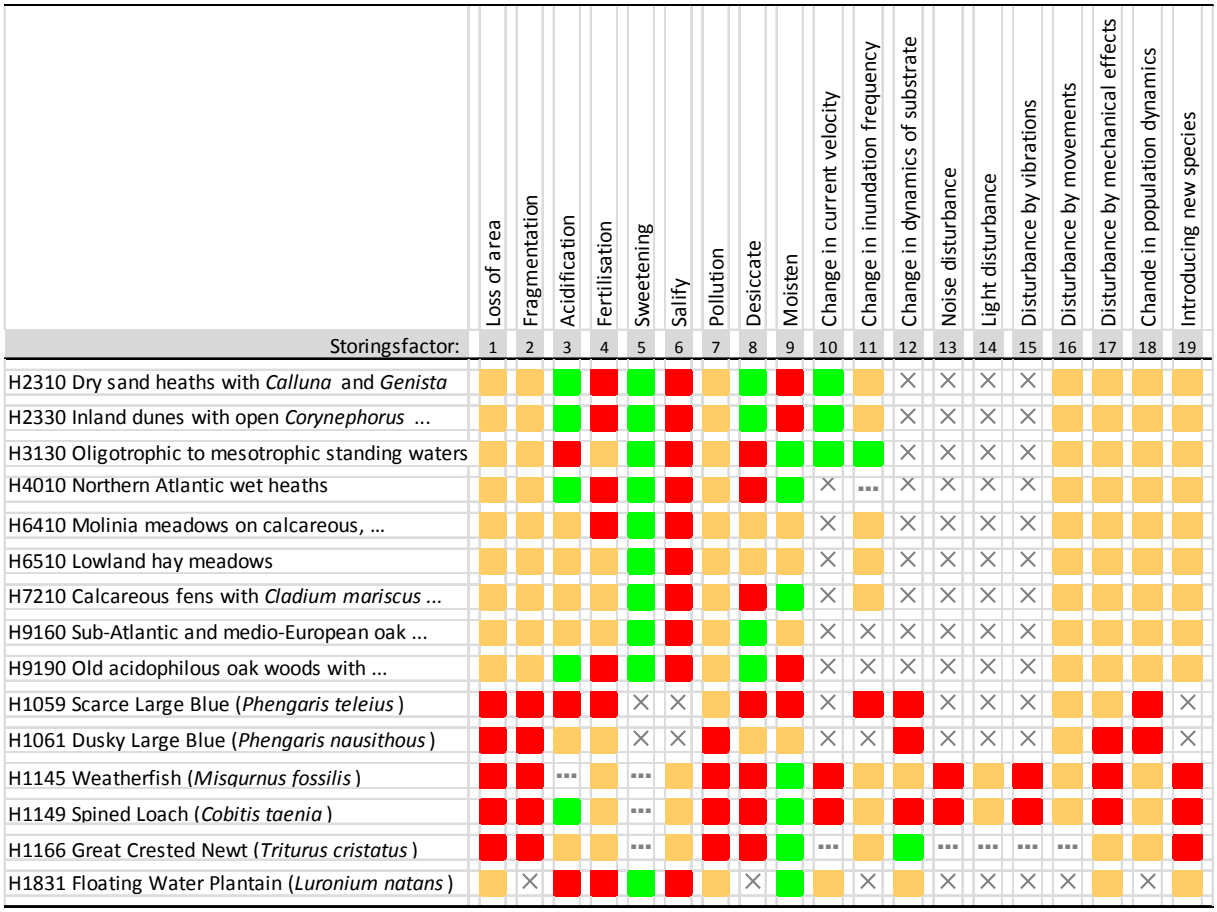


Figure 26 – Example of the matrix showing the susceptibility of habitat types of Annex 1 and species of Annex 2 for 19 different impacts (Red: very sensitive, orange: sensitive, green: not sensitive, X: not applicable, …: unknown)

3.2 Review of Appropriate Assessments

For this part of the study, sample AA reports from the eight reference[c] countries are analysed to identify similarities and differences between countries. The countries and number of AA reports analysed for each can be seen in Table 7. The project names and some further details can be found in Section D.1 of Annex D

Table 7 – Number of AA Reports Analysed

Country	Number of AA Reports Analysed
Sweden	6
Denmark	6
Hungary	5
Austria	2
Belgium	3
Netherlands	10
Ireland	5
United Kingdom	2
Total	39

In order to ensure a variety of project scales and habitats, a template was developed to choose the AAs. This template can be seen in Section A.6 of Annex A. In order to analyse the AAs, a survey of questions was developed and can be seen in Section A.4 of Annex A.

The importance of professionals with ecological knowledge is recognised in all countries (Figure 27). Of the 39 evaluated AA reports, 87% were prepared by ecological consultancies. In five countries the principal, the road manager or the competent authority were involved as well. In some cases in Sweden and the Netherlands, the AA report was made by the initiator or principal of the infrastructural project alone, and in one case in the Netherlands an engineering company wrote the AA report (although this may have been done by the ecological division of the company). Only in Belgium and Hungary is it compulsory that the author of an AA report be licensed.

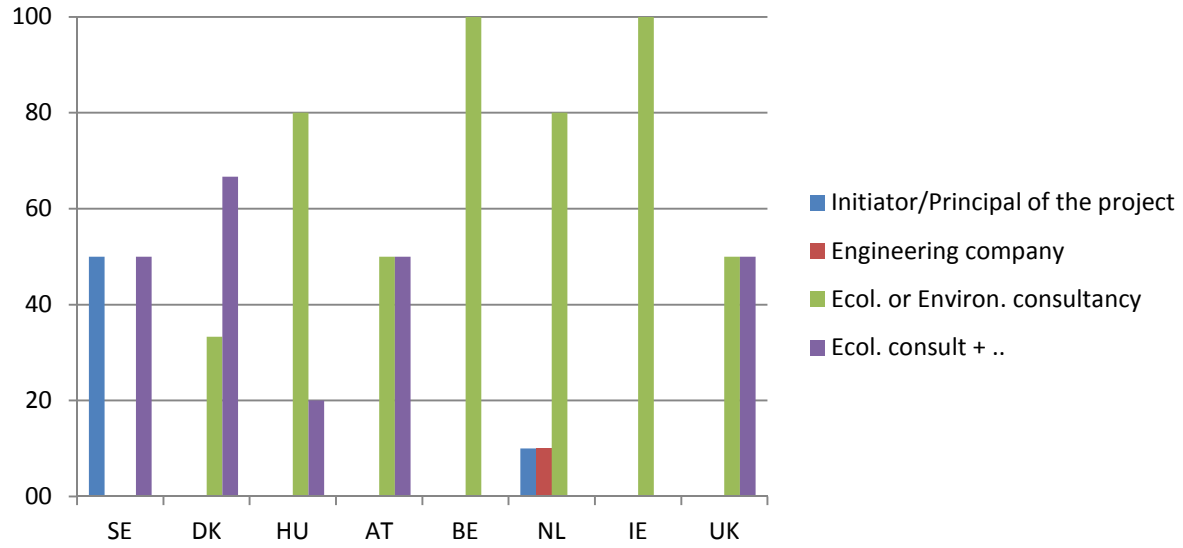


Figure 27 – Authors of AA reports in the 8 reference countries as a % of the number of AAs reviewed per country.

Although not compulsory in all countries (see Section 3.3 below), almost all authors of the AA reports consulted the statutory bodies in their country (Table 8). This will certainly have benefited the decision-making process.

Table 8 – Consultation with relevant statutory bodies by authors of AA reports. Number of AAs per country

	SE	DK	HU	AT	NL	BE	IE	UK
Yes	6	5	4	2	10	1	5	2
No	0	0	1	0	0	0	0	0
Not stated	0	1	0	0	0	2	0	0

Since each Natura 2000 site is different and may be influenced by a unique range of intrinsic and extrinsic factors, the Article 6(3) procedure requires a case-by-case approach. Therefore, it is important that every case is described and assessed properly to make a well-founded decision possible. This includes at least a thorough description of the project or plan and of the Natura 2000 site and the status of its conservation objectives.

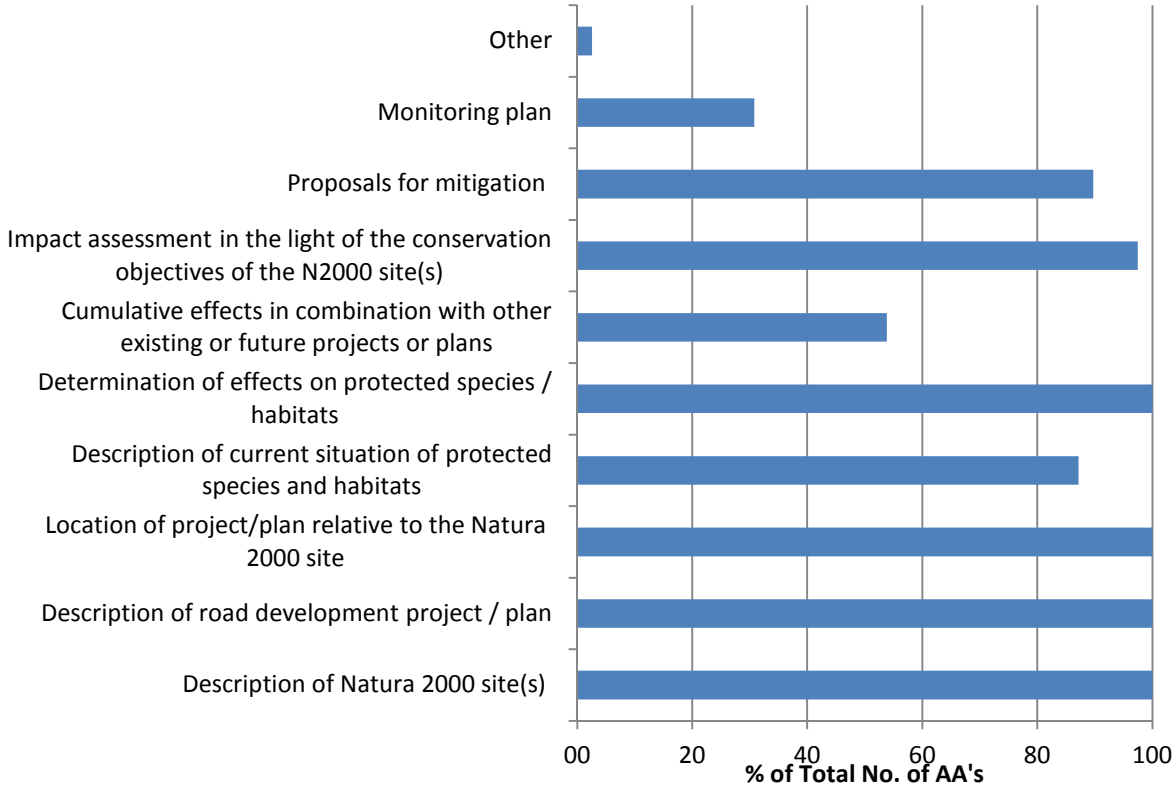


Figure 28 – Topics discussed in the AA reports as a % of the total number of AAs reviewed for all countries (Other = Compensatory measures are described in one Danish AA)

Referring to the content of the AA reports reviewed, it is noted that all give a description of the Natura 2000 site(s), a description of the road development plan or project and the location of the development relative to the Natura 2000 site(s). However, a description of the current state of the protected species and habitats is not always included (Figure 28). This is the case in Sweden, Hungary, the Netherlands and Ireland (Table 9). The cause for this shortcoming is unknown.

Chapters about cumulative effects, impacts in the light of the conservation objectives, mitigation and monitoring are only necessary when effects are expected to occur. However, if mitigation measures are proposed, one would also expect a proposal to monitor the effectiveness of the mitigation measures. From Figure 28, it can be seen that there is a discrepancy between the number of AA reports with proposals for mitigation and the number of AA reports with proposals for monitoring. This discrepancy exists in all countries (Table 9).

For the decision whether authorisation of a plan or project is granted, a monitoring plan is not necessary and it is also not mentioned in Articles 6(3) or 6(4) of the Habitats Directive. However it is recommended in the Methodological Guidance (European Commission, 2002) to monitor the predicted impacts and the efficacy of mitigation measures and explain how unforeseen impacts or failures will be addressed. Also, monitoring will generate knowledge that can be used with other development plans and projects. Therefore a proposal for a monitoring scheme gives added value to the AA report and helps the relevant authority to formulate the conditions imposed on the license to implement the plan or project.

Table 9 – Topics discussed in the AA reports as a % of the number of AAs reviewed per country.

	SE	DK	HU	AT	NL	BE	IE	UK
- Description of Natura 2000 site(s)	100	100	100	100	100	100	100	100
- Description of road development project / plan	100	100	100	100	100	100	100	100
- Location of project/plan relative to the Natura 2000 site	100	100	100	100	100	100	100	100
- Description of current situation of protected species and habitats	67	100	80	100	90	100	80	100
- Determination of effects on protected species / habitats	100	100	100	100	100	100	100	100
- Cumulative effects in combination with other existing or future projects or plans	33	17	0	0	100	67	80	100
- Impact assessment in the light of the conservation objectives of the N2000 site(s)	83	100	100	100	100	100	100	100
- Proposals for mitigation	83	100	80	100	80	100	100	100
- Monitoring plan	33	67	60	50	10	33	0	0
- Other	0	17	0	0	0	0	0	0

The sources used to assess the status of the protected habitat types and species in the Natura 2000 sites at the time of writing the AA report are examined and the results are shown in Figure 29 and Figure 30. In these figures, 'other' refers to interviews with locals and information in documents used for the designation of Natura 2000 sites. Figure 29 shows that fieldwork carried out within the framework of the assessed development and (online) databases are more or less equally used. Table 10 shows the number of AAs that assessed the specific groups (habitat types and species groups). It must be noted that in most AAs, more groups are present.

Table 10 – Number of AAs where habitat types and given species groups are assessed

	SE	DK	HU	AT	NL	BE	IE	UK	*Totals*
Habitat types	4	6	5	2	10	2	5	2	*36*
Plants	4	6	5	2	4	2	5	1	*29*
Invertebrates	4	3	5	1	4	1	4	1	*23*
Fish	1	1	1	2	8	1	5	1	*20*
Amphibians	1	5	5	2	6	2	1	1	*23*
Reptiles	1	5	1	2	4	-	1	-	*14*
Birds	3	5	5	2	8	2	3	2	*30*
Mammals	1	6	4	2	6	2	5	2	*28*
Totals	*19*	*37*	*31*	*15*	*50*	*12*	*29*	*10*	

There are some small differences between the groups. For example, for information about habitat types, a visit to the project area appears to be preferred over an intensive baseline study. While for amphibians, reptiles and birds, the intensive baseline study is preferred. For all groups, information in existing databases is important. For most groups this is more important than information in reports or scientific literature, with the exception of fish and amphibians. The opinion of experts is most frequently used. It has to be noted that expert judgement is never used alone. It is always combined with one or more of the other information sources and is essential to interpreting existing information from databases and reports.

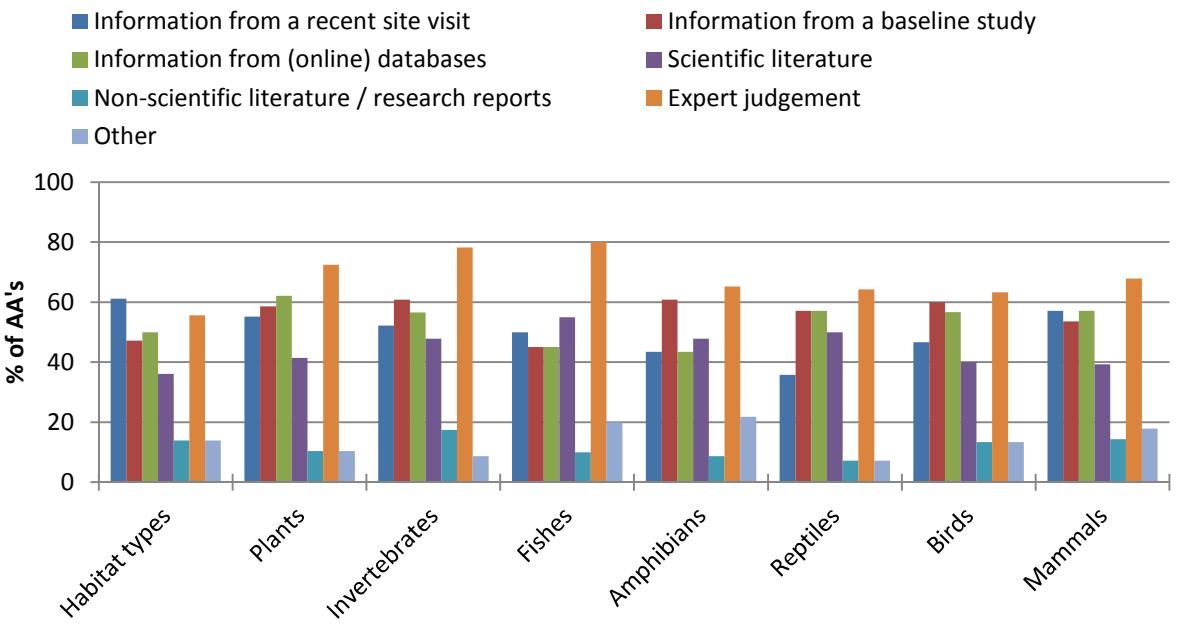


Figure 29 – Information sources for the AAs per flora and fauna group as % of AAs considering the species group (all countries combined)

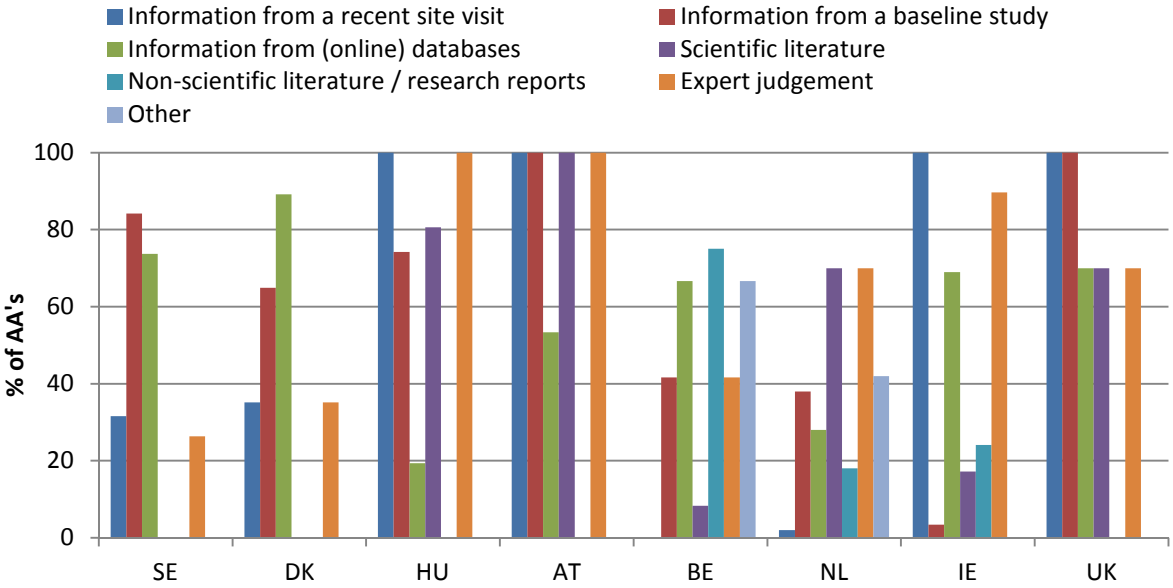


Figure 30 – Information sources for the AAs as % of number of AAs per country

Between the countries, there are significant differences in the sources used for information about the status of protected habitat types and species (Figure 30). For all Hungarian, Austrian, Irish and UK AA reports, the authors visited the project area to get to know the local situation. While in Belgium and the Netherlands, the authors almost never visited the project area. They rely heavily on the expert interpretation of existing data in (online) databases, scientific and non-scientific literature and information from locals. In Hungary, existing databases are rarely used because they are often difficult to access. It must be noted that for Austria and the UK only two AA reports were reviewed.

For the assessment of the significance of an adverse effect on the protected habitat types and species, it is not only essential to know whether they are present, but also in what quantity or density they are present. It is also important to know the function of the project area for the species. For example, if the project area is outside the Natura 2000 site, but it affects an important foraging site of protected birds breeding inside the Natura 2000 site, the project can have significant adverse effects on the conservation objectives of these breeding birds if it is likely that the population of birds in the Natura 2000 site would be reduced. On the other hand, if the project takes place in an area inside the Natura 2000 site used for breeding by protected birds, but many alternative sites inside the Natura 2000 site are available for the birds too, the loss or deterioration of the area may not be significant.

Figure 31 shows which aspects of the habitat types and species with conservation objectives were treated in the AAs. One would expect that the AA would at least describe the presence of the habitat types and species. For the habitat types this is true, but not for the species. Also it is clear that the other aspects are often not treated. It is especially striking that the current state of species and habitat types with conservation objectives is mostly not described. To be able to assess the significance of an effect, information about the current state is indispensable.

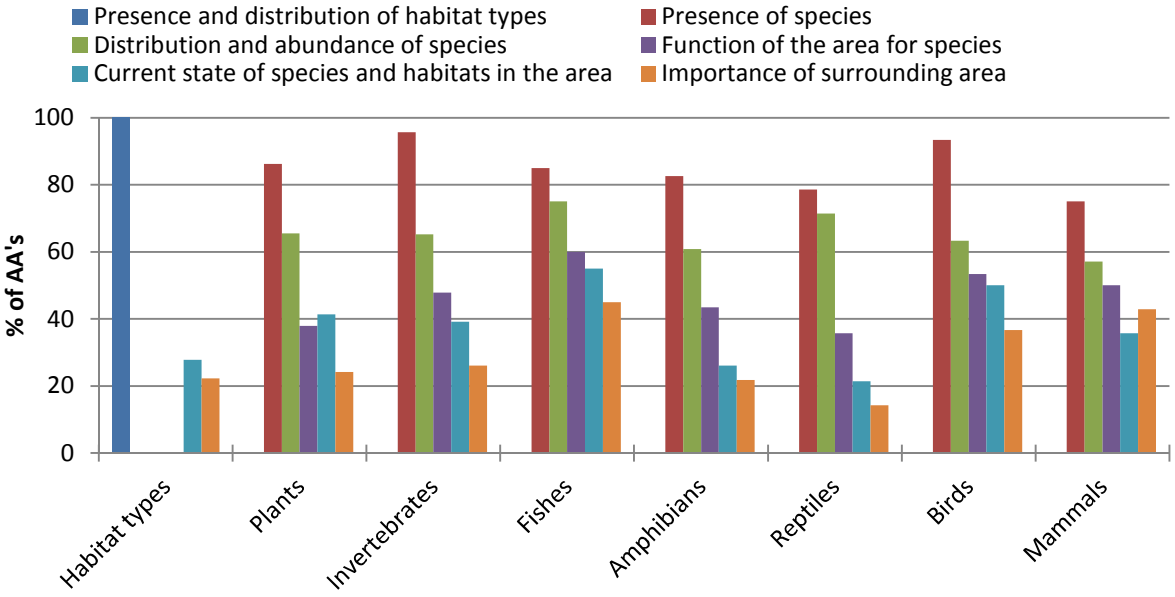


Figure 31 – Aspects described in the AA reports for flora and fauna groups as % of AAs considering the specific flora or fauna group (all countries combined)

Comparing the countries, it is noted that Denmark, the Netherlands, Ireland and the UK are the countries where the presence of species with conservation objectives is not always described (Figure 32). The importance of the surrounding area is never described in the Swedish AA reports and sometimes in the Danish, Hungarian and Dutch AA reports. Only in Austria, Belgium and Ireland is the importance of the surrounding area for more than half of the species with conservation objectives described. Also Austrian and Belgian AA reports described the current state for more than half of the protected species and habitat types, as is the case in the UK AA reports. In all other countries the current state is sometimes described. Only in Belgian AA reports are the distribution and abundance of species and the function of the area for species always described. In Dutch and Irish AA reports this is done for more than half of the protected species, while in all other countries, with the exception of Belgium and the UK, the distribution and abundance of species is more often described than the function of the area for species. In the UK it is the other way round.

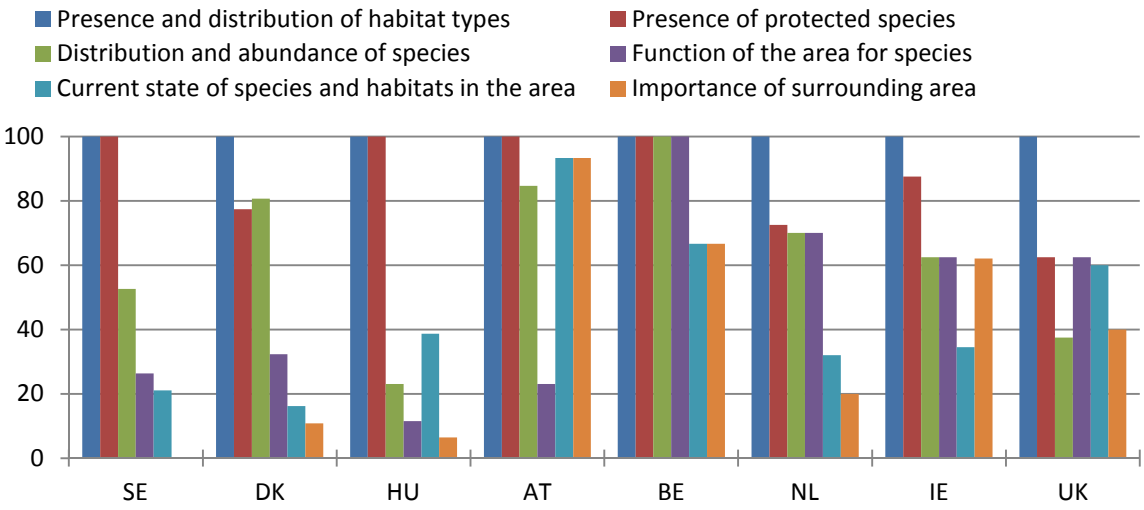


Figure 32 – Aspects described in the AA reports for flora and fauna groups as % of the number of AAs per country

The assessment of effects should be based on the current state of the protected habitat types and species. Hence, the data used to describe the state should not be too old. This is the case for most habitats and species considered (Figure 33). However, in some AA reports, the age of the data is not mentioned, which makes it difficult to evaluate whether the AA was carried out in an appropriate way. Transparency is a prerequisite for Appropriate Assessments.

Comparing the countries, it appears that only in Sweden and the Netherlands the age of the data is not always mentioned (Figure 34). As is to be expected, AAs based on data collected during a recent site visit (Figure 30) use the most recent data, and thus the scores for this age group are highest in Hungary, Austria, Ireland and the UK. A good sign is that data collected more than 5 years before the writing of the AA report is seldom used and in all cases it is only used as additional data in combination with newer data.

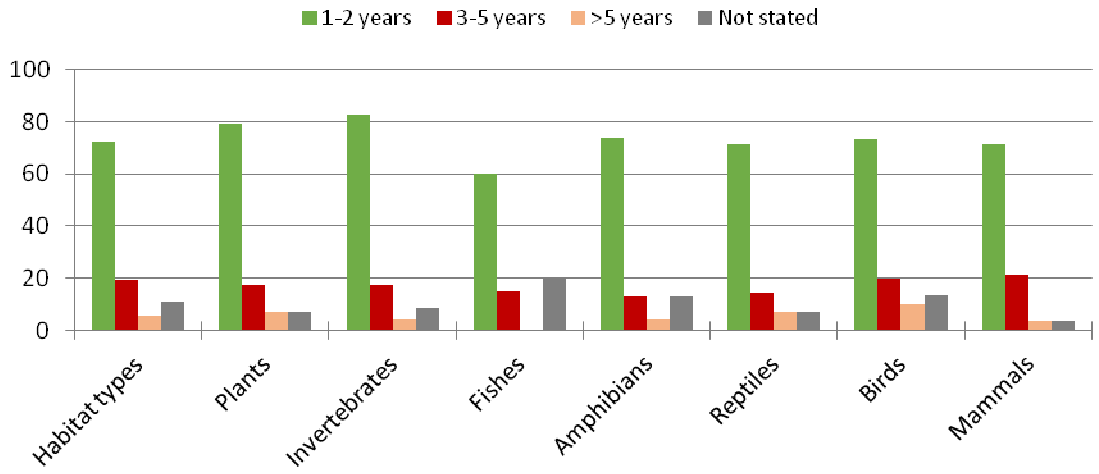


Figure 33 – Age of the data used to describe the current state of species and habitats with conservation objectives as % of AAs considering the specific flora or fauna group (all countries combined).

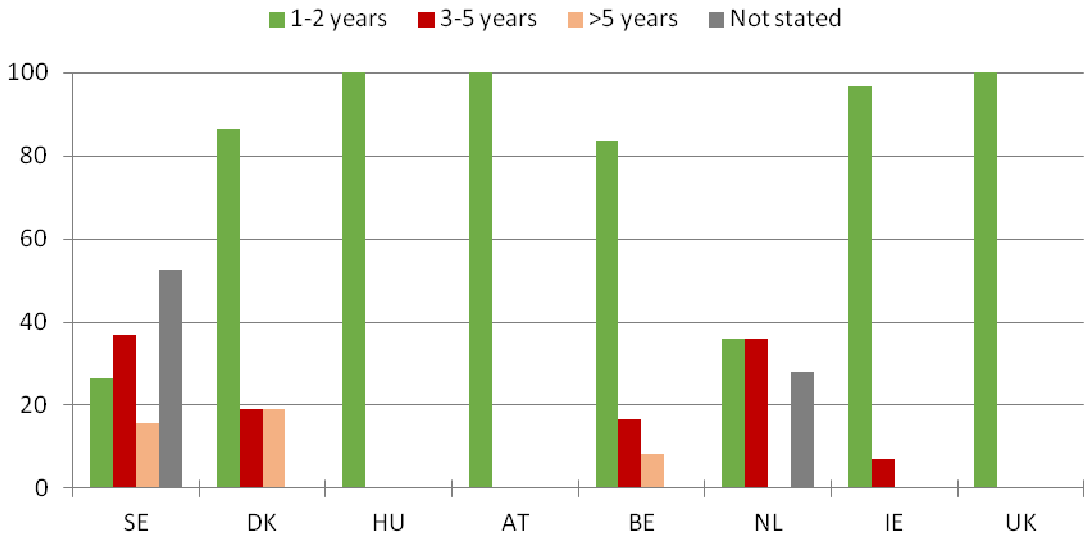


Figure 34 – Age of the data used to describe the current state of species and habitats with conservation objectives as % of the number of AAs reviewed per country

It is advised by the European Commission to monitor the effects of a development and the effectiveness of mitigation measures during and after the completion of a project. When a baseline study is carried out, it is wise to use a method that can be repeated later and delivers comparable data. Figure 35 shows that only for amphibians and reptiles is such a method used in more than half of the baseline studies. From Table 11 it follows that for many baseline studies it is not possible to ascertain the method from the AA report. From Table 11 it follows that this is only true for Sweden and Denmark. From Table 11, it can also be seen that in Austria, Belgium and the UK a method with monitoring in mind is almost never used.

Table 11 – Number of baseline studies where the research methods are based on a monitoring study of the effects on species and habitats which could be repeated after completion of the project

	Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals	SE	DK	HU	AT	NL	BE	IE	UK
Yes	5	6	6	4	7	3	6	6	0	7	17	1	18	0	0	0
Partially	1	1	2	0	0	0	1	1	5	0	0	0	0	0	1	0
No	7	5	4	4	3	2	6	6	1	0	6	14	1	5	0	10
Unknown	4	5	2	2	4	3	5	2	10	17	0	0	0	0	0	0
Totals	*17*	*17*	*14*	*10*	*14*	*8*	*18*	*15*	*16*	*24*	*23*	*15*	*19*	*5*	*1*	*10*

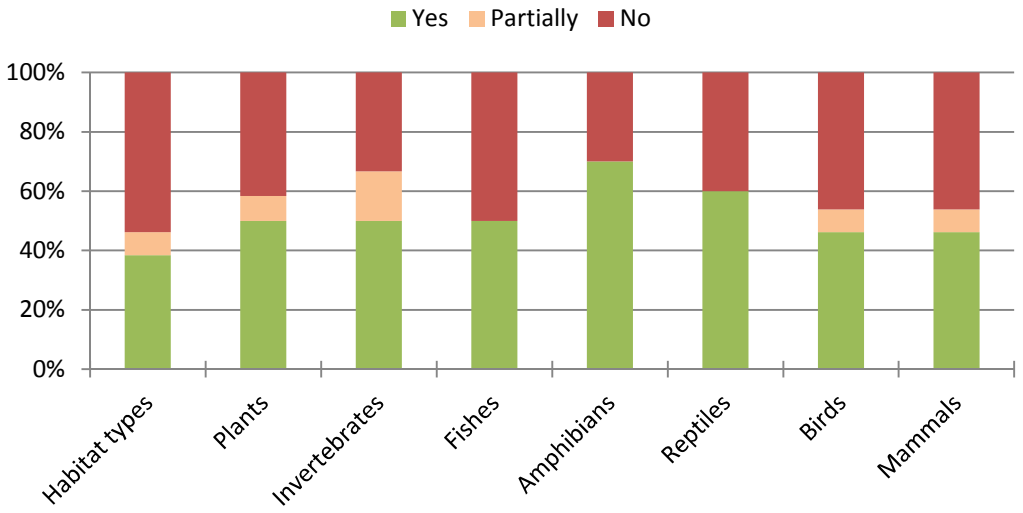


Figure 35 – Compliance of the research methods used for the baseline studies with a monitoring study of the effects on species and habitats after completion of the project (all countries combined)

In those cases that baseline data is not collected according to a monitoring scheme, is the fieldwork nevertheless carried out according to guidelines or general knowledge about best practice for field surveys? For example, for most species and habitat types there is an optimal season to check for their presence or use of the area. The review shows that, when known, 80% or more of the surveys are carried out according to guidelines or general knowledge about best practice for field surveys. Only for plants and amphibians is it just a bit less (Figure 36). However, for almost half (92 out of 203) of the data sets used for the AAs, it is not possible to find information about the survey method used in the AA.

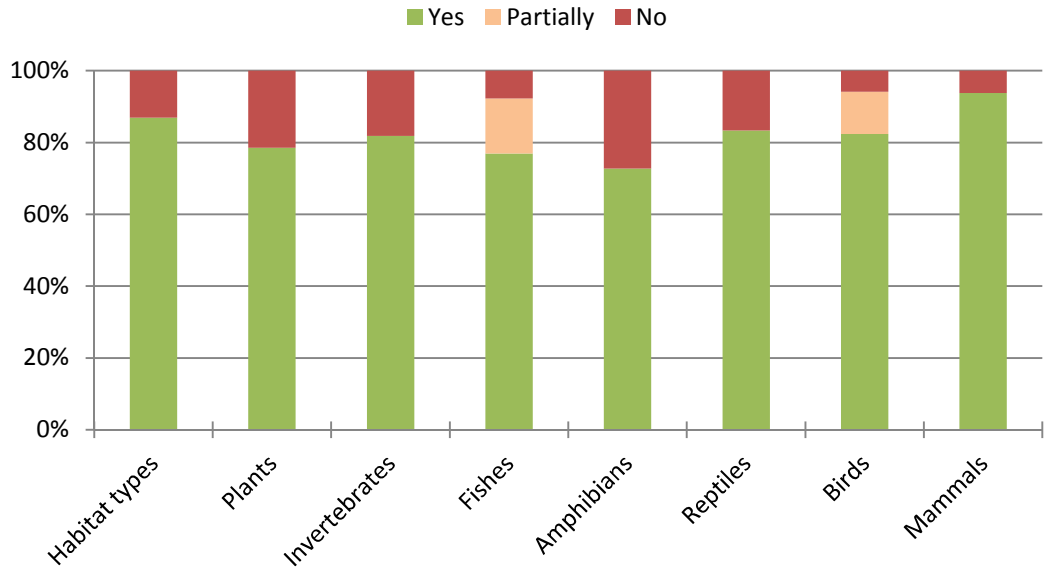


Figure 36 – Compliance of field studies with guidelines for, or general knowledge about, best practice survey (all countries combined).

Figure 37 shows large differences between the countries. Only in Hungary, Austria, the Netherlands, Ireland and the UK does the fieldwork always comply with the best practice survey methods known for the country. As mentioned before, not all reports are clear about the methods used (see table 11), which explains why Denmark is not included in figure 37.

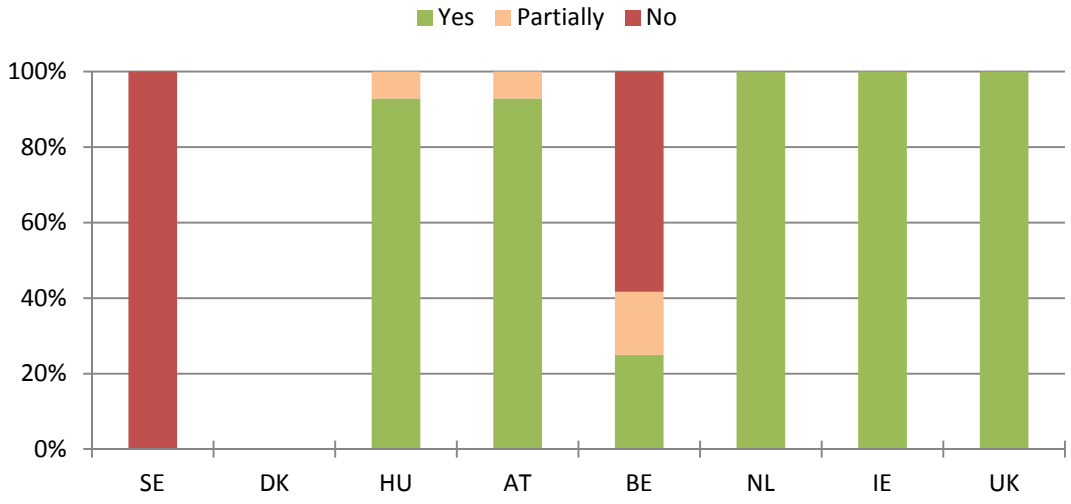


Figure 37 – Compliance of field studies with guidelines for, or general knowledge about, best practice survey methods

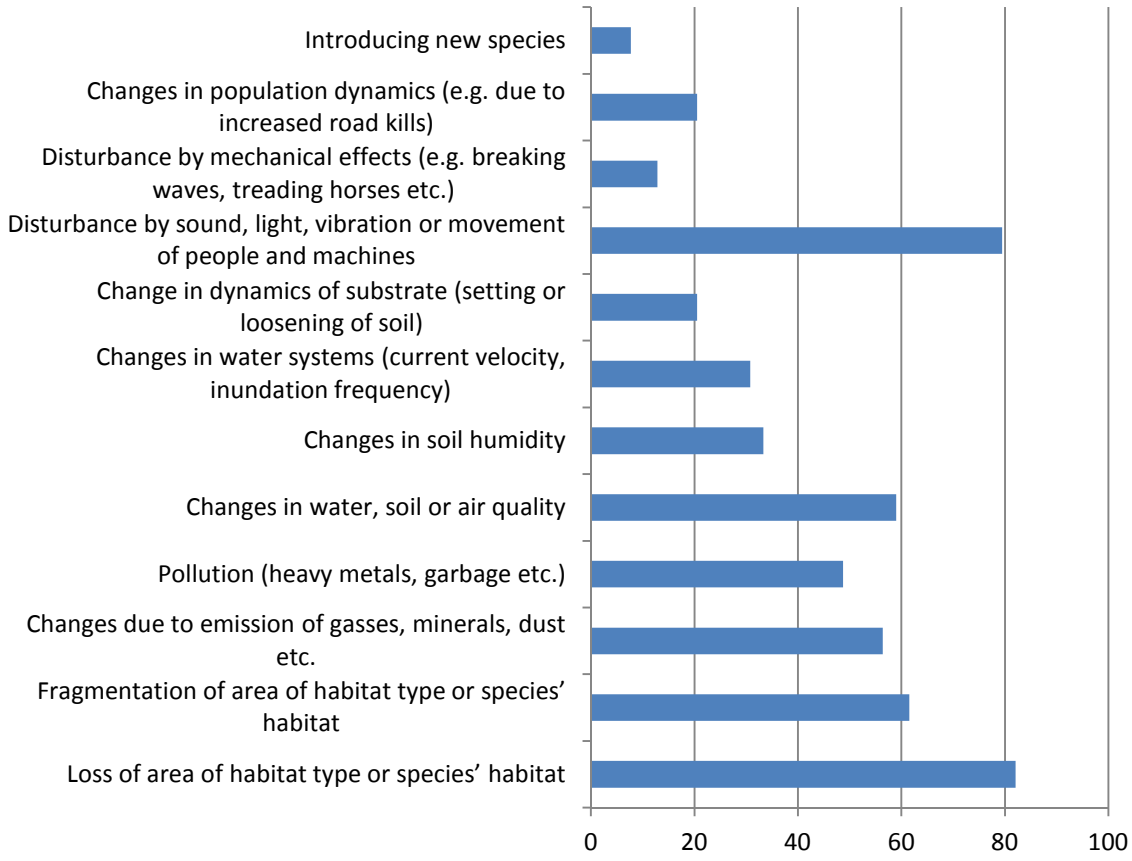


Figure 38 – Impacts assessed as a % of the total number of AAs reviewed (All countries)

Table 12 – Impacts assessed as a % of the number of AAs reviewed per country

	SE	DK	HU	AT	NL	BE	IE	UK
- Loss of area of habitat type or species' habitat	50	100	100	100	70	100	80	100
- Fragmentation of area of habitat type or species' habitat	33	33	100	100	40	100	80	100
- Changes due to emission of gasses, minerals, dust etc.	33	67	0	50	100	33	60	50
- Pollution (heavy metals, garbage etc.)	33	100	20	50	20	33	100	50
- Changes in water, soil or air quality	50	100	0	100	40	67	100	50
- Changes in soil humidity	33	67	0	0	40	100	0	0
- Changes in water systems (current velocity, inundation frequency)	0	67	0	50	30	0	60	50
- Change in dynamics of substrate (setting or loosening of soil)	0	17	0	0	10	0	100	50
- Disturbance by sound, light, vibration or movement of people and machines	50	100	100	100	80	100	60	50
- Disturbance by mechanical effects (e.g. breaking waves, treading horses etc.)	0	33	20	0	10	0	0	50

	SE	DK	HU	AT	NL	BE	IE	UK
- Changes in population dynamics (e.g. due to increased road kills)	0	0	40	50	10	33	20	100
- Introducing new species	0	0	20	0	10	0	20	0

Figure 38 and Table 12 show the division of the impacts assessed across the 39 AA reports examined. Impacts that are almost always assessed are 'Loss of area of habitat type or species' habitat' and 'Disturbance by sound, light, vibration or movement'. Possible impacts are site specific and thus it is reasonable that not all impacts are assessed in all AAs. It is interesting to note that the 'Introduction of new species' due to road construction or refit is assessed in three countries. It must be noted that for the review of impacts addressed, the list of impacts for Dutch AAs was used. The reviewers were given the option to add other impacts if necessary but none were added.

Impacts can occur during construction and during exploitation. For example, a new road will lead to an increase in traffic and a retrofitted road may do so. This in turn may lead to an increase in nitrogen deposition in a Natura 2000 site. The review examines whether the possibility of impacts in both phases of a project are considered. The duration of impacts are also reviewed. Impacts during the construction phase are often short-term, for example, disturbance by workmen and vehicles. On the other hand, the loss of a piece of habitat type is a long-term impact.

The AAs reviewed often concern construction work along long stretches of road and could therefore take place inside and outside of Natura 2000 sites. Therefore, in most cases, both direct and indirect impacts must be considered. Removing a piece of habitat to build a piece of road in the same location is a direct impact. Changes in the groundwater level due to the construction of a new road outside a Natura 2000 site may have indirect impacts on the Natura 2000 site by changing the humidity conditions.

Article 6(3) states that the AA should assess the likelihood of impacts caused by the project or plan itself, as well as in combination with other plans or projects. The AAs are therefore examined on this aspect too.

The results can be seen in Figure 39. Of the aspects mentioned, one would expect that 'long-term and short-term impacts' and impacts during the 'construction and exploitation phase' should always be treated in an AA. However, this is found not to be the case. Table 13 shows that the two phases of a project or plan are almost always treated (with the exception of Dutch AAs), but that a distinction between long and short-term impacts is only made in the Belgian, Irish and UK AAs and never in Austrian AAs. As before, it is important to note here that only two Austrian and two UK AAs were reviewed. Of course, the result of the AA may be that there are no effects; however, an AA should at least refer to these aspects.

For some projects it may be clear from the beginning that direct or indirect impacts will not occur and are therefore not treated in the AA. However it would be beneficial to devote at least a sentence to this aspect to make clear to the reader that the author has considered both types of impact, but that one or both of them do not occur. In five out of eight reference countries, this aspect is treated in all the AA reports reviewed (Table 13). This aspect is not treated in any of the Swedish AA reports and in only one of the Danish and Austrian AA reports.

Similarly, cumulative impacts only need to be considered when the project or plan has an effect on the conservation objectives of a Natura 2000 site. Nevertheless, in many AA's, a

paragraph about cumulative impacts is included, even though there are no effects. This is the case in all the Belgian, Dutch and UK AAs and almost all Irish AAs. In the Hungarian and Austrian AAs, this aspect is never treated and in Swedish and Danish AAs it is only treated in about 1/3 of the AAs considered (Table 13).

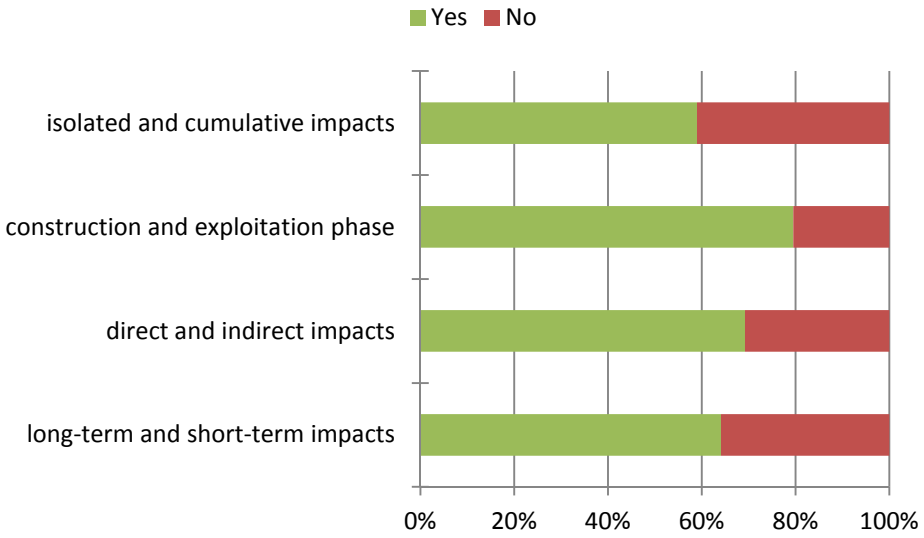


Figure 39 – Aspects covered by the AAs as a % of the total number of AAs reviewed (All countries)

Table 13 – Aspects covered by the AAs as a % of the number of AAs reviewed per country

	SE	DK	HU	AT	NL	BE	IE	UK
Long-term and short-term impacts:								
- Yes	17	33	60	0	90	100	100	100
- No	83	67	40	100	10	0	0	0
Direct and indirect impacts:								
- Yes	0	17	100	50	100	100	100	100
- No	100	83	0	50	0	0	0	0
Construction and exploitation phase:								
- Yes	100	83	100	100	40	67	100	100
- No	0	17	0	0	60	33	0	0
Isolated and cumulative effects:								
- Yes	33	33	0	0	100	100	80	100
- No	67	67	100	100	0	0	20	0

From Table 6 in Section 3.1 above, it can be seen that none of the countries in the review have scientifically agreed thresholds or criteria for determining the 'significance' of a project. Hence, it is not surprising that expert judgement plays an important role in the assessment of the significance of adverse effects (Figure 40 and Table 14). In Hungary and Austria, the assessment relies almost completely on expert judgement.

Information from previous similar projects is occasionally used, with most examples occurring in Belgium and the UK (Table 14). This could be a good method if the impacts of a project or

plan on Natura 2000 sites are monitored since more would be known about their (adverse) effects and a well-substantiated statement about their significance would be possible.

Quantitative models are used in five out of eight countries and especially in Denmark and the Netherlands. Models were used to calculate changes in noise, nitrogen deposition and sediment. Direct measurements were mainly used to estimate the loss of area by superimposing the area covered by the new or retrofitted road over the area covered by protected habitat types or species habitats. A description of a chain of impacts is used only once, in a Dutch AA.

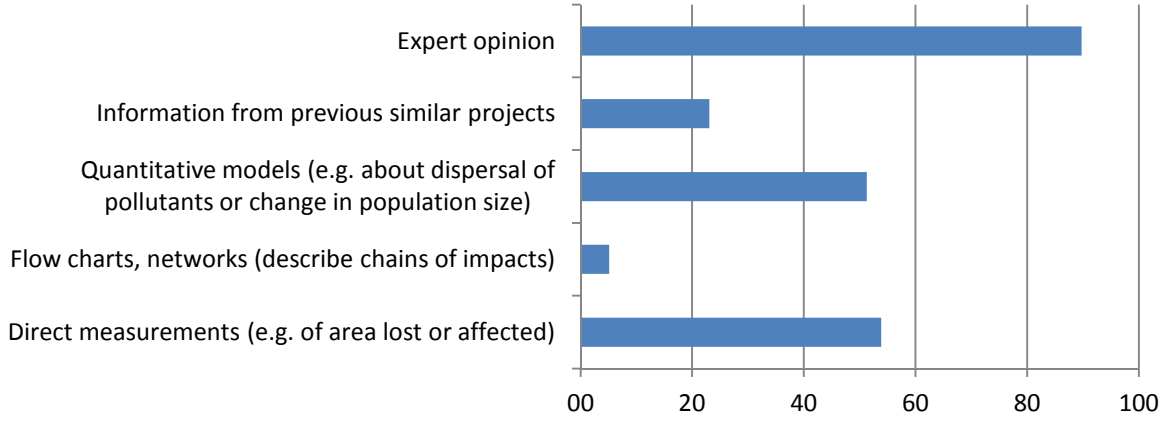


Figure 40 – Methods used to assess the significance of adverse effects as a % of the total number of AAs reviewed (All countries)

Table 14 – Methods used to assess the significance of adverse effects as a % of the number of AAs reviewed per country

	SE	DK	HU	AT	NL	BE	IE	UK
- Experts judgement	83	100	100	100	80	67	100	100
- Information from previous similar projects	17	33	0	0	30	67	0	50
- Quantitative models	50	83	0	0	90	33	40	0
- Flow charts, networks	0	0	0	0	20	0	0	0
- Direct measurements	0	67	20	0	70	100	80	100

Nowadays, National Road Authorities often make use of Design-and-Construct contracts or sometimes Design-Build-Finance-and-Maintenance contracts. With these contracts, it is commonplace not to describe precisely what the contractor has to do and how, but to describe what kind of goals or functions the construction must fulfil. Contracts are based on a performance level the contractor has to achieve. In relation to mitigation measures this method of procurement is not yet widely implemented, which can be seen from Figure 41. It is only in the Swedish and Belgian AA reports that performance based mitigation measures are commonplace (Figure 41).

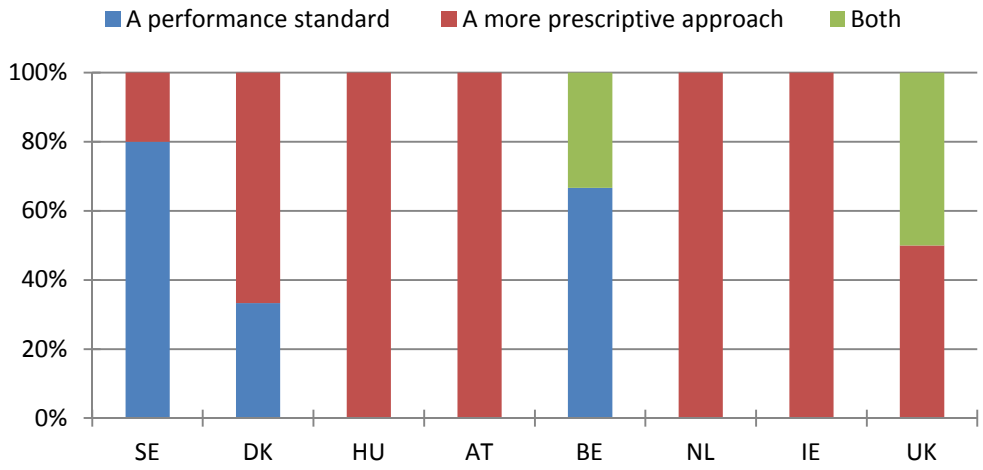


Figure 41 – The way mitigation measures are described in AA reports as a % of the number of AAs reviewed per country

Article 6(4) of the Habitats Directive states: '*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.*' Interestingly, in many of the AA reports that come to the conclusion that significant adverse effects will occur, compensatory measures are described, but alternative solutions for the project or plan and imperative reasons of overriding public interest are not included (Table 15). This is in contradiction with the decision-making process of Articles 6(3) and 6(4) due to the fact that if one wants to continue with a development, after the AA concludes that significant adverse effects cannot be excluded, it should first be demonstrated that alternatives do not exist and secondly state the imperative reasons of overriding public interest. If these conditions are met, then authorisation of the development may be granted once compensatory measures are taken (Figure 1). Therefore, it is incorrect to propose compensatory measures without explaining why the plan or project must be executed despite its significant adverse effects on the integrity of the Natura 20000 site. However as is the case in Ireland these alternatives and perhaps also the imperative reasons of overriding public interest may be included in the Statement of Case report rather than the Appropriate Assessment IROPI report.

Table 15 – Number of AAs per country that mention three aspects of article 6.4 of the Habitats Directive

	SE	DK	HU	AT	NL	BE	IE	UK
- There are no alternatives (e.g. other location, different design etc.);			1		2			
- The project has imperative reasons of overriding public interest (e.g. public health, national security etc.);			1		3			
- Compensatory measures in the Natura 2000 site will be taken.	2	2	5	2	3			

Another interesting point is that the number of AAs that treat compensatory measures (Table 15) is not equal to the number of AAs that discuss a monitoring plan (Table 9). The Methodological Guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (European Commission, 2002) recommends monitoring the ability of the compensatory measures to achieve their objectives and explaining which steps will be taken to address and rectify failures. It would be reasonable to expect a proposal for a monitoring scheme in these AA reports. However, in two Dutch, one Austrian and two Hungarian reports, compensatory measures are described, but no monitoring plan is described.

When asked for their opinion about the AA reports they reviewed, the experts were generally positive about the AA reports (Figure 42 and Table 16), with the exception of the 'Assessment of cumulative effects' and the 'Objectives of monitoring'. Cumulative effects are considered to be assessed properly in all the AA reports only in the Netherlands. The objectives for monitoring are only clearly stated in all the AAs for Belgium and the UK. This could be due to the lack of clear guidelines in the area (see Question 2 of Table 6 in Section 3.1 above). However, cumulative effects are not assessed properly in more than 50% of the AAs despite the fact that all countries with national guidelines give guidance about cumulative effects.

All reviewers are relatively positive about the knowledge of the authors of AA reports ('AA done by those with poor understanding of N2000' and 'Lack of understanding of key terms').

From Table 16 it can be seen that integrating the AAs with the EIAs may have an adverse effect on the quality of the AA, in Belgium and to a lesser extent in Denmark. Reviewers consider that the field data in the Swedish AAs is often insufficient and in some cases this is also the case in the Danish, Hungarian and Belgian AAs.

Interestingly, the absence of national guidelines in Hungary and Austria (Table 6) does not affect the quality of the AA, according to the reviewer. Only the assessment of cumulative effects is considered poor for AAs from these countries (Table 16).

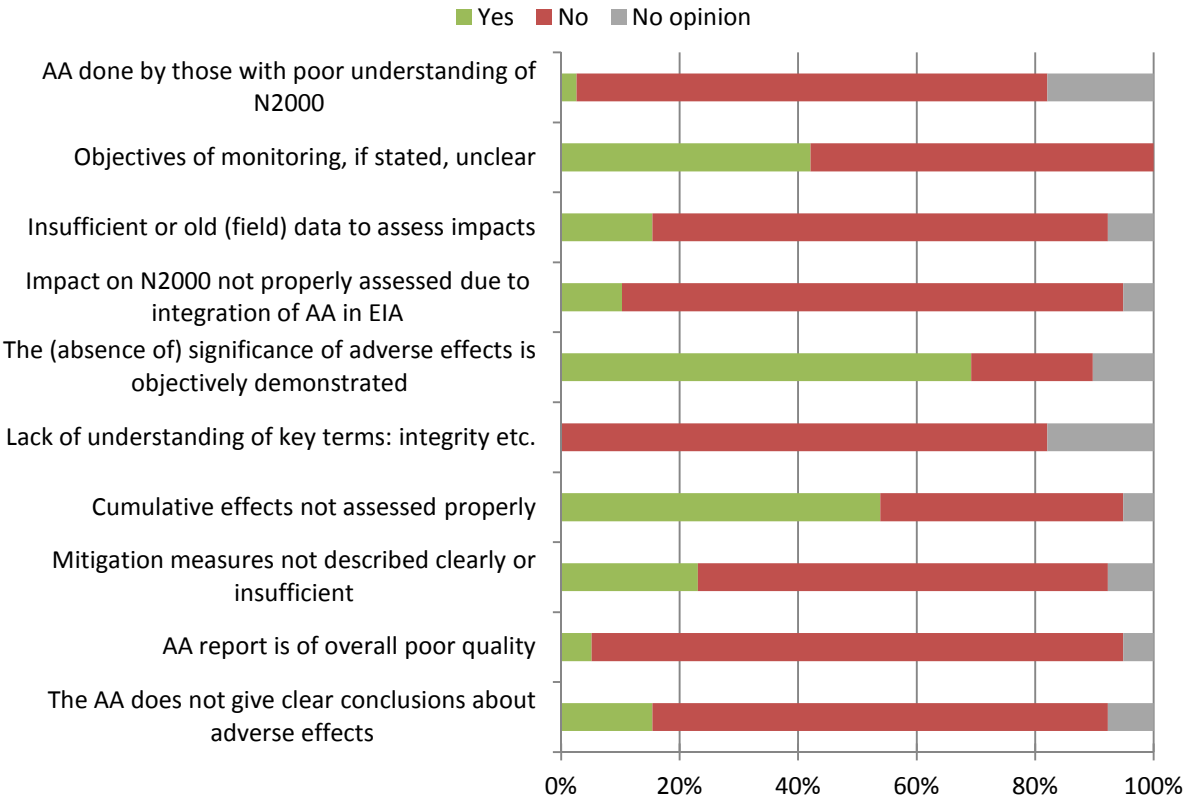


Figure 42 – The opinion of the reviewers about the AA's as a % of the number of AA's reviewed (For 'Objectives of monitoring', only 19 AA's are considered)

Table 16 – The opinion of the reviewers about the AA's as a % of the number of AA's reviewed per country

Question	SE	DK	HU	AT	NL	BE	IE	UK
AA done by those with poor understanding of N2000:								
- Yes	0	0	0	0	0	0	20	0
- No	50	50	100	100	100	100	60	100
- No opinion	50	50	0	0	0	0	20	0
Objectives of monitoring, if stated, unclear:								
- Yes	50	50	20	100	60	0	50	0
- No	50	50	80	0	40	100	50	100
- No opinion	0	0	0	0	0	0	0	0
Insufficient or old (field) data to assess impacts:								
- Yes	50	17	20	0	0	33	0	0
- No	33	83	80	100	90	67	80	100
- No opinion	17	0	0	0	10	0	20	0
Impact on N2000 not properly assessed due to integration of AA in EIA:								
- Yes	0	33	0	0	0	67	0	0
- No	83	67	100	100	100	33	80	100
- No opinion	17	0	0	0	0	0	20	0

The (absence of) significance of adverse effects is objectively demonstrated:								
- Yes	67	83	100	50	60	100	40	50
- No	0	17	0	50	30	0	40	50
- No opinion	33	0	0	0	10	0	20	0
Lack of understanding of key terms: integrity etc.:								
- Yes	0	0	0	0	0	0	0	0
- No	17	83	100	100	100	0	80	100
- No opinion	83	17	0	0	0	0	20	0
Cumulative effects not assessed properly:								
- Yes	67	100	100	100	0	67	20	50
- No	17	0	0	0	100	33	60	50
- No opinion	17	0	0	0	0	0	20	0
Mitigation measures not described clearly or insufficient:								
- Yes	0	50	0	50	40	0	0	50
- No	83	50	100	50	50	100	80	50
- No opinion	17	0	0	0	10	0	20	0
AA report is of overall poor quality								
- Yes	17	0	0	0	10	0	0	0
- No	67	100	100	100	90	100	80	100
- No opinion	17	0	0	0	0	0	20	0
The AA does not give clear conclusions about adverse effects								
- Yes	50	33	0	0	10	0	80	0
- No	33	67	100	100	80	100	20	100
- No opinion	17	0	0	0	10	0		0

3.3 Review of Planning Approval Systems

It is important to note that the provisions of Article 6 require transposition into national law (i.e. they need to be the subject of provisions of national law giving effect to their requirements). This reflects the type of community instrument that has been used, namely a directive. A directive is binding regarding the result to be achieved; however, it leaves a Member State some choice as to the form and methods of achieving the result. For most directives, the result requires national legislation. In order to get some insight into the way in which the EU Member States have implemented the article 6(3) procedure in their system of adjudication, a review is carried out across the eight reference[c] countries. Table 17 shows the results of the review.

In order to carry out this comparative analysis in a consistent manner, a template for reviewing the Planning Approval Systems in the eight reference[c] countries was produced. This template can be seen in Section A.5 of Annex A.

Table 17 – Summary of Planning Approval System for eight reference countries

Questions		SE	DK	HU	AT	NL	BE	IE	UK
Q1. Are the articles of the Habitats & Birds Directives incorporated in existing national laws?	Yes, all were incorporated in existing laws	X	X		X	X	X	X	X
	No, new laws were developed and implemented			X					
Q 2. Who is the competent authority responsible for the Article 6.3 permit procedure?	National authority								X
	Sector authority (e.g. the state forestry. water management authority)			X					
	Competent authority depends on type of project/plan	X	X		X	X	X	X	
Q 3. Is consultation with a statutory advisor compulsory?	Yes	X					X		X
	No		X	X	X	X		X	
Q 4. Is consultation with the competent authority about the criteria and data required for the AA possible?	Yes	X		X	X	X	X	X	X
	No								
Q 5. Who does the competent authority consult to evaluate the ecological aspects of the AA?	Nobody, the competent authority has this knowledge at its own disposal	X	X			X		X	X
	Nobody, the writer of the AA has to consult specific statutory advisors								
	Nobody, the competent authority relies on the competence of the writer of the AA							X	X
	The competent authority consults an independent third party	X	X	X	X	X	X	X	X
Q 6. Is the Article 6.3 procedure integrated into the SEA/EIA procedure?	Yes, always								
	Yes, but only when an EIA is carried out; otherwise the AA stands alone	X	X	X	X	X	X		
	No, never; it is always carried out as a stand-alone procedure							X	X
Q 7. Is it possible for the initiator of the development to	Yes		X	X		X	X		

Questions		SE	DK	HU	AT	NL	BE	IE	UK
object (appeal) to the decision of the competent authority, without going to court?	No	X			X			X	X
Q 8. Are there public hearings about AAs?	Yes, always								
	Yes, sometimes	X	X	X		X	X	X	X
	No, never				X				
Q 9. Is there a national system of adjudication for disputes about AAs?	Yes	X	X		X	X	X	X	X
	No			X					
Q 10. In which courts can stakeholders dispute an AA?	Local or regional court	X		X	X				
	Federal court	X							
	National high court	X		X	X	X	X	X	
	European Court	X	X	X	X	X	X	X	X
	Other *		X					X	X
	* National complaint board (DK), Supreme Court (IE & UK), Courts of England & Wales, Scotland and Northern Ireland (UK)								

In all eight countries reviewed, the articles of the Habitats & Birds Directives are either incorporated in existing laws or transposed into new national laws (Q1 of Table 17). However, the procedure to come to a decision if a project or plan is authorised, differs among the countries. For example from Question 2 of Table 17 it can be seen that in six countries the competent authority depends on the type of project or plan. Regional authorities are responsible for regional projects/plans, while national or federal authorities are responsible for national or interregional projects/plans. In Hungary and the UK, the competent authority is always the same, either a sector authority (HU) or the national authority (UK). The UK and Ireland have set up independent statutory bodies for the authorisation of a project or plan under the Article 6(3) Habitats Directive. In Denmark, large infrastructural projects and plans must be authorised by the Parliament by ratification of a law.

Interestingly, in five of the eight countries, consultation with a statutory advisor is not compulsory (Question 3 of Table 17), even though statutory advisors do exist in these countries. In fact, almost all authors of the AA reports reviewed in Section 3.2 above, consulted statutory advisors. This will certainly have helped to get authorisation for the projects or plans and maybe also have prevented appeals. The quality of the AA reports will probably also have benefitted from the fact that, as far as the reviewer is aware, in all countries consultation with the competent authority about the criteria and data required for the AA is possible (Question 4 of Table 17). The interpretation of Article 6(3) tends to lead to confusion and consequently to lawsuits. One may expect that the competent authority is aware of the jurisprudence about Article 6(3) and thus it is wise that they are consulted before carrying out an AA. On the other hand, one can imagine that the competent authority does not have all the ecological knowledge to evaluate an AA report. However, according to the review in five out of eight countries, the competent authority does have this knowledge at its own disposal (Question 5 of Table 17), although this may actually be a Department of another Ministry where the competent authority is the national authority. Still, in all countries reviewed, the competent authority also consults independent third parties.

An Article 6(3) assessment resembles an assessment under Directive 85/337/EEC (about EIA); however, the outcome of the Article 6(3) permit procedure is legally binding on the competent authority and conditions its decision. This contrasts with the impact assessments carried out under the EIA and SEA Directives where the findings merely have to be 'taken into account'. This is why in the 'Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (European Commission, 2002) it is advised that where Article 6(3) assessments are part of an EIA, the Article 6(3) assessments should be clearly distinguishable and identified within an environmental statement or reported separately. From Question 6 of Table 17 it can be seen that both are the case. Only in Ireland and the UK does the Article 6(3) assessment always stand alone.

Coming to the point of disputes about an AA or (the conditions in) an Article 6(3) permit, it is interesting to note that in Denmark, Hungary, Belgium, the Netherlands, the initiator of a project or plan can object without going to court. In Sweden, Austria, Ireland and the UK on the other hand, this is not possible (Question 7 of Table 17). In Denmark, raising objections is only possible against decisions taken by municipalities, regions and agencies under the Ministry of the Environment. Decisions taken by other state authorities can normally not be appealed and a court case could be the only opportunity to raise objections.

The settlement of notices of objection takes less time than a lawsuit and prevents delays to the start of a development. Since other stakeholders can raise objections too, following the same procedure as the initiator, most public resentment towards a project or plan is dealt with at an early stage preventing long lasting lawsuits. Public hearings about AAs have the same purpose. The Aarhus Convention[1] emphasises the importance of public consultation in relation to environmental decision-making. All countries, except Austria, use public hearings to involve stakeholders and the general public in the decision-making process, though not always (Question 8 of Table 17).

If, after public hearings and the settlement of objections, the (revised) AA report and permit still raise objections, the next step is usually to go to court. All countries, except Hungary, have a national system for adjudication of disputes about AAs (Question 9 of Table 17). In all countries, people and legal entities can always go to a National court (High Court in Ireland and UK, Council of State in the Netherlands and Belgium, National complaint board in Denmark) (Question 10 of Table 17). In Sweden, Hungary and Austria, appeals are also possible at a local or regional court and in Sweden also at a Federal court. Finally, if national judges are unable to settle a dispute, they can consult with the European Court of Justice on the interpretation or validity of European law (the reference for a preliminary ruling).

Summarising the results it seems that there is a high degree of commonality in the planning approval systems among the eight reference countries. Striking differences include:

- In six countries the decision-making powers are spread over different administrative levels and the one responsible for the authorisation depends on the type of project or plan (SE, DE, AT, BE, NL) or on the sector involved (HU). In Ireland and the UK all projects and plans are authorised by the national authority.
- Consultation between executer of AA and competent authority and between executer of AA, competent authority and stakeholders (public hearings) are in

[1] Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. This Convention was concluded in Aarhus, Denmark in June 1998. The European Community is one of the signatories.

general well integrated in the AA process except in Austria. In Austria, public hearings do not occur.

- In Sweden, Austria, Ireland and the UK it is not possible to object against an AA without going to court. On the other hand in Sweden, Austria and Hungary it is possible to appeal against an AA or Article 6(3) permit at a low level court of justice (local or regional). This is a step which is skipped in the other countries.

3.4 Discussion

The Natura 2000 network is regarded as one of the conservation success stories in the global effort to protect biodiversity. The laws guarding its existence, the Habitats and Birds Directives, are mandatory in the obligations they impose on EU Member States and are equipped with explicit reporting and deadline requirements. However, there have been claims that the permitting procedure under Article 6(3) of the Habitats Directive sometimes causes substantial delays in the implementation of development plans and projects and generates a heavy financial and administrative burden for all those involved. A fact-finding study in 2012 commissioned by the European Commission, came to the conclusion that, on the whole, Natura 2000 does not act as a general ban on developments in Natura 2000 sites (Sundseth & Roth, 2013). Also, the study could not find evidence that the AA permit procedure generates a high administrative and financial workload, but this was due to the lack of quantitative data, which made an objective analysis impossible. .

On the other hand, the majority of the authorities interviewed (both nature and sector orientated) by Sundseth & Roth (2013) considered that the Article 6(3) procedure is generally functioning correctly in their country/region and is providing a robust but stable legislative environment for developers. The reviewers of AAs in the current study are in general also positive about the quality of the AAs. Nevertheless, both studies found some problems that have to be solved if the Natura 2000 network is to stay a strong coherent network over the whole of the EU.

Sundseth & Roth (2013) identified the following problems:

- Poor quality of the Appropriate Assessment undertaken
- Lack of skills/ knowledge /capacity in the Article 6.3 procedure
- An inadequate knowledge base on which to assess impacts
- Inconsistent screening of plans and projects
- Lack of understanding of key concepts and legal terms
- Persistent lack of assessment of cumulative effects
- Confusion with the EIA/SEA Procedure
- Lack of early dialogue
- Lack of effectiveness of AAs on plans
- Problems during public consultation

The reviewers of the AAs in the current study are generally positive about the quality of the AAs, in particular about the level of knowledge, skills and capacity of those undertaking the AA. Having a license system for AA authors may help to get quality products but does not seem to be needed, since only two out of the eight countries reviewed have such a system. Sundseth & Roth (2013) mention that “increasing familiarity with the reporting process amongst developers, consultants and authorities and the issuing of targeted guidance and the frequent objections by NGOs (and some authorities) when the AA is insufficient or

considered to be of too poor quality" as explanations for the improvement in the quality of AAs in recent years. To diminish the workload of those involved in the Article 6(3) procedure and to prevent public and political opposition against Natura 2000, improving the quality of AAs through lawsuits is not the best option. Hence, investing in good guidance for authorities, consultants and developers is a better solution. Except for Hungary and Austria, this guidance was or still is available in the eight reference[c] countries.

On the other hand, confusion with the EIA/SEA procedure only played a minor role with the AAs reviewed. Only some Danish and Belgian AAs have been improperly assessed due to integration with EIA.

However, the quality of the authors does not guarantee that all aspects of an AA are well described or implemented. As in Sundseth & Roth's (2013) study, the current study also comes to the conclusion that:

- Although the reviewers are relatively positive about the data used for the AAs, most AA reports only describe the presence and distribution of habitat types and species and almost never describe the current state of the habitat type or species in the Natura 2000 site or the importance of the surrounding area for the habitat type or species. Furthermore, in some countries (Sweden and Belgium), the field studies do not comply with guidelines or general knowledge about the best practice survey methods (e.g. season, minimum number of visits, recommended instruments etc.). Moreover, sometimes it is not clear what the sources of information are or how old the information is. For the competent authority to decide about a permit it should be clear on what information the assessment is based.
- The cumulative effects are not assessed properly in the AAs examined.

In relation to the inadequate knowledge base, the current study also analysed the use of a standard list of impacts that must be assessed and the use of thresholds or criteria to determine the significance of effects. It appeared that five out of eight countries do have a list of possible impacts; however, none of the countries have scientifically agreed thresholds or criteria. The latter may be a consequence of the site-specific conditions, which make it nearly impossible to find thresholds that can be applied in all situations. The consequence is that the assessment of the significance will always depend on the knowledge and experience of the expert(s) consulted. To diminish the chance that disputes about the significance have to be fought in court, it is recommended that the AA is consulted with more than one expert. In some countries, this is implemented by making consultation with a statutory advisor compulsory.

The current study also shows that compensatory measures are sometimes described while alternatives and imperative reasons of overriding public interest tend not to be described in these AA's. This is in contradiction with the decision-making process of Articles 6(3) and 6(4). Compensatory measures are only needed when it has been identified that a plan or project will adversely affect the integrity of a site and the effects cannot be diminished enough by mitigation measures. In that case, Article 6(4) takes effect and an initiator should first prove that no alternatives are available and explain the imperative reasons of overriding public interest that prevail to continue with the project or plan. Only if these two conditions are fulfilled can the project or plan proceed with compensatory measures to eliminate the remaining effects. The description of compensatory measures without the other two requirements of Article 6(4) may be due to confusion between mitigation and compensation.

In both cases (confusion with mitigation or misunderstanding the decision-making process for an Article 6(3) permit), the AA author's mistake may be due to lack of experience or knowledge and that may result in an appeal that will slow down the decision-making process.

Continuing about mitigation, only the Swedish and Belgian AAs, as well as a few Danish AAs, include performance based mitigation measures. In recent years, many contracts for road building and retrofit are performance-based, therefore, it would be good to have the mitigation (and compensatory) measures described as performance-based. This requires a different approach from the AA authors and perhaps further training.

A missed opportunity is the lack of proposals for monitoring in most AA reports. Monitoring of the effects or mitigation measures is not compulsory, but is advised by the EC. Monitoring will increase our knowledge of the (significance of) effects and of the effectiveness of mitigation measures. It is advised to add a chapter about monitoring to all AA reports.

The effect of early dialogue or public consultation could not be analysed in the current study. In all countries it is possible for the initiator to consult the competent authority about criteria and data required for the AA and in all countries, except Austria, public hearings can be a part of the decision-making process. Thus, the means for dialogue and public consultation are available; however, how they affect the quality of the AA or the chances of getting a permit is unclear.

To summarise, Sundseth & Roth (2013) present the following recommendations:

- Improve access to data on Natura 2000 protected species/habitats.
- Provide more training on the AA procedure for competent authorities (especially at regional/local levels) and for project proponents (again, especially at regional/local levels) to improve understanding of the AA procedure.
- Provide more targeted, user-friendly guidance, forms and checklists for the various stages of the AA.
- Ensure a more robust and consistent framework for screening plans and projects.
- Encourage early dialogue and working in partnership not only amongst the competent authorities and potential project or plan proponents but also between different sectors within the government.
- Promote a more strategic approach during the decision-making process in order to take account of Natura 2000 at the earliest possible opportunity in the plan or project development so as to avoid or reduce the potential for conflicts later on and to encourage win-wins and co-benefits.

The following recommendations are provided based on the findings of this report:

- Develop a template for the chapters in an AA (See Table 9 as an example);
- Describe mitigation measures as performance based;
- Invest in guidance and training of AA authors;
- Make monitoring of effects and mitigation and compensation measures compulsory.

4 Review of Court Decisions

Upon approval of a road scheme from the governing authority, a period of appeals is provided wherein any person, body or group are given to opportunity to appeal a project. A time limit is usually applied from whence an appeal can be made. Where a person is given leave to appeal to the court for a judicial review of the case, a decision may be made whether to grant leave or to refuse the appeal further. Once leave is granted a judicial review is carried out whereby the court will make the decision in favour of or against the application. Appeals as to the findings of a judicial review can then be made to the court only when the decision involves a point of law of exceptional public importance and that it is desirable in the public interest that an appeal should be taken further. If leave is granted, the Court may then ask the European Court of Justice (ECJ) to assist in making a decision whereby the ECJ is tasked with interpreting EU law in the matter of the appeal and advising the respective countries as to their findings.

The EU Court of Justice findings are not just opinion but take the form of a reasoned order. The national court to which it is addressed is, in deciding the dispute before it, bound by the interpretation given. The court's judgement likewise binds other national courts before which the same problem is raised.

It is thus through references for preliminary rulings that any European citizen can seek clarification of the European Union rules which affect them. Although such a reference can be made only by a national court, all the parties to the proceedings before that court, the Member States and the institutions of the European Union, may take part in the proceedings before the Court of Justice. In that way, several important principles of EU law have been laid down by preliminary rulings, sometimes in reply to questions referred by national courts of first instance.

In the matter of the Habitats Directive and EIA Directive, project proposals sometimes result in legal appeals such as Judicial Review or cases in the European Court of Justice. While such cases may be uncommon, they can have a profound impact on the planning decisions of member states. The purpose of this section of the report is to provide a review of a sample of court cases from the eight reference[c] countries and to draw conclusions on the effectiveness of the EIA/AA process and suggest possible improvements for the process. Nine court cases were chosen from seven of the reference[c] countries since it was not possible to find a suitable case study from Hungary. (The nine case studies can be seen in Table 18). In this section these court cases are reviewed and the main findings are summarised.

Table 18 - Court cases reviewed

Name	Country
Umeå	Sweden
Pukaviken	Sweden
Egholm	Denmark
S18 Lake Constance dual carriageway	Austria
Buitenring Parkstad, Limburg	Netherlands
North-South connection Houthalen – Helchteren	Belgium
Galway City Outer Bypass	Ireland
New Ross Bypass	Ireland
A5 Western Corridor	UK (Northern Ireland)

4.1 Summaries of Court Cases

4.1.1 Sweden

The two court cases examined in Sweden are the *Pukaviken* case and the *Umeå* case. The two court cases are described further below.

The Pukaviken Case

The *Pukaviken* case examined the decision to approve the construction of two small river bridges over a new road through low lying agricultural land. The two rivers drain into a bay which is designated a Natura 2000 site, approximately 500 m from the road. The two bridge proposals were treated as two separate applications.

The appellant objected on the grounds that the Appropriate Assessments for the bridges were carried out independently of one another, considering it to be an example of the 'salami effect'. In this case, the 'salami effect' can be described as a situation where a large project is broken into smaller parts in the hope that the individual parts of the overall scheme will achieve planning permission more easily.

The Appellant made the following the following points:

- The application for permission to build the bridges should have considered the two bridges together (as parts of the entire road project) and not two separate cases;
- The applicant intentionally divided the road project into separate parts, each of which could successively be expected to be granted permission;
- Granting permission for the bridges gives no other opportunity of road routing than the one the bridges are to serve;
- The EIA's for the bridges were prepared by architects rather than environmentalists;
- Environmental impacts such as those concerning geology, hydrology and ecology were largely neglected or misleading in the EIS;
- An alternative route (through a beech forest instead of a wetland) had been recommended at an earlier planning stage but was not considered in the current planning process;
- There was substantial pressure from local politicians in favour of the development of the road, which probably reduced the relative weight given to the environmental concerns when the decision was to be made;
- The applicant had not considered the irreversible ecological impact of the road and the fact that the local wetland, if subjected to appropriate environmental upgrading measures, could have been developed into a wetland of great ecological value.

The court refused leave to appeal the project due to the lack of compliance with the general prerequisites for permission of leave to appeal. No account was taken of the splitting of the project into separate parts or the poor quality of the scientific assessment. It is noted that the court hears evidence on the legal process of the EIA/AA and does not concern itself with scientific assessment.

The Umeå Case

The *Umeå* case involves a road project consisting of 6.5 km of new ring road through a large forest area that is regularly used for recreation. The project was a part of a larger ring road plan.

The appellant argued that the EIS did not fully assess the entire ring road (splitting of the road project into separate parts; "salami effect") and that the applicant largely underestimated the damage that the encroachment on the large forest would cause to the interest of nature conservation. It was also argued that the EIS did not properly examine alternatives that would have a lesser impact. Furthermore, such a development opened up opportunities for new exploitation of the forest area for dwelling areas and out-of-town establishments—this was even seen by the developer as a good thing in order to make way for further exploitation of the peri-urban area. The appellant also argued that cumulative effects were largely neglected in the planning process.

The Court stated that the systematic effects of the different road alternatives, positive as well as negative, had been considered in the Feasibility Study and its accompanying EIS. As there is no approved plan for the additional ring-road section to be built, the current road plan is to be examined on its own. The court did not find any reason to inhibit the Road Administration's road plan. The Government refused, for formal reasons, to treat the appellation.

4.1.2 Denmark

This case concerns the nature conservation status of the small island of *Egholm* in the Limfjord bay. Part of the island is a Natura 2000 site and The Danish Society for Nature Conservation (DN) suggested the whole island be protected and set aside for nature conservation. This would have stopped a proposed new motorway from crossing the island.

The application contained descriptions of foreseen impact on protected species and advice on maintenance of different natural areas of the island. However, the Danish Nature Agency was not satisfied with the description of how the objectives of the Natura 2000 would be safeguarded by setting off the island for nature conservation. Therefore, an environmental consultancy was hired to assess the expected impact of a motorway on two of the protected species (a frog and a goose). The consultancy concluded that no significant damage would be done to these species once adequate mitigation measures would be taken. The Danish Nature Agency again rejected the application from DN. The reasons given were as follows:

- The future of the protected frog and the protected goose is safeguarded already with the existing Natura 2000 instrument;
- Other parts of the island are protected via alternative protection measures;
- The recreational interest is already safeguarded without any further protection measures.

The case was eventually concluded by the National Environmental Board of Appeal. The Board rejected the application. Its rejection was based on:

- Lack of description of measures that would have been necessary to grant the fulfilment of the goal of setting off of the island for nature conservation

- Insufficient clarity of several of the regulations proposed for setting off of the island for nature conservation
- Insufficient information to estimate the economic effects of the suggested setting off of the area for nature conservation

4.1.3 Austria

Lake Constance dual carriageway in Austria is proposed to run in close proximity to a designated Natura 2000 site. The case brought forward proposed that the Government failed to fulfil its obligations in designating a Natura 2000 site. In particular, it is alleged that the Republic of Austria failed to designate certain sites affected by the project as a Special Protection Area (SPA) in accordance with the Birds Directive and did not sufficiently examine alternatives or take adequate measures to protect the coherence of Natura 2000 sites when approving the road scheme.

The first argument claimed that the current classification and definition of the boundaries of the Lauteracher Ried SPA did not comply with the requirements of protection and sustainable conservation of the bird species present in that area. The corncrake and other migratory grassland-nesting species were of particular concern. According to the appellant, the SPA should be expanded to include additional sites in order to meet the requirements of Articles 4(1) and (2) of the Birds Directive.

The second argument was the failure to comply with the requirements of Article 6(4) of the Habitats Directive, whereby the road project was approved without having regard for the requirement for biotope and habitat protection set for the Lauteracher Ried SPA.

In response to the above arguments, the Government stated that when classifying the protected Natura 2000 area it relied solely on ornithological or ecological aspects, which may be inferred from Article 4(1) and (2) of the Birds Directive. It maintained that an untouched natural setting, essential for the development of the corncrake, is concentrated only in the Lauteracher Ried SPA and that the setting does not include the areas situated in Soren and Gleggen-Koblern, where the road is proposed. The Government decided that the sites did not meet the relevant criteria to be classified as an SPA due to existing quality of the sites.

The Court, considering additional scientific studies that were submitted during the procedure, determined that the Soren and Gleggen-Koblern sites are of comparable importance to the Lauteracher Ried SPA, for both corncrake and migratory bird species. Therefore, based on ornithological criteria, the Soren and Gleggen-Koblern sites are suitable territories for classification as SPA for the purpose of Article 4(1) and (2) of the Birds Directive.

By failing to include the Soren and Gleggen-Köblern sites in the Special Protection Area at the Lauteracher Ried reserve , the Republic of Austria failed to fulfil its obligations under those provisions of that directive Birds Directive. In the light of the foregoing, the Court found the first complaint put forward by the Commission to be well founded.

According to the Court's settled case-law, the principle that projects likely to have significant effects on the environment must be subjected to an environmental assessment does not apply where the application for authorisation for a project was formally lodged before the expiry of the time-limit for transposition of a directive. In accordance, the obligations under the Habitats Directive did not bind the Republic of Austria and that the project for the

construction of the S 18 carriageway was not subject to the requirements laid down in that directive.

4.1.4 Netherlands

The Buitenring Pakstad in Limburg involved a proposal to construct a new highway of 26 km with four lanes and a 100 km/hr speed limit. The route impacts on two Natura 2000 sites, both of which have previously been fragmented by the existing two lane highway.

The appeal claimed that the applicant failed to clarify the exact increase in nitrogen and what proportion of this affects the existing nitrogen impact on the area. The Appropriate Assessment report predicts a decrease in nitrogen deposition at the two Natura 2000 sites, once the project is in place. This is due to improved traffic flow and cleaner car technology. However, the appellant purports that the nitrogen deposition in the two Natura 2000 sites will increase due to the proposed project, even when considering cleaner car technology in the future. Because the current nitrogen deposition of the site already exceeds the critical values for the habitat type, negative effects cannot be excluded.

The High Court sought the opinion of an independent expert organisation that made the following conclusions:

- A more fluent traffic flow cannot be used in the assessment because in parts of the proposed project, close to the Natura 2000 site, traffic flow will remain unchanged.
- Traffic predictions suggest more traffic using the proposed road resulting in emissions of nitrogen that are three times higher than current levels.
- A decrease in traffic using secondary roads will result in more fluent traffic flow; however, this is not enough to result in a decrease in nitrogen deposition at the Natura 2000 site.

The developer argued that while more vehicles will be present, the technology will be cleaner and this will override the nitrogen deposition due to increased traffic. Additionally, the developer claimed that maintenance activities, including regular mowing and the removal of a horse riding school in the neighbourhood, will result in a decrease in nitrogen levels.

The High Court found that it could not be proven that the conservation objectives of the two Natura 2000 sites were not impacted for the following reasons:

- The size of the predicted increase in nitrogen deposition in the two Natura 2000 sites is unclear so it cannot be excluded that negative effects will occur.
- The size of the predicted decrease in nitrogen deposition due to cleaner cars, maintenance activities and the removal of the horse riding school is unclear.
- The current nitrogen deposition already exceeds the critical values of the habitat types.
- The conservation goals for the habitat types in the Natura 2000 sites aim for an improvement in their quality.

As a result, the High Court determined that where possible, the absence of effects must be proven with hard figures, not just with expectations based on experiences elsewhere and overturned the development consent.

The Council granted the opportunity to draft a new plan for the outer ring road, taking into account the verdict. This resulted in a masterplan which included a temporary reduction of the speed to 80 kilometres per hour in the surrounding area of the Natura 2000 sites awaiting the environmental improvement of car engines, hydrologic measures, the purchasing of emission permits, the buying up of extra farming land (reducing nitrogen surpluses) and the provision of a screen near sensitive vegetation. An additional mitigation measure included a 50 metre ecoduct across the Brunssummerheide. To date, the project has not been constructed.

4.1.5 Belgium

The North South Connection (74) acts as an important transport link through the centre of Limburg connecting the towns of Eindhoven and Hasselt. Over the decades, parts of this connection have been upgraded to meet traffic demands; however, further sections of the link still require improvement. An EIA was carried out for the project which impacted on a Natura 2000 site. Both the first draft and the final EIS report were considered in the planning application. One of the mitigation measures for the proposal involves the construction of an ecoduct (outside of the Natura 2000 site).The ecoduct proposal was located approximately 2.5 km away from the development and outside of the affected Natura 2000 site. The proposed ecoduct would connect two nature areas (heathland) that are not dissected by the new road.

The project was appealed based on the supposition that the ecoduct was not a mitigation measures but a compensatory measure. Hence Article 6(4) of the Habitats Directive applies and the applicant would have to show imperative reasons of overriding public interest for the project. As the ecoduct is outside of the development, it cannot be considered an integral part of the plan for the new North-South connection.

The defendant responded with the following points:

- Connecting two nature areas will reduce the risk of increasing habitat fragmentation due to the new road;
- The risk of habitat fragmentation is determined in the light of the ecological target situation and not of the current situation which suffers from fragmentation (it is impossible for many species to move between the two areas);
- The direct loss of habitat area in the Natura 2000 site is small and insignificant;
- The purpose of the mitigation measures proposed is not primarily for the impact on the Natura 2000 site as they mitigate against other ecological impacts between habitats outside of the Natura 2000 site;
- The disturbance effects (noise, visual disturbance, light pollution, acidification and eutrophication) are easily mitigated and therefore are insignificant;
- The ecoduct mitigates against existing habitat fragmentation and therefore is not a compensatory measure;
- The proposals for seemingly compensatory measures don't fulfil the criteria of the European Commission, which implies that these proposals have no connection with the plans for a new road;
- Measures for the improvement or management of Natura 2000 sites cannot be compensatory;

- Compensatory measures are meant to neutralise negative effects of a project and should compensate exactly the negative effects on habitats and species inside a Nature 2000 site;
- The Department of Nature of the Ministry underlines that the mitigation measures outside the Natura 2000 sites are not meant to compensate detrimental effects inside the Natura 2000 sites, but are meant to neutralise possible negative effects outside of these sites.

Accordingly, all mitigation measures together mitigate the increasing risk of habitat fragmentation outside the Natura 2000 sites. The mitigation measures outside the Natura 2000 sites improve European habitat types that are in poor condition, irrespective of the new road, and connect habitats of European species. If the intention was to compensate the relatively small loss of habitat in the Natura 2000 sites it would have been more effective to create forest as a mitigation measure.

Also the defendant argued that the EIA (which included the AA) should be judged based on the final EIS and not on an earlier draft report. In the final EIS the arguments for the mitigation outside the Natura 2000 sites is better described and sentences that may be interpreted as 'compensation' are rephrased.

In reply, the appellants refer to several publicly available documents that the defendant had made based on the Appropriate Assessment. These documents clearly state that:

- the proposed mitigation measures are a necessary result of the Appropriate Assessment;
- the cumulative effects of loss of habitat for heathland species and the loss of connectivity in the Natura 2000 sites are significant; the draft EIS clearly states that new habitat must be created to neutralise the loss of habitat in the Natura 2000 sites;
- many of the above mentioned conclusions were removed from the final EIS;
- these 'corrections' in the final EIS were demanded by a juridical advisor and not by a scientist and that they were not based on new scientific data or explanation.

The Court follows the arguments of the appellants:

- the new road has significant effects on the conservation objectives of the Natura 2000 sites;
- the ecoduct is not situated where the effects occur (in the Natura 2000 sites), but on a location several kilometres away from the sites and thus is not a measure to mitigate the effects in the Natura 2000 site;
- according to the documents of the case (including the draft EIS and juridical analyses of the draft) it is clear that there is a direct relation between the ecoduct (and other mitigation measures outside the Natura 2000 sites) and the significant effects of the proposed route of the new road on the Natura 2000 sites.

Hence the ecoduct (and other mitigation measures outside the Natura 2000 sites) cannot be interpreted as standalone mitigation for the loss of connectivity outside the Natura 2000 sites, but must be interpreted as a compensation for the loss of habitat and connectivity inside the Natura 2000 site due to the proposed route of the new road. Therefore the defendant was required to execute Article 6.4 of the Habitats Directive demonstrating reasons of overriding public interest for the project.

4.1.6 Ireland

The two court cases reviewed from the Republic of Ireland are the Galway City Outer Bypass and the New Ross Bypass. The Galway City Outer Bypass was referred to the European court of justice, while the New Ross Bypass was refused leave for judicial review by the national High Court. Both cases involved impacts on Natura 2000 sites and challenges to the process of carrying out an appropriate assessment by the competent authority.

The Galway City Outer Bypass

The Galway City Outer Bypass involved the planning application for a 21km roadway made up of dual carriageway, 2+1 carriageway with associated link roads, 10 road bridges and 1 river bridge. The proposed route passed though Lough Corrib Special Area of Conservation (SAC) and resulted in the permanent loss of 1.5 hectares of a priority habitat as listed in the Habitats Directive: Limestone Pavement. At the time of the publication of the EIS the SAC was only partially designated and an application to increase the extent of the designated area was not made by the European Commission. Approval was given by the planning authority in 2008.

An appeal to the national High Court made the case that the development would have an adverse effect on the integrity of the site and that the authority had erred in its interpretation of Article 6 of the Habitats Directive. The High Court found in favour of An Bord Pleanála and the developer but granted leave to appeal to the Supreme Court against the decision. The Supreme Court referred the matter to the European Court of Justice (ECJ) to seek advice on the interpretation of the EU Directive. The following questions were referred to the ECJ:

- What are the criteria in law to be applied by a competent authority to an assessment of the likelihood of a plan or project the subject of Article 6(3) of the Habitats Directive, having “an adverse effect on the integrity of the site”?
- Does the application of the precautionary principle have as its consequence that such a plan or project cannot be authorised if it would result in the permanent non-renewable loss of the whole or any part of the habitat in question?
- What is the relationship, if any, between Article 6(4) and the making of the decision under Article 6(3) that the plan or project will not adversely affect the integrity of the site?

The European Court heard the cases and considered these points under the headings of jurisdiction and substance as follows:

The applicant pled that in essence the Court lacks jurisdiction to answer the question referred for ruling given that the decision for approving the project was adopted before the Commission’s decision to classify the impacted site as a Special Area of Conservation (SAC). The decision by the Commission to designate the site was made three weeks after the competent authority’s decision to grant approval of the project.

On this issue the ECJ ruled that as soon as a site is proposed as an SCI by a Member State under the Habitats Directive and at least until the European Commission has made a decision in that regard, that Member state is required to take protective measures to safeguard the ecological interest of that site.

The Supreme Court asked the ECJ whether Article 6(3) of the Habitats Directive must be interpreted as meaning that a project not directly connected with or necessary to the

management of a site adversely affects the integrity of that site by the permanent non-renewable loss of any part of the habitat in question. This raises the question of the possible effect of the precautionary principle and the question of the relationship between Article 6(3) and Article 6(4) of the Habitats Directive.

The authority in making its decision to approve the project had established that it would have a locally significant negative impact on the SCI but decided that such an impact did not adversely affect the integrity of that site. However the appellant maintained that such an impact does entail an adverse effect on the site integrity.

In surmising, the ECJ considered that the site was designated as a site hosting a priority habitat type, limestone pavement, a natural resource which once destroyed, cannot be replaced and that the conservation objective requires the maintenance at a favourable conservation status of that priority habitat. Based on these findings the ECJ determined that a priority habitat protected under the EU Habitats Directive cannot suffer irreparable loss to the whole or part of that habitat for development purposes except for 'imperative reasons of overriding public interest' and that Article 6(4) of the Directive applies should no alternative exist.

New Ross Bypass

An application for the New Ross bypass was made and approved by the competent authority for a roadway consisting of approximately 15km of dual and single carriageway with three at grade junctions, 1 river crossing, 10 road bridges and 1 railway bridge. The project crosses the River Barrow which is designated as a candidate Special Area of Conservation.

Upon approval of the project by the planning authority an application for leave to appeal was made based on Article 6 of the Habitats Directive. While the initial application was based on a number of issues, the applicant narrowed his complaint down and focused on the grounds raised by him in connection with the Habitats Directive Article 6. It was put to the court that the proposed road was to cross an SAC and there was scientific doubt as to the impact on the site. The appeal was made based on the following grounds:

1. No conservation objectives were available for the Natura 2000 site at the time of application. In the absence of such conservation objective the authority could not properly assess the possible impact on the immediate environment.
2. There was scientific doubt raised in the inquiry prior to planning approval that should have been sufficient to create a reasonable scientific doubt such that the authority could not grant permission
3. A stepwise approach to making the decision was not adopted as a result of which the authority did not ask itself the right questions i.e. was there a reasonable scientific doubt.

The competent authority argued that the decision was not irrational and that there is no requirement for conservation objectives to be set in relation to a site by any authority. Conservation objectives may be established in the course of the EIA and were clearly set out in the EIS which is the first step of departure in the EIA process. Secondly there was no scientific doubt raised at the inquiry as mitigation measures were not considered in the submission that suggested scientific doubt. Finally, the authority argued that there is no requirement to set out the decision in a formulaic way. What is required is an appropriate assessment of the effects which was carried out.

The court did not grant leave for judicial review as it was considered that in the first instance there were no objections raised as to the validity or relevance of the conservation objectives that were produced and that, in its decision to approve, the authority had considered that the conservation objectives in the EIS were site specific and appeared thoroughly comprehensive.

The court noted that there is a high threshold for the authorisation of plans and projects under Article 6(3) of the Directive and that a project can only be authorised by the competent authority if it has made certain that it will not adversely affect the integrity of the site. The court referred to the *Waddenzee* judgement when considering 'reasonable scientific doubt'. The Waddenzee judgement determined that an appropriate assessment of the implications for the site concerned of the plan or projects implies that, prior to its approval all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives, must be identified in the light of best scientific knowledge in the field. Reasonable Scientific doubt cannot be equated with mere concerns expressed in opposition to the project. A hypothetical risk or a supposition unverified by scientific evidence cannot constitute such a reasonable scientific doubt. Submission made regarding the project were addressed in the EIS and mitigated against to the satisfaction of the authority.

Finally, the court determined that the competent authority had before them the findings of the EIS, AA and the inspector's report and that they carried out an appropriate assessment correctly. The court states that they should only intervene in the decision of administrative tribunals such as the Boards when it is satisfied that the decision was unlawful. Even if the court was satisfied the tribunal was wrong it cannot intervene. The test is one of the legality of the decision and not its correctness. The courts will not intervene by way of judicial review to quash decisions of administrative tribunals in the absence of evidence of illegality. It is not a function of the court to substitute itself for the Board for the purpose of determining whether it believes that the decision made was the correct one.

4.1.7 United Kingdom

The A5 Western Transport Corridor proposal was approved by the planning authority in Northern Ireland (UK) in 2011. The proposed project is made up of 85km roadway made up of single carriageway, dual carriageway and associated link roads and junctions. The route crosses over two watercourses within the River Foyle SAC and is within 15m of the River Finn SAC.

The project was appealed in a number of issues including the following key issues:

- The project was in breach of the EU obligation to send details of the scheme to the Irish Government whereby member states are required to send project description to neighbouring member states that have a transboundary impact on the environment
- There was a failure to carry out an appropriate assessment on the River Foyle and River Finn Special Areas of Conservation under the Habitats Directive
- There was a failure to comply with the Strategic Environmental Assessment Directive by not considering reasonable alternatives
- The EIS was inadequate under the Environmental Impact Assessment Directive.

The court rejected the suggestion that there was a breach of the Environmental Impact Assessment Directive as it was considered that the Irish Government was heavily involved in the development of the Scheme.

With regards to the failure to carry out an appropriate assessment of the impact on the River Foyle and River Finn, the judge raised concerns around the value of the remedial measures proposed by the applicant in relation to the scheme. Therefore, risks of significant impacts on the sites could not rationally be excluded on the basis of objective information. He afforded the applicant the opportunity to either confirm the previous concession in relation to the exercise of discretion or to make further submissions.

When considering the failure to carry out a Strategic Environmental Assessment for the scheme, the judge declined to grant any relief to the applicants given that the plans and programmes had been published for some time and there was no objection to then by the appellant. Furthermore the appellant had not sought to challenge those plans and programmes at the time of the public inquiry in 2011 when they had the benefit of legal advice.

With regards to the inadequacy of the Environmental Statement under the EIA Directive, the court was satisfied that the inspector found the report to be adequate, that there was a vast amount of detail in the environmental statement, and those concerned were able to read and comment on it including giving evidence at the inquiry. The judge noted that the Department had proceeded on the basis that there are two projects – one in Northern Ireland and one in the Republic of Ireland. The project in the Republic of Ireland has been deferred and the two projects are not dependent on each other.

As a result of his findings, the judge agreed that an appropriate assessment under the Habitats Directive should have been carried out. Therefore, he indicated that he was prepared to overturn the decision to grant approval.

4.2 Discussion

Overall the findings of the examined court cases are very broad and vary from country to county. However a number of issues are evident from examining the cases.

1. “Salami” effect and cumulative impact

   The issues of assessment based on part of a project, without considering related road links or future development, frequently arises when seeking development consent and in the courts. For three of these eight examples, the Buitenring Parkstad from the Netherlands and the Pukaviken and Umeå cases from Sweden, the cumulative impact was not fully considered. Such issues regularly arise when considering the approval of road projects which are broken down in to several sections. Assessment of cumulative effects remains difficult for the developer as there is a great deal of uncertainty and a lack of guidance on how to properly assess the cumulative effects of a project, in particular when it is related to larger plans. While the provision of Appropriate Assessment Guidelines are available, which should in theory fill this lacuna, they often appear to be high level and have limited practical mitigation measures that can be applied at project level.

2. Proper designation of a Natura 2000 site

   Failure to properly designate a site is evident in the S18 Lake Constance dual carriageway case in Austria and is also noted in the Galway City Outer Bypass case

in the Republic of Ireland, where an extension of the Natura 2000 site was made based on information furnished to the state as a result of the road planning / appeals process. These court decisions suggest that a site not being designated as a Natura 2000 is not always a sufficient defence for developing a part of it. The conclusion is that greater certainty in planning routes will result from a clearly defined, well justified and complete list of Natura 2000 sites

In summary, based on the court cases examined, the following conclusions are made:

- An impact on a priority habitat which could render the conservation status of the site as unfavourable due in part to the area of that habitat or the ability of the habitat to be replaced, is considered to have an impact on the integrity of the site and is therefore significant.
- As demonstrated by the Belgian case, the definition of mitigation and compensation can prove to be a complex issue. In many cases measures proposed as mitigation are more correctly considered as compensation from a legal perspective.
- The absence of a Natura 2000 Site Designation when assessing the impact of a road project on Habitats Directive Annex I habitats and Annex II species, can be the result of a failure of the state to properly designate the site, consideration should be given to the quality of the habitat regardless of the designation status.

5 Conclusions

The objective of this report is to analyse the current approach being used for Environmental Assessment in order to identify areas where commonalities and differences exist between countries and to identify where guidelines are needed to promote a more standardised and effective approach throughout Europe. There are three main sections of the report: a review of EIAs, a review of AA reports and a review of court decisions.

The first section of the project examines the EIA process in nine countries across Europe. In order to do this, the relevant guidelines were analysed and comparisons were made between countries. Following on from this, a database of 87 EISs across nine European countries is analysed to identify the similarities and differences between countries in the implementation of the duties required by EU Environmental Legislation. As well as comparing approaches between countries, an audit is carried out to identify the degree of implementation on a 5 point scale under the headings Screening; Scoping; Identification of Habitats; Impact Assessment Methodologies; Mitigation Measures and Monitoring. In relation to this audit, it is found that the degree of implementation under the headings considered varies greatly between countries. A general trend is seen in most countries that EISs appear to carry out little or no monitoring. When examining the results of this audit, it must be noted that it is very subjective as it depends on the expert opinion of several individuals.

In general it is found that standardised guidelines are available for ecological assessment in most countries. However, guidelines dealing with specific habitats are less standardised across the countries considered. Only five of the eight countries considered have guidelines available for specific species or habitats. It is noted that in the UK there are guidelines available for certain species or habitats for non-road schemes; however, these are not specific to roads. This presents an opportunity to develop a more standardised approach to guidelines for specific habitats and species.

Another finding of the first section of the report is that the terminology used within the EIS guidelines needs to be standardised in some countries. For example, it is found that there is no clear definition given for short, medium and long term impacts in six of the eight reference countries' guidelines. There is scope for an EU standard for terminology in order to reduce the potential for different interpretations.

It is also found that the competency requirements of an ecologist set out in the guidelines varies from country to country. This also arose as an issue in the Pukaviken Swedish court case, where the appellant objected on the grounds that the Appropriate Assessment was not carried out by a suitably qualified professional (ecologist), although the court did not accept the argument. An EU standard for this would provide clarity and avoid such objections.

A significant proportion of the EISs examined did not use surveys carried out within the past two years. Field assessments are a fundamental aspect to any EIA and it is important that the information is up to date. Clear guidelines are required on timing of surveys for different species and habitats.

One of the most important findings of the study is that cumulative impacts are not suitably addressed in a significant proportion of the EISs examined. Assessment of cumulative effect remains difficult for the developer as there is a great deal of uncertainty and a lack of guidance on how to properly assess the cumulative effect of a project, in particular when it is related to larger plans. While the provision of Strategic Environmental Assessment and

Appropriate Assessment Guidelines are available, they appear at times to be too high level and difficult to assess within the EIS as part of a cumulative effect. It is therefore recommended that clearer EU guidelines be developed to provide recommendations on how the cumulative effects of a project should be assessed.

It is also found that a large proportion of the EISs examined did not include an appropriate plan for monitoring. It is found that in general, although it may be included in the guidelines, it is not followed through as part of the EIA. It is concluded that clearer and more stringent guidance is required in this area.

The second section of this report consists of a review of AA reports across the eight reference[c] countries. As part of the overall review, three individual reviews are carried out. Firstly, a review is carried out of the guidelines for AAs. Secondly a review of 39 AA reports related to road building and retrofit and finally, a review of planning approval systems is completed. As part of the AA review, the reviewers were asked to give their opinion on the quality of the AA. The reviewers of the AA reports are generally positive about the quality, in particular about the level of knowledge, skills and capacity of those undertaking the AA. It is suggested that a license system for AA authors may help to get quality products but does not seem to be needed, since only two out of the eight countries reviewed have such a system.

On a negative note, most AA reports only describe the presence and distribution of habitat types and species and almost never describe the current state of the habitat type or species in the Natura 2000 site or the importance of the surrounding area for the habitat type or species. Furthermore, in some countries (Sweden and Belgium), the field studies do not comply with guidelines or general knowledge about the best practice survey methods (e.g. season, minimum number of visits, recommended instruments etc.). Moreover, sometimes it is not clear what the sources of information are or how old the information is. For the competent authority to decide about a permit it should be clear on what information the assessment is based. It is also noted that the cumulative effects are not assessed properly in the AAs examined, a finding that is consisted with the EIA reviews carried out in Section 2.2.

This part of the report also shows that compensatory measures are sometimes described while alternatives and imperative reasons of overriding public interest tend not to be described in these AA reports and are included instead in Statement of Case reports. Compensatory measures are only needed when adverse effects on the integrity of a Natura 2000 site cannot be excluded and the effects cannot be diminished enough by mitigation measures. In that case, Article 6(4) takes effect and an initiator should first prove that no alternatives are available and explain the imperative reasons of overriding public interest that prevail to continue with the project or plan.

Continuing about mitigation, of the AA reports reviewed only the Swedish and Belgian reports, as well as a few Danish reports, include performance based mitigation measures. In recent years, many contracts for road building and retrofit are performance based, therefore, it would be good to have the mitigation (and compensatory) measures described as performance based. This requires a different approach from the AA authors and perhaps further training.

It is noted that there is a lack of proposals for monitoring in most AA reports. Monitoring of the effects or mitigation measures is not compulsory, but is advised by the EC. Monitoring will increase our knowledge of the (significance of) effects and of the effectiveness of mitigation measures. It is advised to add a chapter about monitoring to all AA reports.

The examination of court cases showed that the issue of proper designation of Natura 2000 sites may also arise during the application for development, highlighting shortcomings within the state authorities to properly designate Natura 2000 sites. This issue also considers the responsibility of the developer to sufficiently address how to properly deal with identification and impact on Annexed habitats or species in proximity to or in connection with a Natura 2000 site.

In examining the court cases, it is also found that cumulative effects need to be addressed more clearly in the guidelines to avoid a situation where the plan is appealed and brought to court on these grounds. In both the Pukaviken and the Umeå court cases in Sweden, the issue of cumulative effects and the fact that it is not dealt with appropriately within the Environmental Assessment is found to be at the heart of the objection. In both the above cases the court ruled in favour of the project; however, clearer guidance is required on how the cumulative effects should be dealt with within the Environmental Assessment.

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Sundseth, K., & Roth, P. (2013). *EC Study on evaluating and improving permitting procedures related to Natura 2000 requirements under Article 6.3 of the Habitats Directive 92/43/EEC.* Brussels, Belgium: Ecosystems LTD (Belgium).

Whitfield, C., & McIntosh, N. (2014). *Nitrogen Deposition and the Nature Directives: Impacts and Responses: Our Shared Experiences, JNCC Report 521, ISSN 09638901.*

Annex A Templates

A.1 Environmental Impact Assessment Guideline Review Template

Please copy and paste the following tick into the relevant boxes: ✓

Country:

1. **Are specific guidelines available in your country for the consideration of flora and fauna during the EIA and construction phases of road schemes?**

   ☐ Yes
   ☐ No
   ☐ No, but guidelines are used from a neighbouring country.

   Please specify country:

   Please provide comments:

2. **Please provide a list of the general guidelines used (please use additional pages if necessary).**

3. **Do these Guidelines ensure compliance with EU Guidelines & Legislation?**

   ☐ Yes
   ☐ No

4. **Are guidelines available for specific species or habitats? If so please list these (e.g. NRA Guidelines for the treatment of Badgers on National Road Schemes)**

5. **Do the guidelines in your country provide specific guidance for the following stages and areas of assessment?**

   ☐ Screening
   ☐ Scoping
   ☐ Route selection
   ☐ Establishing the baseline
   ☐ Survey methodology
   ☐ Impact Assessment
   ☐ Mitigation

- [ ] Construction
- [ ] Monitoring

6. Is a sample/guide list of Consultees that should be contacted provided as part of the guidelines?

- [ ] Yes
- [ ] No

7. Are seasonal constraints for surveys identified for specific species/habitats/ groups of species?

- [ ] Yes for most/all species/habitats/groups
- [ ] Yes for some key species
- [ ] No

8. Is the survey footprint relative to works footprint clearly identified for species/habitats/ groups etc e.g. reptiles generally require survey distance of no more than 100mm from the footprint of the project in Ireland.

- [ ] Yes for most/all species/habitats/groups
- [ ] Yes for some key species
- [ ] No

9. Do you agree with these survey guidelines?

- [ ] Yes
- [ ] No

Please provide comments (e.g. survey range is too broad/not broad enough):

10. Is the competency requirements of the Ecologist clearly identified in the Guidelines?

- [ ] Yes the chapter must be completed by a licensed ecologist for EIA
- [ ] The ecologist must hold an appropriate academic qualification
- [ ] The author/surveyor must have relevant experience in similar projects
- [ ] The ecologist must be a member of a recognised professional body
- [ ] The ecologist must be a chartered member of a recognised professional body
- [ ] The Ecologist is part of a statutory/government body
- [ ] No, there are no specific professional requirements

11. Is the geographical context for determining value of a receptor clearly defined (e.g. International importance, national importance, county importance, local importance (higher value), local importance (lower value))?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please provide comments:

12. Is the likelihood of change/impact clearly defined (e.g. near certain 95%; probable 50-95%; unlikely 5-50%; extremely unlikely <5%)?

- ☐ Yes
- ☐ Somewhat
- ☐ No

13. When describing changes and impact, are the following considered and clearly defined?

Positive and negative impact	☐ Yes	☐ No
Magnitude of impact	☐ Yes	☐ No
Extent	☐ Yes	☐ No
Duration	☐ Yes	☐ No
Reversibility	☐ Yes	☐ No
Timing and frequency	☐ Yes	☐ No

Please provide comments:

14. Is the level of impact clearly identified and defined (e.g. profound, significant, moderate, slight, imperceptible)?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please provide comments:

15. Is the duration of impacts clearly identified (e.g. short term (1-7 years); Medium term (7-15) etc)?

- [ ] Yes
- [ ] Somewhat
- [ ] No

Please provide comments:

16. Is guidance dealing with inter-relationships between environmental impacts clearly identified and provided (e.g. interrelationship between noise and ecology)?

- [ ] Yes
- [ ] Somewhat
- [ ] No

17. Is guidance provided for the construction of watercourse crossings?

- [ ] Yes
- [ ] No

18. Is clear guidance provided for the for passage of fish and or mammals in the design and construction of bridges and culverts (i.e. minimum length, baffles, light openings etc)?

Mammals	[ ] Yes	[ ] No
Fish	[ ] Yes	[ ] No

Please provide comments:

19. Is clear guidance provided for diversions of watercourses (temporary or permanent)?

- [ ] Yes
- [ ] No

Please provide comments:

20. Is clear guidance provided for pollution prevention prior to and during construction?

- [ ] Yes
- [ ] No

Please provide comments:

21. Are standard mitigation measures available for construction and operation of road schemes for the following:

Habitats	☐	Yes	☐	No
Plants	☐	Yes	☐	No
Large Mammals	☐	Yes	☐	No
Small Mammals	☐	Yes	☐	No
Fish	☐	Yes	☐	No
Invertebrates	☐	Yes	☐	No
Reptiles	☐	Yes	☐	No
Amphibians	☐	Yes	☐	No

22. Is monitoring recommended during and post construction for the following:

Habitats	☐	Yes	☐	No
Plants	☐	Yes	☐	No
Large Mammals	☐	Yes	☐	No
Small Mammals	☐	Yes	☐	No
Fish	☐	Yes	☐	No
Invertebrates	☐	Yes	☐	No
Reptiles	☐	Yes	☐	No
Amphibians	☐	Yes	☐	No

If so what periods of monitoring are generally recommended?

A.2 Environmental Impact Statement Review Template

Project Name:
Project Description:
Status (approved, under appeal etc.):
EIS ☐
AA ☐

1. What EIA guidelines were used for this project? Are they:

   ☐National
   ☐EU
   ☐Other

2. How has the baseline data for the EIA been secured?

3. Have all the surveys have been carried out in the optimum season?

   ☐ All
   ☐ Most
   ☐ Yes, some
   ☐ None
   ☐ Not evident in the EIS

   If not, why? For example, is there not enough time?

4. What are the primary sources of information?

   ☐ Online mapping e.g. http://webgis.npws.ie/npwsviewer/
   ☐ Recent site visit (in connection with the EIA work)
   ☐ Already existing inventories
   ☐ Databases
   ☐ Scientific literature
   ☐ Other:

5. How old were the ecological surveys used to complete the EIAs at the time of EIS publication?

   ☐ <2 years
   ☐ 3-5 years
   ☐ > 5 years
   ☐ Not Stated

6. Are the following topics addressed within the EIS

- ☐ Description of site(s)
- ☐ Description of road development project / plan
- ☐ Location of project/plan relative to habitats or species of conservation interest
- ☐ Description of baseline
- ☐ Determination of effects on protected species / habitats
- ☐ Impact assessment in the light of the national, regional and international conservation objectives
- ☐ Cumulative effects in combination with other existing or future projects or plans
- ☐ Proposals for mitigation
- ☐ Monitoring plan
- ☐ Other (please specify)

7. When discussing baseline habitats and species, have the following aspects being incorporated within the EIS:

- ☐ Presence and distribution of protected habitat types
- ☐ Presence of protected species
- ☐ Distribution and abundance of protected species
- ☐ Current state of protected species and habitats in the local area, region, country etc
- ☐ Importance of surrounding area for species

8. Has there been consultation with the relevant statutory bodies?

- ☐ National Parks & Wildlife Service / Scottish Natural Heritage / Natural England, etc.
- ☐ NGO's
- ☐ Fisheries Board
- ☐ Other (please specify)

9. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?
(*For example, a prescriptive approach would involve specifying the precise number and locations of the badger passes, whereas a performance based approach would require you to connect two communities of badgers.)*

- ☐ Prescriptive
- ☐ Performance based

If performance based, please provide examples from the EIS.

10. What species groups have had mitigation measures proposed in the EIS?
    - ☐ Large mammals
    - ☐ Small ground mammals
    - ☐ Fish
    - ☐ Birds
    - ☐ Bats
    - ☐ Amphibians
    - ☐ Invertebrates
    - ☐ Other:

11. Have ecological considerations been taken account of in the design of other environmental mitigation measures? *(e.g. solid barriers for noise attenuation preventing passage, archaeological trench testing and its potential impacts on badger setts, wetlands etc)*
    - ☐ Yes
    - ☐ No
    - ☐ Don't know

12. Are the following aspects of the development considered?
    - ☐ Construction compounds (*site offices, machinery & refuelling depot, etc.)*
    - ☐ Borrow pits *(adjacent sites used by contractor to excavate rock & other materials)*
    - ☐ Iste disposal sites proposed for use (new or existing)
    - ☐ Advanced archaeological testing (*Archaeological test trenching by a separate contractor before the main contract commences*)
    - ☐ Advanced ground investigations *(More detailed Ground Investigations by a separate contractor before the main contract commences)*
    - ☐ Haulage routes

13. When considering ecological impact during construction phase are the following assessments considered?
    - ☐ Advanced investigations into ecology of waters
    - ☐ Traffic noise and light nuisance to animals
    - ☐ Disturbance to animal groups during construction period

14. Is value for money and buildability considered when specifying the mitigation measures?

- ☐ Yes
- ☐ No
- ☐ To some degree
- ☐ Unknown

If no, please provide explanation.

15. Please identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5, for each of the following headings:

(1 - Not at all compliant, 2 - Only partially compliant, 3 - Generally compliant, 4 - Mostly Compliant)

Screening

Scoping

Identification of Habitats

Impact Assessment Methodologies

Mitigation Measures

Monitoring

16. Please identify which of the following types of mitigation measures are proposed in the EIS

<u>Habitats and Flora</u>

- ☐ Drainage pipes
- ☐ Viaducts
- ☐ Overbridges
- ☐ Piled embankments
- ☐ Culverts
- ☐ Fencing
- ☐ Translocation
- ☐ Compensation planting
- ☐ Other (Please specify):

<u>Large Mammals</u>

- ☐ Viaducts

☐ Green bridges
☐ Culverts
☐ Underpass / pipe
☐ Fencing
☐ Artificial shelters *e.g. badger setts, holts, etc.*
☐ Other (Please specify):

Small ground mammals

☐ Green Bridge
☐ Culverts
☐ Underpass / pipe
☐ Other (Please specify):

Fish

☐ Specialised culvert design *e.g. size, bottomless, buried etc*
☐ Fish Passes
☐ Salvage
☐ Alteration of watercourse *e.g. Baffles, Backwater, Pools etc*
☐ Other (Please specify):

Birds

☐ Bridge Design, *e.g. height, cable design, colour etc*
☐ Landscaping *e.g. Tree lines / canopy*
☐ Bird Boxes/Ledges
☐ Other (Please specify):

Bats

☐ Bat boxes and Tubes
☐ Green Bridges
☐ Bat House
☐ Landscaping/canopy design
☐ Other (Please specify):

Amphibians & invertebrates

☐ Ponds
☐ Culverts/underpasses/pipes

- ☐ Translocation
- ☐ Fencing
- ☐ Other (Please specify):

17. If there is any other information you would like to include, please add it here.

A.3 Appropriate Assessment Guideline Review Template

Q1. Does your country have national guidelines?

- ☐ No, we use the EC Guidelines (go to question 5)
- ☐ Yes, we have more elaborated guidelines based on the EU Guidelines (continue with Q2)

Q2. For which of the following aspects does your country have national guidelines?

- ☐ significance (of adverse effects);
- ☐ direct and indirect (external) effects;
- ☐ accumulation of effects;
- ☐ mitigation;
- ☐ how to carry out an AA when the designation of the Natura 2000 site is not definitive yet;
- ☐ other, specify:

Q3. What kind of guidance documents exist in your country?

- ☐ a simple translation of the Commission's Article 6 guide;
- ☐ a detailed methodological guide, based on national experiences with AAs;
- ☐ checklists;
- ☐ other, specify:

Q4. The concept of 'significance' is not defined in the Habitat Directive. Essentially the assessment of the significance of adverse effects is a judgment, built up from a number of factors, but it may also be made more objective with the use of criteria and standards for changes in size of habitattype area, size of species habitat, size of species population, quality of habitattype and species habitat. Are in your country criteria or standards (e.g. for available for the assessment of significance?

- ☐ Yes. Please send us the criteria or standards.
- ☐ No

Q5. Is or was assistance available for writers of AAs in the form of non-commercial courses, seminars or workshops?

- ☐ Yes
- ☐ No

A.4 Appropriate Assessment Review Template

1. Give a very short description of the project (maximum 5 lines).

2. Do AA Guidelines exist in your country?
   - Yes
   - No

3. In case the project is screened out for AA is this confirmed by / consulted with the competent authority?
   - Yes
   - No

4. Who has carried out the AA?
   - The competent authority
   - Organisation/individual with licence to do AA's
   - Organisation/individual with license to do EIA/SEA
   - Initiator / principal of the project
   - Site manager
   - Road manager
   - Contractor of the project
   - Ecological or environmental consultancy
   - Nature Conservation organisation
   - Any organisation/individual (no special qualifications)
   - Other (please specify)

5. Select aspects that were included in the AA? Select all that apply.
   - Description of Natura 2000 site(s) (natural values, conservation objectives)
   - Description of road development project / plan
   - Location of project/plan relative to the Natura 2000 site (in or outside the site)
   - Description of current situation of protected species and habitats (presence, abundance and distribution)
   - Determination of effects on protected species / habitats
   - Cumulative effects in combination with other existing or future projects or plans
   - Impact assessment in the light of the conservation objectives of the Natura 2000 site(s)
   - Proposals for mitigation
   - Monitoring plan
   - Other (please specify)

6. Select sources of information on which the AA is based (more than one answer possible).

	Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
Information from a recent site visit (in connection with the assessed project)								
Information from a baseline study (in connection with the assessed project)								
Information from databases (e.g. species distribution, abundance, presence)								
Scientific literature								
Non-scientific literature / research reports								

Expert judgement								
Other (please specify)								

7. Select aspects upon which the AA was based (more than one answer possible).

	Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
Presence and distribution of protected habitat types								
Presence of protected species								
Distribution and abundance of protected species								
Function of the area for protected species (foraging, breeding, commuting etc.)								
Current state of protected species and habitats in the local area, region, country								
Importance of surrounding area for protected species								
Not applicable								
Other (please specify)								

8. How old were the ecological surveys used to complete the AA at the time of publication?

	1-2 years	3-5 years	> 5 years	Not stated
Habitat types				
Plants				
Invertebrates				
Fish				
Amphibians				
Reptiles				
Birds				
Mammals				

9. If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?

	Yes	No	Partially
Habitat types			
Plants			
Invertebrates			
Fish			
Amphibians			

Reptiles			
Birds			
Mammals			

10. If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?

	Yes	No	Partially
Habitat types			
Plants			
Invertebrates			
Fish			
Amphibians			
Reptiles			
Birds			
Mammals			

11. Has there been consultation with the relevant statutory bodies?
    - Yes
    - No
    - Not stated

12. Is a list of possible impacts that must be analysed in an AA available?
    - Yes; Please translate the list to English
    - No

13. Which of the following possible impacts were assessed? (more than one answer possible)
    - Loss of area of habitat type or species' habitat
    - Fragmentation of area of habitat type or species' habitat
    - Changes due to emission of gasses, minerals, dust etc.
    - Pollution (heavy metals, garbage etc.)
    - Changes in water, soil or air quality
    - Changes in soil humidity
    - Changes in water systems (current velocity, inundation frequency)
    - Change in dynamics of substrate (setting or loosening of soil)
    - Disturbance by sound, light, vibration or movement of people and machines
    - Disturbance by mechanical effects (e.g. breaking waves, treading horses etc.)
    - Changes in population dynamics (e.g. due to increased road kills)
    - Introducing new species
    - Other (specify)

14. Is a distinction made between:

	Yes	No
long-term and short-term impacts		
direct and indirect impacts		
construction and exploitation phase		
isolated and cumulative impacts		

15. Are mitigation measures described in terms of:
    - a performance standard or
    - a more prescriptive approach?

    (*For example, a prescriptive approach would involve specifying the precise number and locations of the badger passes, whereas a performance based approach would require you to connect two communities of badgers.)*

16. Are the proposals for mitigation based on national guidelines for mitigation for the effected species / habitat types?
    - Yes
    - No

17. What methods are used to assess the significance of adverse effects (more than one answer possible)?
    - Direct measurements (e.g. of area lost or affected)
    - Flow charts, networks (describe chains of impacts)
    - Quantitative models (e.g. about dispersal of pollutants or change in population size)
    - Information from previous similar projects
    - Expert opinion

18. Are scientifically agreed thresholds or criteria for determining significance available?
    - Yes
    - No

19. If significant adverse effects, after the implementation of mitigation measures, cannot be excluded, which of the following aspects are described to get a permit for the project anyway?
    - There are no alternatives (e.g. other location, different design etc.);
    - The project has imperative reasons of overriding public interest (e.g. public health, national security etc.);
    - Compensatory measures in the Natura 2000 site will be taken.

20. Which authority reviewed the AA and decided if the project is allowed to proceed and if a permit is needed?
    - National Government
    - Regional Government
    - Local Government
    - Site manager
    - Road manager
    - Initiator / principal of the project
    - Other (please specify)

21. Your overall opinion about the AA?

	Yes	No
The AA does not give clear conclusions about adverse effects		
AA report is of overall poor quality		
Mitigation measures not described clearly or insufficient		
Cumulative effects not assessed properly		
Lack of understanding of key terms: integrity etc.		
The (absence of) significance of adverse effects is objectively demonstrated		
Impact on N2000 not properly assessed due to integration of AA in EIA		

Insufficient or old (field) data to assess impacts		
Objectives of monitoring, if stated, unclear		
AA done by those with poor understanding of N2000		

A.5 Planning Approval Review Template

Q1. Are the articles of the Habitat & Bird Directives incorporated in existing national laws?
- ☐ Yes, all were incorporated in existing laws;
- ☐ Yes, but partially (e.g. articles about species protection in existing Species Protection Law and for articles about site protection a new law was made);
- ☐ No, new laws were developed and implemented;
- ☐ No, the articles of the Directives are not transposed to national laws (yet).

Q2. Who is the competent authority responsible for the Article 6.3 permit procedure?
- ☐ national authority
- ☐ regional authority (country, province, Land)
- ☐ local authority (municipality)
- ☐ sector authority (e.g. the state forestry. water management authority)
- ☐ competent authority depends on type of project/plan (e.g. national, regional or local project/plan)

Q3. Is consultation with a statutory advisor (e.g. the relevant nature conservation authority) compulsory?
- ☐ Yes
- ☐ No

Q4. Is consultation with the competent authority about the criteria and data required for the AA possible?
- ☐ Yes
- ☐ No

Q5. Who does the competent authority consult to evaluate the ecological aspects of the AA?
- ☐ Nobody, the competent authority has this knowledge at its own disposal;
- ☐ Nobody, the writer of the AA has to consult specific statutory advisors;
- ☐ Nobody, the competent authority relies on the competence of the writer of the AA;
- ☐ The competent authority consults an independent third party.

Q6. Is the Article 6.3 procedure integrated into the SEA/EIA procedure?
- ☐ Yes, always;
- ☐ Yes, but only when an EIA is carried out; otherwise the AA stands alone;
- ☐ No, never; it is always carried out as a stand-alone procedure.

Q7. Is it possible for the initiator of the development to object (appeal) to the decision of the competent authority, without going to court?
- ☐ Yes
- ☐ No

Q8. Are there public hearings about AAs?
- ☐ Yes, always
- ☐ Yes, sometimes
- ☐ No, never

Q9. Is there a national system of adjudication for disputes about AAs?
- ☐ Yes
- ☐ No

Q10. In which courts can stakeholders dispute an AA? More than one answer possible.

- ☐ Local or regional court
- ☐ Federal court
- ☐ National high court
- ☐ European Court
- ☐ Other, specify:

A.6 Template for choosing Environmental Impact Statements & Appropriate Assessments

Time & Lifecycle stage
All EIA/AA should have been published between 2005-2012.
A minimum of 15 projects should be approved by the planning authority.
A least 3 projects (if possible) are published but appealed under judicial review, high court or the European Court. All outcomes of appeals are acceptable.
No more than 5 projects should be Screened out for AA
A minimum of 5 projects should be completed /built
A minimum of 3 projects should be built and undergoing or have completed an assessment of effects on the conservation objectives of a Natura 2000 site
Scale of Project
A minimum of 3 projects should be classified as a small scale project
A minimum of 3 projects should be classified as a medium scale project
A minimum of 3 projects should be classified as a large scale project e.g. meets the criteria set out in Annex I of the EIA Directive
At least 2 projects should involve the upgrade/widening of an existing roadway
Habitat types
At least 3 projects should be a new build roadway
A minimum of 10 projects should be directly impacting on one or more Natura 2000 sites
A minimum of 5 habitats as listed under Annex I of the habitats directive should be examined within the 20 EIA/AA
A minimum of 5 species listed under Annex II or Annex IV of the Habitats Directive should be examined within the 20 EIA/AA
A minimum of 5 species listed under the Birds Directive should be examined within the 20 EIA/AA

Annex B EIA Guideline Reviews

B.1 List of EIA Guidelines from Eight Reference[c] Countries

Sweden			
Title	**Description**	**Language**	**URL**
Rapport Planläggning av vägar och järnvägar. Version 1.0	This document gives an overall description of the new (2013) process for road and railway planning.	Swedish	http://www.trafikverket.se/PageFiles/106166/planlaggning_vagar_jarnvagar_1_0_141014.pdf
TRVÖK. 2012. Trafikverkets övergripande krav för fysisk planläggning av vägar och järnvägar. Anläggningsstyrning. TRV 2012:211. TDOK 2012:1151. Trafikverket. Borlänge. 96 pp.	This document gives an overall description of the new (2013) process for road and railway planning. It also provides guidance as to modifications in the EIA handbook (2011:090) due to the new planning process.	Swedish	http://publikationswebbutik.vv.se/upload/6900/2012_211_trafikverkets_overgripande_krav_for_fysisk_planlaggning_av_vagar_och_jarnvagar.pdf
Anvisning: Miljö i planläggningsprocessen. 2012. Bilaga 3 till TDOK 2012:1151 / TRV 2012:211. TRV 2012:225. Trafikverket. Borlänge. 48 pp.	This document (which is an annex to TRVÖK 2012) gives advice on the treatment of environmental issues in the new (2013) process for road and railway planning. It provides brief guidance how to use the EIA handbook in the new planning process.	Swedish	http://publikationswebbutik.vv.se/upload/2012_225_Anvisning_Miljo_i_planlaggningsprocessen.pdf
Miljökonsekvensbeskrivning för vägar och järnvägar. Handbok. Metodik. 2011. Trafikverket Publikation 2011:090. Trafikverket. Borlänge. 72 pp.	This EIA handbook, targeting EIA consultants, describes the EIA procedure in cases where the County Administrative Board has decided that there is a risk of “significant environmental impact” (term referring to the Swedish Environmental Code).	Swedish	http://publikationswebbutik.vv.se/upload/6352/2011_090_miljokonsekvensbeskrivning_for_vagar_och_jarnvagar_handbok_metodik.pdf
Miljöuppföljning av väg- och järnvägsprojekt. Metodbilaga. Vägverket/Banverket. Vägverket publikation 2007:40.	This is the Transport Administration’s handbook on monitoring of road and railway projects.	Swedish	http://publikationswebbutik.vv.se/upload/4172/2007_40_miljouppfoljning_av_vag_och_jarnvagsprojekt_paket.pdf

Sweden			
Title	**Description**	**Language**	**URL**
Natura 2000 i Sverige. Handbok med allmänna råd. 2003. Handbok 2003:9. Naturvårdsverket. Stockholm. 87 pp.	This handbook, issued by the Swedish Environmental Protection Agency, gives advice to the regional County Administrative Boards, other authorities and NGO:s on the establishment and administration of Natura 2000 areas.	Swedish	http://www.naturvardsverket.se/Documents/publikationer/620-0131-0.pdf
Förordning (1998:905) om miljökonsekvensbeskrivningar.	This regulation (decree) comprises the legal requirements for EIA.	Swedish	http://www.notisum.se/rnp/SLS/lag/19980905.htm
Samlat planeringsunderlag Miljö och hälsa. Trafikverket Publikation 2014:081. Borlänge.		Swedish	http://publikationswebbutik.vv.se/upload/7388/2014_081_Samlat_planeringsunderlag_Miljo_och_halsa.pdf
Naturvärdesinventering avseende biologisk mångfald (NVI) - Genomförande, naturvärdesbedömning och redovisning (Biodiversity survey—Implementation, assessment and reporting). Svensk standard. SS 199000:2014. Swedish Standards Institute. 44 pp. (not studied)	This is a standard for biological surveys.	Swedish	http://www.sis.se/standard/std-102015
Naturvärdesinventering avseende biologisk mångfald (NVI) – Komplement till SS 199000. Svensk standard. SS 199001:2014. Swedish Standards Institute. 108 pp. (not studied	This guide is a complement to SS 199000:2014.	Swedish	http://www.sis.se/standard/std-102175

Sweden			
Title	**Description**	**Language**	**URL**
Råd Avvattningsteknisk dimensionering och utformning – MB 310. 2014. Trafikverket TDOK 2014:0051. Version 1.0. 63 pp.	This publication from the Transport Administration gives advice on intersections roads/waterways.	Swedish	http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&ved=0CCUQFjAB&url=http%3A%2F%2Ftrvdokument.trafikverket.se%2FfileHandler.ashx%3Ftyp%3Dshowdokument%26id%3D97b3505f-6592-4bcf-8d2f-a3b500f3b5b9&ei=cPtyVMqdEOSnygPyqYGABQ&usg=AFQjCNGUriFeVIQ7u256kDiNp8kqMYbUDA&bvm=bv.80185997,d.bGQ
Temablad Natur. Miljöanpassning av trumma/bro. Trafikverket SKAPA. 4 pp.	This publication from the Transport Administration gives advice on construction of water culverts and bridges.	Swedish	http://www.trafikverket.se/PageFiles/101360/temablad_trumma_version2.pdf
Krav för vägars och gators utformning. 2012. Trafikverket and Sveriges Kommuner och Landsting. Trafikverket Publikation 2012:179. 261 pp.	This regulation from the Transport Administration gives advice on road construction, among other things intersections roads/waterways.	Swedish	http://publikationswebbutik.vv.se/upload/6892/2012_179_krav_for_vagar_och_gators_utformning.pdf
Utformning av ekologiskt anpassade vägpassager. Råd när vägpassager ska anläggas och vandringshinder åtgärdas. Skogsstyrelsen, Trafikverket et al. No year. 6 pp.	This brochure gives advice on adaption of bridges and water culverts to wildlife.	Swedish	http://www.lansstyrelsen.se/norrbotten/SiteCollectionDocuments/Sv/publikationer/miljo%20och%20klimat/Remibar/remibar_2012.pdf
Vilda djur och infrastruktur – en handbook för åtgärder. Vägverket and Banverket. Vägverket Publikation 2005: 72. Borlänge. 123 pp.	This publication issued by the former road and railway administrations, give advice on ecological adaptation measures.	Swedish	http://publikationswebbutik.vv.se/upload/2311/2005_72_vilda_djur_och_infrastruktur_en_handbok_for_atgarder.pdf
Handbok för artskyddsförordningen. Del 1 – fridlysning och dispenser. 2009. Naturvårdsverket Handbok 2009:2, utgåva 1. Naturvårdsverket. Stockholm. 130 pp.	This handbook, issued by the Swedish Environmental Protection Agency, gives advice on administration and management of protected species.	Swedish	http://publikationswebbutik.vv.se/upload/2311/2005_72_vilda_djur_och_infrastruktur_en_handbok_for_atgarder.pdf

Denmark			
Title	**Description**	**Language**	**URL**
Vejledning om VVM i planloven. 2009. Miljøministeriet, By- og Landskabsstyrelsen. Copenhagen. 109 pp.	This is a general description of the EIA process in Denmark.	Danish	http://naturstyrelsen.dk/media/nst/9948968/vvm_vejledning2.pdf
Vejledning om konsekvensanalyser. Finansministeriet et al. Maj 2005. 80 pp.	This publication, issued by many ministries together, regulates impact assessment at a general level.	Danish	http://www.modst.dk/~/media/Files/%C3%98AV/Vejledninger/Arkiv%20materiale/Bevillingsomr%C3%A5det/%C3%98vrige%20vejledninger/Vejledning_om_konsekvensanalyser%20pdf.ashx
Miljøkonsekvensvurderinger af lovforslag og andre regeringsforslag. Miljøministeriet, Landsplanafdelningen. Juni 2003. 32 pp.	This publication, issued in 2003 by the Ministry of the Environment, gives general advice on EIA for Danish law proposals.	Danish	http://naturstyrelsen.dk/media/nst/attachments/82164/vejledning_om_miljokonsekvensvurdering_juni03.pdf
Landskab og kulturmiljø. Miljøkonsekvensvurderinger i det åbne land. Håndbog. 2002. Skog- og naturstyrelsen.	This handbook, issued by the Ministry of the Environment, gives advice on EIA in open landscapes.	Danish	http://naturstyrelsen.dk/media/nst/attachments/82166/vvm_vejledning4.pdf
Vejledning til bekendtgørelse nr. 408 af 1. maj 2007. Om udpegning og administration af internationale naturbeskyttelsesområder samt beskyttelse af visse arter. 2011. Naturstyrelsen. Miljøministeriet. København. 63 pp.	This handbook gives advice to authorities on the administration of Natura 2000 areas.	Danish	
Bilag 1 - Oversigt over danske naturligt hjemmehørende arter der er omfattet af habitatdirektivets bilag IV samt markering af de arter, der både er omfattet af bilag II (udpegningsgrundlag) og bilag IV.	This is a list of Danish species mentioned in the Habitat Directive Appendices II and IV. The list is appended to the handbook above.	Danish	http://naturstyrelsen.dk/media/nst/Attachments/vejledningjuni2011pdf.pdf

Denmark			
Title	**Description**	**Language**	**URL**
Håndbog om dyrearter på habitatdirektivets bilag IV. – til brug i administration og planlægning. 2007. Editors: Bjarne Søgaard & Tommy Asferg. Faglig rapport fra DMU nr. 635, 2007. Danmarks Miljøundersøgelser. Aarhus Universitet. 226 pp.	This handbook, edited by the University of Aarhus, gives advice on management of Danish species listed in Appendix IV of the Habitat Directive.	Danish	http://www2.dmu.dk/pub/fr635.pdf
Monitoring the effect of roads on nature and environment. Vejdirektoratet Rapport 428 - 2014. Copenhagen. 35 pp.	This document, issued by the Danish Road Agency, gives advice on environmental monitoring of roads.	Danish	http://www.vejdirektoratet.dk/DA/viden_og_data/publikationer/Lists/Publikationer/Attachments/791/Overv%c3%a5gning%20af%20effekter%20fra%20veje%20p%c3%a5%20natur%20og%20milj%c3%b8.pdf
Vejledning. Flagermus og større veje. Registrering av flagermus og vurdering av avværgeforanstaltninger. Vejdirektoratet Rapport 382-2011. Copenhagen. 61 pp.	This handbook gives advice on bat surveys and monitoring of the effectiveness of adaptation measures.	Danish	http://www.vejdirektoratet.dk/DA/viden_og_data/publikationer/Lists/Publikationer/Attachments/196/Flagermus_vejledning.pdf
Vejledning. Fauna- og menneskepassager. Anlæg og planlægning. Vejregler November 2011. Vejdirektoratet. Copenhagen. 150 pp.	This document, issued by the Danish Road Agency, gives advice on fauna passages.	Danish	http://vejregler.lovportaler.dk/showdoc.aspx?q=faunapassager&adv=false&area=0&querytype=ALL&docId=vd-anlaeg-fauna-2012-full
Vejledning. Hegning lengs veje. Anlæg og planlægning. Vejregler oktober 2011. Vejdirektoratet Rapport 309. Copenhagen. 156 pp.	This document, issued by the Danish Road Agency, gives advice on wildlife fencing.	Danish	http://vejregler.lovportaler.dk/ShowDoc.aspx?q=faunapassager&adv=false&area=0&querytype=ALL&docId=vd-anlaeg-hegning-2011-full

Hungary			
Title	**Description**	**Language**	**URL**
314/2005. (XII.25.) Korm. Rendelet a környezeti hatásvizsgálati és az egységes környezethasználati engedélyezési eljárásról	Governmental Decree on the Environmental Impact Assessment and Integrated Environmental Use Licensing	Hungarian	http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0500314.KOR
1996.évi LIII. törvény a természet védelméről	Hungarian Nature Conservation Act	Hungarian	http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=99600053.TV
275/2004. (X. 8.) Korm. Rendelet az európai közösségi jelentőségű természetvédelmi rendeltetésű területekről	Govermental Decree on Protected Areas of European Importance	Hungarian	http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A0400275.KOR
147/2010. (IV.29.) Korm. Rendelet a vizek hasznosítását, védelmét és kártételeinek elhárítását szolgáló tevékenységekre és létesítményekre vonatkozó általános szabályokról	Governmental Decree on the General Rules of Water Use, Protection and Damage Control	Hungarian	http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A1000147.KOR
ÚT 2-1.303 :2006 Közúti zajárnyékoló falak. Létesítés és fenntartás e-UT 03.07.43	Noise Protection Barriers along Roads. Construction and Maintenance Standards	Hungarian	http://internet.kozut.hu/szakmai/muszakiszabalyozas/Documents/2010_szeptember_honlap.pdf
Út 2-1.304 :2007 Ökológiai átjárók e-UT 03.07.51 Szabvány	Ecological Passage Standards	Hungarian	http://internet.kozut.hu/szakmai/muszakiszabalyozas/Documents/2010_szeptember_honlap.pdf
ÚT 2-1.305 :2007 Védőkerítések kialakítása közutak mellett e-UT 03.07.52 Szabvány	Protective Fencing Along Roads Standards	Hungarian	http://internet.kozut.hu/szakmai/muszakiszabalyozas/Documents/2010_szeptember_honlap.pdf

Austria			
Title	**Description**	**Language**	**URL**
Österreichische Forschungsgesellschaft Straße–Schiene–Verkehr	RVS 04.01.11 Environmental Examination	German	Not Available Online
Österreichische Forschungsgesellschaft Straße–Schiene–Verkehr	RVS 04.03.11 Amphibian protection along roads	German	Not Available Online
Österreichische Forschungsgesellschaft Straße–Schiene–Verkehr	RVS 04.03.12 Wildlife protection	German	Not Available Online
Österreichische Forschungsgesellschaft Straße –Schiene–Verkehr	RSV 04.03.13 Bird protection along transport infrastructure	German	Not Available Online
Österreichische Forschungsgesellschaft Straße –Schiene–Verkehr	RVS 04.03.14 Wild Mammals (excluding Bats), Conservation on the Transportation Infrastructure	German	Not Available Online
Österreichische Forschungsgesellschaft Straße –Schiene–Verkehr	Technical base for RVS 04.03.14 "Wild mammals (excluding bats) conservation on the transportation infrastructure"	German	Not Available Online
Österreichische Forschungsgesellschaft Straße –Schiene–Verkehr	RVS 04.05.11 Environmental site surveillance	German	Not Available Online
To be published in 2015	RVS 04.03.15 Species protection	German	Not Available Online
To be published in 2015	RVS 04.01.12 Environmental measures	German	Not Available Online
Österreichische Forschungsgesellschaft Straße –Schiene–Verkehr	Technical base for RVS 04.03.13 Bird protection along transport infrastructure	German	Not Available Online

Netherlands			
Title	**Description**	**Language**	**URL**
Ministry of Infrastructure and Environment. Milieueffectrapportage – Besluit milieueffectrapportage [an Order in Council that is essential to evaluate if an EIA is necessary]	Describes when an EIA is necessary.	Dutch	http://www.infomil.nl/onderwerpen/ruimte/mer/procedurehandleiding/wanneer-beoordeling/besluit-0/
Ministry of Infrastructure and Environment. Milieueffectrapportage - Wat zijn de procedurele en inhoudelijke eisen van m.e.r.?	Describes the procedure, actors and essential requirements of an EIA.	Dutch	http://www.infomil.nl/onderwerpen/ruimte/mer/procedurehandleiding/procedurele/
Ministry of Infrastructure and Environment. Milieueffectrapportage - Inhoudsvereisten MER uit de Europese richtlijn betreffende de milieubeoordeling van bepaalde openbare en particuliere projecten (2011/92/EU, bijlage IV)	Describes the essential requirements according to European guidelines.	Dutch	http://www.infomil.nl/onderwerpen/ruimte/mer/procedurehandleiding/procedurele/opstellen-mer/inhoudsvereisten/
Ministry of Infrastructure and Environment. Milieueffectrapportage - Crisis- en Herstelwet	Describes two changes in the EIA procedure for infrastructural and other construction projects due to the law to speed up the decision making process in these times of economic stress.	Dutch	http://www.infomil.nl/onderwerpen/ruimte/mer/procedurehandleiding/procedurele/opstellen-mer/crisis-herstelwet/
EU Law - Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment Text with EEA relevance.	New changes will have to be implemented in the near future due to modification in the EIA Guidelines of the European Commission.	English	http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0052
Ministry of Infrastructure and Environment. Milieueffectrapportage - Handreiking milieueffect-rapportage	This website offers assistance when carrying out an EIA. It provides tips, tricks, information and examples.	Dutch	http://www.infomil.nl/onderwerpen/ruimte/mer/praktijkhandreiking/

Netherlands			
Title	**Description**	**Language**	**URL**
Commissie voor de milieueffectrapportage - Factsheets	The Netherlands Commission for Environmental Assessment (NCEA) has several factsheets that describe procedures, laws, methods and specific themes related to EIA.	Dutch	http://www.commissiemer.nl/publicaties/factsheets

Belgium			
Title	**Description**	**Language**	**URL**
Departement Leefmilieu, Natuur en Energie - Milieueffectrapportage	This website contains all information necessary for EIAs in Flanders (Belgium)	Dutch	http://www.lne.be/themas/milieueffectrapportage
Geactualiseerd MERrichtlijnenboek Discipline Fauna & Flora	Guidelines for flora and fauna in EIAs.	Dutch	http://www.lne.be/themas/milieueffectrapportage/deskundigen/richtlijnenboeken/rlb-fauna-en-flora-2006.pdf
Milieueffectrapportage – Richtlijnenboek Wegen	Guidelines for EIAs about roads.	Dutch	http://www.lne.be/themas/milieueffectrapportage/deskundigen/richtlijnenboeken/rlb-infra-2007-wegen071127.pdf
Handleiding milderende maatregelen binnen het MER, met het oog op een verduidelijking en betere doorwerking ervan	Handbook for EIAs about mitigation measures.	Dutch	http://www.lne.be/themas/milieueffectrapportage/deskundigen/handleidingen-1/2238503010_handleidingMM_DEF.pdf

Ireland			
Title	**Description**	**Language**	**URL**
NRA Guidelines for Assessment of Ecological Impacts of National Road Schemes	to provide guidance on the assessment of impacts on the natural environment during the planning and design of national road schemes	English	http://www.nra.ie/environment/environmental-planning-guidelines/
NRA Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes	to provide guidance on the assessment of impacts on the natural environment during the planning stages of national road schemes. This document is intended to supplement the 'Ecology Guidelines' by providing advice on procedures and survey techniques to inform the Natural Environment section of the Constraints Study, Route Corridor Selection Study and the Environmental Impact Statement (EIS) for new schemes and improvements.	English	http://www.nra.ie/environment/environmental-planning-guidelines/
NRA Environmental Impact Assessment of National Road Schemes, A Practical Guide	is to ensure that the EIA process for road schemes continues to follow correct statutory procedures while at the same time achieving quality and consistency in the assessment and mitigation of environmental impacts	English	http://www.nra.ie/environment/environmental-planning-guidelines/
NRA Guidelines for the Treatment of Otters prior to the construction of |National Road Schemes	sets outs procedures for the protection of otters during the construction of national road schemes. It details procedures for the exclusion of otters from holts and it contains a new specification for mammal fencing.	English	http://www.nra.ie/environment/environmental-construction-guidelines/

United Kingdom			
Title	**Description**	**Language**	**URL**
IEEM Guidelines for Ecological Impact Assessment in the United Kingdom	to promote good practice in Ecological Impact Assessment (EcIA) relating to terrestrial, freshwater and coastal environments to the mean low water mark in the UK	English	http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terestrial_Freshwater_Coastal.pdf
Design Manual for Roads and Bridges: Volume 11. Environmental Assessment	Guidance of the general principles of Environmental assessment, assessment techniques and assessment of implication on European sites.	English	http://www.standardsforhighways.co.uk/DMRB/vol11/index.htm
Design Manual for Roads and Bridges: Volume 10. Section 4. Environmental Design and Management. Nature conservation	Guidance on assessment of impacts on Biodiversity, Badgers, Bats, Otters, Dormice, Amphibians and Reptiles	English	http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol10/index.htm

Annex C Environmental Impact Assessment Review

C.1 List of Environmental Impact Statements

Sweden			
Number	**Title**	**Published year**	**Habitat directive article used**
1	Alingsås: E 20 Alingsås-Vårgårda	2008	Article 6 not mentioned.
2	Anttis: Projekt Malmtransporter Kaunisvaara-Svappavaara, delen väg 395 Anttis-Lovikka	2014	Article 6 not mentioned.
3	Axvall: Väg 49 Axvall-Varnhem	2008	Article 6 not mentioned.
4	Björkås: E18 Björkås-Skutbergsmotet	2008	The nature reserve Sörmon was not a Natura 2000 site at that time (but suggested). Exemption from nature-reserve rules were anticipated. It was mentioned that compensatory measures may be needed, e.g. extension of the future nature reserve. Article 6 not mentioned.
5	Börjelslandet: E4 Persön-S. Råneå, delen genom Börjelslandet	2009	Screened out of AA because impact on the adjacent Natura 2000 site is assessed as being insignificant. Article 6 not mentioned.
6	Edebyekhage: E4 Förbifart Stockholm Natura 2000-tillståndsansökan Edeby ekhage	2011	Article 6 not mentioned.
7	Halmstad: Detaljplan för Halmstad 4:28 (del av) mfl, södra infarten	2008	Article 6 not mentioned.
8	Hansta: Förbifart Stockholm, tillståndsansökan Hansta Natura 2000-område	2014	Article 6 not mentioned.
9	Hova: E20 delen förbi Hova	2014	No special Article mentioned.
10	Linaälv: Väg 45, bro över Lina älv	2012	No special Article mentioned.
11	Lösen: E22 Karlskrona-Kalmar, delen Lösen-Jämjö	2009	No special Article mentioned.
12	Rinkabyholm: E22 Karlskrona-Kalmar, delen förbi Rinkabyholm	2013	No Natura 2000 site. No special Article mentioned.
13	Röbäck: Väg E12, Västra länken, delen Röbäcksdalen-Röbäck	2011	No special Article mentioned.
14	Sölve: E22 Sölvesborg-Karlskrona, delen Sölve-Stensnäs	2008	No special Article mentioned.

15	Tanumshede: Väg E6, delen Pålen-Tanumshede	2011	No Natura 2000 site. No special Article mentioned.

Denmark			
Number	**Title**	**Published year**	**Habitat directive article used**
1	Fjordfrederikssund: Ny fjordforbindelse ved Frederikssund	2010	6.4. There has been a shift in the interpretation of the Habitats directive in DK in summer 2014,
2	Kliplev: Ny motorvej mellem Kliplev og Sønderborg	2005	6.3
3	Limfjordtredje: 3. Limfjordsforbindelse	2011	Competent national authority has not agreed to the plan or project yet
4	Næstved: Nordlig omfartsvej ved Næstved	2010	6.3
5	Silkeborg: Motorvej Herning-Århus ved Silkeborg	2008	6.3
6	Skovvejen: Rute 23 Skovvejen Regstrup-Kalundborg	2012	Competent national authority has not agreed to the plan or project yet.

Hungary			
Number	**Title**	**Published year**	**Habitat directive article used**
1	National road from Körmend to the Austrian border	2010	Competent national authority has not agreed to the plan or project yet.
2	Mórahalom bypass	2011	Competent national authority has not agreed to the plan or project yet.
3	Székesfehérvár ringroad, section III. (00+000-7+036 km)	2010	Competent national authority has not agreed to the plan or project yet.
4	Várpalota bypass south	2008	Competent national authority has not agreed to the plan or project yet.
5	Perkáta bypass	2007	Competent national authority has not agreed to the plan or project yet.
6	Railway overbridge on the main road at Dinnyés	2007	Competent national authority has not agreed to the plan or project yet.
7	Road improvement from the new Danube bridge	2011	Competent national

	at Dunaújváros to Székesfehérvár		authority has not agreed to the plan or project yet.
8	New bridge over the Kapos-stream at Pincehely	2010	Competent national authority has not agreed to the plan or project yet.
9	National road upgrading to 11.5 tons from Pétfürdő to Veszprém	2010	Competent national authority has not agreed to the plan or project yet.
10	Road upgrading and widening from Bánd to Bakonygyepes	2010	Competent national authority has not agreed to the plan or project yet.
11	Berettyóújfalu - Mezőpeterd local roads (0891 and 0893)	2008	Competent national authority has not agreed to the plan or project yet.
12	National road between Dunavecse and Kecskemét	2008	Competent national authority has not agreed to the plan or project yet.
13	Road upgrading and widening from Hatvan to Bátonyterenye	2011	Competent national authority has not agreed to the plan or project yet.
14	Albertirsa bypass	2012	Competent national authority has not agreed to the plan or project yet.
15	Monor - Pilis bypass No. 2	2008	Competent national authority has not agreed to the plan or project yet.
16	National road upgrading in Heves and Jász-Nagykun-Szolnok counties at Jászberény (road No. 32.)	2012	Competent national authority has not agreed to the plan or project yet.
17	National road from Veszprém to Körmend, section II 1. (EIA&AA)	2012	Competent national authority has not agreed to the plan or project yet.
18	National road upgrading in Heves and Jász-Nagykun-Szolnok counties along road No. 33. (EIA&AA)	2012	Competent national authority has not agreed to the plan or project yet.

Austria			
Number	**Title**	**Published year**	**Habitat directive article used**
1	S 36: Judenburg-Scheifling 2x2 lane road	2008	Habitat directive II., IV.
2	S 10: Unterweitersdorf - Freistadt Nord motorway (S10) stretch	2007	3.3., 4., 12., 13.,
3	S 1: Schwechat-SüBenbrunn Outer Bypass stretch	2009	Habitat directive II., IV.
4	S 1 West: Knoten Korneuburg Outer Bypass stretch	2007	Habitat directive II., without article: 6
5	S 7 West: Fürstenfelder Highway West	2008	6.,12., 16.,

Netherlands			
Number	**Title**	**Published year**	**Habitat directive article used**
1	Trajectnota/MER Stap 2 A4 Delft-Schiedam	2009	Article 6.3: AA performed
2	Milieueffectrapport N303 omleiding Voorthuizen	2009	Screened out
3	Rondweg N348 Zutphen- Eefde. Milieueffectrapport. Deel A: hoofdrapport	2009	Article 6.3: AA performed
4	Milieu Effect Rapport A28 Zwolle-Meppel. Hoofdrapport behorende bij het (Ontwerp) Tracébesluit A28 Zwolle-Meppel	2008	Screened out
5	Verbreding N244 Milieueffectrapport	2011	Article 6.3: AA performed
6	Millieueffectrapport Verdubbeling N33 Assen – Veendam – Zuidbroek	2010	Article 6.3: AA performed
7	Planstudie PlanMER N340 Zwolle – Ommen. Deel A – de hoofdnota	2009	Article 6.3: AA performed
8	Noordoosttangent Tilburg. Milieueffectrapportage voor de verdubbeling van de Burgemeester Bechtweg	2009	Screened out
9	Planstudie/tracé-MER N261 Tilburg-Waalwijk. Milieueffectrapportage	2004	Article 6.3: AA performed
10	Ontwikkeling Ede-Oost en spoorzone. Milieueffectrapportage. Delen A en B.	2008	Articles 6.3 and 6.4
11	(Plan-)MER 381 Drachten – Drentse grens	2011	Article 6.3: AA performed
12	MER Tractaatweg N62	2013	Screened out
13	Trajectnota/MER Hoofdrapport. Betere bereikbaarheid door een robuust wegennetwerk in de regio Arnhem - Nijmegen	2011	PlanEIA. Assessment of effects in next phase.
14	MER N 331 Zwartsluis – Vollenhove – Inrichting als gebiedsontsluitingsweg	2012	Article 6.3: AA performed

Belgium			
Number	**Title**	**Published year**	**Habitat directive article used**
1	Studie ten behoeve van de realisatie van de Noordzuidverbinding te Houthalen-Helchteren. Plan-MER.	2014	Article 6.3: AA performed
2	PlanMER Gewestelijk ruimtelijk uitvoeringsplan Nx tussen N11 en A12.	2011	Article 6.3: AA performed
3	Plan-MER R43 - Doortrekking Ring om Eeklo. Delen I en II	2009	Article 6.3: AA performed

Greece			
Number	**Title**	**Published year**	**Habitat directive article used**
1	Ring Road of Kalabaka, Region of Thessaly	2011	6.3
2	Improvement of the road Trikala - Pyli, Region of Thessaly	2008	6.3
3	Egnatia odos, Mymphopetra - Rentina, Region of Central Macedonia	2010	6.3
4	National road Patra-Pyrgos-Tsakona (Section Amaliada -Tsakona), Region of West Greece	2006	6.3
5	E65 Highway, Kalabaka - Egnatia Odos, Regions of Thessaly and Western Macedonia	2005	6.3
6	Vertical axes of Egnatia Odos Section Koromilia - Krystallopygi, Region of West Macedonia	2009	6.3
7	Egnatia odos, Mymphopetra - Rentina, Region of Central Macedonia	2005	6.3
8	Improvement of the National Road 15, Section Oxineia - Deskati, Region of Thessaly	2012	6.3
9	Improvement of Road Argyri - Kataphylio Bridge, Region of Thessaly	2012	6.3
10	Road Elos - Simantiriana, Region of Crete	2012	6.3

Ireland			
Number	**Title**	**Published year**	**Habitat directive article used**
1	Killaloe Bypass, Shannon Bridge Crossing and R494 improvement	2012	6
2	Butlers Bridge to Belturbet Realighment	2005	6
3	N5 Westport to Turlough	2013	None mentioned explicitly
4	M18 Galway (Rathmorrissy) to Tuam	2007	6
5	Galway City Outer Bypass	2006	6
6	N7 Newlands Cross	2007	None mentioned explicitly
7	M11 Gorey to Enniscorthy	2009	None mentioned explicitly
8	N18 Gort to Oranmore	2006	12
9	N22 Tralee Bypass	2008	6
10	N25 New Ross Bypass	2007	6
11	N59 Maigh Cuilinn Bypass	2011	3, 4, 5, 6 10,12

United Kingdom			
Number	**Title**	**Published year**	**Habitat directive article used**
1	Aberdeen Western Peripheral Route	2007	None mentioned
2	forth bridge	2009	6
3	M3 Junction 2 to 4a	2014	2, 6
4	M74 Raith Junction 5	2007	No mention of Habitats Directive at all
5	Port Talbot Peripheral Distributor Road (Stage 2)	2010	None mentioned

C.2 EIA Review Results

Sweden		
Number of EISs Analysed	**15**	
1. What EIA guidelines were used for this project?	National:	9
	EU:	0
	Not Stated:	6
2. Have all surveys been carried out in the optimum season?	All:	1
	Most:	2
	Some:	2
	None:	0
	Not evident in the EIS:	10
	Reasons for surveys not being completed in optimum season:	
3. What are the primary sources of information?	Online Mapping:	14
	Recent Site Visit:	10
	Existing inventories:	15
	Databases:	13
	Scientific Literature:	0
	Other:	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS	<2 years:	9
	3-5 years:	5
	>5 years:	5

publication?	Not Stated:	3
5.Topics addressed within the EIS?	Description of site:	15
	Description of road development project/plan:	15
	Location of project/plan relative to habitats or species of conservation interest: 15/15	15
	Description of baseline:	10
	Determination of effects on protected species/habitats:	12
	Impact assessment in the light of the national, regional and international conservation objectives:	13
	Cumulative effects in combination with other existing or future projects or plans:	0
	Proposals for mitigation:	12
	Monitoring plan:	2
	Other:	
6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	12
	Presence of protected species:	12
	Distribution and abundance of protected species:	9
	Current state of protected species and habitats in the local area, region, country etc.:	5
	Importance of surrounding area for species:	7
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	7
	NGO's:	12
	Fisheries board:	4
	Local Community Bodies	5
	Other Government Bodies	15
	Universities	1
	Museums	2
	Other: Electricity Company: (4).	
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	10
	Performance Based:	2
	No Mitigation Measures:	3
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	7
	Large mammals:	7
	Small ground mammals:	6
	Fish:	3
	Birds:	1
	Bats:	1
	Amphibians & Invertebrates:	7
	Other: Mussels: (1); lizard (1); Animals in creeks (1).	

10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:					0
	No:					12
	Don't know:					2
	No other measures:					1
11. The following aspects of the development are considered.	Construction compounds:					7
	Borrow pits:					7
	Waste disposal sites proposed for use (new or existing):					1
	Advanced archaeological testing:					3
	Advanced ground investigations:					8
	Haulage routes:					6
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:					3
	Traffic noise and light nuisance to animals:					5
	Disturbance to animal groups during construction period:					9
13. Is value for money and buildability considered when specifying the mitigations measures?	Yes:					0
	No:					1
	To some degree:					0
	Unknown/Not specified:					13
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	0	2	13
	Scoping	0	0	0	2	13
	Identification of Habitats	0	2	2	1	10
	Impact assessment Methodologies	1	4	4	1	4
	Mitigation measures	0	5	5	3	2
	Monitoring	4	5	4	2	0
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				2
		Viaducts:				0
		Over bridges:				0
		Piled embankments:				0
		Culverts:				0
		Translocation:				0
		Compensation planting:				3
		Fencing:				0

		Other: Protection of trees: (2); Measures against dust and Nox: (1);Ground water level control: (1);	
	Large mammals:	Viaducts:	1
		Green Bridges	5
		Culverts:	1
		Underpass/pipe:	3
		Fencing:	7
		Artificial shelters:	0
		Other: Otter Stepping bridge under road bridge: (1);	
	Small ground mammals:	Green Bridges:	2
		Culverts:	2
		Underpass/pipe:	5
		Fencing:	1
		Other:	
	Fish:	Specialized culvert design:	1
		Fish Passes:	0
		Salvage:	0
		Alteration of watercourse:	1
		Seasonal Constraints:	1

		Other: Restoration of brook/basin/banks after installation of culvert: (2); Measures against turbidity increase: (2).	
	Birds:	Bridge Design:	0
		Landscaping:	0
		Bird Boxes/Ledges:	0
		Seasonal Constraints:	0
		Other: Speed limit and quiet asphalt: (1).	
	Bats:	Bridge Design:	1
		Bat boxes and tubes:	0
		Green Bridges:	0
		Bat house:	0
		Landscaping:	0
		Seasonal Constraints:	0
		Other:	
	Amphibians & invertebrates:	Ponds:	3
		Culverts/underpasses/pipes:	7
		Translocation:	0
		Fencing	4
		Seasonal Constraints	
		Other: Insects and Lichens via oak tree measures: (1);	

Denmark		
Number of EISs Analysed	**6**	
1. What EIA guidelines were used for this project?	National:	5
	EU:	3
	Not Stated:	2
2. Have all surveys been carried out in the optimum season?	All:	2
	Most:	1
	Some:	0
	None:	0
	Not evident in the EIS:	3
	Reasons for surveys not being completed in optimum season:	
3. What are the primary sources of information?	Online Mapping:	5
	Recent Site Visit:	5
	Existing inventories:	5
	Databases:	5
	Scientific Literature:	1
	Other: Noise Modelling: (1).	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	5
	3-5 years:	1
	>5 years:	3
	Not Stated:	1
5. Topics addressed within the EIS?	Description of site:	6
	Description of road development project/plan:	6
	Location of project/plan relative to habitats or species of conservation interest:	6
	Description of baseline:	5
	Determination of effects on protected species/habitats:	6
	Impact assessment in the light of the national, regional and international conservation objectives:	4
	Cumulative effects in combination with other existing or future projects or plans:	2
	Proposals for mitigation:	6
	Monitoring plan:	2
	Other: Compensatory Measures: (1).	

6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	6
	Presence of protected species:	6
	Distribution and abundance of protected species:	5
	Current state of protected species and habitats in the local area, region, country etc.:	3
	Importance of surrounding area for species:	3
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	1
	NGO's:	3
	Fisheries board:	0
	Local Community Bodies	3
	Other Government Bodies	4
	Universities	0
	Museums	0
	Other:	0
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	6
	Performance Based:	0
	No Mitigation Measures:	0
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	4
	Large mammals:	6
	Small ground mammals:	4
	Fish:	3
	Birds:	1
	Bats:	4
	Amphibians & Invertebrates:	6
	Other: Lizard:(1).	
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	3
	No:	1
	Don't know:	2
	No other measures:	0
11. The following aspects of the development are considered.	Construction compounds:	3
	Borrow pits:	1
	Waste disposal sites proposed for use (new or existing):	2
	Advanced archaeological testing:	1
	Advanced ground investigations:	1
	Haulage routes:	2
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:	2
	Traffic noise and light nuisance to animals:	2
	Disturbance to animal groups during construction period:	5
13. Is value for money and	Yes:	0

buildability considered when specifying the mitigations measures?	No:					0
	To some degree:					0
	Unknown/Not specified:					6
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	0	1	4
	Scoping	0	0	0	1	4
	Identification of Habitats	0	0	0	1	5
	Impact assessment Methodologies	0	1	0	0	4
	Mitigation measures	0	1	3	1	1
	Monitoring	1	2	1	0	0
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				0
		Viaducts:				0
		Over bridges:				0
		Piled embankments:				0
		Culverts:				0
		Translocation:				0
		Compensation planting:				2
		Fencing:				0
		Other: Ground water level control: (2); Pond: (1); Highway runoff treatment in above- and below- ground treating basins: (1); Water holes as compensatory measures: (1).				
	Large mammals:	Viaducts:				0
		Green Bridges				3
		Culverts:				3
		Underpass/pipe:				5
		Fencing:				5
		Artificial shelters:				2
		Other: Earth paths along river bridge: (1); Bridge design to allow animal passage underneath: (1).				
	Small ground mammals:	Green Bridges:				3
		Culverts:				1

		Underpass/pipe:	4
		Fencing:	0
		Other:	
	Fish:	Specialized culvert design:	0
		Fish Passes:	0
		Salvage:	0
		Alteration of watercourse:	2
		Seasonal Constraints	1
		Other: Measures against mud deposition: (1); Fish passages: (1).	
	Birds:	Bridge Design:	0
		Landscaping:	1
		Bird Boxes/Ledges:	1
		Seasonal Constraints	0
		Other:	
	Bats:	Bridge Design:	0
		Bat boxes and tubes:	0
		Green Bridges:	0
		Bat house:	3
		Landscaping:	1
		Seasonal Constraints:	1

		Other: Translocation: (1).	
	Amphibians & invertebrates:	Ponds:	6
		Culverts/underpasses/pipes:	6
		Translocation:	2
		Fencing	4
		Seasonal Constraints	
		Other: Wood Plantations: (1); New waterholes: (2).	

Hungary		
Number of EISs Analysed	**18**	
1. What EIA guidelines were used for this project?	National:	15
	EU:	16
	Not Stated:	0
2. Have all surveys been carried out in the optimum season?	All:	11
	Most:	1
	Some:	1
	None:	0
	Not evident in the EIS:	5
	Reasons for surveys not being completed in optimum season:	
3. What are the primary sources of information?	Online Mapping:	1
	Recent Site Visit:	17
	Existing inventories:	7
	Databases:	4
	Scientific Literature:	15
	Other: Expert Judgement: (2).	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	13
	3-5 years:	1
	>5 years:	3
	Not Stated:	1
5. Topics addressed within the EIS?	Description of site:	18
	Description of road development project/plan:	18
	Location of project/plan relative to habitats or species of conservation interest:	18
	Description of baseline:	17
	Determination of effects on protected species/habitats:	16
	Impact assessment in the light of the national, regional and international conservation objectives:	6
	Cumulative effects in combination with other existing or future projects or plans:	0
	Proposals for mitigation:	14
	Monitoring plan:	6

6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	16
	Presence of protected species:	15
	Distribution and abundance of protected species:	2
	Current state of protected species and habitats in the local area, region, country etc.:	10
	Importance of surrounding area for species	8
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	12
	NGO's:	0
	Fisheries board:	1
	Local Community Bodies	1
	Other Government Bodies	2
	Universities	0
	Museums	0
	Other: Railway planners: (1);	
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	17
	Performance Based:	0
	No Mitigation Measures:	1
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	15
	Large mammals:	8
	Small ground mammals:	10
	Fish:	2
	Birds:	13
	Bats:	1
	Amphibians & Invertebrates:	12
	Other: Reptiles: (3).	
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	2
	No:	13
	Don't know:	3
	No other measures:	0
11. The following aspects of the development are considered.	Construction compounds:	9
	Borrow pits:	12
	Waste disposal sites proposed for use (new or existing):	10
	Advanced archaeological testing:	0
	Advanced ground investigations:	1
	Haulage routes:	7
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:	1
	Traffic noise and light nuisance to animals:	13
	Disturbance to animal groups during construction period:	8
13. Is value for money and	Yes:	1

buildability considered when specifying the mitigations measures?	No:					0
	To some degree:					9
	Unknown/Not specified:					8
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	1	4	13
	Scoping	2	3	5	7	1
	Identification of Habitats	2	0	1	4	11
	Impact assessment Methodologies	1	7	7	2	1
	Mitigation measures	3	4	4	6	1
	Monitoring	12	1	0	1	4
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				0
		Viaducts:				0
		Over bridges:				0
		Piled embankments:				0
		Culverts:				0
		Translocation:				3
		Compensation planting:				11
		Fencing:				4
		Other:				0
	Large mammals:	Viaducts:				4
		Green Bridges:				3
		Culverts:				0
		Underpass/pipe:				1
		Fencing:				6
		Artificial shelters:				0
		Other: Wildlife warning signage (1); Deer escape ramps (1); Wild boar escape gates: (1); Protective planting along fencing: (1).				
	Small ground mammals:	Green Bridges:				2
		Culverts:				2

		Underpass/pipe:	6
		Fencing	1
		Other: Dry crossing ledge/bridge across stream for otters: (2); Viaducts: (1); Roadway put on pillars: (1); Ditches with steep slopes to be covered during construction and animals to be rescued from them before filling them (1).	
	Fish:	Specialized culvert design: 0/18	1
		Fish Passes: 0/18	0
		Salvage: 0/18	0
		Alteration of watercourse:	0
		Seasonal Constraints	0
		Other: Water retention interventions through weir system contraction to keep high water table: (1).	
	Birds:	Bridge Design:	0
		Landscaping:	4
		Bird Boxes/Ledges:	3
		Seasonal Constraints:	6
		Other: Protective woods should not be cut down around the nests of protective species: 1; No trees attracting migrating birds should be planted along road verges: 2; Check for birds before demolition: 1; Power line insulation to avoid bird strikes:1; Solid barrier: 1.	
	Bats:	Bridge Design:	0
		Bat boxes and tubes:	0
		Green Bridges:	0
		Bat house:	0
		Landscaping:	1
		Seasonal Constraints:	1

		Other: Total protection of riparian trees for pond bats: (1); No construction during the night to avoid disturbance of bat foraging: (1).	
	Amphibians & invertebrates:	Ponds:	0
		Culverts/underpasses/pipes:	11
		Translocation:	0
		Fencing: 8/18	8
		Seasonal Constraints	
		Other: Viaducts: (1).	

Austria		
Number of EISs Analysed	**5**	
1. What EIA guidelines were used for this project?	National:	5
	EU:	5
	Not Stated:	0
2. Have all surveys been carried out in the optimum season?	All:	5
	Most:	0
	Some:	0
	None:	0
	Not evident in the EIS:	0
	Reasons for surveys not being completed in optimum season:	
3. What are the primary sources of information?	Online Mapping:	0
	Recent Site Visit:	5
	Existing inventories:	0
	Databases:	2
	Scientific Literature:	5
	Other:	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	5
	3-5 years:	0
	>5 years:	0
	Not Stated:	0
5. Topics addressed within the EIS?	Description of site:	10
	Description of road development project/plan:	5
	Location of project/plan relative to habitats or species of conservation interest:	5
	Description of baseline:	5
	Determination of effects on protected species/habitats:	5
	Impact assessment in the light of the national, regional and international conservation objectives:	5
	Cumulative effects in combination with other existing or future projects or plans:	0
	Proposals for mitigation:	5
	Monitoring plan:	5

6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	5
	Presence of protected species:	5
	Distribution and abundance of protected species:	4
	Current state of protected species and habitats in the local area, region, country etc.:	5
	Importance of surrounding area for species:	4
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	5
	NGO's:	1
	Fisheries board:	2
	Local Community Bodies	0
	Other Government Bodies	0
	Universities	0
	Museums	0
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	5
	Performance Based:	0
	No Mitigation Measures	0
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	5
	Large mammals:	5
	Small ground mammals:	5
	Fish:	3
	Birds:	5
	Bats:	4
	Amphibians & Invertebrates:	5
	Other: Reptiles: (4).	
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	0
	No:	1
	Don't know:	4
	No other measures:	0
11. The following aspects of the development are considered.	Construction compounds:	5
	Borrow pits:	5
	Waste disposal sites proposed for use (new or existing):	4
	Advanced archaeological testing:	0
	Advanced ground investigations:	0
	Haulage routes:	5
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:	4
	Traffic noise and light nuisance to animals:	5
	Disturbance to animal groups during construction period:	5
13. Is value for money and	Yes:	2

buildability considered when specifying the mitigations measures?	No:					0
	To some degree:					0
	Unknown/Not specified:					3
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	0	0	5
	Scoping	0	0	0	1	4
	Identification of Habitats	0	0	0	0	5
	Impact assessment Methodologies	0	0	0	1	4
	Mitigation measures	0	0	0	2	3
	Monitoring	0	0	1	1	3
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				0
		Viaducts:				0
		Over bridges:				0
		Piled embankments:				0
		Culverts:				0
		Translocation:				0
		Compensation planting:				5
		Fencing:				1
		Other:				
	Large mammals:	Viaducts:				0
		Green Bridges:				4
		Culverts:				0
		Underpass/pipe:				0
		Fencing:				3
		Artificial shelters:				0
		Other: Wildlife warning reflectors & signage (1); Tunnel (1).				
	Small ground mammals:	Green Bridges:				1
		Culverts:				2

		Underpass/pipe:	3
		Fencing:	0
		Other: Tunnel: (1); Protection of grassland areas a small mammal (hare) habitats: (1).	
	Fish:	Specialized culvert design: 0/5	0
		Fish Passes:	2
		Salvage:	0
		Alteration of watercourse: 1/5	0
		Seasonal Constraints	2
		Other: Use of biodegradable gasoline: (1).	
	Birds:	Bridge Design:	0
		Landscaping:	3
		Bird Boxes/Ledges:	1
		Seasonal Constraints	0
		Other: Grassland rehabilitation: 2; Artificial nests: 1.	
	Bats:	Bridge Design:	0
		Bat boxes and tubes:	2
		Green Bridges:	2
		Bat house:	0
		Landscaping:	3
		Seasonal Constraints	1

		Other: Rescuing overwintering animals when carrying out work: (1); Mitigation ponds to provide food for bats: (1).	
	Amphibians & invertebrates:	Ponds:	5
		Culverts/underpasses/pipes:	4
		Translocation:	0
		Fencing	0
		Seasonal Constraints	
		Other:	

Netherlands		
Number of EISs Analysed	**14**	
1. What EIA guidelines were used for this project?	National:	14
	EU:	14
	Not Stated:	0
2. Have all surveys been carried out in the optimum season?	All:	2
	Most:	1
	Some:	1
	None:	0
	Not evident in the EIS:	10
	Reasons for surveys not being completed in optimum season:	
3. What are the primary sources of information?	Online Mapping:	4
	Recent Site Visit:	1
	Existing inventories:	11
	Databases:	6
	Scientific Literature:	6
	Other: Inventory especially conducted for this project: (10).	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	11
	3-5 years:	6
	>5 years:	0
	Not Stated:	0
5.Topics addressed within the EIS?	Description of site:	10
	Description of road development project/plan:	14
	Location of project/plan relative to habitats or species of conservation interest:	13
	Description of baseline:	8
	Determination of effects on protected species/habitats:	14
	Impact assessment in the light of the national, regional and international conservation objectives:	14
	Cumulative effects in combination with other existing or future projects or plans:	8
	Proposals for mitigation:	12
	Monitoring plan:	3
	Other: Knowledge Gaps: (1); Proposal for compensating regional protected natural area (not Natura2000): (1).	

6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	11
	Presence of protected species:	13
	Distribution and abundance of protected species:	11
	Current state of protected species and habitats in the local area, region, country etc.:	8
	Importance of surrounding area for species:	8
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	1
	NGO's:	2
	Fisheries board:	0
	Local Community Bodies	0
	Other Government Bodies	14
	Universities	0
	Museums	0
	Other:	
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	12
	Performance Based:	4
	No Mitigation Measures:	2
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	7
	Large mammals:	6
	Small ground mammals:	6
	Fish:	7
	Birds:	8
	Bats:	9
	Amphibians & Invertebrates:	7
	Other: Plants: (11).	
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	3
	No:	3
	Don't know:	7
	No other measures:	1
11. The following aspects of the development are considered.	Construction compounds:	2
	Borrow pits:	0
	Iste disposal sites proposed for use (new or existing):	0
	Advanced archaeological testing:	3
	Advanced ground investigations:	1
	Haulage routes:	2
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:	0
	Traffic noise and light nuisance to animals:	3
	Disturbance to animal groups during construction period:	3
13. Is value for money and	Yes:	0

buildability considered when specifying the mitigations measures?	No:					0
	To some degree:					0
	Unknown/Not specified:					14
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	1	9	4
	Scoping	0	0	1	10	3
	Identification of Habitats	0	0	4	5	4
	Impact assessment Methodologies	0	0	4	7	3
	Mitigation measures	0	2	3	7	2
	Monitoring	8	3	3	0	0
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				0
		Viaducts:				0
		Over bridges:				0
		Piled embankments:				0
		Culverts:				0
		Translocation:				3
		Compensation planting:				0
		Fencing:				0
		Other: Run off prevention: (3); Avoidance of orchids: (1); Measures to improve the hydrological situation: (1); Remove sources of nitrogen emission (agriculture) and adjust management activities in nature sites to remove nitrogen faster (e.g. Mowing): (1); Remove the additional deposition of Nox from the soil:(1).				
	Large mammals:	Viaducts:				1
		Green Bridges:				2
		Culverts:				1
		Underpass/pipe:				5
		Fencing:				3
		Artificial shelters:				0
		Other: Grids: (1).				
	Small ground mammals:	Green Bridges:				1
		Culverts:				1

		Underpass/pipe:	6
		Fencing:	0
		Other: Adjusted management of road verges: (1).	
	Fish:	Specialized culvert design: 0/5	2
		Fish Passes:	0
		Salvage:	3
		Alteration of watercourse: 1/5	1
		Seasonal Constraints	0
		Other: Aqueduct: (2); Measures to prevent run-off (1).	
	Birds:	Bridge Design:	0
		Landscaping:	4
		Bird Boxes/Ledges:	1
		Seasonal Constraints	1
		Other: Use of a particular type of asphalt: (1); Mark breeding sites: (1); create new habitats/breeding suitable for birds: (2).	
	Bats:	Bridge Design:	2
		Bat boxes and tubes:	0
		Green Bridges:	1
		Bat house:	1
		Landscaping:	2
		Seasonal Constraints:	0

		Other: Measures to reduce disturbance by light: (6).	
	Amphibians & invertebrates:	Ponds:	0
		Culverts/underpasses/pipes:	0
		Translocation:	0
		Fencing:	0
		Seasonal Constraints:	
		Other: Measures to prevent run-off: (1); Create new habitats: (1).	

Belgium		
Number of EISs Analysed	**3**	
1. What EIA guidelines were used for this project?	National:	3
	EU:	3
	Not Stated:	0
2. Have all surveys been carried out in the optimum season?	All:	0
	Most:	1
	Some:	2
	None:	0
	Not evident in the EIS:	0
	Reasons for surveys not being completed in optimum season:	
3. What are the primary sources of information?	Online Mapping:	3
	Recent Site Visit:	0
	Existing inventories:	3
	Databases:	3
	Scientific Literature:	2
	Other: inventory especially conducted for this project: (3).	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	3
	3-5 years:	2
	>5 years:	3
	Not Stated:	0
5.Topics addressed within the EIS?	Description of site:	3
	Description of road development project/plan:	3
	Location of project/plan relative to habitats or species of conservation interest:	3
	Description of baseline:	3
	Determination of effects on protected species/habitats:	3
	Impact assessment in the light of the national, regional and international conservation objectives:	3
	Cumulative effects in combination with other existing or future projects or plans:	3
	Proposals for mitigation:	3
	Monitoring plan:	3
	Other:	

6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	3
	Presence of protected species:	3
	Distribution and abundance of protected species:	1
	Current state of protected species and habitats in the local area, region, country etc.:	2
	Importance of surrounding area for species:	1
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	1
	NGO's:	1
	Fisheries board:	
	Local Community Bodies	
	Other Government Bodies	3
	Universities	
	Museums	
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	2
	Performance Based:	3
	No Mitigation Measures:	0
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	3
	Large mammals:	2
	Small ground mammals:	1
	Fish:	0
	Birds:	3
	Bats:	3
	Amphibians & Invertebrates:	2
	Other: Reptiles: (1).	
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	2
	No:	1
	Don't know:	0
	No other measures:	0
11. The following aspects of the development are considered.	Construction compounds:	3
	Borrow pits:	0
	Waste disposal sites proposed for use (new or existing):	0
	Advanced archaeological testing:	1
	Advanced ground investigations:	1
	Haulage routes:	3
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:	1
	Traffic noise and light nuisance to animals:	2
	Disturbance to animal groups during construction period:	3
13. Is value for money and	Yes:	0

buildability considered when specifying the mitigations measures?	No:					3
	To some degree:					0
	Unknown/Not specified:					0
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	0	0	3
	Scoping	0	0	0	2	1
	Identification of Habitats	0	0	1	0	2
	Impact assessment Methodologies	0	0	0	1	2
	Mitigation measures	0	0	2	1	0
	Monitoring	0	1	1	1	0
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				0
		Viaducts:				0
		Over bridges:				0
		Piled embankments:				0
		Culverts:				0
		Translocation:				0
		Compensation planting:				3
		Fencing:				
		Other: Prevent damage to vegetation during construction: (2); Limit drying out of soil: (2); Minimize space needed for the road: (1); Keep Haulage routes away from vulnerable vegetation; (1); Prevent soil settling due to heavy vehicles: (1)				
	Large mammals:	Viaducts:				0
		Green Bridges:				0
		Culverts:				0
		Underpass/pipe:				1
		Fencing:				0
		Artificial shelters:				0
		Other: Wildlife warning reflectors: (1); Fauna Passage: (1); Prevent noise and light disturbance: (1).				
	Small ground mammals:	Green Bridges:				0
		Culverts:				1

		Underpass/pipe:	0
		Fencing:	0
		Other: Fauna Passage: (1); Prevent noise and light disturbance: (1).	
	Fish:	Specialized culvert design: 0/5	0
		Fish Passes:	0
		Salvage:	0
		Alteration of watercourse: 1/5	0
		Seasonal Constraints	0
		Other: Limit drying out effects through water management: (1).	
	Birds:	Bridge Design:	0
		Landscaping:	1
		Bird Boxes/Ledges:	0
		Seasonal Constraints	1
		Other: Sound barriers: (1); Prevent noise and light disturbance: (1); Fauna Passage: (1); Preserve existing corridors: (1).	
	Bats:	Bridge Design:	1
		Bat boxes and tubes:	0
		Green Bridges:	0
		Bat house:	0
		Landscaping:	3
		Seasonal Constraints:	0

		Other: Prevent noise and light disturbance: (1); Fauna Passage: (2).	
	Amphibians & invertebrates:	Ponds:	1
		Culverts/underpasses/pipes:	2
		Translocation:	0
		Fencing	0
		Seasonal Constraints	1
		Other:	

Ireland		
Number of EISs Analysed	**11**	
1. What EIA guidelines were used for this project?	National:	11
	EU:	9
	Not Stated:	0
	Other: UK: (2) UK Institute of Ecology and Environmental Management : (1).	
2. Have all surveys been carried out in the optimum season?	All:	3
	Most:	3
	Some:	4
	None:	0
	Not evident in the EIS:	1
	Reasons for surveys not being completed in optimum season: Not considered necessary: (1); No reason given: (2); Land access issues: (1); Habitats not considered sufficiently important: (1).	
3. What are the primary sources of information?	Online Mapping:	9
	Recent Site Visit:	10
	Existing inventories:	10
	Databases:	9
	Scientific Literature:	6
	Other: Consultation with statutory bodies: (1); Aerial Photography: (1); Previous studies/site visits: (1).	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	8
	3-5 years:	7
	>5 years:	1
	Not Stated:	1
5.Topics addressed within the EIS?	Description of site:	11
	Description of road development project/plan:	11
	Location of project/plan relative to habitats or species of conservation interest:	11
	Description of baseline:	11
	Determination of effects on protected species/habitats:	10
	Impact assessment in the light of the national, regional and international conservation objectives:	5
	Cumulative effects in combination with other existing or future projects or plans:	1
	Proposals for mitigation:	10
	Monitoring plan:	1

	Other: Residual Impact: (2).	
6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	11
	Presence of protected species:	11
	Distribution and abundance of protected species:	11
	Current state of protected species and habitats in the local area, region, country etc.:	9
	Importance of surrounding area for species:	11
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	10
	NGO's:	7
	Fisheries board:	8
	Local Community Bodies	0
	Other Government Bodies	0
	Universities	0
	Museums	0
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	11
	Performance Based:	1
	No Mitigation Measures:	0
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	11
	Large mammals:	9
	Small ground mammals:	4
	Fish:	7
	Birds:	7
	Bats:	9
	Amphibians & Invertebrates:	2
	Other:	
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	4
	No:	3
	Don't know:	3
	No other measures:	1
11. The following aspects of the development are considered.	Construction compounds:	6
	Borrow pits:	1
	Waste disposal sites proposed for use (new or existing):	1
	Advanced archaeological testing:	1
	Advanced ground investigations:	1
	Haulage routes:	3
12. When considering ecological impact during construction phase are the following	Advanced investigations into ecology of waters:	0
	Traffic noise and light nuisance to animals:	1
	Disturbance to animal groups during construction	5

assessments considered?	period:					
13. Is value for money and buildability considered when specifying the mitigations measures?	Yes:					1
	No:					8
	To some degree:					0
	Unknown/Not specified:					2
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	1	5	4
	Scoping	0	0	3	6	1
	Identification of Habitats	0	1	0	5	4
	Impact assessment Methodologies	0	1	0	7	2
	Mitigation measures	0	2	2	4	2
	Monitoring	7	3	0	0	0
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				5
		Viaducts:				1
		Over bridges:				2
		Piled embankments:				2
		Culverts:				6
		Translocation:				2
		Compensation planting:				10
		Fencing:				9
		Other: Collection of see for seed bank: (1); Avoidance: (2) Topsoil reuse: (1); SUDS: (1); No cuttings permitted: (1); Use of specified free draining material for fill: (1); Hydrogeological mitigation for construction: (1); Monitoring throughout and post construction: (1).				
	Large mammals:	Viaducts:				2
		Green Bridges:				1
		Culverts:				8
		Underpass/pipe:				8
		Fencing:				9
		Artificial shelters:				3
		Other: Signage and delfectors: (1); Further survey: (1).				

	Small ground mammals:	Green Bridges:	0
		Culverts:	1
		Underpass/pipe:	1
		Fencing:	0
		Other:	
	Fish:	Specialized culvert design: 0/5	7
		Fish Passes:	1
		Salvage:	2
		Alteration of watercourse: 1/5	4
		Seasonal Constraints	2
		Other: Silt curtains: (1); Riparian protection buffer zone: (1); water quality: (2); Landscape planting: (2); Fencing: (1); Recreation of banks: (1); Consultation with inland fisheries: (1).	
	Birds:	Bridge Design:	1
		Landscaping:	3
		Bird Boxes/Ledges:	0
		Seasonal Constraints	6
		Other: Screen fencing: (1); Lighting restrictions: (1).	
	Bats:	Bridge Design:	1
		Bat boxes and tubes:	9
		Green Bridges:	1
		Bat house:	0

		Landscaping:	9
		Seasonal Constraints:	1
		Other: Culverts: (1); Lighting Restrictions: (2); Hop over: (1); Refurbishment of a derelict house: (1); Further survey: (1).	
	Amphibians & invertebrates:	Ponds:	0
		Culverts/underpasses/pipes:	0
		Translocation:	2
		Fencing:	1
		Seasonal Constraints:	0
		Other:	

United Kingdom		
Number of EISs Analysed	**5**	
1. What EIA guidelines were used for this project?	National:	5
	EU:	0
	Not Stated:	0
	Other: UK Institute of Ecology and Environmental Management : (3).	
2. Have all surveys been carried out in the optimum season?	All:	2
	Most:	3
	Some:	0
	None:	0
	Not evident in the EIS:	0
	Reasons for surveys not being completed in optimum season: Lack of time: (2).	
3. What are the primary sources of information?	Online Mapping:	5
	Recent Site Visit:	5
	Existing inventories:	5
	Databases:	5
	Scientific Literature:	5
	Other:	
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	3
	3-5 years:	2
	>5 years:	0
	Not Stated:	0
5.Topics addressed within the EIS?	Description of site:	5
	Description of road development project/plan:	5
	Location of project/plan relative to habitats or species of conservation interest:	5
	Description of baseline:	5
	Determination of effects on protected species/habitats:	5
	Impact assessment in the light of the national, regional and international conservation objectives:	5
	Cumulative effects in combination with other existing or future projects or plans:	5
	Proposals for mitigation:	5
	Monitoring plan:	3

6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	5
	Presence of protected species:	5
	Distribution and abundance of protected species:	5
	Current state of protected species and habitats in the local area, region, country etc.:	3
	Importance of surrounding area for species:	2
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	5
	NGO's:	1
	Fisheries board:	3
	Local Community Bodies	0
	Other Government Bodies	0
	Universities	0
	Museums	0
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	5
	Performance Based:	0
	No Mitigation Measures:	0
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	5
	Large mammals:	4
	Small ground mammals:	3
	Fish:	3
	Birds:	5
	Bats:	3
	Amphibians & Invertebrates:	3
	Other:	
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	4
	No:	0
	Don't know:	1
	No other measures:	0
11. The following aspects of the development are considered.	Construction compounds:	5
	Borrow pits:	3
	Waste disposal sites proposed for use (new or existing):	3
	Advanced archaeological testing:	3
	Advanced ground investigations:	4
	Haulage routes:	4
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:	1
	Traffic noise and light nuisance to animals:	3
	Disturbance to animal groups during construction period:	3
13. Is value for money and	Yes:	0

buildability considered when specifying the mitigations measures?	No:					0
	To some degree:					0
	Unknown/Not specified:					5
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	0	0	5
	Scoping	0	0	2	3	0
	Identification of Habitats	0	0	3	2	0
	Impact assessment Methodologies	0	0	0	5	0
	Mitigation measures	1	0	2	2	0
	Monitoring	0	3	2	0	0
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				0
		Viaducts:				0
		Over bridges:				0
		Piled embankments:				1
		Culverts:				0
		Translocation:				3
		Compensation planting:				3
		Fencing:				0
		Other:				
	Large mammals:	Viaducts:				0
		Green Bridges:				0
		Culverts:				3
		Underpass/pipe:				3
		Fencing:				4
		Artificial shelters:				4
		Other:				
	Small ground mammals:	Green Bridges:				0

		Culverts:	0
		Underpass/pipe:	2
		Fencing:	0
		Other:	
	Fish:	Specialized culvert design: 0/5	2
		Fish Passes:	0
		Salvage:	1
		Alteration of watercourse: 1/5	1
		Seasonal Constraints	0
		Other: Light restrictions: (1); Noise measures: (1).	
	Birds:	Bridge Design:	0
		Landscaping:	2
		Bird Boxes/Ledges:	0
		Seasonal Constraints	1
		Other: Visual screens: (1); Noise measures: (1); Lighting design: (1).	
	Bats:	Bridge Design:	0
		Bat boxes and tubes:	2
		Green Bridges:	0
		Bat house:	0
		Landscaping:	3

		Seasonal Constraints:	0
		Other: Light restrictions: (1); Appropriate use of machinery and site management: (2); Culverts/underpasses/overbridges: (1).	
	Amphibians & invertebrates:	Ponds:	0
		Culverts/underpasses/pipes:	0
		Translocation:	2
		Fencing:	1
		Seasonal Constraints:	0
		Other:	

Greece		
Number of EISs Analysed	**10**	
1. What EIA guidelines were used for this project?	National:	10
	EU:	10
	Not Stated:	0
2. Have all surveys been carried out in the optimum season?	All:	0
	Most:	3
	Some:	0
	None:	7
	Not evident in the EIS:	0
	Reasons for surveys not being completed in optimum season: Not enough time: (7)	
3. What are the primary sources of information?	Online Mapping:	10
	Recent site visit:	10
	Existing inventories:	2
	Databases:	10
	Scientific Literature:	10
	Other:	0
4. How old were the ecological surveys used to complete the EIAs at the time of the EIS publication?	<2 years:	0
	3-5 years:	10
	>5 years:	0
	Not Stated:	0
5. Topics addressed within the EIS?	Description of site:	10
	Description of road development project/plan:	10
	Location of project/plan relative to habitats or species of conservation interest:	10
	Description of baseline:	10
	Determination of effects on protected species/habitats:	10
	Impact assessment in the light of the national, regional and international conservation objectives:	10
	Cumulative effects in combination with other existing or future projects or plans:	0
	Proposals for mitigation:	10
	Monitoring plan:	10
	Other:	

6. When discussing baseline habitats and species, have the following aspects been incorporated within the EIS?	Presence and distribution of protected habitat types:	10
	Presence of protected species:	10
	Distribution and abundance of protected species:	10
	Current state of protected species and habitats in the local area, region, country etc.:	10
	Importance of surrounding area for species:	10
7. Has there been consultation with the relevant statutory bodies?	National Parks & Wildlife Service:	10
	NGO's:	10
	Fisheries board:	0
	Local Community Bodies	0
	Other Government Bodies	0
	Universities	8
	Museums	8
	Other:	
8. Are mitigation measures described in terms of a performance standard or a more prescriptive approach?	Prescriptive:	10
	Performance based:	0
	No Mitigation Measures	0
9. What species groups have had mitigation measures proposed in the EIS?	Habitats and Flora:	10
	Large mammals:	4
	Small ground mammals:	10
	Fish:	0
	Birds:	2
	Bats:	0
	Amphibians & Invertebrates:	10
	Other:	0
10. Have ecological considerations been taken account of in the design of other environmental mitigation measures?	Yes:	10
	No:	0
	Don't know:	0
	No other measures:	0
11. The following aspects of the development are considered.	Construction compounds:	10
	Borrow pits:	10
	Waste disposal sites proposed for use (new or existing):	0
	Advanced archaeological testing:	10
	Advanced ground investigations:	2
	Haulage routes:	0
12. When considering ecological impact during construction phase are the following assessments considered?	Advanced investigations into ecology of waters:	10
	Traffic noise and light nuisance to animals:	10
	Disturbance to animal groups during construction period:	2
13. Is value for money and	Yes:	10

buildability considered when specifying the mitigations measures?	No:					0
	To some degree:					0
	Unknown/Not specified:					0
14. Identify the degree of compliance of the EIA with the relevant guidelines on a scale of 1 to 5?		**1**	**2**	**3**	**4**	**5**
	Screening	0	0	8	2	0
	Scoping	0	0	8	2	0
	Identification of Habitats	0	0	8	2	0
	Impact assessment Methodologies	0	8	0	2	0
	Mitigation measures	0	8	0	2	0
	Monitoring	8	0	0	2	0
15. Which of the following types of mitigation measures are proposed in the EIS?	Habitats and Flora:	Drainage Pipes:				10
		Viaducts:				10
		Over bridges:				0
		Piled embankments:				0
		Culverts:				10
		Translocation:				0
		Compensation planting:				0
		Fencing:				4
		Other:				
	Large mammals:	Viaducts:				4
		Green Bridges				0
		Culverts:				2
		Underpass/pipe:				2
		Fencing:				4
		Artificial shelters:				0
		Other:				
	Small ground mammals:	Green Bridges:				0
		Culverts:				10

		Underpass/pipe:	2
		Fencing:	4
		Other:	
	Fish:	Specialized culvert design:	0
		Fish Passes:	0
		Salvage:	0
		Alteration of watercourse:	0
		Seasonal Constraints	0
		Other:	
	Birds:	Bridge Design:	0
		Landscaping:	2
		Bird Boxes/Ledges:	0
		Seasonal Constraints:	0
		Other:	
	Bats:	Bridge Design:	0
		Bat boxes and tubes:	0
		Green Bridges:	0
		Bat house:	0
		Landscaping:	0
		Seasonal Constraints:	0

		Other:	
	Amphibians & invertebrates:	Ponds:	0
		Culverts/underpasses/pipes:	10
		Translocation:	0
		Fencing	0
		Seasonal Constraints	
		Other:	

Annex D Appropriate Assessment Review

D.1 List of Appropriate Assessments

Sweden		
Number	**Title**	**Year**
1	(“Anttis”:) Miljökonsekvensbeskrivning för vägplan. Projekt Malmtransporter Kaunisvaara-Svappavaara, delen väg 395 Anttis – Lovikka, Pajala kommun, Norrbottens län BD 109133-395. 2013-12-10, kompletterad 2014-02-25. Trafikverket.	2014
2	(“Axvall”:) Väg 49 Skara – Skövde, delen Axvall – Varnhem, Skara kommun, Västra Götalands län. Miljökonsekvensbeskrivning till arbetsplan. 2008-04-18, rev 2008-09-15. Trafikverket.	2008
3	(”Edebyekhage”:) E4 Förbifart Stockholm. Objekt 8448590. Miljökonsekvensbeskrivning tillhörande Natura 2000-tillståndsansökan Edeby ekhage. 2008-11-17. Reviderad 2009-02-13, 2010-03-15, 2011-06-30. Trafikverket.	2011
4	(“Halmstad”:) Detaljplan för Halmstad 4:28 (del av) mfl, södra infarten. Martin Luther, Halmstads kommun. Miljökonsekvensbeskrivning Samrådshandling 2008-06-18. Halmstads kommun.	2008
5	(”Hansta”:) Förbifart Stockholm. Miljökonsekvensbeskrivning till tillståndsansökan Hansta Natura 2000-område. Underlag för prövning mars 2013, Reviderad juni 2014. Bilaga 7 Reviderad miljökonsekvensbeskrivning för Natura 2000 Hansta. 2014-06-30. Trafikverket.	2014
6	(“Röbäck”:) Miljökonsekvensbeskrivning Arbetsplan Umeåprojektet - Västra Länken, entreprenad 9. Väg E12, delen Röbäcksdalen – Röbäck. Umeå kommun, Västerbottens län. 2010-12-21 Kompletterad 2011-02-03. Objekt: 8211524-12. Trafikverket. 2011.	2011

Denmark		
Number	**Title**	**Year**
1	(”Fjordfrederikssund”:) Ny fjordforbindelse ved Frederikssund. VVM-redegørelse. Miljøvurdering del 1 og 3. Rapport 353. 2010. Vejdirektoratet.	2010
2	(“Kliplev”:) Ny motorvej mellem Kliplev og Sønderborg. Tillæg nr. 27 til Regionplan 2001-2012. Bilag 1: VVM-redegørelse. Revideret September 2005. Amtsrådet. Sønderjyllands Amt. 2005.	2005
3	(”Limfjordtredje”:) 3. Limfjordsforbindelse. VVM- redegørelse. Miljøvurdering Del 1 og 2. Rapport 380. 2011. Vejdirektoratet.	2011
4	(”Næstved”:) Nordlig omfartsvej ved Næstved. Supplerende VVM-undersøgelse. Sammenfattende rapport. Rapport 365.	2010

	2010. Vejdirektoratet.	
5	("Silkeborg":) Motorvej Herning-Århus ved Silkeborg. Forbedret Kombilinieprojekt. Supplerende VVM- redegørelse. Rapport 333. 2008. Vejdirektoratet.	2008
6	("Skovvejen":) Rute 23 Skovvejen Regstrup-Kalundborg	2012

Hungary		
Number	**Title**	**Year**
1	National road from Körmend to the Austrian border	2010
2	Mórahalom bypass	2011
3	Székesfehérvár ringroad, section III. (00+000-7+036 km)	2010
4	Várpalota bypass south	2008
5	Perkáta bypass	2007
6	Railway overbridge on the main road at Dinnyés	2007
7	Road improvement from the new Danube bridge at Dunaújváros to Székesfehérvár	2011
8	New bridge over the Kapos-stream at Pincehely	2010
9	National road upgrading to 11.5 tons from Pétfürdő to Veszprém	2010
10	Road upgrading and widening from Bánd to Bakonygyepes	2010
11	Berettyóújfalu - Mezőpeterd local roads (0891 and 0893)	2008
12	National road between Dunavecse and Kecskemét	2008
13	Road upgrading and widening from Hatvan to Bátonyterenye	2011
14	Albertirsa bypass	2012
15	Monor - Pilis bypass No. 2	2008
16	National road upgrading in Heves and Jász-Nagykun-Szolnok counties at Jászberény (road No. 32.)	2012
17	National road from Veszprém to Körmend, section II 1. (EIA&AA)	2012
18	National road upgrading in Heves and Jász-Nagykun-Szolnok counties along road No. 33. (EIA&AA)	2012

Austria		
Number	**Title**	**Year**
1	S 36: Judenburg-Scheifling 2x2 lane road	2008
2	S 10: Unterweitersdorf - Freistadt Nord motorway (S10) stretch	2007
3	S 1: Schwechat-SüBenbrunn Outer Bypass stretch	2009
4	S 1 West: Knoten Korneuburg Outer Bypass stretch	2007

5	S 7 West: Fürstenfelder Highway West	2008

Belgium		
Number	**Title**	**Year**
1	Studie ten behoeve van de realisatie van de Noordzuidverbinding te Houthalen-Helchteren. Plan-MER. Hoofdfstuk 17: Passende beoordeling	2014
2	PlanMER Gewestelijk ruimtelijk uitvoeringsplan Nx tussen N11 en A12. Bijlage 7-7.1: Passende beoordeling	2011
3	Plan-MER R43 - Doortrekking Ring om Eeklo. Passende beoordeling en Verscherpte natuurtoets	2009

Netherlands		
Number	**Title**	**Year**
1	Verbreding A2 's-Hertogenbosch – Eindhoven. Natuurbeschermingswet 1998 Deel B: Passende Beoordeling effecten van stikstofdepositie op Natura 2000-gebied Vlijmens Ven, Moerputten & Bossche Broek	2011
2	Trajectnota/MER Stap 2 A4 Delft-Schiedam Deelrapport Natuur	2009
3	Rondweg N348 Zutphen- Eefde. Passende beoordeling Stikstofdepositie Natura 2000-gebied Uiterwaarden IJssel	2009
4	Passende Beoordeling inpassingsplan verbreding N244 Beoordeling natuureffecten i.h.k.v. de Natuurbeschermingswet 1998	2013
5	OTB/MER verdubbeling N33. Toetsing Natuurbeschermingswet 1998 (inclusief Passende Beoordeling Natura 2000-gebieden)	2010
6	Passende Beoordeling Natura 2000 en Beschermde natuurmonumenten N340 Zwolle - Ommen	2010
7	Passende Beoordeling Ombouw N261	2011
8	Passende Beoordeling Ontwikkeling Ede-Oost	2009 & 2012
9	Passende Beoordeling in verband met de omvorming van de N381 ter hoogte van Natura 2000-gebied Drents-Friese Wold & Leggelderveld en Natura 2000-gebied Wijnjeterper Schar	2011
10	Passende Beoordeling Reconstructie N331	2011

Ireland		
Number	**Title**	**Year**
1	N4 Collooney to Castlebaldwin Natura Impact Statement	2013

2	M11 Gorey to Enniscorthy Scheme	2009
3	N13/N15 Ballybofey/Stranorlar Bypass	2007
4	N14 / N15 to A5 Link	2011
5	N59 Maigh Cuilinn (Moycullen) Bypass Road Project	2011

United Kingdom		
Number	**Title**	**Year**
1	A5 Western Transport Corridor	2011
2	M3 Junction2 to 4a Smart Motorway	2014

D. 2 AA Review Results

No.	Question/Country		SE	DK	HU	AT	NL	BE	IE	UK
1	Number of AAs reviewed		6	6	5	2	10	3	5	2
2	Do AA Guidelines exist in your country?	Yes	6	6			10	3	5	2
		No			5	2				
3	Is screening out of project confirmed by competent authority?	Yes	1		4	2				2
		No			1					
4	Who has carried out the AA?	The competent authority								
		Organisation/individual with license to do AA			5					
		Organisation/individual with license to do EIA/SEA						1		
		Road manager								
		Initiator/Principal of the project	3				1			
		Engineering company					1			
		Ecol. or Environ. consultancy		2	4	1	8	3	5	1
		Ecol. consult + ..	3	4	1	1				1
5	Topics addressed within the AA?	Description of Natura 2000 site(s)	6	6	5	2	10	3	5	2
		Description of road development project / plan	6	6	5	2	10	3	5	2
		Location of project/plan relative to the Natura 2000 site	6	6	5	2	10	3	5	2
		Description of current situation of protected species and habitats	4	6	4	2	9	3	4	2
		Determination of effects on protected species / habitats	6	6	5	2	10	3	5	2
		Cumulative effects in combination with other existing or future projects or plans	2	1			10	2	4	2

		Impact assessment in the light of the conservation objectives of the N2000 site(s)	5	6	5	2	10	3	5	2
		Proposals for mitigation	5	6	4	2	8	3	5	2
		Monitoring plan	2	4	3	1	1	1		
		Other		1						
6	See tables per country									
7	See tables per country									
8	See tables per country									
9	See tables per country									
10	See tables per country									
11	Has there been consultation with the relevant statutory bodies?	Yes	6	5	4	2	10	1	5	2
		No			1					
		Not stated		1				2		
12	Is a list of possible impacts that must be analysed in an AA available?	Yes	2				10	1	3	1
		No			5	2			1	1
13	Which of the following possible impacts were assessed?	Loss of area of habitat type or species' habitat	3	6	5	2	7	3	4	2
		Fragmentation of area of habitat type or species' habitat	2	2	5	2	4	3	4	2
		Changes due to emission of gasses, minerals, dust etc.	2	4		1	10	1	3	1
		Pollution (heavy metals, garbage etc.)	2	6	1	1	2	1	5	1
		Changes in water, soil or air quality	3	6		2	4	2	5	1
		Changes in soil humidity / HYDROLOGY	2	4			4	3		
		Changes in water systems (current velocity, inundation frequency)		4		1	3		3	1
		Change in dynamics of substrate		1			1		5	1

		(setting or loosening of soil)								
		Disturbance by sound, light, vibration or movement of people and machines	3	6	5	2	8	3	3	1
		Disturbance by mechanical effects (e.g. breaking waves, treading horses etc.)		2	1		1			1
		Changes in population dynamics (e.g. due to increased road kills)			2	1	1	1	1	2
		Introducing new species			1		1		1	
		Other (specify)								
14	See tables per country									
15	Are mitigation measures described in terms of:	A performance standard	4	2				2		
		A more prescriptive approach	1	4	5	1	7		4	1
		Both						1		1
		Not filled	1			1	3		1	
16	Are the proposals for mitigation based on national guidelines for mitigation for the effected species / habitat types?	Yes	1	1	1	1	1		5	1
		No	3		4		6	3		1
17	What methods are used to assess the significance of adverse effects?	Direct measurements (e.g. of area lost or affected)		4	1		7	3	4	2
		Flow charts, networks (describe chains of impacts)					2			
		Quantitative models (e.g. about dispersal of pollutants or change in population size)	3	5			9	1	2	
		Information from previous similar projects	1	2			3	2		1
		Expert opinion	5	6	5	2	8	2	5	2

18	Are scientifically agreed thresholds or criteria for determining significance available?	Yes	3	4						
		No			5	2	8	3	5	2
		Niet ingevuld	3	2						
19	If significant adverse effects, after the implementation of mitigation measures, cannot be excluded, which of the following aspects are described to get a permit for the project anyway?	There are no alternatives (e.g. other location, different design etc.);			1		2			
		The project has imperative reasons of overriding public interest (e.g. public health, national security etc.);			1		3			
		Compensatory measures in the Natura 2000 site will be taken.	2	2	5	2	3			
		Not applicable	4	2			5	2		
20	Which authority reviewed the AA and decided if the project is allowed to proceed and if a permit is needed?	National Government	6				1			3
		Regional Government			4		9	3		
		Local Government			1	2				
		Site manager								
		Road manager								
		Initiator / principal of the project								
		Other (please specify)		6					5	
21	See tables per country									

Sweden

No.	Question		Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit (in connection with the assessed project)	2	2					1	1
		Information from a baseline study (in connection with the assessed project)	4	3	3		1	1	3	1
		Information from databases (e.g. species distribution, abundance, presence)	3	3	3		1	1	3	
		Scientific literature								
		Non-scientific literature / research reports								
		Expert judgement	1	1	1				2	
		Other (please specify):								
		Not filled	1	2	2	2	1	1	2	1
7	Select aspects upon which the AA was based	Presence and distribution of protected habitat types	4							
		Presence of protected species		4	4	1	1	1	3	1
		Distribution and abundance of protected species		3	3		1		2	1
		Function of the area for protected species (foraging, breeding, commuting etc.)		2	2				1	
		Current state of protected species and habitats in the local area, region, country		2	1				1	
		Importance of surrounding area for protected species								
		Not applicable								

		Other (please specify)								
		Not filled	1	1	1	1	1	1	1	1
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	3	1	1					
		3-5 years	2	1	1				2	1
		>5 years	1						1	1
		Not stated	1	2	2	1	1	1	2	
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes								
		No	1							
		Partially	1	1	1				1	1
		Not filled	2	2	2		1	1	2	
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Yes								
		No	1							
		Partially								

No.	Question		Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts	1	5	
		direct and indirect impacts		6	
		construction and exploitation phase	6		
		isolated and cumulative impacts	2	4	
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects	3	2	1
		AA report is of overall poor quality	1	4	1
		Mitigation measures not described clearly or insufficient		5	1
		Cumulative effects not assessed properly	4	1	1
		Lack of understanding of key terms: integrity etc.		1	5
		The (absence of) significance of adverse effects is objectively demonstrated	4		2
		Impact on N2000 not properly assessed due to integration of AA in EIA		5	1
		Insufficient or old (field) data to assess impacts	3	2	1
		Objectives of monitoring, if stated, unclear (Not stated)	1	1	
		AA done by those with poor understanding of N2000		3	3

Denmark

No.			Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit (in connection with the assessed project)	6	1	1		1	1	1	2
		Information from a baseline study (in connection with the assessed project)	3	4	2	1	4	3	4	3
		Information from databases (e.g. species distribution, abundance, presence)	3	6	3	1	5	5	5	5
		Scientific literature								
		Non-scientific literature / research reports /older survey reports								
		Expert judgement		2	1	2	2	2	2	2
		Other (please specify):								
		Not filled								
7	Select aspects upon which the AA was based	Presence and distribution of protected habitat types	6							
		Presence of protected species		4	3		4	5	5	3
		Distribution and abundance of protected species		5	3		4	5	5	3
		Function of the area for protected species (foraging, breeding, commuting etc.)			1		3	2	3	1
		Current state of protected species and habitats in the local area, region, country		1		1	1	1	2	

		Importance of surrounding area for protected species					1	1	1	1
		Not applicable								
		Other (please specify)								
		Not filled								
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	5	4	3		3	3	4	4
		3-5 years	1	1	1		1	1	1	1
		>5 years	1	2	1		1	1	1	
		Not stated		1	1	1	1	1	1	1
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes	1	1	1		1	1	1	1
		No								
		Partially								
		Not filled	2	3	1	1	3	2	3	2
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Yes								
		No	1	1	1		1	1	1	1
		Partially								

			Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts	2	4	
		direct and indirect impacts	1	5	
		construction and exploitation phase	5	1	
		isolated and cumulative impacts	2	4	
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects	2	4	
		AA report is of overall poor quality		6	
		Mitigation measures not described clearly or insufficient	3	3	
		Cumulative effects not assessed properly	6		
		Lack of understanding of key terms: integrity etc.		5	1
		The (absence of) significance of adverse effects is objectively demonstrated	5	1	
		Impact on N2000 not properly assessed due to integration of AA in EIA	2	4	
		Insufficient or old (field) data to assess impacts	1	5	
		Objectives of monitoring, if stated, unclear	1	1	
		AA done by those with poor understanding of N2000		3	3

Hungary

No			Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit (in connection with the assessed project)	5	5	5	1	5	1	5	4
		Information from a baseline study (in connection with the assessed project)	4	4	4		4		4	3
		Information from databases (e.g. species distribution, abundance, presence)	1	1	1		1		1	1
		Scientific literature	4	4	4	1	4	1	4	3
		Non-scientific literature / research reports								
		Expert judgement	5	5	5	1	5	1	5	4
		Other (please specify):								
		Not filled								
7	Select aspects upon which the AA was based	Presence and distribution of protected habitat types	5							
		Presence of protected species		5	5	1	5	1	5	4
		Distribution and abundance of protected species		1	1	1	1	1	1	
		Function of the area for protected species (foraging, breeding, commuting etc.)							2	1
		Current state of protected species and habitats in the local area, region, country	1	2	2	1	1	1	3	1
		Importance of surrounding area for							2	

		protected species								
		Not applicable								
		Other (please specify)								
		Not filled								
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	5	5	5	1	5	1	5	4
		3-5 years								
		>5 years								
		Not stated								
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes	3	3	3		3		3	2
		No	1	1	1		1		1	1
		Partially								
		Unknown								
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Yes	2	2	2		2	1	2	2
		No								
		Partially				1				

			Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts	3	2	
		direct and indirect impacts	5		
		construction and exploitation phase	5		
		isolated and cumulative impacts		5	
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects		5	
		AA report is of overall poor quality		5	
		Mitigation measures not described clearly or insufficient		5	
		Cumulative effects not assessed properly	5		
		Lack of understanding of key terms: integrity etc.		5	
		The (absence of) significance of adverse effects is objectively demonstrated	5		
		Impact on N2000 not properly assessed due to integration of AA in EIA		5	
		Insufficient or old (field) data to assess impacts	1	4	
		Objectives of monitoring, if stated, unclear	1	4	
		AA done by those with poor understanding of N2000		5	

Austria

No			Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit (in connection with the assessed project)	2	2	1	2	2	2	2	2
		Information from a baseline study (in connection with the assessed project)	2	2	1	2	2	2	2	2
		Information from databases (e.g. species distribution, abundance, presence)	1	1	1	1	1	1	1	1
		Scientific literature	2	2	1	2	2	2	2	2
		Non-scientific literature / research reports								
		Expert judgement	2	2	1	2	2	2	2	2
		Other (please specify):								
		Not filled								
7	Select aspects upon which the AA was based	Presence and distribution of protected habitat types	2							
		Presence of protected species		2	1	2	2	2	2	2
		Distribution and abundance of protected species		1		2	2	2	2	2
		Function of the area for protected species (foraging, breeding, commuting etc.)					1	1		1
		Current state of protected species and habitats in the local area, region, country	2	2	1	2	2	1	2	2
		Importance of surrounding area for protected species	2	2	1	2	2	1	2	2

		Not applicable									
		Other (please specify)									
		Not filled									
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	2	2	1	2	2	2	2	2
		3-5 years								
		>5 years								
		Not stated								
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes					1			
		No	2	2	1	2	1	2	2	2
		Partially								
		Unknown								
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Yes	2	2	1	1	1	2	2	2
		No								
		Partially				1				

			Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts		2	
		direct and indirect impacts	1	1	
		construction and exploitation phase	2		
		isolated and cumulative impacts		2	
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects		2	
		AA report is of overall poor quality		2	
		Mitigation measures not described clearly or insufficient	1	1	
		Cumulative effects not assessed properly	2		
		Lack of understanding of key terms: integrity etc.		2	
		The (absence of) significance of adverse effects is objectively demonstrated	1	1	
		Impact on N2000 not properly assessed due to integration of AA in EIA		2	
		Insufficient or old (field) data to assess impacts		2	
		Objectives of monitoring, if stated, unclear	1		
		AA done by those with poor understanding of N2000		2	

Netherlands

No			Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit				1				
		Information from a baseline study	2	2	2	4	2	2	2	3
		Information from (online) databases	4	1	1	2	1	1	3	1
		Scientific literature	4	4	4	6	4	4	5	4
		Non-scientific literature / research reports	2	1	1	1	1	1	1	1
		Expert judgement	6	4	4	5	4	4	4	4
		Other	5	1	1	4	3	1	3	3
		Not filled								
7	Select aspects upon which the AA was based	Presence and distribution of habitat types	10							
		Presence of protected species		4	3	6	4	2	7	3
		Distribution and abundance of species		4	3	6	4	2	6	3
		Function of the area for species		4	3	6	4	2	6	3
		Current state of species and habitats in the area	3	2	1	3	1		4	2
		Importance of surrounding area	2	1		1	1		3	2
		Not applicable								
		Other (please specify)	1							
		Not filled								
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	3	2	2	2	2	2	3	2
		3-5 years	3	3	1	3	2	1	3	2
		>5 years								

		Not stated	3			2	2		2	1
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes	1	2	2	4	2	2	2	3
		Partially								
		No	1							
		Unknown								
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Unknown								
		Yes	8	1	1	3	3	1	5	2
		Partially								
		No								

			Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts	9	1	
		direct and indirect impacts	10	0	
		construction and exploitation phase	4	6	
		isolated and cumulative impacts	10	0	
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects	1	8	1
		AA report is of overall poor quality	1	9	
		Mitigation measures not described clearly or insufficient	4	5	1
		Cumulative effects not assessed properly		10	
		Lack of understanding of key terms: integrity etc.		10	
		The (absence of) significance of adverse effects is objectively demonstrated	6	3	1
		Impact on N2000 not properly assessed due to integration of AA in EIA		10	
		Insufficient or old (field) data to assess impacts		9	1
		Objectives of monitoring, if stated, unclear	3	2	
		AA done by those with poor understanding of N2000		10	

Belgium

No			Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit (in connection with the assessed project)								
		Information from a baseline study (in connection with the assessed project)		1	1	1			1	1
		Information from databases (e.g. species distribution, abundance, presence)		1	1	1	1		2	2
		Scientific literature	1							
		Non-scientific literature / research reports	2	1	1		1		2	2
		Expert judgement		1	1		1		1	1
		Other (please specify):		2	1		2		1	2
		Not filled								
7	Select aspects upon which the AA was based	Presence and distribution of protected habitat types	2							
		Presence of protected species		2	1	1	2		2	2
		Distribution and abundance of protected species		2	1	1	2		2	2
		Function of the area for protected species (foraging, breeding, commuting etc.)		2	1	1	2		2	2
		Current state of protected species and habitats in the local area, region, country		1	1	1	1		2	2

		Importance of surrounding area for protected species		1	1	1	1		2	2
		Not applicable								
		Other (please specify)								
		Not filled								
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	1	2	1	1	2		2	1
		3-5 years	1							1
		>5 years							1	
		Not stated								
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes								
		No		1	1	1			1	1
		Partially								
		Unknown								
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Yes	1							2
		No	1	2	1	1	2			
		Partially							2	

			Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts	3		
		direct and indirect impacts	3		
		construction and exploitation phase	2	1	
		isolated and cumulative impacts	3		
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects		3	
		AA report is of overall poor quality		3	
		Mitigation measures not described clearly or insufficient		3	
		Cumulative effects not assessed properly	2	1	
		Lack of understanding of key terms: integrity etc.		3	
		The (absence of) significance of adverse effects is objectively demonstrated	3		
		Impact on N2000 not properly assessed due to integration of AA in EIA	2	1	
		Insufficient or old (field) data to assess impacts	1	2	
		Objectives of monitoring, if stated, unclear		1	
		AA done by those with poor understanding of N2000		3	

Ireland

No			Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit (in connection with the assessed project)	5	5	4	5	1	1	3	5
		Information from a baseline study (in connection with the assessed project)			1					
		Information from databases (e.g. species distribution, abundance, presence)	4	4	3	4			1	4
		Scientific literature	1	1	1	1				1
		Non-scientific literature / research reports	1	1	2	1			1	1
		Expert judgement	5	5	4	5			2	5
		Other (please specify):								
		Niets ingevuld								
7	Select aspects upon which the AA was based	Presence and distribution of protected habitat types	5							
		Presence of protected species		4	4	5	1		3	4
		Distribution and abundance of protected species		3	3	4			1	4
		Function of the area for protected species (foraging, breeding, commuting etc.)		3	3	4			1	4
		Current state of protected species and habitats in the local area, region, country	2	2	2	2				2
		Importance of surrounding area for protected species	3	3	3	4			1	4
		Not applicable								

		Other (please specify)								
		Not filled								
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	5	5	4	5	1	1	3	4
		3-5 years			1					1
		>5 years								
		Not stated								
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes								
		No								
		Partially			1					
		Unknown								
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Yes	5	5	4	5	1	1	3	5
		No								
		Partially								

			Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts	5		
		direct and indirect impacts	5		
		construction and exploitation phase	5		
		isolated and cumulative impacts	4	1	
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects		4	1
		AA report is of overall poor quality		4	1
		Mitigation measures not described clearly or insufficient		4	1
		Cumulative effects not assessed properly	1	3	1
		Lack of understanding of key terms: integrity etc.		4	1
		The (absence of) significance of adverse effects is objectively demonstrated	2	2	1
		Impact on N2000 not properly assessed due to integration of AA in EIA		4	1
		Insufficient or old (field) data to assess impacts		4	1
		Objectives of monitoring, if stated, unclear	1	1	
		AA done by those with poor understanding of N2000	1	3	1

United Kingdom

No			Habitat types	Plants	Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
6	Select sources of information on which the AA is based	Information from a recent site visit (in connection with the assessed project)	2	1	1	1	1		2	2
		Information from a baseline study (in connection with the assessed project)	2	1	1	1	1		2	2
		Information from databases (e.g. species distribution, abundance, presence)	2	1	1				1	2
		Scientific literature	1	1	1	1	1		1	1
		Non-scientific literature / research reports								
		Expert judgement	1	1	1	1	1		1	1
		Other (please specify):								
		Niets ingevuld								
7	Select aspects upon which the AA was based	Presence and distribution of protected habitat types	2							
		Presence of protected species			1	1			1	2
		Distribution and abundance of protected species			1	1				1
		Function of the area for protected species (foraging, breeding, commuting etc.)			1	1			1	2
		Current state of protected species and habitats in the local area, region, country	2		1	1			1	1
		Importance of surrounding area for	1		1	1				1

		protected species								
		Not applicable								
		Other (please specify)								
		Not filled								
8	How old were the ecological surveys used to complete the AA at the time of publication?	1-2 years	2	1	1	1	1		2	2
		3-5 years								
		>5 years								
		Not stated								
9	If a baseline study is carried out, are the research methods based on a monitoring study of the effects on species and habitats after the realisation of the project?	Yes								
		No	2	1	1	1	1		2	2
		Partially								
		Unknown								
10	If not, did the survey comply with guidelines or general knowledge for best practice survey methods (e.g. time of the year, minimum number of visits, recommended instruments etc.)?	Yes	2	1	1	1	1		2	2
		No								
		Partially								

			Yes	No	Unclear
14	Is a distinction made between:	long-term and short-term impacts	2		
		direct and indirect impacts	2		
		construction and exploitation phase	2		
		isolated and cumulative impacts	2		
			Yes	No	No opinion
21	Your overall opinion about the AA?	The AA does not give clear conclusions about adverse effects		2	
		AA report is of overall poor quality		2	
		Mitigation measures not described clearly or insufficient	1	1	
		Cumulative effects not assessed properly	1	1	
		Lack of understanding of key terms: integrity etc.		2	
		The (absence of) significance of adverse effects is objectively demonstrated	1	1	
		Impact on N2000 not properly assessed due to integration of AA in EIA		2	
		Insufficient or old (field) data to assess impacts		2	
		Objectives of monitoring, if stated, unclear		1	
		AA done by those with poor understanding of N2000		2	

Annex E Germany

At the time of printing, the work for Germany was still ongoing. The results of the examination of the German approach to Environmental Impact Assessment and Appropriate Assessment will follow here.