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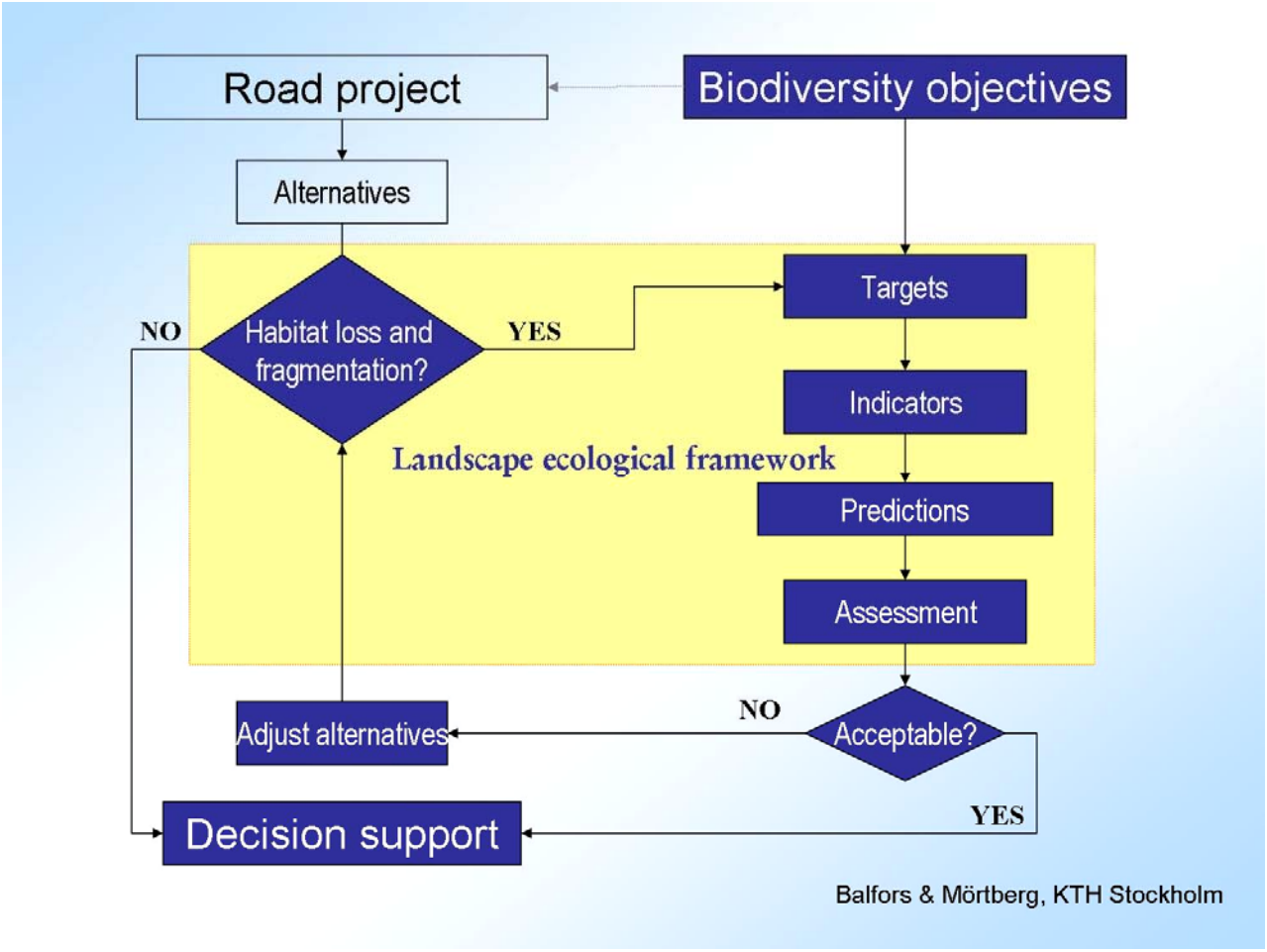
European Exchange of Experience on the Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites According to Article 6 (3) and (4) of the Habitats Directive (92/43/EEC)



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European Exchange of Experience on the Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites According to Article 6 (3) and (4) of the Habitats Directive (92/43/EEC)

Proceedings of the International Workshop held at the TU Berlin, Germany, March 29th-30th, 2007

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1 INTRODUCTION

The Berlin University of Technology and the German Federal Agency for Nature Conservation hosted a workshop for the European exchange of experience on the assessment of plans and projects significantly affecting Natura 2000 sites in accordance with Article 6 (3) and (4) of the Habitats Directive (92/43/EEC). The event took place in Berlin on the 29th and 30th of March, 2007, and was commissioned by the German Federal Agency for Nature Conservation, on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

The conference aimed at continuing the European exchange of experience on the assessment of plans and projects significantly affecting Natura 2000 sites in accordance with Article 6 (3) and (4) of the Habitats Directive (92/43/EEC). The assessment requirements of Article 6 of the Habitats Directive establish a multi-stage approach. Generally, the procedure is comprised of up to three main stages: the screening stage, the Appropriate Assessment stage and the exception procedure. Besides the procedure of Appropriate Assessment, the conference also focussed on the screening stage. The task of screening is to reach a decision on whether or not an Appropriate Assessment according to Article 6 is required in individual cases. If significant effects on the Natura 2000 site cannot be excluded with complete certainty at the screening stage, an Appropriate Assessment will be necessary.

Furthermore, the conference addressed methodological aspects of scoping for Appropriate Assessment. To provide a thematic focus, the presentations and discussions concentrated on road construction projects as examples.

The following questions and related experiences of the Member States were discussed at the conference:

Screening

- How is the assessment procedure for road construction projects according to Article 6 of the Habitats Directive handled in the Member States?
- Where is the starting point of the Appropriate Assessment (provided that necessary explanation of the respective planning system is given as background information)?
- What is understood by the screening stage? In what way are the extent and content of the screening (stage one) and the actual Appropriate Assessment (stage two) different?
- At what point of the screening stage is it justified to require an Appropriate Assessment?

  Two aspects must be considered in this question:

  a) Plans and/or projects are legally subject to inspection.

  b) The actual, material possibility of significant effects must be examined.

- How is the possibility of significant effects assessed at the screening stage? Is the possible existence of impact correlations to be discussed exclusively, or is the issue of significance rather the question at hand?
- Which aspects are relevant for the screening (e.g. features of the project, distance from the Natura 2000 site, conservation objectives)? Which information

is needed? Which criteria or indicators are used? How can cumulative effects be considered with regard to other plans or projects?

- To what extent are positive lists or negative lists used at the screening stage? What is the professional value of such lists? Do other instruments exist to facilitate or objectify decision-making?
- Which case studies and explanations of decision-making processes exist at the screening stage with regard to the requirement for Appropriate Assessment?

Scoping and the Investigative Framework of the Appropriate Assessments:

- What is the extent of investigations (e.g. subjects, inventory, methods)? How are individual cases determined?

On the first day of the conference the participants were welcomed by Inka Gnittke (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, BMU), Matthias Herbert (Federal Agency for Nature Conservation, BfN) and Wolfgang Wende (TU Berlin). Afterwards, Matthias Herbert gave an introduction to the conference topic. This was followed by a presentation concerning the European perspective on Appropriate Assessment according to the Habitats Directive by Hans Lopatta. Representatives from the different Member States then presented reports and examples of dealing with Appropriate Assessment in their countries. The first day closed with a discussion and conclusion session. The second day of the conference went on with reports and examples from different Member States. Finally the results were discussed and concluded.

This report includes the main results and summaries of the presentations from several European countries as well as main conclusions of the general discussions after the presentations at the two workshop days. The editors would like to thank all participants for their contributions and especially Inka Gnittke (BMU) for supporting the organization and carrying out the conference.

1.1 Introduction by the Federal Agency for Nature Conservation

Speaker: Dir. and Prof. Matthias Herbert
Institution: Federal Agency for Nature Conservation
State: Germany

Mr. Matthias Herbert, head of the Department for Landscape Planning at the German Federal Agency for Nature Conservation, gave a brief introduction to the topics and aims of the workshop.

Dealing with the Habitats Directive, the workshop will try to concentrate on examples of road construction projects and their typical effects on Natura 2000 sites. The Habitats Directive workshop held in Berlin in 2004 ("International Exchange of Experience on Compensatory Measures under Article 6, par. 4 of the Habitats Directive") mainly focused on compensatory measures. The current workshop will deal with the assessment phases of screening and Appropriate Assessment.

Aims of the Workshop:

- Learning about the situations in different EU Member States
- Discussion about current cases and problems
- Exchange of experiences and ideas
- Discussion about difficult working steps or implications of assessments
- Identification of best practice examples and necessary improvements

The provisions of Art. 6 par. 3 of the Habitats Directive read as follows: "Any plan or project, […] likely to have a significant effect [on a site], either individually or in combination with others, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives. The authorities shall agree […] only after having ascertained that [the plan or project] will not adversely affect the integrity of the site". As a decision scheme a chart can be drawn from these clauses (Figure 1).

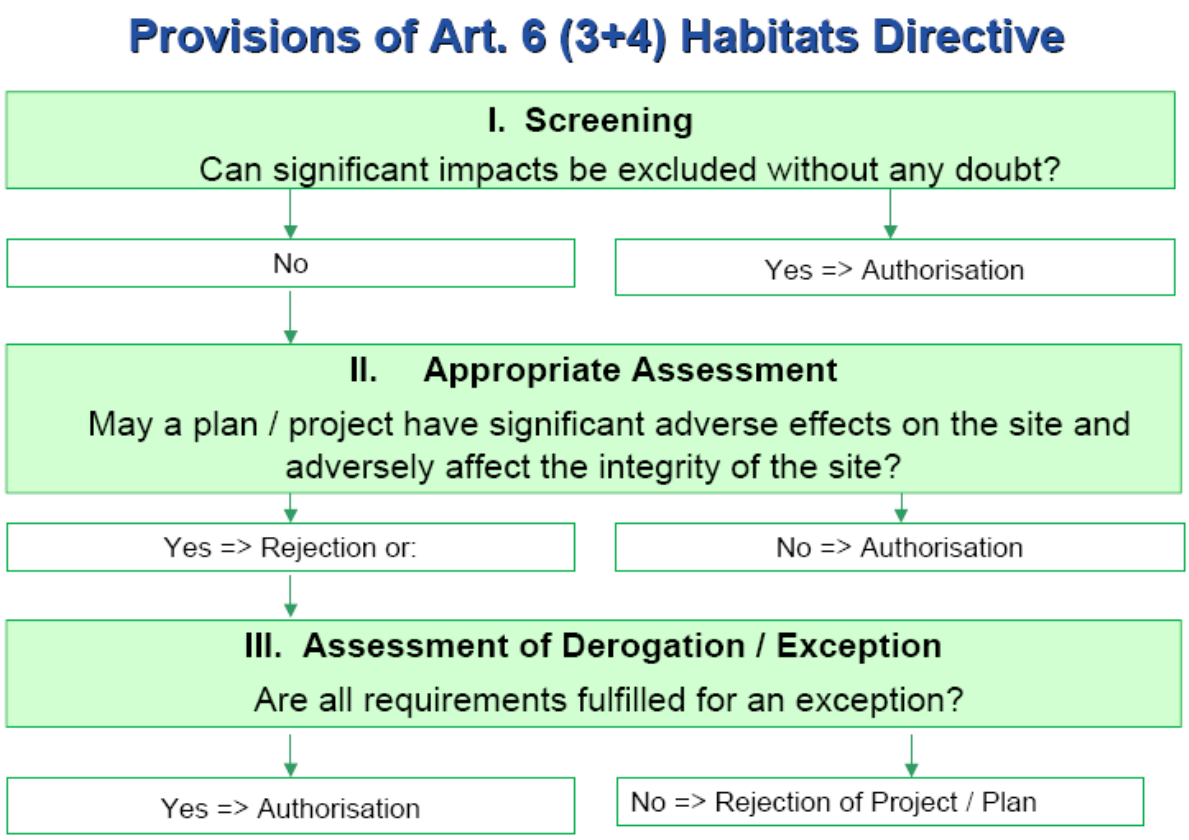

Figure 1: Provisions of Art. 6 (3+4) Habitats Directive

Screening

In the screening phase, a wide interpretation of the terms „project“ and „plan” and a strong application of the precautionary principle are necessary to assure positive effects of the process.

On the basis of objective information, it must be possible to conclude that significant effects on the site will not occur. Otherwise an Appropriate Assessment must be carried out. For the workshop discussions and exchange of experience, some of the following issues and questions might be helpful:

- How is the screening stage applied in the different countries?
- What is the starting point of:
  - Screening?
  - Appropriate Assessment?
- What are the differences in extent and content between both stages?
- How is precautionary principle dealt with?
- Which information is needed?
- Who makes the decision and how is the decision documented?
- What instruments/tools exist to objectify the decision making?

Appropriate Assessment

An Appropriate Assessment is the core of the Habitats Assessment procedure. It provides baseline information on the site, as well as an appraisal of its vulnerability to the effects caused by the project in question. In an Appropriate Assessment, it is examined in view of the conservation objectives if the project might have significant effects and thus might adversely affect the integrity of the site.

For the screening, not only the certainty, but also just a likelihood of significant impacts is arbitrative for the decision on the project's permission.

If no significant effects are detected in an Appropriate Assessment, authorities have to guarantee that no reasonable scientific doubt remains about the absence of such adverse effects. If this is not the case, rejecting the project or proceeding to an exception according to Art. 6 par. 4 of the Habitats Directive will be the result.

For the conservation objectives of an SPA or an SAC, the relevant components are Annex I and migratory bird species (Art. 4/2 Birds Directive) as well as species listed in Annex II of the Habitats Directive, including their habitats, and habitats of the Annex I of the Habitats Directive, including their "typical species". Ecological factors, structures and functions relevant for the conservation objectives also play an important role.

The following keywords and questions might be of help for the professional exchange between the workshop participants:

- What is the investigative framework (e.g. inventory, methods)?
  - Habitats and species (sensitivity)
  - Impacts (range and intensity)
  - Methods (mapping, predicting, assessing)
- Is there a possibility for a scoping procedure?
- How to identify the significance of effects?
- How to deal with uncertainties in the context of the precautionary principle?
- How to deal with cumulative effects?

Assessment of exceptions, Art. 6 par. 4

In spite of a negative Appropriate Assessment, a plan or project may only be granted if there are

1. Imperative reasons of overriding public interest (IROPI) that outweigh the public interest of conserving the Natura 2000 site,
2. No reasonable alternatives to the project without any or with less serious adverse effects,
3. Necessary measures to safeguard the coherence of the Natura 2000 network provided.

Summary

The aims of the Habitats Directive are to prevent loss within the ecological network, to avoid significant effects to it and, last but not least, to preserve biodiversity.

The provisions of Art. 6 of the Habitats Directive are crucial for managing the network of Natura 2000. Especially significant are par. 2 (preservation and management of sites),

par. 3 (Appropriate Assessment for plans or projects) and par. 4 (assessment of exceptions). Decisions according to the provisions of Art. 6 par. 3 and par. 4 must still be made case by case.

Recommendations:

- The Habitats Directive assessment (screening and Appropriate Assessment respectively) shall be carried out in a more detailed way.
- Comprehensive and complete information about habitats, species and natural functions are required for qualified results.
- Decisions shall be clear and transparent. Documentation and communication about the results of an Appropriate Assessment and its consequences must be very explicit.
- Guidance papers shall be used if there are any uncertainties about the proceedings.
- In the case of significant effects, it is necessary to investigate alternative solutions, overriding public interests and compensation measures.

In conclusion, one can say that the provisions of Art. 6 par. 3 and 4 are a powerful tool for saving important habitats and species in EU Member States. Though federal infrastructure or transport projects are not usually stopped by the results of an Appropriate Assessment, the planners are forced to design road schemes in a more sustainable way with fewer environmental impacts because of mitigation, by choosing better alternatives, or at least by taking appropriate compensation measures.

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2 PROCEEDINGS OF THE PRESENTATIONS

2.1 The Legal Framework of the Habitats Directive - the Role of the European Commission: Guidance Papers, Art. 6 (4) - Opinions

Speaker: Dr. Hans Lopatta
Institution: European Commission, DG Environment

Mr. Lopatta provided information about the legal framework of Article 6 (3) and (4) (Habitats Directive and European Court of Justice case law) and two examples of how far the European Commission (EC) is involved in its implementation in the Member States (Guidance and Art. 6 (4)-Opinions). He also gave a brief overview of the history of the Habitats Directive.

Article 6 (3), (4) – Directive's requirements and interpretation in case law

1. Definition of "plan" and "project" (6.3)

Mr. Lopatta began by providing an overview of Article 6 (3) and (4) of the Habitats Directive and by explaining the main elements of these provisions. He summarised the main procedural steps (screening, Appropriate Assessment, investigation of alternatives, overriding public interest, compensatory measures, involvement of the Commission) and outlined the effects resulting from different conditions. As for example the construction of a theme park is a case in which no imperative reasons of overriding public interest (IROPI) are given. In such a case, an exception under Article 6 (4) of the Habitats Directive is not possible and the procedure ends with the negative result of the Appropriate Assessment. In this context, Mr. Lopatta also pointed out that an early consideration of alternative solutions, if already possible at the screening stage, would be strongly advisable.

The first element concerns the concept of "plan" and "project". From the Habitats Directive itself, no definition can be drawn on the terms "plan" or "project". It states that any plan or project not directly connected with or necessary to the management of the site is subject to assessment. From the existing case law of the European Court of Justice, however, it can be drawn that national legislation must not allow for a waiver of the Environmental Impact Assessment (EIA) obligation for development plans due to their particular type (Judgement by the ECJ of April the 6th, 2000 in the case C-256/98, Commission/France, paragraph 39).

The most important Court judgement in this field so far is the *Waddenzee* ruling, where mechanical cockle fishing has been conducted for many years with a licence annually granted for a limited time period. Every year each licence entails a new assessment both of the possibility of carrying on with the fishing and of the site where it may be carried out, because it fulfils the concept of a 'plan' or 'project' (Judgement by the ECJ of September the 7th, 2004 in the case C-127/02, Waddenzee, paragraph 29).

2. Screening and Appropriate Assessment (6.3)

The Court gave answers to the questions as to when a screening procedure and an Appropriate Assessment are necessary and what is to be understood under "significant effects". In light of the fundamental precautionary principle the Court held, that an Appropriate Assessment of the effects by a plan or a project on the site's conservation objectives is always required **"if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site**, either individually or in combination with other plans or projects" (paragraphs 44, 45). Mr. Lopatta expressed the view that this is the main legal lesson to be drawn from the ECJ case law so far in relation to the screening stage. The same judgement also informed about the main criterion with regard to significant effects ascertained from the Appropriate Assessment: "Where a plan or project not directly connected with or necessary to the management of a site **is likely to undermine the site's conservation objectives**, it must be considered likely to have significant effect on that site. The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such plan or project." (C-127/02, paragraph 49). All further considerations regarding screening and Appropriate Assessment based on Article 6 (3) of the Habitats Directive must take these fundamental legal considerations into account.

Further shaping of the term "plan" and "project" was given by the Court in a case from the UK, where it concluded that “water abstraction plans and projects” and “land use plans” cannot be excluded from Article 6 (3) (Judgement by the ECJ on October 20th, 2005 in the case C-6/04, Commission/United Kingdom, paragraphs 41-56). A German case dealt with projects outside of Special Areas of Conservation, and the ECJ stated the obligation to carry out assessments according to the Habitat Directive in the absence of established scientific criteria which would a priori rule out that emissions from projects or plans outside the site have significant effects on that site (Judgement by the ECJ of January the 10th, 2006 in the case C-98/03, Commission/Germany, paragraphs 39-52). These two rulings concretised the principles found by the Court in the abovementioned landmark case C-127/02 based on the precautionary principle.

The Directive does not define a particular method for performing an Appropriate Assessment. Nonetheless, it requires all the aspects of the plan or project that can affect the site’s conservation objectives either individually or in combination with other plans or projects. The plan or project may be authorised only if the competent authorities are convinced that it will not impair the integrity of the site in question (C-127/02, paragraphs 52-61).

3. Information obligation (6.4)

Only if the preconditions are fulfilled (negative result of Appropriate Assessment, absence of alternative solution, overriding public interest in carrying out the project with particular qualification in case of priority habitat types or species present at the site), the competent authorities have to inform (regarding SPAs under the Birds Directive and SCIs/SACs under the Habitats Directive without priority species/habitat types) or consult the Commission (SCIs/SACs under the Habitats Directive hosting priority spe-

cies/habitat types). The purpose of complying such information is to enable the Commission to judge the adequacy of adopted compensatory measures (Judgement by the ECJ of December the 5th, 2002 in the case C-324/01, Commission/Belgium, paragraph 20).

4. Applicability of Article 6 (3), (4)

The protective measures prescribed in Art. 6 (2-4) of the Habitats Directive are only required for sites which are on the official Community SCI list. Those sites which are only on the national proposed list, which host particular priority habitats or species must not be subject to the requirements under Article 6 (3) and (4), but must be protected by appropriate measures in view of the directive's conservation objectives (Judgement by the ECJ of January the 13th, 2005 in the case C-117/03, Dragaggi et al.). In a further judgement, the Court developed a more detailed approach to these peculiar protection requirements in deciding that Member States are requested not to authorise interventions which hold the risk of seriously compromising the ecological characteristics of sites on their national list but not yet included in the Community list (Judgement by the ECJ of September the 14th, 2006 in the case C-244/05, Bund Naturschutz in Bayern).

Role of the Commission

1. Guidance

To help with the interpretation of the Habitats Directive, the Commission so far issued the following guidance papers:

- Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive, 2000
- Assessment of plans and projects significantly affecting Natura 2000 sites, November 2001
- Nature and biodiversity cases. Rulings of the European Court of Justice, 2006
- Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC, January 2007
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, February 2007

2. Opinions concerning Art. 6 (4)

The EC only gets involved if the above listed preconditions are met (negative assessment, no alternatives, overriding public interest, compensatory measures). With regard to the term "compensatory measures", Mr. Lopatta stressed the difference between mitigation measures (prevention, mitigation, removal of effects), which can be considered within Article 6 (3), i.e. within the nature impact assessment and compensatory measures (compensation for negative effects, "last resort"). The specific aim of compensatory measures is restoration, improvement, or the new establishment of habitats of the same type as those concerned. It has to take place in the closest possible vicinity of the site, and must be at least in the same bio-geographical region

within the Member State to assure the coherence of Natura 2000. The network's functionality is maintained by fulfilling all compensatory measures before the original site is impaired by the project.

The following information has to be supplied to the EC to receive an opinion:

- plan/project description
- site conditions, negative effects (nature impact assessment = Appropriate Assessment)
- alternative solutions
- imperative reasons of overriding public interest
- compensatory measures

Opinions are based on considering the following:

- if ecological interests and imperative reasons are outbalanced,
- if the compensatory measures are sufficient,
- conditions that can be imposed if necessary.

The EC opinion is not binding for the Member State, but should be taken into account in the decision process in order to avoid the risk of an infringement of Community law.

Conclusion

Mr. Lopatta concluded that in case of any doubt about the occurrence of significant impacts, one should always follow the precautionary principle and perform an Appropriate Assessment. He pointed out that the European Commission is concerned with the problems of implementation and practice of the Habitats Directive in the Member States and is always willing to assist individual Member States with solutions.

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Short Discussion Summary – Presentation of Dr. Hans Lopatta

The question arose as to how to deal with the danger of impacts to sites that are not yet on the official community list of a member country. Generally, Member States should always stick to the official opinion of the EU Commission and observe the precautionary principle. A representative case may be cited in the so-called "Dragaggi-judgement". Articles 6 (3/4) are only applicable to sites on the Community List of the Member State at that time.

An example came from Ireland where a new site (an extension of an already existing site) came under protection only two days before an approval would have been granted by the authorities for a project which was then likely to interfere with the site's conservation objectives.

2.2 Experience of Appropriate Assessment in Germany

Speaker: Dirk Bernotat
Institution: Federal Agency for Nature Conservation
State: Germany

This lecture gives a general overview and some examples of the practice of Appropriate Assessment according to Article 6 (3) and 6 (4) of the Habitats Directive in Germany, specifically in the context of transport infrastructure planning.

Figure 1 shows the three stages of Federal Transport Infrastructure Planning in Germany and points out how different environmental contributions are integrated into the planning process.

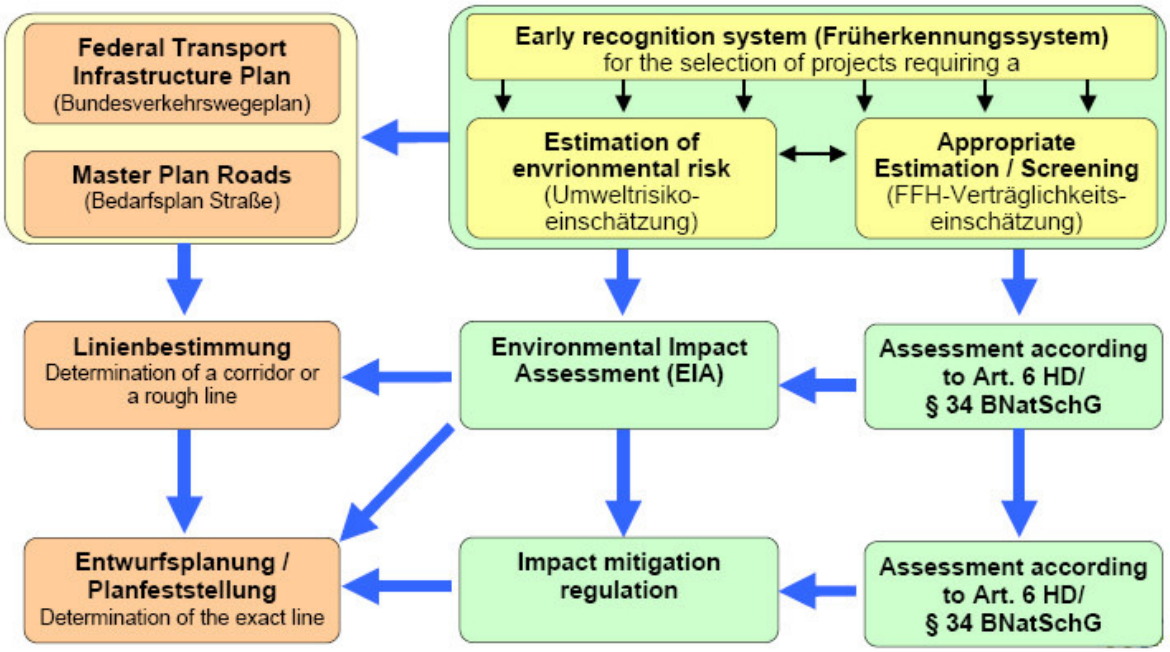

Figure 1: Three stages of Federal Transport Infrastructure Planning and environmental contributions in Germany

In Germany it has become common practice to assess projects or plans in a stage-by-stage approach. The whole assessment can be divided into three stages:

1. Screening: to check if significant effects on a Natura 2000 site can be excluded without doubt;
2. Appropriate Assessment: to find out if a plan or project, either alone or in combination with other projects or plans, may have significant adverse effects on those components of a site which are of critical interest for the conservation objectives;
3. Assessment of Exception: in case the project might have significant adverse effects, it may only be approved by derogation if there is no reasonable alternative, if the project is necessary because of imperative reasons of overriding public interest and if adequate measures to safeguard the coherence of the Natura 2000 network are provided.

Screening offers some important advantages: It determines in a cost-efficient manner and at an early stage if an Appropriate Assessment is necessary.

In some cases a few changes of the project or plan at the screening stage will prevent significant effects right from the beginning. Additionally, the planning process is accelerated through screening. EU legislation (ECJ C-127/02) requires a strong precautionary principle. Following this provision, particularly the most intensive possible impacts on the one hand and the most sensitive habitats and species on the other hand have to be considered.

Screening normally means a (rough) estimation by using available data, generally accepted information and experiences. But still it is always done case by case, which is why no general list of projects can be established – neither for "always significant" nor for "always not significant" projects. Thus, the term "plan or project" remains undefined in the Directive and a wide interpretation is necessary. In road planning, screening is especially relevant for projects within a certain distance from Natura 2000 sites, since direct affects to a site result in an obligatory Appropriate Assessment (AA). In case an AA is regarded as not necessary, documenting the screening process and its results accurately is most important.

The main objective of **Appropriate Assessment** is to determine whether the impacts of a plan or project might be significant or not. The possible impacts ("Wirkfaktoren") of the plan or project and the sensitivity of habitats and species of the site towards these impacts must be identified. Scoping can support decision-making as to which details have to be investigated within the affected area, and assist in the following data collection.

Investigations generally include:

- Identifying habitats and species which are protected by conservation objectives
- Collecting available data
- Mapping within the affected area
- Predicting possible negative effects
- Designing appropriate mitigation measures to avoid impacts at their source
- Assessing the significance of the remaining effects.

Typical impacts of road projects are emissions of nutrients or harmful substances, the death of animals by motor vehicles and the effects of noise and road illumination or headlights. For example birds were disturbed by a road next to an SPA. In the assessment, zoning models with different grades of functionality loss (e.g. RECK et al. 2001 for roads, TULP et al. 2002 for railways) and orientation values for the maximum range of effects (e.g. GASSNER et al. 2005: 190f. for flight distances) can be used. Further common effects of roads are those of intersection and fragmentation of habitats. One can distinguish between spatial and functional types of intersection. Spatial types occur within sites or between a site and its surroundings (problematic e.g. for birds of prey or bats) and between different sites (harmful for quite mobile species like lynx or wolf). Functional intersection effects are barrier effects, an increase in mortality and isolation of populations can result in habitat sizes below the ecological minimum for the concerned species. Impacts on typical plant and animal species of habitat types also have to be taken into account.

Nonetheless, the key issue in assessment remains that of a correct interpretation of “significance”. The term „significance“ is not defined in the Habitats Directive, which leads to some difficulties and heterogeneity in practice. Consequently, legal and planning certainty is not always given.

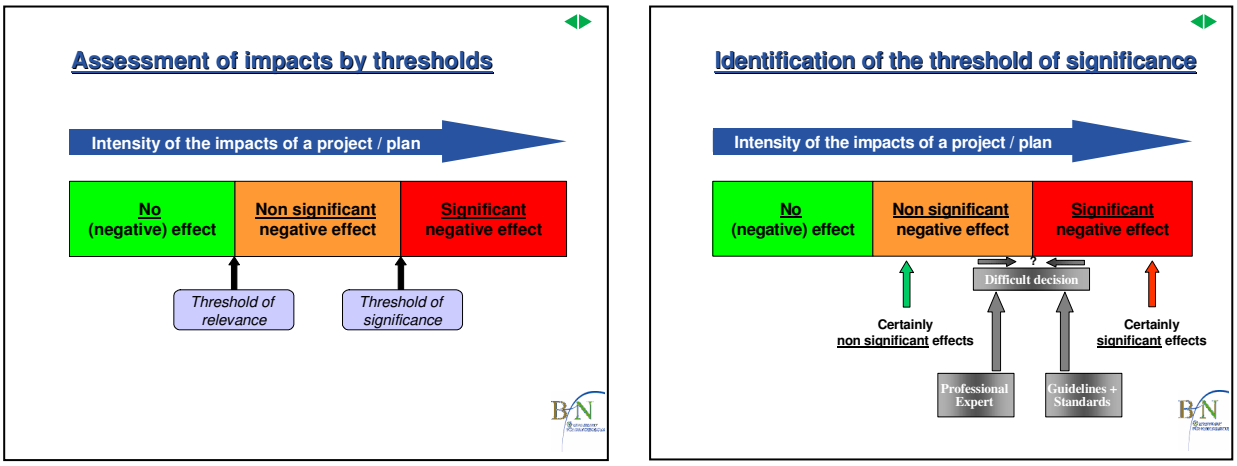

Figure 2: Assessment of impacts by thresholds and identification of the threshold of significance

It is obvious that objectivity is needed most when interpreting the scope of the term „significance“ (EU COMMISSION 2000: 33). Judgments may be rendered more objective by the use of criteria and standards (EU COMMISSION 2001: 62). Methodical guidelines and standards are also important for advice and support and a higher quality of assessments, for reduction of efforts and costs and, last but not least, for legal certainty. Two examples were introduced to the workshop participants.

The guideline of the Federal Ministry of Transport (2004) which was created for federal road projects and includes information for the different working steps and examples of “standard maps and plans”. Furthermore the research project of the Federal Agency for Nature Conservation was presented, where detailed guidelines for the assessment of impacts and for the identification of significance were developed. They were devised in 6 years by an interdisciplinary working group (LAMBRECHT et al. 2004; LAMBRECHT & TRAUTNER 2007). The project includes a guidance document, two proposals of standards for deciding on significance in assessment procedures and a database. The proposed standard or convention for the habitats according to Annex 1 reads as follows:

The direct and permanent loss of a part of a habitat, which is part of the conservation objectives of the site, is in general a significant effect. Effects can only be considered non-significant if they fulfill these five cumulative criteria:

a) no important, particular or special function or variant of the habitat is to be affected and

b) a quantitative absolute threshold for which an orientation value was defined for each habitat type in a table will not be exceeded and

c) a quantitative relative threshold of 1% of the habitat in the Natura 2000 site will not be reached and

d) no other cumulative losses shall lead to an exceeding of threshold values and

e) no other types of impacts shall lead to significant effects.

These two standards for assessing the significance of impacts on habitats according to Annex 1 Habitats Directive and habitats of species according to Annex 2 Habitats Directive and Annex 1 Birds Directive are the most differentiated approaches for Appropriate Assessments in Germany.

To summarize the conclusions of experience with Appropriate Assessment in Germany, one can say that:

1. Fulfilling the provisions of Art. 6 of the Habitats Directive is very important for the protection of the Natura 2000 network,
2. The correct interpretation of significance is crucial to assure the integrity of a site,
3. Transparency and objectivity are most important in the assessment procedure, and that
4. Guidelines and standards can be helpful, especially to provide planning and legal certainty.

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Short Discussion Summary – Presentation of Dirk Bernotat

The presented examples show that baseline information is crucial when carrying out assessments. Therefore the bigger cases of Appropriate Assessment are broadly discussed with the nature conservation authorities in Germany. According to the standard data forms, both the actual status and the objectives for a site are taken into account in the assessment. The diverse biological aspects of nature make it difficult to standardise parts of assessments. On the other hand there is a need of objectivity and transparency. For this reason all standards must include not only quantitative criteria but also qualitative criteria and functional aspects as mentioned in the examples.

2.3 Screening and Scoping for Appropriate Assessments in the Planning of A 39 between Lüneburg and Wolfsburg in Lower Saxony

Speaker: Stephan Köhler
Institution: Lower Saxony State Agency for Road Construction and Transport (NLStBV)
State: Germany

The Project A 39

The A 39 has been classified as an „urgent necessity“ in the German Federal Infrastructure Plan and became part of the Federal Trunk Road Upgrading Act (investment plan with a legislative procedure). The further step in the planning process for roads in Germany foresees the determination of the corridor/line with an Appropriate Assessment according to article 6 of the Habitat Directive. The final environmental and Appropriate Assessment will be carried out for the approval procedure. The length of the highway A 39 will be about 100 kilometres, connecting Lüneburg and Wolfsburg in Lower Saxony.

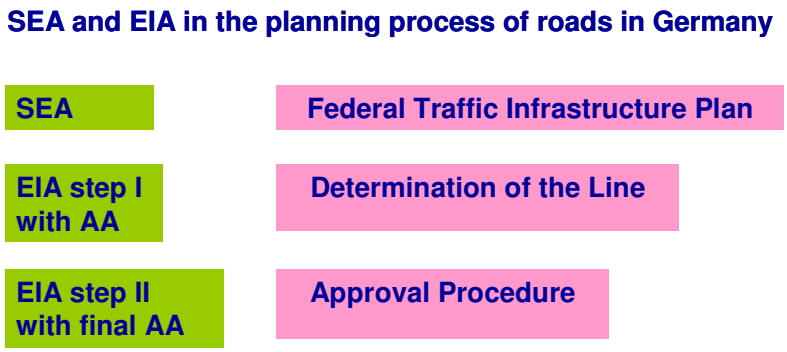

Figure 1: SEA and EIA in the planning process of roads in Germany

Methods of preliminary examination

The principle method of proceeding is declared in a “Methodical Guideline for Impact Transportation Infrastructure significantly affecting Natura 2000 sites” of the Federal Ministry of Transport (2004). The screening has to determine whether or not an Appropriate Assessment has to be carried out. The assessment approach is a process made up of several steps. As a first step, the risk (possibility) of significant adverse effects on conservation objectives of the Natura 2000 sites concerned was estimated. The avoidance of significant adverse effects on Natura 2000 sites were therefore taken into account by the determination of the investigation area the project could be realized. The second step was a listing of sites, which were obviously not affected (more than 1500-2000m away). At this level, the potential hazards related with each alternative and their likely consequences for the integrity of each site were assessed.

The objective of the screening was to reduce administrative efforts by sorting out obviously unproblematic alternatives and identifying clear-cut cases. The screening was based solely on available information about the conservation objectives of the Natura 2000 sites and the occurrence of species and habitats. The following issues were cleared on a case-by-case approach. If the risk of a significant adverse effect couldn’t be ruled out, an Appropriate Assessment was carried out.

Description of the project

Specific descriptions of the technical features of the project, which were known at this stage of the planning procedure, were addressed. Features included cross-section, daily traffic intensity, noise impacts, trenches, embankments, and culverts e.g. Precautions for avoidance and reduction of adverse effects were only considered if they were non-optional characteristics of the project.

Description of potentially affected Natura 2000 Sites

For each potentially affected Natura 2000 site, a separate description of its habitats, species and conservation objectives has been made with regards to the relevant ecological baseline features of the site. The examination took into account the most sensitive stage of the life cycle of species or the most ecological functions of the site.

Description of the project-specific effects

As the impact-factors of the project and the resulting processes have been described in the Environmental Impact Assessment, their relevance for the Appropriate Assessment were examined in the preliminary examination. The procedure starts with the "deterioration and disturbance assessment" in order to determine whether or not the project may possibly cause deterioration or disturbances in the protected area. In assessing the potential effects of the project, their significance is established in light of the characteristics and specific environmental conditions as well as the conservation objectives of the site concerned. The estimation of the likely magnitude of effects was based on accepted expert opinions about the extent and intensity of impacts. The range of immissions and fragmentation effects were considered to be the most important factors. Any direct land use of a site was understood as to have likely adverse effects on the site. The relevance of the project effects and impacts, both inside and outside the site, depends on the sensitivity of the site's conservation objectives as well as the specific layout of the dispersal. On the basis of the case "A 26 – motorway" the sensitivity of bird populations against noise and the reasonable use of noise abatement measures can be illustrated in detail.

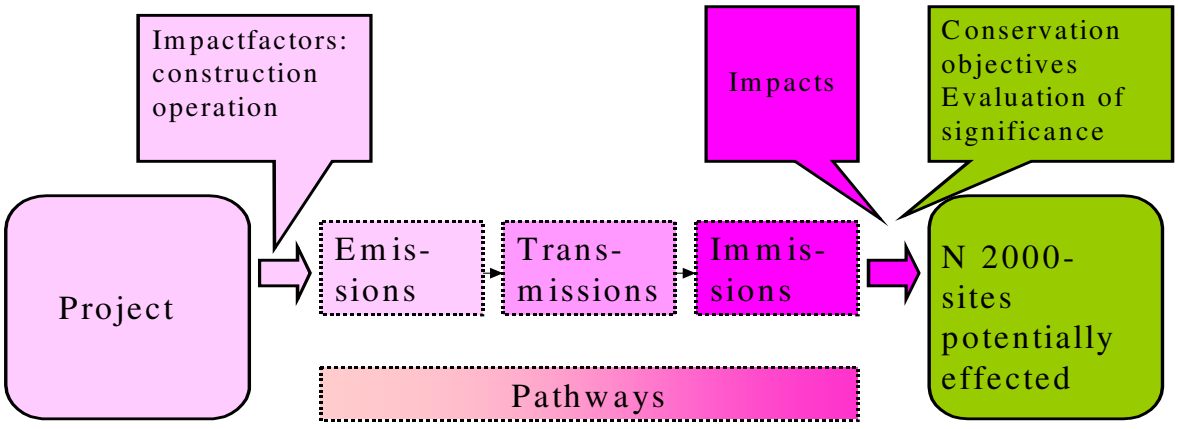

Figure 2: Impact Model

Examples and results of different site-screenings

The results of the preliminary examination were discussed with the responsible authorities. When no adverse effects on any site were found, the examination was used to exclude sites from further investigations. In the case of significant effects, the examination was used for the determination of the scope and level of detail of information and investigation, which must be included in the Appropriate Assessment. In practice, the combination with other plans or project isn't important at this planning stage when the possibility of any significant effect can be excluded.

Example 1: Site DE 2628-331 „ Ilmenau mit Nebenbächen" Part „Röbbelbach"

The line is crossing the site. An Appropriate Assessment was carried out.

Example 2: Site DE 2628-331 Part „Vierenbachniederung"

There is a distance of about 500 m from the border of the Natura 2000 site in this part of the Vierenbach lowland. The Elbe-Seiten Channel runs between the Natura 2000 site and the project.

Conservation objectives:

Habitats:

- 91E0* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*),
- 91D0* Bog woodland,
- 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation

Species:

- Brook lamprey (*Lampetra planeri*),
- Bullhead (*Cottus gobio*),
- Eurasian otter (*Lutra lutra*).

Result: no significant adverse effects on the conservation objectives

Example 3: Site DE 3229-401 „ Schweimker Moor und Lüderbruch"

The A 39 runs about 750m from the border of the site.

Conservation objectives:

- 8 Breeding pairs of Common Crane (*Grus grus*)

Result: significant adverse effects on the conservation objectives may be likely due to noise impacts on feeding sites of the common crane and fragmentation of the breeding and feeding places. An Appropriate Assessment was carried out.

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Short Discussion Summary – Presentation of Stephan Köhler

The presented methodological guideline of the German Federal Ministry of Transport, Building and Housing took five years to complete, but still only provides orientation values and is not meant to be used exclusively. In general, it may be said that it is better to have no standard than a bad standard for handling cases of Natura 2000 assessment.

2.4 Habitats Assessment Procedure for Road Construction and Vehicular Traffic in Austria: The Project "Schnellstrasse S33 – Donaubrücke Traismauer" as a Practical Example

Speaker: Dr. Manfred Pöckl & Klaus Steininger
Institution: State Government of Lower Austria & RaumUmweltPlanungs-GmbH
State: Austria

By constitution, Austria is a Federal Democratic Republic. Besides several topics belonging to the federal level (e.g. "Bundesstrassengesetz" and Environmental Impact Assessment) the nine provinces ("Bundesländer") have their own legislative sovereignty in a huge variety of topics ("Landesgesetze"), including for example nature conservation, hunting and fisheries. For example, the Habitats Directive (92/43/EEC) and the Bird Directive (79/409/EEC) have been implemented in the Nature Conservation Acts of the provinces. There is, however, no overall national law on this topic. A special task force, the Connective Office ("Verbindungsstelle der Bundesländer"), is responsible for inter-connecting the various provinces, helping them to guarantee for a qualified and standardised approach when dealing with international legislation and conventions.

Authorities in nature conservation are firstly the local district administrations and secondly the responsible administration department (department for nature conservation) of the province. The actual split of legal and authoritative competence between federal and provincial level, their different administrative authorisation procedures and their different contents based on different acts and directives, lead to difficulties in the practical assessment of projects in Austria. As there is no national authority in nature conservation, possible appeals courts are the administrative tribunal ("Verwaltungsgerichtshof") and the constitutional court ("Verfassungsgerichtshof"). Civic action groups against the realisation of case S 33 have initiated legal proceedings. These groups represent the opinion that the construction of major roads must a priori be prohibited in all Nature 2000 sites, which of course is a very problematic point of view and ignores an Appropriate Assessment procedure on this topic.

The administrative authorisation procedure is explained in the example of a Road Construction Project "Schnellstrasse S 33 – Donaubrücke Traismauer" from the point of view of an authority expert for nature conservation (Mr. Pöckl) and a project planner (Mr. Steininger).

The Road Construction Project S 33 is a connection between two existing motorways north and south of the river Danube located in the largest Austrian province, "Lower Austria" (19 174 km^2). The main traffic targets and the role for the higher road network are:

a) the establishment of a ring of motorways in the Vienna region,
b) the discharge of traffic at the lower road network,
c) meeting the requirements for highly increasing traffic according to prognosis.

With a length of 7 kilometres, the road project passes through the Natura 2000 site "Tullnerfelder Donauauen", located in the continental bio-geographical zone close to the

border of the alpine zone. This pSCI and SPA area has a length of 55 km and a width of 1-4 km (17 586 ha). The road project crosses nearly at the western end of the site, partly in a lowland forest area. The Danube section in the “Tullnerfelder Donau-Auen” is impounded by a hydroelectric power plant. This impoundment both interrupts the continuity of the river itself and has, due to longitudinal dams, heavy impacts on the groundwater dynamics. The riverside forests have largely lost both their natural floodplains and the intensive ground-water connectivity, and have intensively been changed by forestry. In spite of these slight degradations of habitats at the outset of the project, there is still enough structure for a highly diverse and endangered indigenous fauna. The species and habitat types belonging to the Annexes of the European Directives (Annex I and II of the Habitats Directive (92/43/EEC) and Annex I of the Birds Directive (79/409/EEC)) and their impacts are presented.

According to Austrian legislation, the stages of the assessment procedure are described in the example “S 33 – Donaubrücke Traismauer”:

1. *Feasibility study* (“Machbarkeitsstudie” focused on technical options and acquisition of land use; 1998).
2. Preliminary Study (“Vorprojekt” according to federal legislation “Bundesstrassengesetz”) including the *Benefit-Cost analysis*, the assessment of guidelines of spatial planning and the choice of the lie of the road (1999-2000).
3. *Screening* according to the provincial legislation (NÖ NSchG). Clarification of the necessity of an Appropriate Assessment according to Art. 6 Habitats Directive (during the Reconnaissance stage 1999-2000).
4. *Environmental Impact Assessment (EIA)* according to federal legislation (“UVP-G”; 2003-2005) with approval of alternatives in the sense of Art. 6 Habitats Directive according to the provincial legislation. The alternatives have been analysed with regard to the future traffic requirements and the impacts on the Nature 2000 site.
5. *Appropriate Assessment* (“Naturverträglichkeitsprüfung”) according to the provincial legislation (§10 NÖ Naturschutz-Gesetz implementing Art. 6 FFH-Directive) including a detailed analysis of the Habitats Directive, Bird Directive and the coherence with the management objectives (*favourable conservation state*) under simultaneous consideration of mitigation measures.

The actual competences belonging to both the federal administration and the provincial administration, and the authority’s lack of experience with road projects of this dimension crossing a Nature 2000 site, required an innovative approach. Finally different licensing authorities together with the project planners brought up an authorisation procedure which respects the legislative requirements belonging to European, federal and provincial level. The risk of contradictory results can be additionally minimised (positive approval in EIA and negative result in Art. 6 - procedure).

The main innovative aspects include the following:

a) an additional alternative has been examined at the preliminary study phase as a result of the screening process
b) public interest concerning economic and traffic plans has been examined at an early stage

c) the assessment of alternatives has been carried out before the formal Appropriate Assessment

d) a wide range of mitigation measures, which led to a lot of improvements of the previous technical project, has also been planned (e.g. bridges over water courses and the foreland, wildlife underpasses, concrete Jersey barriers, box culverts, noise barriers, filter basins for the purification of waste water, etc.)

e) the results of the EIA have been a pre-condition for conserving the coherence of the Nature 2000 network. Therefore a connection between EIA and Appropriate Assessment is evident.

The screening took place according to the specific guideline of the provincial government. The requested identification of impacts, minded subjects of protection and affected subjects of protection resulted in a short and clear report. Significant negative impacts caused by road construction and vehicular traffic in sensitive sites and on sensitive wildlife must be expected within a special, factor-correlated distance. Negative effects, as highlighted and summarised in several ecological textbooks (e.g. Road Ecology: Science and Solutions by FORMAN et al. (2003); Wildlife and Roads by SHERWOOD et al. (2002) are numerous. Impacts of road construction include: permanent or temporary habitat losses (e.g. water-bodies, wet lands, forests, meadows), reduced habitat quality, change of microclimate, change of hydrologic balance (prevention of infiltration, surface run-off), interruption and intersection of habitat connectivity, interruption/intersection of migratory routes of animals (barrier effects, fragmentation), isolation of animal populations (home range and minimum territory), noise, light and disturbance effects on shy and endangered animals (e.g. resting migratory birds). Additionally, the traffic of motor vehicles produces noise (detrimental to song birds), and light (headlights of vehicles and illumination along the road), emission of nutrients (eutrophication of oligotrophic ecosystems) and a huge variety of harmful substances, for example the common practice of salting roads with sodium chloride in order to melt ice and snow during winter.

Relevant impacts on the Natura 2000 site and its habitats and species could therefore not be excluded due to the dimension of the road project crossing the site, and the need for an Appropriate Assessment was evident.

Railway lines and highest priority roads (Autobahnen/Schnellstraßen) are of national interest. According to a recent decision of the Austrian Constitutional Court (“Österr. Verwaltungsgerichtshof”) the Provincial States do not have the power to decide on alternatives in infrastructural projects of national interest. Under those conditions it was clear that the Ministry of Traffic, Infrastructure and Technology had to be the responsible authority not only for the EIA, but also for important aspects of the Appropriate Assessment according to Article 6 (3) and (4).

Testing of alternatives did not reveal a better solution than the one chosen here. A new location line upon the existing road by technically improving another bridge expressing more or less a zero option would cause additional traffic into the City of Krems, an area with a high population density. Not fulfilling central traffic guidelines, the lack of space in the urban area, and the high population density within this area would cause new negative impacts on human aspects.

According to the standard data form for the relevant Natura 2000 site, the following habitat types of Annex I are to be found: riparian forests of the type 91F0 (60%), alluvial forests (91E0, 20%), several types of standing (3130 with 20%, 3150 with 1%, 3140 with < 1%) and running waters (3260 with 1%, 3270 with < 1%), semi-natural tall-herb humid meadows (6430 with 1%, 6440 with < 1%), several types of semi-natural dry grasslands and scrubland facies (6240 with 1%, 6211 with 1%, 6210 with < 1%) and mesophile grasslands (6510 with < 1%).

The following animal species from Annex II are also to be found: 2 mammals, the beaver (*Castor fiber*), and the otter (*Lutra lutra*), 2 species of amphibians (*Triturus dobrogicus* and *Bombina bombina*), 17 species of fish (Codes 1096, 1134, 1114, 1146, 1163, 1105, 1139, 1130, 1145, 1157, 1149, 1122, 1160, 1131, 1124, 1159), 2 species of beetles (*Lucanus cervus* and *Cucujus cinnaberinus*), 4 species of butterflies (Codes 1061, 1059, 1052, 1060), 2 species of damsel-/dragonflies (*Leucorrhinia pectoralis* and *Ophiogomphus cecilia*), and the freshwater clam *Unio crassus*.

Moreover, the site has a special importance for a huge number of breeding, resting and over-wintering birds listed in Annex I of the Birds Directive (79/409/EEC). Of high relevance is the white-tailed sea eagle (*Haliaaetus albicilla*) which has tried to breed within the site several times, as well as the following breeding birds: the kite species (*Milvus milvus, M. migrans*), the marsh harrier (*Circus aeruginosus*), the honey buzzard (*Pernis apivorus*), the small bittern (*Ixobrychus minutes*), the water rail (*Porzana porzana*), the kingfisher (*Alcedo atthis*), 3 species of woodpecker (*Picus canus*, *Dryocopus martius, Dendrocopus medius*), the blue-breasted warbler (*Luscinia svecica*), the barred warbler (*Sylvia nisoria*), the collared flycatcher (*Ficedula albicollis*), and the red-backed shrike (*Lanius collurio*).

The information from the standard data form was, in the opinion of the authority, not enough to allow further decisions on the detailed project. The occurrence of habitat types, plant and animal species had to be observed in the field within an appropriate study area.

Appropriate mitigation measures to minimise negative impacts with respect to the road construction project include for example:

- sprinkling water over dry earth at building sites to prevent dust emission;
- preventing direct physical damage to adjacent habitats by placing fences at the edge of building sites;
- rescuing animals entering construction sites (setting temporal fences and traps);
- the construction of bridges over water courses, including enough space at both banks (adjacent land habitats) for allowing migratory corridors (e.g. for beavers, otters, etc.);
- the construction of “foreland bridges” to bridge over terrestrial habitats;
- the construction of slender piers instead of compact piers (bulges) to allow visibility for wildlife and thus promote migration;
- the construction of wildlife underpasses such as box culverts (wildlife overpasses cannot be constructed in this special case because of the dammed road and the high noise barriers);

- the construction of concrete Jersey barriers (hindering amphibians, reptiles and small mammals to reach the road and prevent mortality);
- the installation of appropriate wildlife fences (hindering e.g. deer to reach the road);
- the construction of noise barriers (as traffic noise has been proved to be detrimental to song birds, e.g. REIJNEN et al. (1995);
- the avoidance of glass noise barriers to prevent bird collisions (concrete Jersey barriers and noise barriers can be combined);
- the construction of filter basins for the purification of waste water, including sodium chloride emission during winter;
- the use of appropriate "time windows" for critical (extremely noisy) works both in season (breeding season) and day-time (dusk, dawn and night time);
- no overhead lighting along the roadsides at all, or – if absolutely required; the use of environment-friendly lamps and spectrum (yellow-orange) instead of ultra-violet (may be detrimental to night-active butterflies and disturb other species);
- the use of antiglare barriers;
- an appropriate land use adjacent to the road (e.g. no fragmented forestation, no forest too close to the road, and no forests on both sides of the road because animals tend to migrate between forests and risk getting killed);
- and last but not least the critical controlling by ecologists, who can observe road construction as well as re-cultivation works (regularly reporting to the authority and the experts).

Together the bridges have a length of 1 320.52 metres, which is c. <1/5 of the total length of the road project. The roadway on the dam crest (the dam should also act as flood protection) has a width of 30.00 m, a base of 65 m, and a height increasing towards 14 m. According to the prognosis, there will be an intensity of 16.000 vehicles per 24 hour time period.

The Appropriate Assessment has taken into account the general management objectives of the site defined by the Provincial Authority as well as the objectives for the "*favourable conservation state*" of each of the relevant habitat types and species. The direct loss of habitat types according to Annex I (92/43/EEC) is 11.32 hectares, including 8.71 ha of riparian forests (91F0), this type having the highest loss. Because of the considerable size of the site (17 586 ha), this only represents 0.1% of the total 91F0. The total habitat loss, however, is expected with 37.8 ha. Much more important than the direct habitat loss are the long-distance effects of traffic noise on a number of bird species (e.g. RECK 2001). Hence, a much larger area is affected by habitat degradation because bird species, which are sensitive to noise, e.g. woodpeckers living in the impacted forests, will avoid the road above a certain threshold value. Based on these threshold values, the habitat requirement was calculated for three different groups of birds, inhabiting (a) forests, (b) water and wetlands, and (c) open land habitats (TRAXLER 2006). Moreover, fragmentation effects caused by the huge dam (described above) cannot be excluded, although land – water eco-tones are bridged over.

Thus, according to the precautionary principle as suggested by the European Commission, mitigation measures might not be far-reaching enough to exclude significant negative impacts. Compensatory measures will have to be realised to ensure

the overall coherence of the Natura 2000 network. Within the Appropriate Assessment, previously incorporated into the EIA-process of the Ministry, the authorisation of the "Schnellstraße S33 – Donaubrücke Traismauer" was **exceptionally granted** under the conditions of Article 6 (4). In his assessment procedure, the first author closely followed the guidance of the European Commission. It was agreed upon that in total 162.4 ha will have to be used as compensatory measures, and of these 65.6 ha will represent changes in the presently intensively used forest areas towards a PNV (tree and shrub species composition according to the **P**otential **N**atural **V**egetation; conserving old, dead and decaying trees as habitats for e.g. woodpeckers, hole-breeding birds, bats and beetles; absolute non-use of land – water eco-tones as habitats for e.g. beavers, otters and amphibians).

The EIA process of the Ministry ended in an optimised project, including mitigation and compensatory measures. The latter were not only demanded by the authority experts for nature conservation but also by the authority expert for forestry and hunting. The project planners incorporated the obligations of the previous EIA to optimise the former project for the formal second procedure belonging to the authorities in nature conservation (district administrations), who are the responsible authorities for the Appropriate Assessment according to Article 6 (3) and (4). As the obligations of the EIA and the anticipated Appropriate Assessment had already more or less been fulfilled and the project optimised accordingly, the Article 6 assessment for the district administrations as authorities in nature conservation was easy and straightforward. There was no need to demand compensation again, as this – at the time of those subsequent proceedings – had already been part of the project.

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2.5 Screening of Potential Effects of Minor Road Expansions on Natura 2000 Sites under the Habitats Directive in the Netherlands

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Minor road expansions in the Netherlands

In 2003, the Dutch parliament accepted the Urgency Act Road Expansions. The intent of the act was to rapidly relieve some of the daily traffic jams on the Dutch highways, by streamlining consultations of the public for several road expansions. All consultations (Environmental Impact Study, dispensations, permits, etc.) in a project would run simultaneously, thus shortening the planning phase. The act listed 34 specific expansions that suffered most from traffic jams and that should benefit from the act (Figure 1).

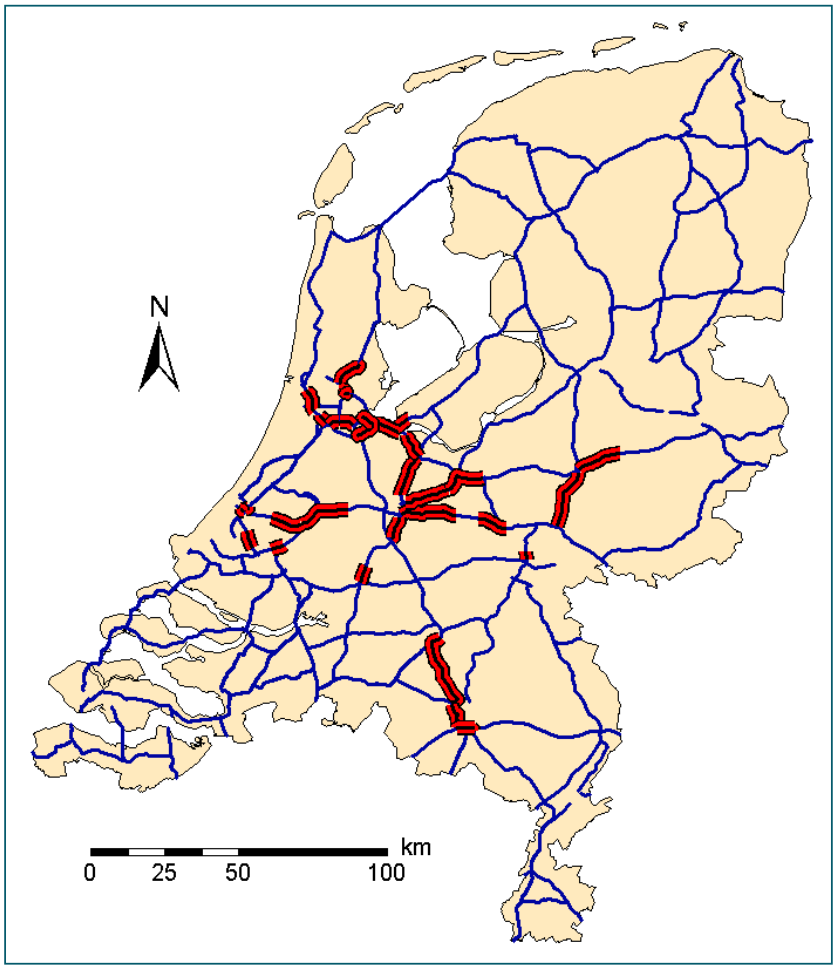

Figure 1: Location of 34 minor road expansions in the Netherlands

All expansion projects under the urgency act were minor expansions. They typically envisaged the use of existing safety lanes as driving lanes (repartitioning driving lanes), usually in combination with the construction of safety bays, or adding only a small strip of asphalt. As safety precautions in the absence of a security lane, cameras and illumination would be installed if not yet present. In addition, the maximum speed limit

would be reduced from 120 to 100 km/h during opening hours of the additional lane, and in most cases the additional lane would only be opened during rush hours.

Although the urgency act projected a rapid construction of the road expansions, many of the projects are still running as a result of problems with fine dust emissions exceeding acceptable levels.

Implementation of the Habitats Directive in the Netherlands

In 2004, the European Commission approved 141 Natura 2000 sites proposed by the Netherlands. However, it took until 2005 before the Habitats Directive itself was translated into national legislation, the Nature Conservation Act. At the end of 2006, conservation objectives for the first 111 sites were published for consultation of the public. These raised close to 6000 responses, which the Ministry of Agriculture, Nature and Food Quality is currently processing. The conservation objectives for the remaining sites will probably be published in 2007. At the moment, there are no final objectives available.

The fact that the Urgency Act Road Expansions (2003) and the implementation of the Habitats Directive (2004 and still ongoing) crossed one another complicated the application of the regulations in the Habitats Directive in the road expansion projects.

Screening of effects - two cases

For 26 road expansions, no explicit screening was done. What these 26 projects have in common, retrospectively, is the fact that the closest Natura 2000 site was located at a distance of more than 2.5 km. One project has not yet started, resulting in seven road expansions for which explicit screening was conducted (Figure 2).

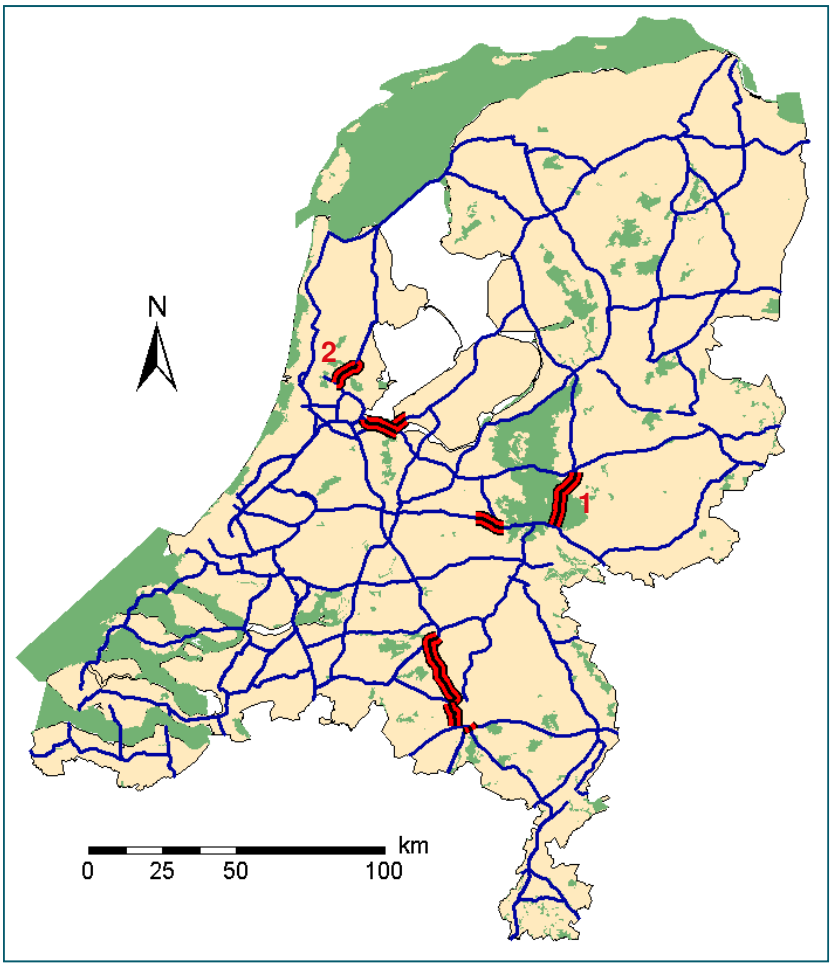

Figure 2: Location of Natura 2000 sites protected through the Habitats Directive (green), and seven road expansions for which explicit screening took place. Numbers 1 and 2 represent cases A50 and A7, respectively.

1. Highway A50 through Natura 2000 site Veluwe

This example was one of the earliest projects, for which screening started in 2003. At that time, the designation of the Natura 2000 sites was still proceeding, the Habitats Directive had not been implemented into national legislation, and no (draft) conservation objectives were available.

The project encompassed the construction of one additional lane in one direction (two to three lanes), on existing asphalt. Natura 2000 site Veluwe is the largest terrestrial site in the Netherlands, and includes 17 protected habitats (3 priority: species-rich *Nardus* grasslands, alluvial forests and active raised bogs). In addition, it contains seven protected species (two insects, two fish, one amphibian, one bat and one plant), but no priority species.

Two possible effects of the road expansion were expected - the destruction of 0.49 ha for 14 safety bays and the disturbance by illumination that would be installed. Increased noise was not expected to have an effect, as the traffic model used did not foresee additional traffic as a result of the expansion. The potential effects of illumination were mitigated by dimming it to less than 50%, or switching it off, when appropriate (at least during the night), and by the use of armatures that would send the light to the road, and not to the surroundings.

An ecology consultant conducted a field survey along the highway and found no species listed in the Habitats Directive. He did not include areas at greater distance from the road. The consultant also surveyed for habitat types, and found two non-priority types along the road, totalling 0.23 ha.

The only negative effect of the road expansion, after mitigation of illumination, was considered to be the loss of area. In the absence of exact borders for the Natura 2000 site, it was assumed that the construction of safety bays would destroy a portion of the site. However, this loss would only be 0.0005% of the total area. In terms of protected habitats, the absolute area loss was even smaller (0.23 ha), and although the proportion of habitat loss of the total was not determined, the effects were not considered significant.

2. Highway A7 along Natura 2000 Site Ilperveld, Varkensland, Oostzanerveld and Twiske

Screening for this second example started in 2006, when the Natura 2000 site had been approved, the Habitats Directive had been implemented in national legislation, and draft conservation objectives were available.

Similar to the A50, the A7 would have one additional lane, from two to three, on existing asphalt. The Natura 2000 site Ilperveld, Varkensland, Oostzanerveld and Twiske is a wetland area and harbours five protected habitat types (one priority type, bog woodland), and six species protected through the Habitats Directive (four fish and two mammals). One of the species, *Microtus oeconomus*, is a priority species.

The safety bays that needed to be constructed would lie outside of the Natura 2000 site, so that no area or habitat would be destroyed. Illumination was already present. Potential effects of the road expansion therefore included increased noise (the road expansion was expected to attract additional traffic), increased emission of nitrogen oxides that might affect protected oligotrophous habitats, and changing bird foraging pressure on protected habitats, when birds would be affected by increased noise. This last potential effect was ruled out through an Appropriate Assessment within the scope of the Birds Directive: increased noise would not affect birds.

An ecological consultant surveyed the road verges and bordering parts of the Natura 2000 site, and concluded that no protected habitats were present close to the road. Furthermore, no protected species were observed close to the road. *M. oeconomus* and fish species might use these sites outside of the Natura 2000 site as a marginal habitat.

When assessing the effects of increased noise production on protected species close to the road (*M. oeconomus* and fish), there appeared to be no information on effects of noise on these species. However, since they would occur at sites that were already heavily affected by noise, they are probably not sensitive, so that there would not be a significant effect. As for increased emission of nitrogen oxides, background values of nitrogen are high in the Netherlands, so that the increased emission as a result of the road expansion would be negligible. Furthermore, studies show that the level drops rapidly at a distance from the road, and the direct vicinity of the current road will only contain habitats that are adjusted to the current high levels of nitrogen. It was also noted, however, that little or no information is available on potential effects of other pollutants on protected habitats. For the A7 road expansion, it was concluded that there might be negative effects, but that they would not be significant.

Conclusions

Comparing all road expansions for which explicit screening took place, a clear distinction between the screening stage and the Appropriate Assessment *sensu* Habitats Directive was never made, but a single-stage model was used instead. If any negative effects were expected, a more detailed approach or Appropriate Assessment was used to determine their significance. There are several reasons for that:

- Significance is not well defined in the Habitats Directive or in national legislation. To be on the safe side, projects decided to use an Appropriate Assessment to define significance.
- The Dutch Nature Conservation Act includes a permit system, and requires a "light assessment" to obtain permits for non-significant negative effects. In the absence of a definition for significance, an Appropriate Assessment might turn out to be necessary upon completion of a "light assessment".
- Starting with an Appropriate Assessment avoids time-consuming two- or three-stage studies.

In the assessments, focus was placed on destruction, noise, illumination, isolation and emission of nitrogen oxides. Except from published studies on the effects of noise on breeding birds, and on the effects of illumination on several birds and mammals, not much information on these or other effects on different species appears to be available. For minor road expansions, there was the assumption that other factors would have no effects.

The currently available information about effects has been summarised by the Dutch Ministry of Agriculture, Nature and Food Quality in an online effect indicator (Figure 3). While this tool is useful in the screening stage, it is important to realise that the basis for the indicator is narrow for several effects on species and habitats, as is indicated in the manual that accompanies the indicator. Despite the use of expert judgement, the indicator frequently produces "unknown" effects. It is important to fill gaps in knowledge, but small-scale road expansion projects clearly do not provide the opportunity for this. However, it could be useful to monitor the situation before and after a road expansion, to learn how effects work out. This is not common practice in the Netherlands.

In the surveying of habitats, ecologists frequently made notion of marginal habitat, or habitats that contained characteristics of protected habitat types. This made it difficult to determine when a habitat qualified as a protected habitat conform the Habitats Directive. For both habitat types and species, the publication of (draft) conservation objectives has facilitated assessment of significant effects, as far as they contain clear goals.

Overall, considering all 34 minor road expansions, significant effects were absent. While taking into account the uncertainties in the assessments, small-scale road expansions may have little impact.

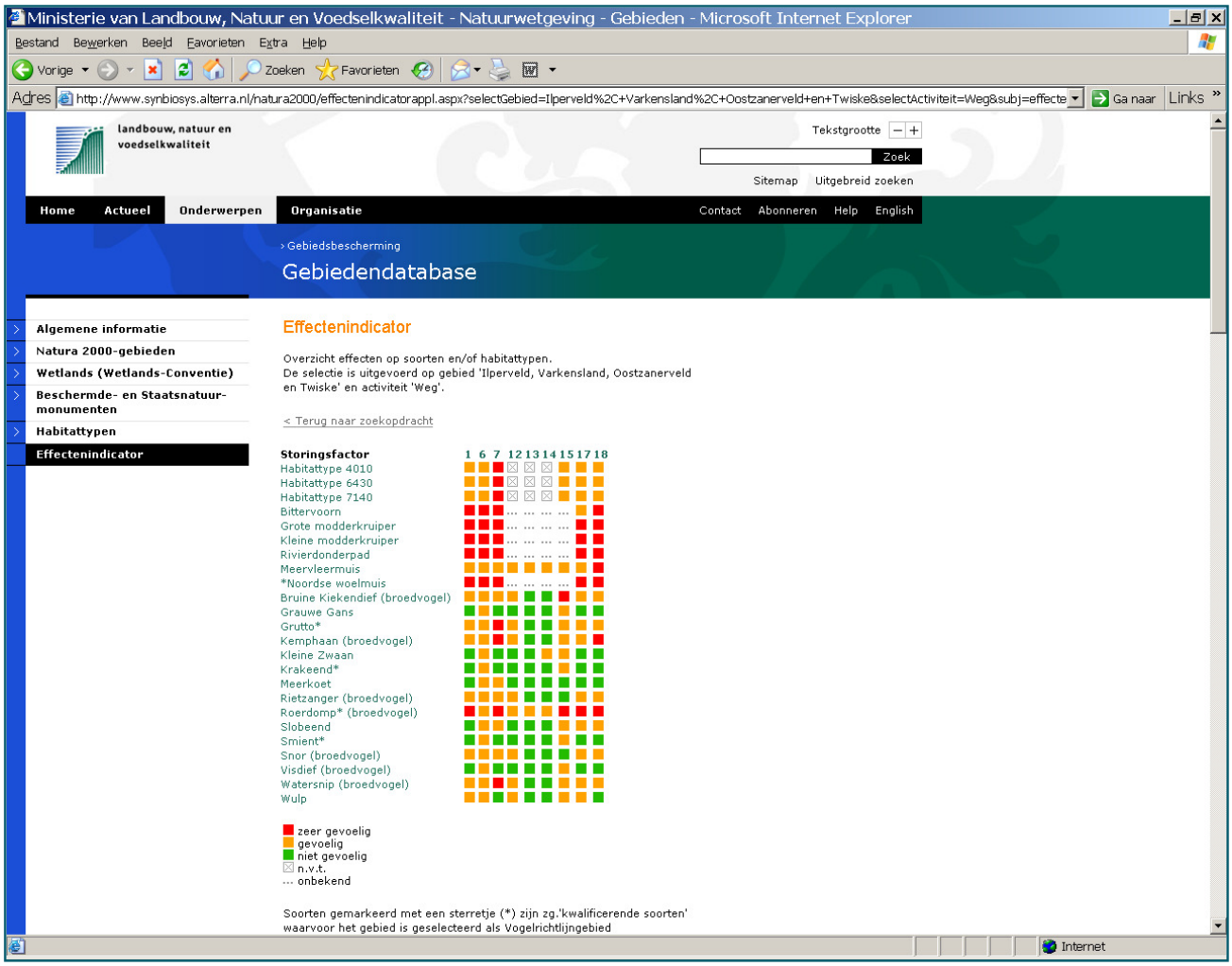

Figure 3: Output of the online effect indicator of the Dutch Ministry of Agriculture, Nature and Food Quality, for Natura 2000 site Ilperveld, Varkensland, Oostzanerveld and Twiske (http://www.synbiosys.alterra.nl/natura2000/effectenindicator.aspx?subj=effectenmatrix, last accessed on 11 May 2007). Note that the indicator is based on the Habitats Directive as well as the Birds Directive.

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Short Discussion Summary – Presentation of Victor Loehr

If you have existing roads that are altered in a new project, it is often difficult to deal with the definition of impact. Which impacts should be considered in the assessment, if the existing road was built before the Habitats Directive had been applied? Since it is not reasonably possible to properly take the negative effects of the existing road into account, it is advised to only assess the new effects. Thresholds values, for example noise or carbon emissions, can be helpful in such assessments.

2.6 Appropriate Assessment Experiences in Finland: Road Projects as Examples

Speaker: Tarja Söderman
Institution: Finnish Environment Institute; SYKE
State: Finland

This summary presents Finnish legislation related to Appropriate Assessment procedures according to the Article 6 (3) and (4) of the Habitats Directive (CEC 1992), and illustrates how these issues are treated in road planning. Several road projects are used as examples to demonstrate how the screening and scoping of the Appropriate Assessment are carried out in road planning.

The Finnish Nature Conservation Act (1996) follows quite literally the wording of Article 6 (3) and (4) of the Habitats Directive. In addition, the Nature Conservation Act requires that the authority in charge of granting the permit or approving the plan has to request an official opinion on the Appropriate Assessment report from the regional environment centre. There are 13 regional environment centres and they are the governmental regional authorities responsible for environmental issues. This opinion is to be given within six months from the date of the request. The opinion includes the centre's judgment on the adequacy of the report, e.g. whether it includes all necessary data or not, and the view of the significance of the impacts of the project or plan in question.

In cooperation with stakeholders, the Finnish Environment Institute (SYKE) published guidelines on Appropriate Assessment in 2003 including screening and scoping. The guidelines are available only in Finnish because of their national use. They are followed in road development projects by the Finnish Road Administration. The screening phase is carried out by the regional road administration with the help of the regional environment centre. There are nine administrative road regions in Finland and they are responsible for e.g. Environmental Impact Assessments (EIAs) and Strategic Environmental Assessments (SEAs) in road planning. In the screening phase, the negotiations between the road region and the regional environment centre are often unofficial but sometimes written opinions are asked and given.

The screening, scoping and performance of Appropriate Assessment are usually carried out in general road planning. If an EIA is applied to a general plan, an Appropriate Assessment is a part of the procedure (Act on Environmental Impact Assessment Procedure 1994). Finnish EIA legislation has been in force since 1994 and has been amended several times (Act on Amendment to the Act on Environmental Impact Assessment procedure 2006). Transport system planning precedes the general planning. According to the Finnish Act on the Assessment of the Impacts of the Authorities' Plans Programmes and Policies on the Environment (2005), transport system plans are not subject to environmental assessment according to the SEA Directive (CEC 2001), but their environmental impacts should be investigated and assessed to a sufficient degree in the course of their preparation. The transport plan of the Helsinki Metropolitan Area Council is an exception, in that it always requires the environmental assessment. Road planning and construction planning phases follow the general planning and focus on the technical planning of the chosen road route

alternative. Therefore, the most suitable road-planning phase to study impacts on Natura 2000 sites is the general planning with several alternatives for the routing.

The difference between the screening and the full Appropriate Assessment has been somewhat indistinct in Finland. The regional environment centres have given opinions on reports that have been called screening reports regardless of having included numerous and very detailed data. Likewise they have given opinions on full Appropriate Assessment reports that have not included necessary data to state anything on the significance of the impacts. In these cases the centres have regarded the full Appropriate Assessment as insufficient and demanded data completions from the project planner.

A full Appropriate Assessment has been carried out when significant negative impacts have been likely or it has not been possible to prove that there are none. Screening has included the collection of existing data on the project or plan and the affected Natura 2000 site. Field studies have not usually been carried out in screening.

There are not any specifically listed projects that are legally subject to Appropriate Assessment but all projects are subject to screening criteria dealing with the actual material possibility of significant impacts. Checklists are not used because the projects and their affected habitat types and species are very site-specific. Thus, the result of screening is much founded on the ecological expertise of the regional environment centres. They apply the following criteria case by case:

1. Does the plan or project affect the Natura 2000 site's conservation objectives? – Conservation objectives are listed Annex species and habitat types in a Natura 2000 data form.
2. Do the effects of the plan or project have a deteriorating character to the Natura 2000 site? – Deterioration is e.g. a decline of living species, disturbance, change of physical environment, change affecting particular features of a habitat type, reduction of the area of a habitat type etc.
3. Are the effects on the Natura 2000 site significant together with the effects of already existing or planned activities affecting the site? – Significance depends on the extent of changes in relation to the importance and location of the site's conservation objectives.
4. Are the effects anticipated to be likely? - Likeliness is interpreted through the precautionary principle and the outcome of screening should be justified.

Six cases were examined as examples of screening for the Appropriate Assessment in road projects. Three of the cases concern road projects in Northern Finland - Lapland, two cases are from Eastern Finland - North Karelia, and the last example is from the Southern coast of Finland.

The first example from the year 2004 deals with the improvement of the Kiilopää road near the Urho Kekkonen National Park, which is a Natura 2000 site. The planned stretch of road that would follow the border of the park was 1.8 km, with 700 m planned inside the park. The widening of the present road was planned to be 0.5 – 7.0 m. The improvement was planned to include the building of a new parking lot. The result of the

screening was that the area that would be sealed by the road was 0.381 hectares and 0.00012 per cent of the total park area. In addition, the western taiga habitat type potentially consumed by the road was already changed and not very representative. The screening was carried out by the Lapland road region, which concluded that the significant adverse effects to the Natura 2000 site were not likely. The region also asked the opinion of the Ministry of the Environment. The ministry agreed with the road region in its written opinion and added that the affected area did not host any especially valuable species.

The second example from the year 2003 deals with the improvement of the Karesuvanto-Lavivaara road in Lapland. The project included the reconstruction of an old road bridge inside a Natura 2000 site composed mostly of Aapa mires. Dredging of the Pahtajoki-river 20 m from the bridge to the lower reaches was planned. In addition, a new temporary channel for the river was planned to be constructed during the bridge construction. Dredging masses were planned to be placed outside the Natura 2000 site. The new channel would have consumed 250 m^2 of the Nordic subalpine/ subarctic forest with *Betula pubescens ssp. czerepanovii*. This was seen in the screening report not to be significant, because the loss of the habitat type would have only been 0.0083 per cent of the whole habitat type area of that particular Natura 2000 site. The Lapland road region asked the opinion of the Lapland regional environment centre. The centre stated in its written opinion that they do not disagree with the outcome of the report.

The third example from the year 2007 deals with the Nuorgram-Niemelä-Polmakjärvi road. The project consisted of the reconstruction of an old bridge inside a Natura 2000 site. This project is still in the planning stage. The screening report of the Lapland road region stated that the bridge is planned to be reconstructed in the same place as the old bridge to save the vegetation. However, it would be necessary to build a temporary detour route for the road during the bridge reconstruction and the site for the planned detour route is the only site in Finland for the *Myricaria germanica* population. Thus 200 m^2 (0.12 per cent of the total population of the Natura 2000 site) of the population would be left under the detour. It was planned to re-plant this part of the population in a new place and re-plant them when the bridge was completed. Thus the effect was seen as not significant for Alpine rivers and their ligneous vegetation with *Myricaria germanica* habitat type. The Lapland regional environment centre has not yet given its opinion on the screening.

The fourth example from the year 2003 deals with the improvement of a road to the Koli Harbour in North Karelia inside the Koli National Park, which is a Natura 2000 site. The improvement was planned to be a 1.5 m widening of the existing road, including bridges and the construction of a new parking lot. The length of the road was planned to be 9.5 km. Project planning started with avoidance of adverse effects on the Natura 2000 site and the North Karelia regional environment centre perceived that an Appropriate Assessment was not necessary. The Savo-Karjala road region chose to carry out a full Appropriate Assessment anyway. The Appropriate Assessment report of the Savo-Karjala road region concluded that there were no adverse effects and the regional environment centre agreed on this opinion. Nevertheless, in a later construction stage, due to the ditching of the parking lot, the waters of the alkaline fen started to flow elsewhere and drying of the habitat started. The road region planned and realized additional mitigation measures in co-operation with the regional environment centre to

save this habitat type. The lesson of the case was that it is very difficult to correctly predict all possible impacts.

The fifth example is a road plan with a very detailed screening report from the year 2002. The project involved the building of a new light traffic bridge alongside the road bridge. The regional environment centre decided that it was necessary for the road region to carry out screening for an Appropriate Assessment because the bridge crossed a Natura 2000 site and noise effects of piling work for the bridge threatened the bird habitats. Screening species by species with mapped nesting places was carried out and a screening report including 22 pages was written. The result of the screening was that a full Appropriate Assessment would not be necessary if the piling work was done in September or October outside the nesting season. It was also noted that the site's importance as a resting place for migratory birds was smaller in autumn than in spring. The North Karelia regional environment centre agreed on this in its written opinion to the administrative road region. However, the screening report was actually as broad and detailed as a full Appropriate Assessment.

The sixth and last example is the only screening case of the chosen examples that lead to a full Appropriate Assessment. The project comprised the construction of a new road to Kilpilahti, one of the largest chemical industry centres in the Northern Europe and the biggest harbour in Finland. It also required an EIA procedure due to its size. In the Kilpilahti area there was only one existing road and the need for another was high because of the risk management and development of the industrial area. An Appropriate Assessment was carried out as a part of the EIA procedure in 2005 – 2006. From the beginning of the planning it was clear that an Appropriate Assessment was necessary because the planned road followed the eastern edge of an active raised bog area of a Natura 2000 site for 400 m. Both screening and scoping stages were negotiated between the Uusimaa road region and the Uusimaa regional environment centre. The Appropriate Assessment was carried out by a consultant specialized in ecological impact assessment. Field inventories were carried out in March – August 2005, during which time a 100 – 200 m wide corridor was examined including surveys of the flying squirrel and butterflies. The surveys were reported in an annex of the Assessment Report (corresponding to EIS in some EU Member States) of the EIA. Also the full Appropriate Assessment was reported as an annex of the Assessment Report.

The conclusion of the Appropriate Assessment was that the adverse effects on the Natura 2000 site were not significant because the affected habitat type was reduced to 0.2 hectares (0.2 per cent of the total habitat type of the Natura 2000 site) and the reduced part was not very representative. As a mitigation measure, the road was planned to be constructed on a pile plate to prevent disturbance of the water balance of the bog. In addition, the affected part did not host any suitable habitats for the Scarce Fritillary butterfly (*Euphydryas maturna*), which was one of the conservation objectives. Therefore, the main conservation objectives were not affected significantly and the official opinion given by the Uusimaa regional environment centre in 2007 agreed with this conclusion.

In addition to these practical examples a wider study reviewing the 50 full Appropriate Assessment cases including the reports and the opinions of the regional environment centres has been completed this year in Finland. The results will be published sometime

in the near future. As the examples described above, the results of the study also suggest that regional environment centres have a crucial role in the Appropriate Assessment process. Their opinions in screening and especially in the scoping stage and in final decision-making not only improved the quality of the assessment but also changed the project planning itself. In cases where the regional environment centre found the Appropriate Assessment report inadequate or adverse impacts of the project significant, the assessment was improved and the project changed or mitigation measures added so that significant adverse impacts would be avoided. Thus in 70 per cent of the studied cases, after several changes and completions, the projects and plans were finally found to be feasible with the added mitigation measures. This part could also be larger because in 14 per cent of the cases the Appropriate Assessment report was found inadequate in the first stage. So, after changes and completions it is possible that 84 per cent of the studied projects and plans could be feasible. This implies that the most impossible or unfeasible cases do not reach the Appropriate Assessment but they are eliminated in the screening phase or even earlier.

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Short Discussion Summary – Presentation of Tarja Söderman

The environment centre and the road authority do not have to agree on a plan, but in practice, their opinion is powerful and important for the project permission.

2.7 Natura 2000 Sites – Practical Experience of Appropriate Assessment in Swedish Road Planning

Speaker: Ass. Prof. Berit Balfors
Institution: Department of Land and Water Resources Engineering,
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State: Sweden

Abstract

In Sweden, the Natura 2000 network consists of more than 4000 nature areas. For each of the Natura 2000 sites a conservation plan has been drawn up, which describes the natural qualities in the area as well as the measures that will be taken to preserve the area, its habitats and species. The legal provisions regarding the protection of Swedish Natura 2000 sites are incorporated in the Environmental Code. According to these provisions, permission is required for activities that can potentially affect Natura 2000 sites.

The protection of Natura 2000 sites plays an important role in road planning. Already in the initial study, which outlines the conditions for the subsequent planning process, the impact of the proposed project on designated areas for nature protections (such as Natura 2000 sites) are identified. When the impact is considered to be significant, a detailed assessment of the road project on the Natura 2000 sites will be made in the Environmental Impact Assessments (EIAs) for the feasibility study and the design plan.

Both the primary analysis in the initial study and the detailed assessment in the subsequent EIAs require sound knowledge on the landscape ecological impacts of the project on habitats and species. Moreover, there is a need to establish a dialogue between the actors involved in the planning process in order to strengthen the quality of the assessment.

In this contribution, Swedish practice regarding the protection of Natura 2000 sites in road planning will be discussed and analysed. The analysis is based on a practical example of a recent road project in Sweden. The example shows the need for a consistent approach for the assessments in all stages of the planning process. Furthermore, there is a need to develop adequate methods and tools that support the quality of the primary analysis in the initial study and Environmental Impact Assessment in the later stages of the planning process.

EIA in Sweden

Regulations regarding EIA and SEA are included in the Swedish Environmental Code (1999), which provides a legislative framework for environmental protection and nature conservation in Sweden.

In Sweden, the basis for environmental and nature protection policies consists of a set of environmental objectives (Table 1). The environmental quality objectives describe the quality and the state of the environment and natural and cultural resources of Sweden which the Parliament judges to be environmentally sustainable in the long term.

Table 1: Sweden's environmental objectives
(Swedish Environmental Objective Council, 2006)

1.	Reduced Climate Impact
2.	Clean Air
3.	Natural Acidification Only
4.	A Non-Toxic Environment
5.	A Protective Ozon Layer
6.	A Safe Radiation Environment
7.	Zero Euthrophication
8.	Flourishing Lakes and Streams
9.	Good-Quality Groundwater
10.	A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos
11.	Thriving Wetlands
12.	Sustainable Forests
13.	A Varied Agricultural Landscape
14.	A Magnificent Mountain Landscape
15.	A Good Built Environment
16.	A Rich Diversity of Plant and Animal Life

Swedish Natura 2000 network

In Sweden, the Natura 2000 network consists of more than 4000 sites. For each of the Natura 2000 sites, a conservation plan has been drawn up which describes the area's qualities as well as the measures that will be taken to preserve it with its habitats and species. The provisions for Natura 2000 are incorporated in the Swedish Environmental Code which considers all Nature 2000 sites as national interests. This implies that activities that can affect a Natura 2000 site require a permit in accordance with the Environmental Code.

Road planning in Sweden

In Sweden, the planning process for the construction of a new road is divided in a number of steps (Figure 1). The first step is the initial study in which the conditions for the subsequent planning process are identified. The main purpose of the initial study is to provide a general baseline, collect information and identify problems and relate to the goals. The initial study comprises an environmental component, but not an EIA. Mitigation measures, effects and consequences are only mentioned briefly and will be elaborated in the further planning steps. The initial study is also a basis for the decision of the County Board on significant environmental impacts.

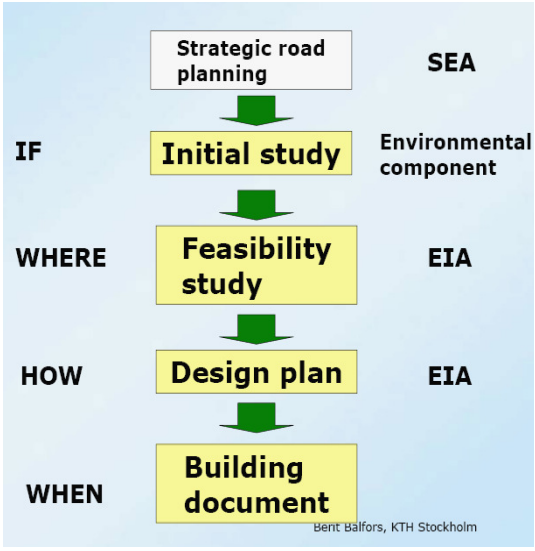

Figure 1: Steps in the planning process for roads (based on SNRA, 2002)

The feasibility study comprises an analysis of alternative locations for the proposed road. As part of the analysis an assessment of the economic impacts and an EIA is carried out. The feasibility study provides the basis for a broad consultation process with authorities and stakeholders. When the feasibility study concerns a major project, it provides a basis for a decision on the political acceptability (permissibility).

In the design plan a detailed description of the design of the project is presented. The design plan includes an EIA in which mitigation measures for the road project are proposed. The design plan is a basis for the decision on the implementation of the project.

Natura 2000 Sites in road planning

The protection of Natura 2000 sites plays an important role in road planning. Already in the initial study, where the conditions for the subsequent planning process are outlined, the impact of the proposed project on designated areas of nature protection (such as Natura 2000 sites) are identified. When the road project is expected to generate significant impacts on the Natura 2000 site, a permit is required. The application for this permit should also involve an Appropriate Assessment. The need for such permit is evaluated by the Road Administration together with the County Administrative Board. Aspects that are considered in this evaluation are the character of the project, the qualities of the area and the anticipated environmental impacts.

The Swedish legislation does not specify at what stage of the planning process the decision for the permit regarding the impact of the road project on a Natura 2000 area should be made. The Swedish Environmental Protection Agency argues that a decision should be made early in the planning process in order to allow a broader discussion on alternative solutions. The Swedish National Road Administration maintains on the other hand that such decision cannot be made until the design stage when detailed information on the impacts of the road is available.

Example: Edeby oak pasture

When a tunnel will be constructed as part of the new ringroad around Stockholm, the Edeby Oak pasture, which is a designated Natura 2000 area, may be affected. The Edeby Oak pasture holds a high number of old oaks and a diverse vegetation. In order to store and transport masses of rock, a harbor will be constructed close to the Edeby area which may affect the nature values in the pasture. In addition, the tunnel that will be built as part of the ring road, may change the hydrologic conditions in the area.

In its feasibility study the Road Administration states that no significant impacts on the Natura 2000 site are expected. The County Administrative Board disagrees and argues in its response on the feasibility study that an Appropriate Assessment should be carried out prior to the decision on the permissibility. Yet, the Road Administration refuses and claims that the activity will not affect the groundwater levels. Furthermore, alternative means of transport (by road) will make the harbor unneeded. Nevertheless, the Road Administration investigated two alternative locations for the harbor and assessed their impacts on the Natura 2000 site (Table 2).

Table 2: Comparison of the impacts on the Edeby oak pasture of two harbor alternatives (SNRA 2005)

Aspects (selection)	**Alt A**	**Alt B**
Distance to border of site	1	2
Main wind direction between harbour and Edeby	1	2
Impact on surrounding areas	2	1
Impact on landscape	2	1
Impact on ancient monuments	2	1
Impact on bird life	2	2

The example demonstrates that authorities made different judgements regarding the expected significant impacts caused by the project. Current practise offers the County Administrative Board a relatively weak position in the discussion on the significance of impacts on Natura 2000 sites. Furthermore, the example shows that the lack of guidance on *when* in the planning process the impacts on Nature sites should be assessed tends to undermine the protection status of the Natura 2000 network. Therefore there is a need for a consistent approach to assess the impacts of road construction on Natura 2000 sites in an adequate stage of the planning process. This requires guidance, methods and tools that facilitate the primary analysis in the initial study and the Environmental Impact Assessment in the later stages of the planning process.

Prediction tools

The integration of nature conservation and biodiversity issues in the assessment requires prediction tools that employ relevant knowledge on the impact of land use changes on fauna and flora. These tools should allow an assessment of the ecological impacts on a landscape level, primarily derived from landscape ecological knowledge. Applying a landscape ecological approach involves that impacts on nature and biodiversity are considered from a network perspective. In addition, assessment tools should allow to predict the effects of development scenarios on vegetation and habitats in different time scales. In this way it is possible to determine the significance of the ecological impacts.

In order to handle the spatial and temporal aspects of land use changes, the application of geographical information systems (GIS) need to be considered to quantify, analyse and visualise the impacts on nature preservation and biodiversity issues. Since a multitude of GIS-based ecological models is available, a selection should be made based on the aim and scope of the study and the context in which the result will be used. Furthermore, the availability and quality of data and expert knowledge, the biodiversity components that are to be modelled, and last but not least the time frame are relevant issues in this matter.

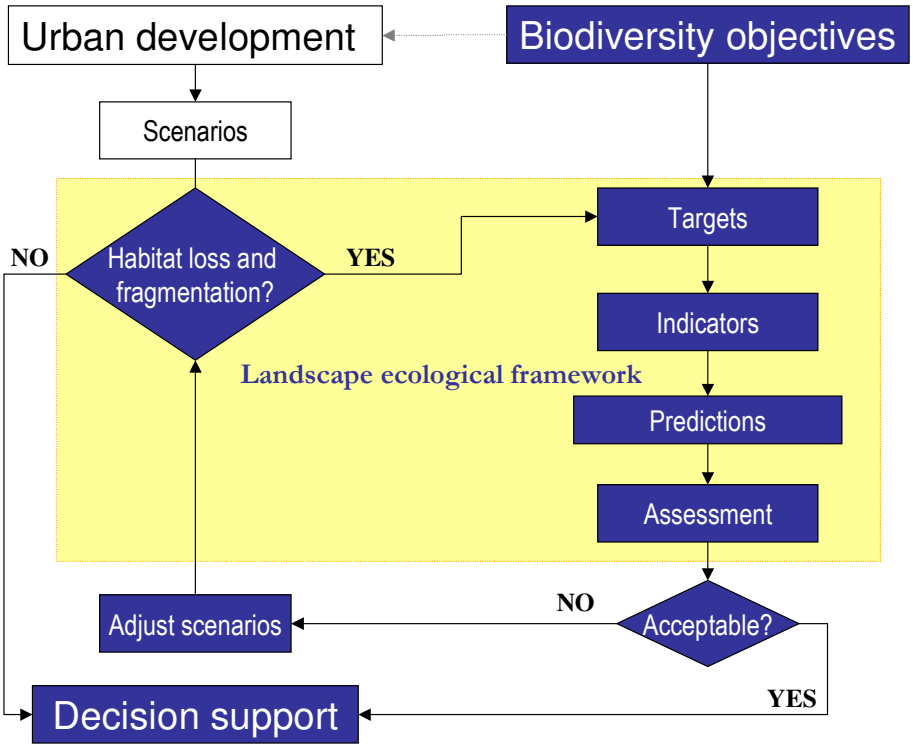

Figure 2: Landscape Ecological Assessment: A tool for integrating nature preservation and biodiversity issues in Environmental Assessments (MÖRTBERG et al., 2006).

In order to predict the impacts of long-term changes in land use, for example road construction, on biodiversity and nature preservation, the concept Landscape Ecological Assessment (LEA) was developed (MÖRTBERG et al., 2006). LEA (Figure 2) is primarily based on landscape ecological knowledge, which also defines the scale of the assessments. A basic assumption in LEA is that biodiversity on a landscape scale can be maintained through the preservation of habitat networks, sufficient for the persistence of assemblages of native species. LEA is designed to provide predictions specified in time and space through the use of GIS. The core components of LEA are scenarios which present relevant alternative future developments, objectives which define the quality of habitat types and indicators which respond to the properties of the landscape.

Conclusion

In assessments, both the primary analysis in the initial study and the detailed assessment in the subsequent EIA, require sound knowledge of the landscape ecological impacts caused by the project on habitats and species. Moreover, establishing a dialogue between all actors involved in the planning process is very important in order to strengthen the quality of the assessment. There is an urgent need for further development of the process and the methods applied in the assessment of impacts caused on Natura 2000 sites by road projects. When dealing with this problem, a landscape ecological approach could be a step into the right direction.

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Short Discussion Summary – Presentation of Ass. Prof. Berit Balfors

Sweden is aiming towards a more holistic approach and a broader perspective, in which the whole landscape is included. With regard to the European Landscape Convention, Swedish authorities are trying to use a landscape ecological framework for deciding on Natura 2000 cases.

2.8 Legal Aspects and the Implementation of Appropriate Assessment in the Slovak Republic

Speaker: Imrich Vozár
Institution: Ministry of the Environment of the Slovak Republic
State: Slovak Republic

In his presentation, Mr. Vozár gave an overview over the Slovak legal system concerning nature protection and Habitats Directive implementation by explaining the provisions of the Slovak EIA Act and Act No. 543/2002 Coll. of Nature and Landscape Protection, referred to in the following as “the Act”.

The Act provides regulations that aim at:

- a favourable conservation status of species, habitats and specially protected parts of nature and landscape - § 5 (4) and (5), (1)
- preventive and corrective measures - § 8 (2)
- obligations to avoid impairments on habitats of European interest - §12, (3)
- differentiated territorial protection:
  - according to §§11 – 16, five levels of protection were established.
  - the first level of protection applies to the whole Slovak Republic, level 2-5 characterize specially protected parts of nature and landscape (the most restrictive level of protection is the fifth).
  - in each level of protection, activities listed in the Act require an approval by the nature protection authority, otherwise they are prohibited.
  - SPAs usually have the first level of protection; when they overlap with other protected areas, for example national parks, they have a higher level of protection (level 2-5)
  - pSCIs have at least the second level of protection or higher (level 3-5).

In the whole country, projects with impairing effects on natural habitats of European and/or national interest require an approval by the nature protection authority. The maintenance and achievement of a favourable status of the landscape is in the interest of the public. Therefore, after prior notice and before mitigation of a project, the nature conservation authority may restrict or prohibit activity that might either cause destruction or damage to nature or the landscape. In § 28 (2) of the Act, the application of Art. 6 par. 3 of the Habitats Directive for SPAs, SCIs and proposed SCIs is regulated. According to § 28 (3) of the Act, Art. 6 par. 4 Habitats Directive is fully applied in SPAs and SCIs approved by the European Commission.

In the Slovak Act No. 24/2006 Coll. Environmental Impact Assessment (EIA Act), an amendment of the old EIA Act of 1994, the directives 85/337/EEC (EIA Directive) and 2001/42/EC (SEA Directive) are implemented.

The Habitats Directive is implemented in the EIA Act as well as in the Act. Only plans listed in Annex 1 of the EIA Act are subject to assessments according to Art. 6 par. 3, 4 Habitats Directive. § 15 of the EIA Act defines that the plan could be allowed by

competent national authorities only in case that conditions of Art. 6 (3, 4) are executed. But not every plans refer to above mentioned, only plans from Annex 1 to Act EIA.

Annex 8 to Act EIA defines activities (projects) which are obligatory liable to be subject to procedure of Environmental Impact Assessment, and if the project is planned on the Natura 2000 site, then the competent national authorities should agree with it only in case that the conditions of Art. 6 (3, 4) are executed. But not every projects refer to above mentioned, only from Annex 8 to EIA Act.

One problem is, that not all projects, which could have significant effects on a Natura 2000 site, are listed in Annex 8 of the EIA Act. For example there is a project, which could have significant effects on a Natura 2000 site and which is not listed in Annex 8 of the EIA Act. According to § 28 (2, 3) of the Act, the regional district of environment decides (on the base of expert organization statement) that this impact on a Natura 2000 site (SPAs, pSCIs), can be important considering to subject of protection this site. It can make a decision, that the project is „an intervention into the area that may cause fundamental changes in the biological diversity, structure and function of ecosystem“. After this decision, the project has to be a subject of an Environmental Impact Assessment.

There are only two possibilities, when the project, which is planned in Natura 2000 site, will be not a subject of an Environmental Impact Assessment (that means when regional district of environment make a decision, that the project is “an intervention into the area that may **not** cause fundamental changes in the biological diversity, structure and function of ecosystem“):

- there is certainty, that the intervention may not cause fudamental changes on Natura 2000 site or
- the intervention is necessary for ensuring care of the Natura 2000 site.

All other projects, about which the regional district of the environment decides that the intervention have to be subject of Environmental Impact Assessment, could be allowed by the competent national authorities only in case, if the conditions of Art. 6 (3, 4) of the Habitats Directive are executed.

Public participation is statutory in both of the above mentioned legal regulations. In case of a public involvement with an EIA, participation in the licensing process is also possible.

Facts on Natura 2000 in the Slovak Republic

The national list of pSCIs, including 382 sites, was approved by the government of the Slovak Republic in 2004. Until the list of sites approved by the EC for the Slovak Republic is completed, according to § 27 (7) of the Act, pSCIs will be treated like SCIs in terms of protection levels and legal consequences of impairment.

The national list of SPAs, including 38 sites (25, 2% of the whole area of the Slovak Republic), was approved by the government in 2003. Their protection is provided according to § 26 (4) of the Act (Nature and Landscape Protection) and the EIA Act. Since SPAs are protected areas, the restrictions to safeguard their conservation are designed individually for them on the basis of their protection ordinances.

Since the Slovak Republic just joined the EU in 2004, the country has had very little experience with Natura 2000 in general, and they have not had any experience with Appropriate Assessments in road planning. Due to the number of protected areas, it is apprehended by the Slovak government that road planning will cause problems for the many Sites of Community Interest in the future.

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Short Discussion Summary – Presentation of Imrich Vozár

The Slovak Republic has no experience with Appropriate Assessment yet, but it is expected that the huge amount of large, interconnected Natura 2000 sites in the country will cause problems for road planning projects in the future.

2.9 Habitats Assessment Procedure for Road Construction Projects in France

Speaker: Charlotte Le Bris & Helène Montelly
Institution: French Ministry of Ecology and Sustainable Development
State: France

The assessment procedure, defined in Article 6 Par. 3 and 4 of the Habitats Directive, has been translated in the French environmental code (Articles L 414-4 to L 414-7 and R 414-19 to R 414-24). The content of the assessment is detailed in the R 414-19 article of the code of environment and in the circular of October 5, 2004.

This procedure aims at preventing the natural environment from any damage without totally and permanently freezing development of those areas. The assessment procedure has to check that the project does not significantly impact the natural habitats or the species present in a Natura 2000 site. In the contrary case, the project must be redefined to avoid such impacts. The project, whether it is inside or outside a Natura 2000 site, whether it is developed by the State, the local communities or by private actors, is subject to an assessment from the moment that an impact on a Natura 2000 site is deemed likely to occur.

It is the responsibility of the developer to make sure whether the project requires an assessment of incidences or not. The assessment targeted on the natural habitats and the species of Community interest having justified the designation of the Natura 2000 site. The assessment is also proportioned with the nature and the importance of the project and adapted to the states of conservation of the Natura 2000 site.

No new procedure of authorisation has been created. The assessment of the incidences is joined to the file of request for administrative authorisation of the project. Moreover, some guidelines on specific topics, such as infrastructures or quarries, were set up to help the actors to carry out the impact assessment on Natura 2000 site. Those documents give advice as well, to follow through the project and to provide the public with complete information.

The concrete example part begins with a quick overview of the French roads organisation, based on the administrative system. The different road developers are the State (for motorways and national roads), counties (for interurban roads) and communes (for rural roads and inner cities network). A national protocol, used for State projects, is a kind of deep collaboration; endeavoured to apply to the other decisional levels.

This specific protocol, between the developer (Ministry of transportation) and the environmental authority (Ministry of ecology and sustainable development), is a formalized working framework, which follows each step of the research and work stage. It presents good administrative practises, timing for the consultation of the environmental authority, the different environmental areas to be dealt with (such as Natura 2000), and methodological references.

Thus, the environmental assessment is a continuous progress since it takes place from the very beginning with feasibility studies, to the end of process, including preliminary designs and tendering documents. At the early stages of a project, Natura 2000 areas are avoided as much as possible. In case of potential impact (direct or indirect), the proper screening arises and a specific assessment is required.

The motorway A 85 « Contournement nord de Langeais » is located 300 kilometres southwest of Paris between Angers and Tours. The progress of studies occurred just before the definition of three special areas of conservation. Therefore no specific impact assessment had been carried out at first. The European community asked for better assessments of impacts on habitats and species and for proper reduction measures. Afterwards, the operator changed the design of the “La Roumer” viaduct during the detailed design and proposed something quite unusual but much more respectful of wildlife, of the alluvial forest and of fish habitats - a pushed bay bridge. A wide range of measures has been taken during the progress of works as well, in order to respect the natural site as much as possible.

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Short Discussion Summary – Presentation of Charlotte Le Bris and Helène Montelly

Public debates on the procedure of Appropriate Assessment concentrate mostly on alternatives and economical aspects rather than on ecological issues. In France, the decision of whether a case is considered complex or simple is made in a case-by-case manner, as found appropriate without special preset criteria.

2.10 Czech system of the Natura 2000 Appropriate Assessment and the assessment of the State Road I/13

Speaker: Dr. Petr Roth & Dr. Jiří Zicha
Institution: Ministry of the Environment of the Czech Republic
State: Czech Republic

In the first part of the presentation, the Czech system of Natura 2000 Appropriate Assessment (AA) according to Article 6 par. 3 of the Habitats Directive was presented.

The legal basis of the AA is established in Act No. 114/1992 Coll., on the Protection of Nature and the Landscape and in Act No. 100/2001 Coll., on Environmental Impact Assessment (EIA). Therefore the AA runs together with EIA/SEA procedure with two principal differences: screening is done by nature protection authorities and the final report is binding due to Habitats Directive requirements. After screening and scoping, the assessment process usually has three following steps: documentation (paid by proposer), opinion (as peer review, paid by EIA authority) and the final report (issued by EIA authority).

According to Czech law, an institute of specially authorized persons has been introduced for the EIA/SEA, who prepare both documentation and the opinion for the authorities who deliver the final report. The requirements for acquiring the EIA/SEA authorization are relatively simple – a university degree and the passing of a special exam. There are currently 525 authorized persons, 361 (68%) of which are engineers - persons who had never heard about ecology. The remainder, about 32%, have not necessarily had an ecology-related education, but could have, for example, a degree in chemistry, geography, teaching professions, etc. Only a small minority of EIA/SEA authorized persons may therefore have any notion about ecology. Thus, these people cannot carry out an Appropriate Assessment because they are unable to make reasonable conclusions. Why not?

To carry out an „Appropriate Assessment“, one has to understand ecological relationships, linkages and characteristics within and among the sites. The aspects which have to be assessed include the implications for the sites´ conservation objectives, the maintenance of the status of habitats and/or species for which the site has been designated, the „target features“, which are diverse habitats and species, i.e. components of ecosystems and their complex relationships with other species, habitats, as well as hydrology, pedology, and sometimes complicated ethological (behavioural) patterns. Secondly, the effect on the integrity of the site, i.e. the effect on functional and (not only) geographical integrity in an ecological sense must also be assessed.

Therefore, the institute of specially authorized persons for Natura 2000 assessment was formally introduced by law in 2004 (Act No. 114/1992 Coll.) and embedded into the EIA/SEA procedure. These persons are fully responsible for their part of the documentation (which is secured by the proponent and done by an authorised person No. 1) and opinion (which exists as an official peer review, done by an authorised person No. 2). To become an Appropriate Assessment authorised person it is necessary to meet requirements regarding education (MSc. or PhD. in ecology and related fields of university degrees where ecology is one of the required exams) and to pass a very difficult examination organised by the Ministry of Environment. The examination has two parts, a difficult written test and an oral defence of a „model

assessment“. Since November 2004 until now, 10 examination sessions were held during which 67 persons applied (some of them even 4 times) and 33 of them finally passed. According to Czech law, there is also a possibility of rescinding the authorization due to great or repeated breaching of the law during the assessment. In one case an authorization has already been revoked. The system seems to work and eliminates the problem of assessments done according to the wishes of wealthy investors or developers promoting even public developments of large extent, e.g. highways, which often stand in conflict with nature protection interests.

In the second part of the presentation, the Appropriate Assessment of State Road I/13 was described as an example of a solution of conflicts among SPA, SCI, species of Community interest and social concerns.

State road I/13 (E 442, the European route Czech Republic – Slovakia) is an important artery along the Ore Mountains (Erzgebirge) and connects all major cities in the northwestern Bohemian coal basin.

It is a historic transportation route stemming from Celtic times, and its shape reflects the main transportation vehicle of those times - the horse and wagon. The most critical part between Ostrov and Smilov, about 13 km long, goes through narrow Ohře river valley, intersecting two villages. The spatial relationships are such that there is no room even for sidewalks along the road. Most of its sections were already modernised except for the one in question. Its current traffic intensity is 6372 cars per day, of which 1390 are lorries. Thus, there is a strong impact on inhabitants of villages lying along and crossed by the road. Therefore the regional government of the Karlovy Vary (Karlsbad) region is solving the difficult situation of local inhabitants - its voters. For social and transportation reasons, the road must be developed outside the villages, straight and substantially enlarged.

There are also other concerns. The spring of the Korunni (Krondorf) mineral water, bottled since 1876, is situated in the area, necessitating strict requirements of water regime protection. Nearby there is also one of largest (state-owned 330 km^2) military training areas in Europe, the Hradiste. The road therefore has a strategic importance from an economic, transportation and militaristic point of view.

However, the river valley and adjacent slopes are part of an area called Doupovske hory (Doupov mountains), which is designated as an SPA (for the population of *Ciconia nigra, Pernis apivorus, Bubo bubo, Circus aeruginosus, Crex crex, Caprimulgus europaeus, Picus canus, Dryocopus martius, Sylvia nisoria, Lanius collurio, Ficedula parva* and their biotopes) and the pSCI (for the following types of habitats: *Ranunculion fluitantis a Callitricho-Batrachion; Festuco-Brometalia; Arrhenatherion, Brachypodio-Centaureion nemoralis; Asperulo-Fagetum; Tilio-Acerion; Alno-Padion, Alnion incanae, Salicion albae;* and the following species: *Barbastella barbastellus, Bombina bombina, Euphydryas aurinia, Myotis myotis, Pulsatilla patens, Salmo salar, Triturus cristatus*). And last but not least, the valley represents a habitat of unique population of Aesculapian snake *Zamenis longissimus*, one of four European isolated sites lying 300 km outside of the current range. This snake is an Annex IV species of the Habitats Directive, a species of special attention according to the Bern Convention and a critically endangered species according to Czech law, for which an action plan was adopted in 2006 and a rescue and management plan is in preparation.

In 2005 the Directorate of Roads and Highways (DRH) delivered a study of seven alternatives of I/13 bypasses as the start of the EIA process. Not one of them was acceptable from the nature protection point of view and therefore a joint meeting among the Ministry of Environment, Karlsbad Region authorities and the DRH was organised. The agreement was to develop a solution acceptable for all stakeholders. Finally five alternative solutions were proposed and assessed in the framework of the EIA procedure, including the Natura 2000 Appropriate Assessment.

The following table shows the results of the Environmental Impact Assessment (1 - best solution, 5 - worst solution, x - not acceptable solution):

Table 1: Results of the Environmental Impact Assessment (1 - best solution, 5 - worst solution, x - not acceptable solution)

Sphere of impact on / Alternative	**L1**	**L2**	**R1**	**R2**	**C**
Healthy risks	2	3	2	2	3
Air and climate	1	2	3	3	3
Noise	3	5	2	1	4
Flora	5	3	3	2	3
Fauna	x	x	3	x	5
Water	5	4	2	x	3
Soil	1	5	2	3	4
Rocks and natural resources	4	3	4	4	3
Scenic view	4	3	2	1	5
Properties and cultural heritage	4	3	1	2	3
Transport	1	3	2	1	2
Total	x 30	x 34	26	x 19	38
Mean value	**x 3.0**	**x 3.4**	**2.36**	**x 2.1**	**3.45**

According to the Natura 2000 assessment, the conclusions were that all alternatives will have a negative impact and only the zero alternative would be without any impact. The R1 alternative is supposed to be the least harmful one because its negative effect on Natura 2000 is not significant. The L1 alternative was assessed as the worst one regarding the environment. Therefore, if taking into account also other nature protection concerns, the P1 alternative remains the best compromise without significant negative impacts.

The current state of affairs is that the preparation of an EIA opinion is in progress and new adaptations are being sought out.

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Short Discussion Summary – Presentation of Dr. Petr Roth & Dr. Jiří Zicha

In the given example, habitat mapping was carried out all over the Czech Republic. Quantitative as well as qualitative methods were applied. The EIA and Appropriate Assessment experts worked together most of the time. It was recommended that the person doing the Appropriate Assessment shall not complete assessments independently, but still should write an independent report about it. Furthermore, individuals carrying out Appropriate Assessments are required by law to carry a license. Licenses are awarded only after a rigorous testing procedure, and the experts are paid according to an individual contract.

In Finland, costs were expected to rise if only licensed experts had been hired to carry out assessments. Therefore the plan to do it the Czech way was abandoned in Finland. But such an apprehended development has not been experienced in the Czech Republic.

2.11 Impact of Karsakiškis Village Bypass Project on Nature and Natura 2000 Sites

Speaker: Rokas Radvilavičius
Institution: Transport and Road Research Institute
State: Lithuania

Karsakiškis village is located in the northeastern part of Lithuania. It is a small village of 211 inhabitants. The largest town in the nearby vicinity is Panevėžys, a centre of the region with 120,000 inhabitants, situated 12 kilometres to the west. The whole region is not rich in natural territories. Large woods surround Karsakiškis to the north and south: 20138,8 ha north and 10542,4 ha south. Karsakiškis is situated on the north bank of the river Lėvuo. River Lėvuo is a small (~10 m wide) natural river, with natural valleys and natural vegetation on the banks.

Road No. 122 runs along the riverside with a pavement width of 6 m. In the village of Karsakiškis, the road crosses the river Lėvuo by an old and narrow bridge. The annual average daily traffic on the road in the year 2005 was varying, depending on the road section, from 5875 vehicles a day to 1331 vehicles a day. The share of transit traffic was 84%.

A high rate of car accidents with human losses as well as unsuitable technical parameters of the road 122 and the bridge made the bypass necessary in the late seventies. The Karsakiškis bypass project was started in the year 1980. Lithuania had no Natura 2000 sites and EIA procedures at that time. The detailed design has already been prepared for the project. According to the project, the bypass should be 10 m wide and should cross the river Lėvuo via a new bridge and run alongside it on the southern bank of the river, on the other side of Karsakiškis village.

Part of the project has been implemented by building the bridge over the river Lėvuo, and a short part (1,5 km) of gravel road section has also been built. As the building works have been frozen due to the lack of funds, the land was expropriated in a 1990 land reform. A 30 m wide and 5,3 km long corridor of land was reserved for the project as state property.

The project had been renewed in 2005 after confirmation of the EIA programme. No other alternatives of the project had been analysed together with the old one.

The Special Protection Area (Birds Directive) – “Žalioji giria” (14173 ha) is located about 1 km to the north of the project. It was confirmed in 2005 as a territory important for the protection of the Black Stork (*Ciconia nigra)*, Honey Buzzard (*Pernis apivorus)* and Eurasian Pygmy Owl *(Glaucidium passerinum)*. Additionally, Karsakiškis is situated in the gap between the woods which are a 33915 ha potential Site of Community Interest (Habitats Directive), designed in 2005 for the protection of the lynx. The project cuts away 4.4 ha (0,01 %) of the total Natura 2000 territory.

Apart from the close proximity to the existing and potential Natura 2000 territories, the projected bypass crosses several territories, which meet the criteria, but are not yet protected as part of Natura 2000 network.

One territory crossed by the bypass is a grassland area that meets the criteria for Lowland hay meadows *(Alopecurus pratensis, Sanguisorba officinalis)*. The area of this particular grassland is about 3 ha; it is isolated by the river and small forest patches. The planned bypass would destroy one third of it. The minimum area for a stable survival of this kind of grassland is about 1 ha. This kind of area needs constant human

intervention for its survival – cutting the grass at least once a year. Due to a constantly growing agricultural intensity, not many of this type of area is left in Lithuania, and almost extinguished in Europe. Only small, isolated natural grasslands, which are unsuitable to be incorporated in big industrial farmlands, have a possibility to survive.

Another area, protected by the Habitats Directive, but not incorporated in Natura 2000, is an approximately 100 ha complex of artificial ponds, suitable for amphibian and insect life. Experts found numerous species including: the Smooth newt (*Triturus vulgaris)*, the Great crested newt *(Triturus cristatus),* the Common toad *(Bufo bufo),* the Common frog *(Rana temporaria),* the Edible Frog *(Rana esculenta)* and numerous species of protected insects, including *Keroplatus tipuloides, Leucorrhinia albifrons, Euphydryas maturna* and *Leucorrhinia pectoralis*. The projected bypass crosses just one of the ponds, increasing pollution possibility and crossing the amphibian migration path.

The river Lėvuo valleys are natural valleys with changing natural vegetation and river-curving systems having numerous complexes of different degradation river washes. Part of the forest, situated close to the river, is assigned as a woodland key habitat – deciduous forest with washouts, spring let, steep banks and grasslands. The river itself is important for the protection of migrating fishes such as *Vimba vimba*.

The whole projected bypass, besides its significant impact on potentially protected areas, in conjunction with the old road, frames ~5 km of natural valley river, rich in biodiversity.

The decision-makers gave a negative response to this project because of its significant effects on potentially protected areas/species and a lack of alternatives, but the public and the contracting authority protested this verdict, since other alternatives wouldn't be cost effective and would be hard to achieve technically. Both parties are currently trying to reach a compromise in this extraordinary project.

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Short Discussion Summary – Presentation of Rokas Radvilavičius

Potential Natura 2000 sites are always included in the Appropriate Assessment in Lithuania, since the list of Sites of Community Interest has not yet been officially approved by the EC. This could cause problems when it comes to opposing interests, because especially then the actual legal status of an area is crucial to conservation.

2.12 Practical Experience of Habitats Assessment in Slovenia

Speaker: Vesna Kolar Planinšič & Tina Klemenčič
Institution: Ministry of Environment and Spatial Planning of the Republic of Slovenia & Institute of the Republic of Slovenia for Nature Conservation
State: Slovenia

Practical experiences in Slovenia are presented with emphasis on the strategic level and implementation of the Directive 42/2001 on the assessment of certain plans and programmes on the environment in relation to the Council Directive 92/43 on the conservation of natural habitats and of wild fauna and flora. According to the directive, all plans and programmes which have been determined to require assessment pursuant to Council Directive 92/43/EEC of May 21st, 1992 on the conservation of natural habitats and of wild flora and fauna, are likely to have significant effects on the environment and should as a rule be subject to a systematic environmental assessment. Slovenian implementation practice is presented as well as different infrastructure plan examples.

Implementation of the Directive 2001/42 of the assessment of the effects of plans and programmes on the environment in relation to the Directive 92/43 on the conservation of natural habitats and of wild fauna and flora in Slovenia

Slovenia implemented both directives with the Environment Protection Act and Nature Conservation Act as well as with decrees on an environmental report, Natura 2000 and rules on Habitats Assessment. The system for road planning is based on the principle of assessing the effects in a very early stage in the phase of finding corridor alternatives.

Strategic Environmental Assessment also includes screening for Natura 2000 sites. The environmental report includes a Habitats Assessment report as a separate part of the complete report. The Environment Protection Act defines the type of plans and programmes requiring Strategic Environmental Assessment. These are plans that are adopted on the basis of the act by a competent state or municipality body which deals with spatial planning, water and forest management, hunting, fishing, mining, agriculture, energy, industry, transport, waste and waste waters management, drinking water, telecommunications and tourism. The environmental report needs to be prepared if a plan requires an Environmental Impact Study or contains or is likely to impair a special nature protection zone, or if there are other environmental reasons.

The responsible authority for implementation and control of all stages of the assessment as well as reporting is the Ministry of Environment and Spatial Planning. The Institute of the Republic of Slovenia for Nature Conservation gives binding opinions: in the screening phase, in the environment report control and evaluation of the acceptability of the plan. The scoping phase is structured openly and provides possibilities for cooperation.

Screening as the first step in the process is finished by the decision act. The whole Strategic Environmental Assessment process is finalised by the final decision of the Ministry of Environment and Spatial Planning.

The possibility of overlapping public interests according to the Habitats Directive is prescribed by the Nature Conservation Act, but it has not yet been used.

Experiences on Habitats Assessment for road construction in Slovenia

Slovenia has 286 Natura 2000 sites covering 35, 5 % of its territory, so optimisation methods and Appropriate Assessment of alternative solutions present an important environmental matter. Since July 21st, 2004 the SEA and Habitats Assessment have been applied to more than a 100 different plans and programmes per year. Fifteen road plans have been in the process of assessing in the period of 2004 till 2007. Slovenia is finalising the motorway axis and starting with some additional connections for regional coherence.

Some plans are in the scoping phase, some are already in the phase of environment report preparation or decision-making. Slovenia has some experience with Habitats Assessment as well as with other spatial plans such as municipal land-use plans, with a collection of some case studies.

The directive's implementation is based on the process of integrating the environmental requirements into the plan. The important part is to seek alternative solutions and to reduce the environmental risk caused by the project or plan. The process is open and transparent and all decisions are presented in the Internet and in newspapers. The period of public involvement is 30 days.

The overall method for the implementation of the Strategic Environment Assessment in connection with Habitats Assessment has been prescribed by law, but different methods are used for assessment of plans and programmes (GIS, matrix based on qualitative and quantitative criteria, expert opinions, specialist workshops, etc.).

Habitats Assessment methods are used for assessing the effects of road plans on protected areas (national, regional and landscape parks), small-protected areas (nature reserves, strict nature reserves, nature monuments) and Natura 2000 areas (SPA, pSCI). The main criteria for assessment and evaluation are the present distance to the project, ecological status and vulnerability of the occurring species, connection of the populations, existing fragmentation etc.

The quality of environment reports has been controlled by independent experts until April 2007. The Ministry of Transport, which is responsible for roads, has chosen them from a special list prepared by the Agency of the Republic of Slovenia. After checking the quality control report, the environment report and plan are presented to the Ministry of the Environment and Spatial Planning to enable them to decide on the approval.

The case of Povodje-Jeprca is presented as a positive case of Habitats Assessment concerning timing, process methodology and the positive result of choosing the alternative without negative effects on Natura 2000 sites/species.

The role of the Institute for Nature Conservation, Habitats Assessment Guidance and practical infrastructure examples

The Institute of the Republic of Slovenia for Nature Conservation is a professional national institution with the mission to produce high quality scientific work to protect and conserve the natural environment. The work is based on seven regional units that cover the entire country and a central unit as a supportive and integrative element. The role of the Institute of Spatial Planning and Appropriate Assessment is to record and evaluate sites of natural value, to prepare nature conservation guidelines and provide expert opinions at every stage of the process in Strategic Environmental Impact Assessment. As a preparation of these expert opinions, guidance for experts has been composed in 2006.

A handbook for the preparation of expert opinions in the process of Appropriate Assessment of plans shows a summary of European and Slovenian legislation referring to SEA and AA. It describes in detail the process of assessment and the role of IRSNC. A practical example of a gas pipeline project is shown, presenting a step-by-step approach to the screening stage of the Appropriate Assessment. The expert opinions have been analyzed and have also been presented in the handbook.

Three examples of detailed plans of national importance were presented. In the case of the gas pipeline Trojane - Vodice project, the speakers explained the process and approach to the screening stage, which is based on a geographical information system and knowledge about the ecological demands of the species or habitat types. Ecological demands in this sense include feeding, nesting habitats, winter resorts etc., as well as other needs that are required to conserve the favourable status of a species or habitat (water regime, silence, lighting, temperature…). It is important to study the project's effects in relation to the ecological demands of the species, which is best achieved if one follows the "case-by-case" principle.

The highway project Koper – Dragonja shows the process of choosing between alternatives. Each alternative is studied concerning road construction effects and ecological demands of the species present in the area. The chosen alternative had the least adverse effects, because it was planned to follow existing paths outside the area of special natural value.

The third case showed an example of mitigation measures in the military site Mlake. In order to conserve very important parts of *Molinia* meadows in this area, sod was dug out and transported to a prepared area nearby. Those transported meadows are in a very good condition today, with *Molinia* growing lush in its new environment.

Conclusion

The Habitats Assessment is an important tool within the Strategic Environment Assessment process in Slovenia. Positive examples in looking for alternative solutions with the Habitats Assessment shows that the damage within the final plan is reduced significantly. Cases differ, but some can be seen as good methodological examples.

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Short Discussion Summary – Presentation of Vesna Kolar Planinšič and Tina Klemenčič

In Slovenia, cumulative and transboundary effects are considered in the screening stage when it is decided whether an Appropriate Assessment has to be carried out. The definition of the term "plan", for example, differs from that in Germany, where road schemes for the whole country are plans and therefore assessed. This is not the case in Slovenia, where plans are considered political programmes.

2.13 Road Planning and Natura 2000 Sites: Experience in Ireland

Speaker: Dr. Julie A. Fossitt
Institution: National Parks and Wildlife Service, Department of Environment, Heritage and Local Government
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Ireland has experienced unprecedented economic growth and development pressure over the last decade. This has included major investment in transport infrastructure, particularly the provision of new roads. The existing road network is currently undergoing extensive improvements, and most major inter-urban routes are in the process of being upgraded to motorway or high quality dual carriageway. Of the 96,000 km of roads in Ireland, there are over 5400 km of national roads, made up of National Primary and National Secondary roads; the remainder are Regional or Local roads. The current road building programme involves a total of about 160 schemes, of which a small number are completed, while the majority of schemes are either under construction or going through the planning process. The allocation of funds for national roads in 2007 alone amounts to €1.53 billion, and will allow for the completion of nine schemes with a combined length of over 100 km, and the commencement of a further seven schemes with a total length of 215 km.

Improvements to the road network in Ireland are essential to deliver the efficient movement of increasing volumes of traffic, to support a competitive economy, and to improve safety for road users and quality-of-life for communities in heavily congested cities, towns and villages. Road development is not occurring in isolation, however, and there are extensive additional pressures on the environment, including Natura 2000 sites, from the growing economy and population, and from the construction, energy and industrial sectors. It is a major challenge for the various competent authorities to deliver the necessary development and associated services and infrastructure while at the same time meeting the requirements and obligations of EU and national legislation, particularly in respect of environmental protection.

In terms of nature conservation, Ireland's protected area network is in its infancy. Apart from State-owned Nature Reserves and National Parks, designation and legal protection of sites is a recent development, dating from after the transposition of the Habitats Directive into Irish law in 1997. Ireland now has about 420 candidate SACs with a total area of about 1.1 million ha, and about 140 SPAs, although boundaries of the latter are currently under review. The existing SPAs overlap with and are generally a subset of the candidate SACs at present but new SPAs are being selected for certain Annex I bird species. Primary responsibility for implementing the Habitats Directive lies with the National Parks and Wildlife Service (NPWS) of the Department of Environment, Heritage and Local Government. Establishment of the Natura 2000 network is happening concurrently with the development boom, including the planning, design and construction of numerous major road projects.

The road authorities in Ireland are the NRA (National Roads Authority) and the Local Authorities (County and City Councils): the former has a strategic and supervisory role at national level, while the latter are usually the project proponents at individual scheme level. The NRA was established under the Roads Act, 1993, to secure the provision of a

safe and efficient network of national roads, and is responsible for the planning and supervision of construction and maintenance of national roads. The current programme and priorities for road building were determined by the National Road Needs Study, published by the NRA in 1998. Local Authorities are the statutory road authorities and, among other things, are responsible for undertaking detailed planning of individual road projects, and for compliance with legal and procedural requirements. In order to promote greater efficiency and coordinate the planning and delivery of road schemes, the NRA and relevant Local Authorities have come together in 13 National Road Regional Design Offices around the country. At the planning and construction stages, Local Authorities retain the services of consulting engineers and other sub-consultants, including ecologists, to plan and design the new roads, and carry out surveys and assessments in line with legislative requirements.

Since 2001, the consent authority for new road developments, including the compulsory purchase of the necessary lands, is An Bord Pleanála, the Planning Board, an independent statutory body that determines certain planning decisions, including appeals.

According to Irish law[1], the Article 6 assessment procedure for new roads and other major developments is delivered through statutory EIA[2]. The outcome of EIA is the preparation of an EIS (Environmental Impact Statement), and this is submitted to An Bord Pleanála as part of the application for development consent in the case of a road. Accordingly, the Appropriate Assessment is contained within the EIS, and may or may not appear as a separate or distinct report within that document.

Prior to completion of the EIS, however, the planning and design of a new road scheme passes through a number of stages to determine the optimal alignment from environmental, economic and other perspectives. Three key road project management phases are identified in the NRA's (2004) *Guidelines for Assessment of Ecological Impacts of National Road Schemes*[3]:

1. Constraints Study,
2. Route Selection Study, and
3. EIS of the preferred route.

The first two stages focus on avoidance of impacts and consideration of alternatives, both of which are critically important from EIA, Article 6 and COST-341[4] perspectives but are considered as non-statutory elements of EIA by the NRA.

At the Constraints Study stage, all features of international to local ecological importance or sensitivity within or near a given area are identified and evaluated based

[1] The European Communities (Natural Habitats) Regulations, 1997, specify that an Environmental Impact Assessment in respect of a proposed development shall be an Appropriate Assessment

[2] EIA = Environmental Impact Assessment in accordance with Directive 85/337/EEC, as amended

[3] These and other environmental and ecological guidelines are available for download (in English) from the NRA's website: www.nra.ie

[4] TROCMÉ, M. (ed.) 2002. COST 341. Habitat Fragmentation due to transport infrastructure: the European review. European Commission, Brussels.

on desk study, including collation and review of available data and information, and possibly some limited field survey. Route corridor options are then developed taking cognisance of ecological and other constraints. Strong emphasis is placed on avoiding impacts on Natura 2000 sites.

The Route Selection Study stage involves a comparative evaluation of the likely ecological impacts of a number of route corridor options (up to 1 km wide), and is based primarily on desk study and targeted field survey. The scope and detail of the ecological surveys required depends on the issues that arise, including whether Natura 2000 sites are likely to be impacted by one or more route options. This stage is seen as the single most effective means of avoiding or reducing ecological impacts as there is latitude in the ultimate choice of route corridor, and in the alignment of the route within that corridor. Also, as the level of knowledge about the ecology of the area grows, so also does the level of knowledge about other potentially inter-related topics such as hydrology or hydrogeology, thereby providing a stronger basis for determining the potential for indirect effects on Natura 2000 sites.

The NRA guidelines require that all sites with nature conservation designations, including Natura 2000 sites, within the study area, and within 10 km of the study area boundaries, are identified at Constraints and Route Selection stages. The likelihood of direct or indirect impacts must be determined.

To promote consistency and objectivity in the approach at each of the above stages, the NRA guidelines present a *Site Evaluation Scheme* and a matrix of *Criteria for Assessing Impact Significance*. Sites or other ecological features are rated according to a five-point scheme from A (internationally important [5]) to E (low value, locally important). On the basis of the site rating and the extent of the likely impact (temporary or permanent impact on a large or small part of a site), a predicted impact level is determined on an eight-point scale ranging from ‘severe negative’ to ‘major positive’. Any likely impacts on a Natura 2000 site are rated with impact levels of ‘severe negative’ or ‘major negative’. While this does not constitute Article 6 screening, it is finding that significant impacts are likely to occur, or cannot be ruled out, and is acting as a trigger for requiring further survey and assessment (1.) to assist in the choice of preferred route corridor or alignment, and (2.) to make more detailed comparisons of possible alternatives.

The EIS for the preferred route is prepared in line with the requirements of the EIA Directive, and relevant guidance, including that from the NRA (2004), and the Environmental Protection Agency (EPA 2002[6], 2003[7]). The objective is to undertake sufficient assessment to identify and quantify any significant impacts on the environment likely to result from the road’s construction and operation, and to devise and specify the necessary mitigation measures.

[5] A-rated sites include all Natura 2000 sites, and any sites that would qualify for designation as Natura 2000 sites

[6] EPA (Environmental Protection Agency) 2002. Guidelines on the information to be contained in Environmental Impact Statements. EPA, Wexford.

[7] EPA (Environmental Protection Agency) 2003. Advice notes on current practice (in the preparation of Environmental Impact Statements). EPA, Wexford

The NRA guidelines require that there is consultation with relevant statutory bodies, including the Department of Environment, Heritage and Local Government (incorporating NPWS) at the EIS stage and during earlier project management phases. While the need for Article 6 screening is not stated explicitly, consideration and assessment of the likely significant impacts of the scheme on Natura sites is addressed as a priority within the overall suite of ecological issues.

Consultation provides the opportunity for Article 6 screening to occur, and for the detail and scope of ecological and other surveys and assessments to be determined, discussed and agreed.

There are criticisms of the approach in Ireland in respect of Article 6 requirements. Effective screening is difficult prior to the choice of the preferred route as the project is not adequately defined at the earlier stages. Even at the EIS stage, full project details are not available. A road is progressed as a specimen design to the consent stage, and detailed design follows when the scheme has approval. Screening and scoping are difficult because of current gaps in baseline information on the extent and distribution of annexed habitats and species locally and nationally, and because of gaps in the extent of knowledge about the likely impacts of road projects on habitat structure and function, and on species. Further complications arise when there are changes to the Natura 2000 network during the project-planning period, as is the case with new or extended sites.

The ‘in-combination’ or cumulative impacts are difficult to determine and assess; a road takes many years to plan and design and it depends on what other plans, projects or issues are pertinent at any given time. This is a particular problem around rapidly expanding towns and cities being served by new roads, where there is much permitted development that is not yet completed or operational, or where construction has not even commenced. New roads bring additional development, initially as a result of quarrying activity or surplus material disposal and, later, as a result of new residential and commercial development. The extent of planned new development that is not yet proposed is largely unknown.

The Appropriate Assessment is contained within the EIS and is not publicly available until the EIS is submitted to An Bord Pleanála for approval. EIA is a dynamic and iterative process where information gathered through surveys and assessments is used to guide the planning and design of the proposed road. It has a much wider remit than assessing the significance of impacts on Natura 2000 sites. If the conclusion in the EIS is that there will be adverse impacts on the integrity of a site, it is not possible to revert to stage 3 assessment of alternative solutions without rejecting the entire EIS.

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Short Discussion Summary – Presentation of Dr. Julie A. Fossitt

Since the Habitats Directive aims to protect the species and habitats listed in its annexes, one has to know how to deal with new information about occurrences outside already protected areas. Newly registered species seem to be less of a problem to protect than habitat types, because it is not easy to upgrade the list of Sites of Community Interest, even if you can prove that there is a habitat type listed in the annexes of the Habitats Directive.

3 SUMMARY OF GENERAL DISCUSSIONS DAY 1 AND DAY 2

To overcome problematic situations when handling the Habitats Directive and Appropriate Assessment, the training process is extremely important. A lively **exchange between the Member States,** with their different environmental law situations and structures could be very informative and fruitful for every country and its own individual development. The work of the European Commission to help in these matters is sometimes seen as unsatisfactory by some of the Member States.

One statement during the discussion was that besides asking for support of the EC, one could also address the scientific working groups directly in order to solve problems on a more informal level. In the discussion, participants expressed that the Member States should work together more closely to enable the European Community to benefit from knowledge exchange. This could help to avoid problems and mistakes and to deal with critical situations in each individual country. To achieve this, for example, a catalogue of good examples could be published online by reviving a former project for an international internet-based exchange platform under the patronage of the European Commission.

It is a challenge for all practitioners to **establish criteria for improving assessment methods** by developing suitable instruments for tasks ranging from gathering data on species behaviour to coping with global climate change and setting examples of “best practice”. It was noted that there is an urgent need for a more holistic approach to landscape with regard to Appropriate Assessments. Although this requires a huge amount of knowledge and understanding, judging the ecological integrity of a site correctly is critical to safeguarding its functions. Traditional screening methods seem to be too unidirectional. They often “divide everything into pieces” and then analyse the different aspects of landscape ecology in segments, rather than sufficiently regarding the interactive feedback mechanisms within whole ecosystems.

An essentially needed tool appears to be **monitoring** the project itself, as well as the undertaken measures for longer periods of time in order to ensure their effectiveness and to allow modifications if necessary.

Another important tool might be the **participation of the public**. This could be controversial because of the lack of familiarity with the concept and goals of Natura 2000 on the part of the public, and in consequence a lack of understanding why the assessment is necessary in the first place. As a solution, it was suggested to involve the public at an earlier planning stage in order to give them an idea of the whole issue in concern. Such public involvement could take place already during the Strategic Environmental Assessment (SEA) or at the screening stage of the Environmental Impact Assessment (EIA).

When applying the **precautionary principle**, the **significance of effects** is found to be essential. Significance must be judged correctly, which is no easy task, and one can hardly be completely certain of the results. Although it is disconcerting to have a remaining amount of uncertainty, planning can only be done on the basis of “best scientific knowledge”. Conclusively, if there is any doubt whatsoever that significant impacts can be excluded, an Appropriate Assessment should definitely take place.

Finding alternatives for a project harmful to the environment is considered the best way of avoiding impacts, and the **screening phase** provides a good opportunity to do so.

If this cannot be achieved and a significant impact cannot be ruled out, mitigation measures must be designed in the Appropriate Assessment.

There is a problem of **distinguishing clearly between mitigation and compensation measures** in many Member States due to various reasons such as different responsible authorities as well as unequal definitions and the use of the applied terms or measures. Thus, the term “project” can be defined differently and the composition of measures may vary as they can be called, for example, “compensating” in Austria or “coherence keeping” in Germany. As a general formula, one could state that mitigation takes place when negative impacts can be avoided, and that compensation is necessary if somewhere nature or one of its components is impaired.

In any case, following the Habitats Directive guidance papers of the EC is highly recommended.

Another central discussion point in approaching assessments is the use of **quantitative versus qualitative criteria**. Opinions split between the different countries. Finland, for example, tries to mainly apply qualitative criteria. They admit that threshold values are tempting to use, but are wary of relying on such methods or data exclusively, as there is a great risk of neglecting ecological connections and interactions. Additionally, quantitative criteria appear to be less flexible. Others believe that quantitative approaches are easier to use and handle, especially when debating with the public. A qualitative approach might also be useful during early planning stages, while integrating quantitative methods becomes helpful as the planning goes into detail. Some participants found that the approaches are sometimes difficult to identify as qualitative or quantitative (e. g. distance values). Therefore a combination of both quantitative and qualitative criteria might be the best way so that nothing is missed in the analysis.

As some examples from the workshop showed, different methods are employed to **improve the quality of assessments**. A notable example came from the Czech Republic, where the licensing of Appropriate Assessment experts by the authorities is required before they can perform an assessment. In Ireland, for example, experts are required to have an official license from the authorities to carry out surveys on Natura 2000 sites. Such licenses are necessary in order to avoid disturbing sensitive species and their habitats. As one has to deal with corruption or simple carelessness in this matter, licensing is only effective if the authorities inspect the assessment results very carefully and thus safeguard good practice.

There was a discussion as to whether licensing for EIA decision makers could be helpful to overcome the payer-planner dilemma. As planners are employed by the project’s proponent, the integrity of their work is sometimes compromised. It is suggested that part of the Czech system, the expert meetings for example, could be adopted in other member countries.

Implementation models of the Habitats Directive are very diverse in the European Union, and a broad debate on simplifying planning processes continues. Outlining a way of how the directive works best, and the possibility of procedural integration might be solutions was also a subject of the workshop discussions.

Several participants expressed doubts as to whether a general guideline could be drawn up based on individual cases, which allow for a diversity of situations concerning assessment methods and needs.

The success of a procedure in which SEA, EIA, and Appropriate Assessment are carried out in an integrated manner depends on the relationship between the different steps required for each assessment, while combining those steps that they have in common. A lot of double effort could be spared if the procedures are integrated in a proper way.

For example, it can be concluded from Belgium's five year experience with combined assessment that the main problem appears only to be studying the alternatives intensively enough. Therefore it is recommended that the integration of the different assessments should occur at the strategic level in order to combine several steps as appropriate modules, without necessarily unifying the whole of the tasks. Depending on the situation, the modules could be combined according to the special needs of the particular case, while the benefits from simplifying the process would still remain.

Summing up the **similarities of the participating Member States**, first of all one can say that all Member States rely on the same EU institution for guidance and expert opinions. The precautionary principle is generally applied by all Member States. Screening is used as an instrument to identify the main impacts of a plan or project and to determine mitigation procedures to rule out significant impacts. When dealing with the question of "best practice" examples, it is agreed that a good screening requires solid baseline information and data collection. Another similarity in the Member States is the problem of identifying the significance or compatibility when dealing with different impact factors.

Among the various **differences** are the approaches for determining significant impacts and the timing of the screening and Appropriate Assessment procedures, as well as the monitoring of sites. Initial data sources and data collecting methods differ in the Member States (e.g. new database in the Netherlands, GIS engineered ecological modelling in Sweden).

Multistage assessment is another topic where opinions and practices split between the Member States, ranging from the rejection of a full Appropriate Assessment (single-stage comprehensive screening in the Netherlands) up to taking additional assessment measures (legal requirement of official opinion or "quality review report" in Finland).

4 REMAINING QUESTIONS

One problematic question is the issue of conservation objectives, especially with regard to their changing nature. Sometimes conservation objectives cannot be met due to changed circumstances, as caused by storms or floods for example, and sometimes they are found to be insufficient in ensuring the site's sustainability and good condition. Regarding issues of climate change, this gets even more complicated.

During the discussions, concerns arose as to whether fixed objectives for a designated site are too inflexible to meet the challenges of future landscape development, as is for example repeatedly noted during public participation in the Netherlands. As the Habitats Directive is based on designating sites and specific conservation objectives for them, this matter could not be addressed further in the workshop.

The consideration of pre-existing cumulative effects as well as unpredictable impacts during planning and the realisation of new projects are seen in differently by participants.

Defining clear conservation objectives and developing further criteria for habitat and species priority statuses is also considered to be in need of improvement.

The distance dilemma, as presented in cases from Finland and the Netherlands, forms another unsolved matter. Sometimes, it is not possible to say for sure at which point the proximity to Natura 2000 sites may impair them significantly. Furthermore, the timing dilemma remains in terms of finding out at what time screening, assessment and the granting or denial of permission is appropriate.

5 CONCLUSION

The participation of representatives from many different EU Member States and a large variety of examples shown in the presentations allowed for a lively exchange about assessment practice of plans and projects significantly affecting Natura 2000 sites according to Art. 6 par. 3 and 4 of the Habitats Directive. On the basis of different experiences with carrying out Appropriate Assessments and screening procedures, similar problems and possible solutions were discussed. As a conclusion, one can say that working together and exchanging knowledge is crucial for the improvement of handling the Habitats Directive and Appropriate Assessments in European countries. Therefore, it is agreed, that the European exchange of experience on assessments according to the Habitats Directive is desirable and should be continued in the future.

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