INTEGRATED BIODIVERSITY IMPACT ASSESSMENT

STREAMLINING AA, SEA AND EIA PROCESSES

BEST PRACTICE GUIDANCE

EXECUTIVE SUMMARY

Prepared by

Ainhoa González
Tamara Hochstrasser
John Fry
Paul Scott
Peter Carvill
Mike Jones
Berna Grist

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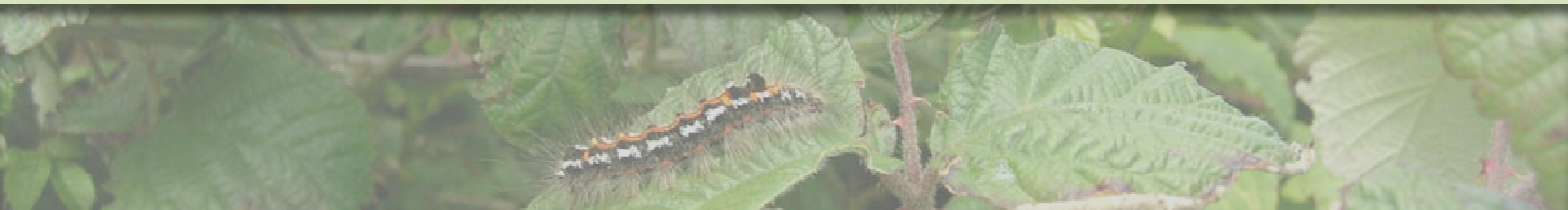

EXECUTIVE SUMMARY

1. Introduction

Integrated Biodiversity Impact Assessment (IBIA) can be defined as a practical and systematic methodological framework for biodiversity impact assessment that integrates SEA requirements with AA for plans and programmes and EIA with AA for projects. Where relevant, IBIA also addresses biodiversity-relevant requirements of the Water Framework Directive (WFD), the Flood Risk Directive (FRD) and the Environmental Liability Directive (ELD). The framework amalgamates assessment processes to enhance the congruence and efficiency of legal, administrative and operational processes. It is envisaged to coordinate efforts; optimise time and resources; reduce/avoid duplication of efforts by improving communication channels and data sharing and enhance cumulative effects assessment. As such this guidance is complementary to other guidance on approaches and specific requirements associated with SEA, EIA and AA. An integration and improvement of procedures is needed to achieve best results for the protection and conservation of biodiversity.

The IBIA guidance aims at informing practitioners, plan/project proponents and consent authorities in integrating the requirements of SEA, EIA and AA in order to streamline biodiversity considerations. IBIA should not be seen as a replacement of existing processes but rather as a framework for coordinating them and for promoting best practice in biodiversity impact assessment.

2. Opportunities for Integrating Biodiversity Impact Assessment

AA, SEA and EIA have unique but complementary objectives and emphasis in biodiversity impact assessment. AA focuses solely on the impact of plans, programmes and projects on the discrete European sites that form the Natura 2000 network, with specific attention to their qualifying interests, conservation objectives and site integrity (Figure 1). In contrast, SEA and EIA have a wide environmental focus, encompassing the assessment of potential impacts on habitats and species within and outside European sites, examining the overall implications for biodiversity (including potential secondary impacts associated with changes in water, soil or climatic conditions, for example).

SEA	EIA	AA
Assessment of potential impacts of certain plans and programmes on the environment; informs decision-making	Assessment of potential impacts of certain projects on the environment; informs decision-making	Assessment of potential impacts of proposals on European sites; determines decision based on the precautionary principle
Potential short/long-term, direct/indirect, synergistic and cumulative effects on a range of environmental factors, including flora, fauna and biodiversity and their inter-relationship	Potential short/long-term, direct/indirect effects on a range of environmental receptors, including flora and fauna	Potential short/long-term, direct/indirect and in-combination effects on conservation interest, objectives and site integrity of the European sites only

Figure 1. Comparison of main legal and procedural differences between SEA, EIA and AA.

SEA and EIA require specific consideration of flora, fauna and, in the case of SEA only, biodiversity. In many instances, information obtained in EIA or SEA is of importance in carrying out AA (e.g. hydrological and geophysical conditions and water quality) and, given the essential interrelationship between such

impacts on the physical environment and impacts on biodiversity, provide information that will better inform the conclusions of AA. Therefore, an opportunity exists to integrate SEA with AA at plan/programme level and EIA with AA at project level, and thus provide a more holistic biodiversity impact assessment.

3. Proposed Methodological Framework for IBIA

The legal and procedural requirements of the SEA, EIA and Habitats Directives are commonly fulfilled through a series of methodological steps undertaken during plan/programme-making or project design and consent processes. The IBIA methodological framework integrates such legal and procedural requirements of each of the SEA, EIA and AA processes combining them in a practical and systematic process. This is achieved by grouping/correlating critical methodological stages and merging their requirements in relation to scope, scale and detail in order to ensure legislative compliance and timely communication (Figure 2). The IBIA methodology is supported, where possible, by spatially-specific data and GIS techniques.

The IBIA process is initiated by AA as, under the Habitats Directive, it has statutory power to withhold consent if it is determined that the proposal (i.e. plan, programme or project) has the potential to significantly impact on the integrity of Natura 2000 sites or if such potential for significant impacts cannot be ruled out (i.e. precautionary principle). AA screening stage can flag up any potential issues that could lead to consent refusal and inform the SEA/EIA scoping stage to consider whether the proposal should move forward in its current form or alternative proposals need to be developed (failure to identify viable alternatives may establish the need to seek an Imperative Reasons of Overriding Public Interest – IROPI derogation for essential public projects). Where AA does not identify any significant reasons to withhold consent or when such reasons have been addressed by adopting an alternative or modifying and redrafting the plan/programme or project to avoid impacting the integrity of a Natura 2000 site, the SEA/EIA process can be commenced.

Information gathered and analysed during AA screening should be incorporated into the SEA/EIA baseline to contribute to a comprehensive reference base for biodiversity impact assessment. Exchanging information between Stage 2 of the AA process and the assessment of impacts as part of SEA or EIA can be clearly aligned to provide a well-informed and quantitative evidence base for the assessment. AA information on qualifying interests, conservation objectives and site integrity of Natura 2000 sites are to inform impact assessment in SEA/EIA. In the same way, SEA/EIA findings with regards, for example, to connectivity (via water features or vegetation, as well as national designations as stepping stones) should be taken into consideration at AA level. Although AA should precede SEA/EIA in the IBIA framework, the definition of alternative ecological solutions envisaged in Stage 3 may occur on a par or at a later stage than the definition of alternatives required in SEA/EIA, which tends to occur prior to the impact assessment stage. In all cases, the processes must be coordinated through ongoing communication to ensure that the ecological alternatives developed at this AA stage are incorporated into the alternatives developed in SEA/EIA, and correspondingly assessed (Figure 2).

Mitigation measures derived from the relevant appraisals (to avoid, reduce and, in the context of IROPI, offset any predicted significant adverse effects on biodiversity and biodiversity-supporting features) need to be compatible and simultaneously considered for their incorporation into the plan/programme/project. Although AA procedures do not formally require the definition of monitoring arrangements, indicators and targets for Natura 2000 sites should be specified as part of SEA/EIA monitoring. Any monitoring scheme should aim at improving the evidence base and address any identified biodiversity data gaps in order to feed into and improve future assessments.

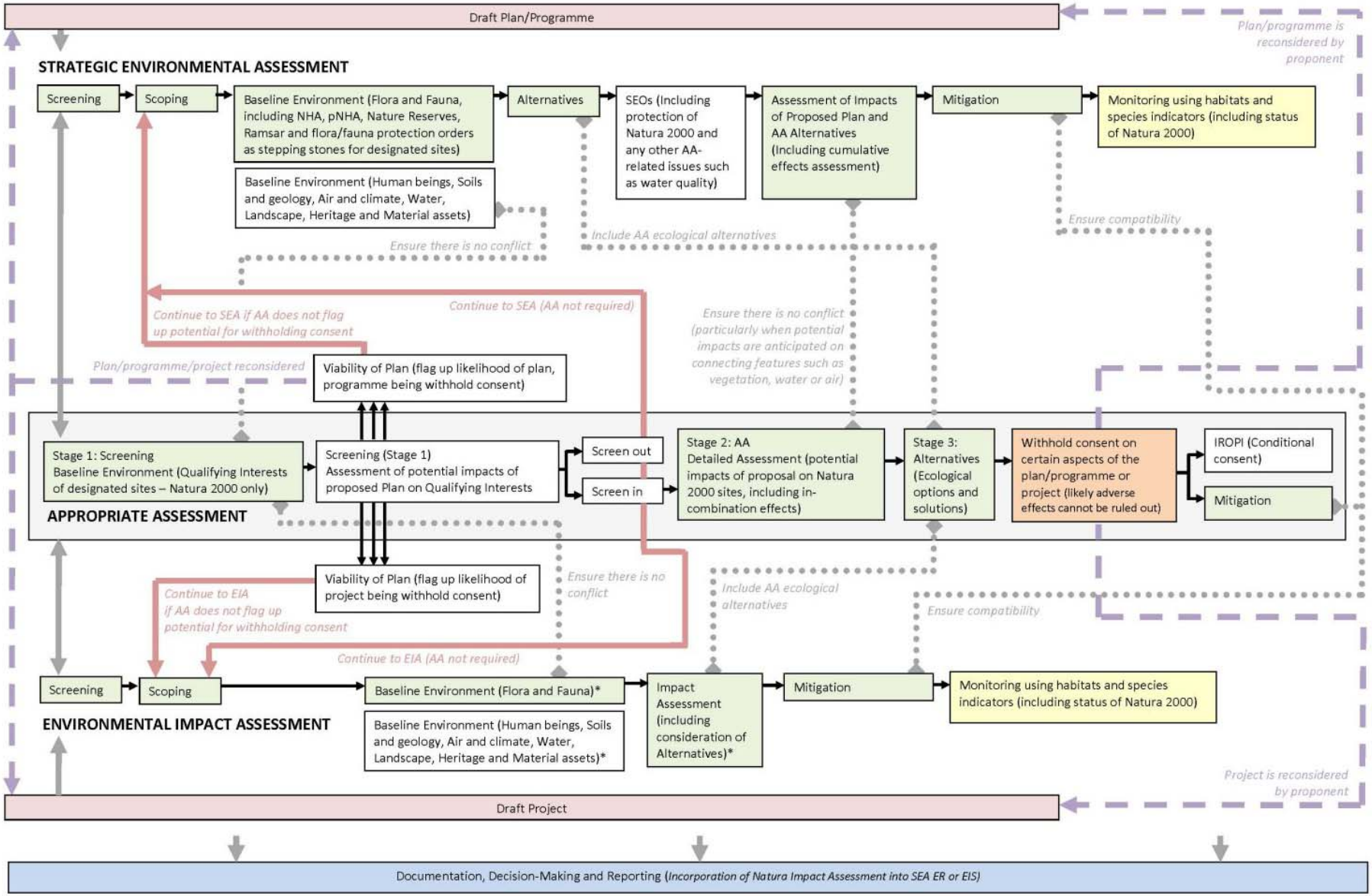

Figure 2. Correlating methodological stages and interactions between SEA-AA and EIA-AA. Note: green boxes indicate 'common' procedural stages; yellow boxes indicate correlation between some of the processes; white refers to those stages solely applicable to one of the processes; and the orange highlights the primacy of this legislative process for refusing consent. Red arrows refer to the critical outcomes of screening for AA; grey dotted arrows link all the rest of relevant stages; discontinuous grey arrows point to reconsideration of proposals in light of IROPI.

4. Current Issues in Biodiversity Impact Assessment Practice

The effective implementation of this IBIA methodology needs to address current issues in SEA/EIA and AA practice. These issues largely relate to divergences in assessment approaches and scope, limitations with regards to the appropriateness of the evidence base and extent of consultation.

- The lack of standardised approaches and consequent variation in the methodologies used, the way cumulative (in the case of SEA/EIA) or in-combination effects (in the case of AA) are assessed, and the level of detail of information provided lead to inconsistent quality of individual assessments, and constrains the comparability and, potentially, the reliability of results.
- Ensuring 'completeness of information' requires *a priori* knowledge on when sufficient data comprehensiveness and level of detail are reached, which can be subjective. When coupled with data limitations (e.g. scale, accuracy and gaps), assessments can lead to inadequate identification of potential (cumulative) impacts with conclusions that are judgmental rather than scientifically based.
- The applicability of available national biodiversity data at lower planning tiers is commonly compromised due to the quality, scale, scope, and, as a consequence, limited usefulness and reliability of such datasets. In contrast, the lack of standardised methods for site-specific data collation (e.g. scale, geographical coverage, taxonomic groups, etc.) compromises their applicability in other studies with different scope or proposal details.
- Current limitations with existing data (e.g. Natura 2000 site surveys are incomplete, outdated or currently under review, there is a lack of management plans and/or comprehensive conservation objectives for most of these sites and a national habitats map has yet to be prepared) are affecting the quality of baseline information and, therefore, the comprehensiveness and validity of assessment outcomes.
- Lack of data sharing mechanisms as well as the lack of ready access to biodiversity information leads to unnecessary duplication of data gathering, management and interpretation efforts, particularly at EIA and/or project AA level, and compromises assessment of cumulative and in-combination impacts.
- There is a limited consideration of reasonable and realistic alternatives; these are commonly formulated to fulfil the minimum requirements of the relevant Directive rather than to consider comprehensively a number of reasonable and pragmatic ways for achieving the overall goals of a proposal while providing sustainable and compliant biodiversity options.
- Assessments generally focus on protected species and sites, rarely considering the ecosystem level and commonly omitting unprotected species and areas that may contain biodiversity values and/or fulfil important functions in the ecosystem. In addition, there is an inadequate appreciation of ecological integrity and connectivity of protected areas or other green infrastructure issues (i.e. wider biodiversity considerations at the landscape level).
- Impacts are generally not quantified or spatially assessed (i.e. GIS-based assessment approaches are rarely applied). Qualitative approaches based on traditional assessment methods (e.g. matrix-based) affect the quality and accuracy of assessment outputs and fail to provide a clear indication as to where potential impacts are likely to manifest.
- Cumulative effects assessment in SEA/EIA and assessment of in-combination effects in AA are generally inadequate; they are generally determined judgmentally on limited data, rather than following a systematic approach supported by comprehensive scientific data.
- Divergent approaches in AA mitigation are not uncommon. Although the Directive states that mitigation is only required if Stage 2 identifies significant effects on qualifying interests, mitigation is regularly proposed without proceeding to Stage 2; while it is acknowledged that if mitigation is

proposed at that stage, the assessment recognises the risk of a significant impact and, therefore, it should proceed to Stage 2.

- Monitoring schemes tend to be basic and based on existing monitoring programmes (reflecting budget, resource and data availability constraints), rarely addressing identified data gaps. There is no explicit legal imperative to monitor in AA and thus monitoring is not implemented unless linked to SEA or EIA – in all cases, monitoring implementation is commonly inadequate.
- Lack of 'know-how' within sectoral and planning authorities commonly leads to independent consultancies collecting data to undertake AA screening and SEA/EIA, with associated resource and budgetary constraints. This commonly results in assessment processes running in parallel rather than in an integrated manner.
- There is a common lack of expert ecological input in the definition and assessment of alternatives in both SEA and EIA, affecting the incorporation of expert judgment into such assessment processes.
- Existing shortcomings in the effectiveness of communication between SEA/EIA and AA expertise and statutory authorities, as well as stakeholders, is affecting the integration of processes, leading to duplication of efforts and, in some cases, rendering inconsistent assessment results.

5. Best Practice Recommendations to Address Current Issues

The IBIA guidance's core aim is to promote best practice when integrating EU and national legislative and procedural requirements for biodiversity impact assessment. The following recommendations derive from international and national best practice and have been formulated to address the most common issues affecting biodiversity impact assessment as part of SEA/EIA and AA as well as to more effectively integrate their requirements. Note that additional step-by-step recommendations are provided in the main document of the IBIA guidance.

- ✓ Initiate IBIA early in the plan/programme-making or project design process. IBIA and drafting of the proposal should run in parallel and ongoing interaction and feedback should exist between processes in order to effectively integrate biodiversity considerations into the final proposal.
- ✓ Establish and maintain ongoing and proactive communication channels between planning and assessment teams, as well as key stakeholders.
- ✓ Undertake pre-planning consultation (i.e. at screening/scoping level) with key stakeholders, including the National Parks and Wildlife Service (NPWS) for full and early identification of potential significant impacts.
- ✓ Undertake ecological surveys and seasonal change assessments where evidence 'beyond reasonable doubt' is not already available in AA screening (particularly at local planning and project-level).
- ✓ Apply standardised methods for data collation, creation and classification, as well as metadata creation, by applying existing international and national guidance.
- ✓ Establish a data sharing mechanism between assessment teams to ensure full consideration of all relevant information and avoid duplication of efforts, ensuring that data collected to meet statutory obligations is also made available in the public domain.
- ✓ Describe the baseline at ecosystem level, including non-designated areas and species and addressing connectivity between designated sites, and potential for cumulative effects.
- ✓ Report data gaps and inconsistencies to acknowledge assessment limitations.

- ✓ Develop alternatives as pragmatic strategic ecological solutions, land use zonings or development specifications that ensure protection of sensitive biodiversity areas by taking into consideration intrinsic biodiversity (and environmental) vulnerabilities.
- ✓ Assess potential cumulative and in-combination impacts at the ecosystem level, including designated and non-designated sites and species. Addressing habitat suitability and integrity, and connectivity between designated and non-designated sites, as well as the inter-relationship with other environmental factors such as water, soil or climate.
- ✓ Provide scientifically comprehensive and, as far as possible, spatially-specific and quantitative results.
- ✓ Provide specific mitigation measures to protect Natura 2000 sites (ensuring avoidance of impacts during AA screening, and providing mitigation for AA Stage 2), and specification of aspects to be dealt with at lower planning tiers or project level.
- ✓ Fully incorporate proposed SEA/EIA and AA findings in the form of mitigation measures and recommendations into the proposal.
- ✓ Formulate the monitoring scheme to fit the scale and scope of the proposal, include indicators for Natura 2000 sites and avail, as far as possible, of existing monitoring arrangements. Monitoring should follow up on implementation of mitigation measures, identify any predicted/unforeseen adverse impacts and, where possible, address any identified data gaps.
- ✓ Reflect AA findings in the SEA ER/EIS (e.g. providing the NIR/NIS as an appendix), and report on 'full-range' of biodiversity impacts, incorporating all mapped results and stating the process/es from which such findings (and proposed mitigation) derive to acknowledge their legal implications.

6. High Level Recommendations

The project has identified a number of high level recommendations that need to be put into practice to ensure the effective implementation of the IBIA methodological framework. These include:

- ⇨ Streamline biodiversity impact assessment processes by ensuring ecological, hydrological and other relevant expertise input, and by promoting proactive and ongoing communication between the proponent, the assessment teams and key stakeholders (e.g. NPWS representatives and biodiversity/heritage officers). This would facilitate a timely identification of issues and seamless information exchange.
- ⇨ Establish an integrated approach to screening and assessment by all of the regulatory authorities whose consent is required for a plan, programme or project.
- ⇨ Prepare, collate and provide key national information, including habitat mapping and site-specific management plans and conservation objectives for Natura 2000 sites, as well as data on headline biodiversity indicators. This would ensure a better evidence base for assessments.
- ⇨ Create a robust and mandatory public biodiversity data sharing mechanism (availing from existing national data infrastructures such as that provided by the National Biodiversity Data Centre – NBDC) that focuses on spatially-specific datasets and encompasses data quality control before distribution. This would facilitate access to data and avoid duplication of data gathering and assessment efforts.
- ⇨ Create and maintain a centralised public repository or record of SEA, EIA and AAs undertaken (indicating, among other things, the nature of the proposal, its location, the assessment findings and

the proposed mitigation). This would help with monitoring and reporting and, most importantly, assist in cumulative effects assessments.

- ⇨ Develop and roll out a national programme of training and capacity building in IBIA and set up regional biodiversity priorities to promote integration and to facilitate in-house screening, spatial data collection, collation and analysis. This would contribute to better formulation of plans that avoid/mitigate biodiversity impacts and a more effective incorporation of biodiversity considerations into the proposal.
- ⇨ Establish biodiversity officers in relevant regional authorities (planning, river basin districts, etc.), as well as appoint ecological expertise in public organisations. This would support effective, integrated and informed biodiversity impact assessment as well as contribute to the provision of early advice on biodiversity considerations during plan-making and/or project design.
- ⇨ Establish a national IBIA working group to promote best practice, with links to the national SEA technical forum. This would encourage better integration of recommendations on best practice and expand the pooling of expertise at a national level.

7. Conclusions and Next Steps

The findings of the project included in the IBIA guidance provide a valuable source of information on current issues and best practice recommendations. IBIA represents a pioneering approach at EU level on the integration of legislative requirements for biodiversity impact assessment. The IBIA recommendations need to be operationalised through the preparation and piloting of a practitioners' manual. It is anticipated that the effective implementation of the recommendations contained in the guidance may be constrained by the availability of resources or the variability in the legislative time-frames allocated to the drafting, consultation and approval of plans, programmes and projects. It is, therefore, recommended that the practitioners' manual version of this guidance be piloted to ascertain its applicability, and fine-tune any relevant aspects if and where appropriate.