European Commission

Measuring and valuing biodiversity at **site level**

Implementation guidance for the Align project recommendations

Align | Aligning accounting approaches for nature

Contributing authors: Jolien Verhelst (Arcadis), Johan Lammerant (Arcadis), Jamil Salis (Arcadis), Jacob Bedford (UNEP-WCMC), Sharon Brooks (UNEP-WCMC), Heli Sihvonen (UNEP-WCMC), Sarah Pickering (UNEP-WCMC), Joshua Berger (CDC Biodiversité), Annelisa Grigg (GlobalBalance)

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Project consortium

The Align project - Aligning accounting approaches for nature - came into being with the objective to co-develop recommendations for a standard on corporate biodiversity measurements and valuation. Align is a three and a half-year project aiming to provide businesses and financial institutions with principles and criteria for biodiversity measurement and valuation. The Align project is funded by the European Commission. It is led by UNEP-WCMC, the Capitals Coalition, Arcadis and ICF with the support of WCMC Europe.

1. BACKGROUND

Awareness of the risks posed by the global decline of biodiversity is rising among investors and within companies. This is driving positive action to halt or reverse biodiversity loss. Guidance on how to measure biodiversity is needed to support these efforts. At the end of 2022, the Align project published recommendations for a standard on corporate biodiversity measurement and valuation, with principles and technical criteria that define which elements of biodiversity should be measured and how this should be done in different business contexts.[1]

This guidance forms part of a series of guidance notes that have been produced to support the implementation of the Align recommendations by outlining different decision-making contexts and concrete examples of measurement approaches that are suitable for site level assessment, bringing the recommendations to life. It focuses on implementing the recommendations **at sites with direct operational control.**[2]

The examples in this document are derived from fictional businesses which are used to describe use cases for measuring biodiversity impacts and dependencies. These cases illustrate the possible measurement methodologies a company can use, structured around the criteria presented in the Align recommendations.

Three different cases are presented: An example from the mining sector with globally dispersed sites, a metal processing company with no net loss ambitions and an energy company with impacts in the marine environment. Together, with the sectors covered in the Align supply chain guidance (agriculture, apparel and technology), a range of industrial sectors is covered.

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[1] UNEP-WCMC, Capitals Coalition, Arcadis, ICF, WCMC Europe (2022) Recommendations for a standard on corporate biodiversity measurement and valuation, Aligning accounting approaches for nature

[2] As opposed to sites where a company has no ownership or control. Direct Operations refer to site and project level impacts directly related to the site or project activities, processes, and incidents and exclude supply chains delivering to the site or project.

Upminerals Ltd is a multinational company operating in the mining sector that wants to develop biodiversity action plans at priority sites

Upminerals

Alloybar Ltd is an aluminium manufacturing company with ambitions to meet No Net Loss and Net Gain Targets across their sites

Alloybar

NRG is a multinational energy company transitioning from conventional fossil-based energy sources to renewables, focusing on marine offshore wind

NRG

2. DECISION-MAKING CONTEXTS AT SITE LEVEL

The three fictional case studies apply biodiversity information to different needs and decision-making contexts. The business context and measurement objectives of these cases are described below.

In line with its new sustainability strategy, with more explicit emphasis on biodiversity, Upminerals has started by defining specific biodiversity goals and related KPIs for its direct operations (quarries). As a first step, the company has decided to conduct a prioritization analysis on all 57 active sites. For a shortlist of the five highest priority sites, a biodiversity action plan will be developed within the next two years. This will have the aim of decreasing negative impacts and improving overall biodiversity value on site and in the surrounding landscape. Action plans for all other material sites will be developed within five years.

Screening and measurement: Company objectives

1. Multi-site screening on material biodiversity impacts
2. Conducting in depth baseline measurements of shortlisted sites as a starting point for developing an action plan
3. Measuring biodiversity KPIs during implementation

Upminerals

Alloybar is a leading global aluminum processing company with 15 production sites globally and several new sites to be developed. It wants to be compliant with the international sector standard that requires a no net loss ambition for all of its sites. As a frontrunner company in terms of sustainability, Alloybar increases this ambition into a 10% net gain target for all sites by 2030, including all new sites.

Screening and measurement: Company objectives

1. Measuring a current baseline (2023) for starting Net Gain roadmaps
2. Estimating on site biodiversity restoration potential for new sites that allows the company to estimate the required offsets
3. Screening potential sites for their potential to implement offset measures
4. Measuring progress towards Net Gain targets by monitoring biodiversity on-site and off-site

Alloybar

NRG plans to develop offshore windfarms across the European coastline as part of its strategy to transition to renewable energy and is looking for suitable locations.

To gain a competitive advantage, the company wants to show the positive and mitigating effects for biodiversity of implementing nature-based solutions in the development plan of new offshore wind farms.

Screening and measurement: Company objectives

1. Screening site suitability for building offshore windfarms, based on biodiversity criteria (pre-construction phase)
2. Conducting a biodiversity baseline measurement of selected locations
3. Measuring real impacts on biodiversity and effectiveness of mitigation measures (monitoring plan)

NRG

3. DATA AVAILABILITY FOR SITES AND PROJECTS

Companies with project sites distributed globally will interface with a variety of ecosystems and species. This will require tailored approaches. It is essential to have detailed (spatial) information on site locations. However, in practice it can be challenging to gather detailed information for each site. Activities that are subject to full Environmental Impact Assessment requirements are likely to have more accurate spatial data than those that are not depending on national requirements. For some sites, an address or coordinates may be available but may lack spatial data on site boundaries, which is needed to calculate the proximity to protected areas. Furthermore, it may not be possible to provide coordinates for the operational sites of some activities. For example, transport or fishing activities. For large site portfolios, significant resources would be required to implement highly accurate measurements that rely on direct measurement and field surveys across all sites. In such cases, an initial prioritization process can inform where resources for assessment and monitoring may be most urgently required.

4. SCREENING AND MEASURING IMPACTS AT SITE AND PROJECT LEVEL

The Align project recommendations set out criteria for initial **screening** of potential impacts, which can be used to inform biodiversity risk and opportunity assessments. They also set out criteria for **measuring** actual impacts on biodiversity on the ground. These criteria are split into 'good practices', which are suitably robust and represent a step forward from business as usual, and 'best practices' which reflect a 'direction of travel' for biodiversity measurement. The good and best practices for site and project level biodiversity measurement are shown in Table 1. The cases presented below indicate when the company applies good practices or when it applies best practices.

Table 1: Good and best practice approaches for site and project level biodiversity measurement (Align Recommendations 2022[3])

SITE & PROJECT LEVEL

GOOD PRACTICE | BEST PRACTICE

Practice		WHAT TO MEASURE	CHARACTERISTICS OF MEASUREMENT APPROACH	MOST APPLICABLE METHODS
Good practice	SCREEN	○ Potential presence & proximity to material species & ecosystems ○ Potential impacts based on sector-average impact drivers	○ Feasibility (screening) - High (able to apply screening at multiple sites) ○ Spatial precision - Medium ○ Accuracy - Medium (measures reflect potential presence & impacts on species & ecosystems, but are not ground-truthed)	✓ Spatial overlays with static biodiversity data layers (ecosystem extent / condition) ✓ Species threat & range layers ✓ Screening using modelled state based on pressures
Good practice	MEASURE	○ Ecosystem extent & condition indicators; or ○ Measurement of material impact drivers (at least land use change) ○ Periodic measurements that start from a baseline, & measurements that reflect changes in state resulting from company-specific impact drivers	○ Responsivness - Medium (able to reflect how changes in pressures affects biodiverisity state) ○ Spatial precision - Medium ○ Accuracy - Medium (measures reflect potential presence & impacts on species & ecosystems, but are not grounded-truthed)	✓ Primary data based on surveys ✓ Measuring using responsive biodiversity data layers ✓ Measuring using modelled state based on pressures
Best practice	SCREEN	○ Potential presence & condition of material species & ecosystems, results ground-truthed ○ Species extinction risk indicators ○ Potential impacts based on company specific impact drivers	○ Feasibility (screening) - High (for screening, able to apply for screening at multiple sites) ○ Spatial precision - High (captures species & ecosystems at site level) ○ Accuracy - High (measures reflect actual, ground-truthed presence of/impacts on species & ecosystems)	✓ Modelled state based on pressures (using company specific impact driver data) for screening only ✓ Species threat & range layers
Best practice	MEASURE	○ Ecosystem extent & condition for individual ecosystem assets ○ Species extinction risk indicators ○ Periodic measurements that start from a baseline, & measurements that reflect changes in state resulting from site-level mitigation measures Based on primary data on material impact drivers	○ Responsiveness (measuring impacts) - reflects effects of site-level mitigation measures ○ Spatial precision - High (captures species & ecosystems at site level) ○ Accuracy - High (measures reflect actual, ground-truthed presence of/impacts on species & ecosystems)	✓ Primary data based on surveys

[3] UNEP-WCMC, Capitals Coalition, Arcadis, ICF, WCMC Europe (2022) Recommendations for a standard on corporate biodiversity measurement and valuation, Aligning accounting approaches for nature.

In the fictional case studies below (Table 2), good and best practices are applied for both screening and impact measurement. Examples of named tools and methodologies for the approaches given in bold are provided in Annex 1. Best practice on interpretation, prioritization and further analyses of the gathered data is outside the scope of this guidance document.

Table 2. Fictional case studies for screening and measuring impacts

COMPANY 1: UPMINERALS LTD

SCREENING POTENTIAL IMPACTS

Objective 1- Multi-site screening of material biodiversity impacts

Upminerals compile a GIS file of site coordinates.[4] As an initial screening exercise based on good practice, it assesses the proximity of site polygons to areas of high biodiversity significance using **spatial secondary data layers on ecosystem integrity [5], species range and threat status [8] and areas of potential critical habitat [6]** (the three criteria used by Upminerals to define biodiversity significance).[5] Upminerals use the number of criteria 'ticked' for each site to rank its sites in order of priority.

Moving to best practice, Upminerals complement this high-level screening (for all sites) with 1/ **ground-truthed data through field surveys [1]** of threatened species and habitats, 2/ **secondary data on species and habitat sensitivity** [7] to industrial impact drivers and 3/ information on local stakeholder concerns regarding biodiversity significance through a **questionnaire to site managers [3].** Engagement with stakeholders pays particular attention to the needs of groups of people considered vulnerable (e.g. Indigenous Peoples and local communities, women and young people). This information was sourced through existing EIA processes where available.

Upminerals then further refine its prioritization analysis by including a high-level estimation of potential impacts at each site, as proximity to areas of biodiversity significance on its own does not provide insight into potential impacts (potential impact is a function of proximity to biodiversity, impact drivers of site operations and site management). Upminerals obtain **sector-average data** on key impact drivers and use these data in a **model-based footprinting [10] tool.**[6] The potential impacts on ecosystem condition estimated through this tool are used to further prioritize sites for development of a Biodiversity Action Plan (BAP).

[4] GIS = Geographic information system, a computer system that analyses and displays geographically referenced information

[5] Polygon = geographic feature defined by a series of grid references, points, or vertices connected to form an enclosed shape

[6] Impact driver = a measurable quantity of natural resource that is used as an input to production or a measurable non-product output of a business activity.

MEASURING REALIZED IMPACTS

Objective 2- In depth baseline measurement of shortlisted sites, as a starting point for developing an action plan

Based on the multi-screening process, Upminerals identified a shortlist of five sites for developing a Biodiversity Action Plan (BAP). The BAPs require a robust baseline based on the state of biodiversity, against which progress can be tracked. The information collected (secondary, primary data) during the screening stage, is assessed to decide if and what additional information is required[7]

To supplement the ground-truthed screening data that Upminerals have already collected, according to best practice it compiles measurements of **ecosystem extent and condition using direct** **field surveys [1]** and conduct species presence-absence surveys. To inform the action plan, Upminerals also first identify the main impact drivers associated with the site's activity and estimate how these may impact the state of biodiversity. It also considers the potential accumulated impacts due to other activities and stakeholders in the same area (e.g., local communities using the same water source as the company). It then applies **impact driver modelling techniques [11]** (e.g., air pollutants dispersion, noise dispersion, hydro-ecological modelling) to estimate impacts. For some sites, this information was available through existing EIAs, but for others further surveys and analysis were conducted.

To ensure best practice measurement throughout the site's operations, accurate measurement must be done and any data gaps that are found must be filled in.

MEASURING REALIZED IMPACTS

Objective 3- Measuring biodiversity outcomes during implementation of site level biodiversity action plans (part of monitoring plan)

Assessing progress towards targets defined in the BAP requires regular monitoring of key performance indicators (KPIs) that reflect biodiversity outcomes. Upminerals developed specific monitoring guidance for each of its site's BAPs. These manuals specify monitoring protocols for different ecosystem types and different species groups. In some cases, these manuals provide specific requirements for individual species and make use of innovative data collection approaches like **eDNA and bioacoustics [2].**

[7] Primary (biodiversity) data = data on biodiversity state that is collected first hand by the user through direct approaches. Secondary (biodiversity) data = data on biodiversity state that has already been collected and made available for reuse by the user.

COMPANY 2: ALLOYBAR LTD

MEASURING REALIZED IMPACTS

Objective 1: Measuring current baseline (2023) for starting site-level Net Gain roadmaps

The concept of No Net Loss (NNL) and Net Gain (NG) is well established in terms of principles to be respected (e.g. quantitative goals for specific biodiversity components, starting from a defined baseline, ecological equivalency, biodiversity accounting approach).[8] Therefore, Alloybar applies these principles in implementing their Net gain target.

According to best practice, Alloybar follows a **corporate biodiversity accounting framework [14]** that structures its measurements to accurately assess site-level baseline positions for tracking losses and gains. This involves compiling an asset inventory of the ecosystem types present at the site, their extent and condition, measured through direct **field surveys on the ground[1]**. Alloybar identify that the population sizes of the material species present at its site are very hard to estimate. For this reason, the company uses the extent of suitable habitat for each species as a proxy.

Alloybar measures both the site-level baselines for existing sites (all in 2023) and will measure the site-level baseline (pre-construction condition, e.g., unbuilt/ undeveloped habitat or redeveloped building) for every new site in the future.

SCREENING OPPORTUNITIS

Objective 2: Screening opportunities for offsetting

Implementing a Net Gain approach will likely require offsets. Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development, after appropriate prevention and mitigation measures have been taken (BBOP). In line with the mitigation hierarchy, biodiversity will need to be restored as much as possible onsite after adoption of prevention and mitigation measures. Biodiversity offsets serve to fill the gap towards a Net Gain target. Based on a calculation of the required volume of biodiversity offsets for achieving a 10% Net Gain target, potential offset locations need to be identified and screened for their suitability.

Suitable offset sites can be identified using certain criteria. This includes an assessment of whether the offset site and the developed site are ecologically equivalent and, how geographically close the offset site and the developed site are.[9] [10] It is particularly important to consider the needs of local people who are negatively impacted by development of the site, but who are not able to benefit from an offset site far away. Finding suitable offset sites can be

[8] See IUCN review report on Biodiversity Net Gain and paper from Bull et. al., (2018). Ensuring No Net Loss for people and biodiversity: good practice principles. Oxford, UK. DOI: 10.31235/osf.io/4ygh7.

[9] Ecological equivalency = reflects the concept of 'like-for-like' when measuring the different components or aspects of biodiversity. When considering biodiversity gains and losses, only the same types of ecosystems or taxa can be compared within an assessment.

[10] Delivering offsets at close proximity to the lost habitat increases the chances of contributing to the conservation and integrity of the same affected ecosystem (as well as the needs of local people, including those groups considered vulnerable – women, Indigenous Peoples and local communities).

facilitated by third parties (such as local authorities, NGOs or specialized habitat banking companies), but this type of cooperation is not possible in every part of the world. In the case of Alloybar, the company needed to identify offset locations on its own as third party support was not available.

For screening offsetting opportunities, Alloybar applies best-practice location-specific data (see [9] Measurement approaches in the context of No Net Loss/Net Gain) on type, extent and condition (which might include species information) of potential ecosystem types for compensation in potential offset areas and validates this information by ground-truthing (field surveys [1]). The company then relies upon expert advice from experienced ecologists who can make a credible assessment of how biodiversity in these potential offset areas will evolve over time as a result of a set of restoration actions.

MEASURING OUTCOMES

Objective 3: Measuring progress towards Net Gain targets, by monitoring biodiversity on-site and off-site

Alloybar is aware that it needs to demonstrate effective compliance with Net Gain targets. Therefore, the company has developed detailed monitoring programs for its own sites and has established arrangements with third parties for monitoring restoration progress in offset areas. If monitoring outcomes indicate that restoration is not on track, either in terms of performance or in terms of timing, adaptive management will need to be applied.

According to best practice, losses and gains of biodiversity over time are registered in the corporate biodiversity accounting [14] system. This approach allows demonstration of whether Net Gain has been achieved. Changes in the condition of each ecosystem type and populations of material species included in their asset inventory are measured periodically using direct field surveys [1]. These can then be aggregated into statements of performance compared to the baseline state.

COMPANY 3 NRG LTD

SCREENING RISKS AND OPPORTUNITIES

Objective 1: Screening site suitability for building offshore windfarms, based on biodiversity criteria (pre-construction phase)

NRG is developing offshore windfarms across the European coastline. Sites are preferably selected in locations with low risk of adverse impacts on sensitive biodiversity.

The company overlays spatial maps of established wind farm sites with **spatial data layers reflecting Protected Areas and Key Biodiversity Areas [4]** (e.g., Natura 2000 sites), **species range and threat layers** (e.g., species distribution maps for marine mammals) **and migratory flyway maps [8]**. Best practice screening uses different information layers that have sufficient spatial precision to narrow down the number of search locations. Some search locations can easily be excluded based on legal and administrative feasibility.

In the EU, establishing windfarms in protected areas is only possible if the company can demonstrate that no alternative locations are available and that the project will not have significant impacts on the EU protected species and habitats in that Natura 2000 site. Additional information layers, such as intensity of bird migration, presence of seabird colonies or presence of marine mammal populations, provide further information for site selection decisions.

MEASURING

Objective 2: Measure biodiversity baseline of selected locations

Once sites are selected, NRG conducts a detailed biodiversity baseline mapping exercise. It then makes a prediction of the potential biodiversity impacts and determines how these can be avoided or mitigated by taking appropriate action. This is often part of the Environmental Impact Assessment (EIA) process.

EIA is often quite prescriptive in terms of the different environmental impacts that need to be investigated but is flexible in terms of data collection and measurement methods. For its windfarm EIA studies, NRG makes use of a combination of data collection and measurement methods, such as:

- **secondary data [5]** layers on location, extent and condition of marine ecosystem types (secondary data from scientific government institutes provide sufficiently detailed and high-quality information) While primary data collection based on **field surveys [1]** of marine biodiversity would be preferable, this was considered too challenging for marine sites and therefore not collected

- model-based measurement approaches for specific areas, such as acoustical modeling of underwater noise during the construction phase
- biodiversity impact prediction based on literature review (secondary data). This is well documented for wind energy developments, including offshore, and offers solid information on how species and ecosystems can be affected by offshore windfarms during all stages of the project life cycle, and includes essential information on **species and habitat sensitivity [7]** towards pressures

MEASURING

Objective 3: Measure actual impacts on biodiversity and effectiveness of mitigation measures (monitoring plan)

Where possible, NRG engages in a joint marine biodiversity monitoring program coordinated by a national scientific body (e.g. operated by a national marine institute). NRG pay a participation fee to obtain robust data at the wider seascape scales. Wider-seascape level biodiversity trends inform adaptive management practices at the site level, and an understanding of cumulative impacts. Data obtained included seabird and migratory bird collisions and overall impacts on their populations; marine mammal disturbance by underwater noise and resulting population trends; colonization of artificial reefs and resulting impacts on marine biodiversity value.

In some countries, however, this type of cooperation does not exist. In that case, NRG has developed a specific monitoring program with the following main elements:

- systematic monitoring of marine mammals (both visual observations from working vessels and acoustic detection (via **bioacoustics [2]**)) during the construction phase
- application of innovative bird detection systems that allow curtailing of turbines when AI-based identification systems detect critical bird species flying on a collision course
- experimental monitoring of artificial reef marine organisms by means of annual **eDNA [2]** sampling

5. MEASURING BIODIVERSITY SUPPORTING DEPENDENCIES

As well as impacting biodiversity, site-based operations can have strong dependencies on biodiversity and ecosystem services. Measurement of the biodiversity underpinning those services is therefore important when assessing exposure to dependency-related risks and understanding opportunities.

An example of how one of the fictional case studies, Alloybar, assesses their material dependencies and incorporates measurement of the biodiversity supporting these dependencies is provided below

*As part of its internal risk management system, Alloybar wants to assess sites exposure to nature-related physical risks. Therefore, the company aims to have a better insight into potentially material dependencies of its direct operations on nature. Based on tools for assessing material dependencies at sector level (see **Dependency screening tool [12]**), they identify their use of water as a key provisioning service, and the maintenance of the quality of this water a key regulating service. To further explore these dependency related risks, the company used tools providing geospatial information on nature-related risks (see **Dependency screening tool [12]** together with information from local river basin committees. This highlighted that some of their operations are in a flood -prone area, exposing their sites to severe disruption from potential flooding. They were informed that wetland ecosystems within close to the site can provide both water filtration and flood defense services. They therefore integrate their monitoring data on wetland extent and condition from their no net loss assessments into their risk assessment processes. Where a loss of condition is found, their risk of disruption increases and informs risk management planning.*

These insights resulted in investments in nature-based solutions (NBS) by Alloybar. As an example, they started investing in large scale upstream wetland restoration to sustain the water filtration and flood defense services. This also resulted in co-benefits for local people who rely on the ecosystem services provided by wetlands, and in turn reduced transition risks for the company. To further reduce flooding risks, the company co-funded the 'Room for the River' initiative which aims to reduce flood risks by restoring natural flood areas in the river valley. This generates many co-benefits ranging from providing habitats for threatened species and carbon sequestration.

6. VALUATION OF IMPACTS AND DEPENDENCIES

Valuation represents the part of the assessment where impacts and dependencies are understood through the lens of importance to different stakeholders. Stakeholders may have different values of biodiversity and ecosystem services and may therefore value business impacts and changes in capitals in a different way. For example, Indigenous Peoples and local communities may value biodiversity that has bio-cultural importance to them. Broadly speaking there are four types of value:

- Direct value - the value of resources that are tangible and direct.
- Underpinning or indirect value - benefits that support direct values or benefits to other stakeholders that do not require the resource to be extracted
- Insurance and options value - The diversity of species that are able to provide functions within ecosystems and, by extension, ecosystem services. Option value represents undiscovered, underutilized or less understood benefits that might exist.
- Intrinsic value - the non-human value of an ecosystem.

It may not be possible to consider all of these types of value in every decision. From a business perspective, direct value may be the most important, especially where the business depends upon that resource for future viability. However, understanding the underpinning and indirect values to a range of stakeholders, including groups considered vulnerable (women, Indigenous Peoples and local communities), will help to ensure that the rights and needs of local people are considered and that the outcomes are sustainable. Businesses may wish to acknowledge intrinsic values and understand the relationship between good ecosystem health and intrinsic value.

An example of the outcomes of a values assessment for one of the fictional companies, Alloybar, is provided below. The focus of the example is on assessing the different values of their dependencies and impacts on wetland ecosystems. It does not represent an attempt to assess the full value of ecosystems that Alloybar sites interact with.

Alloybar include a valuations assessment based on its dependencies on water filtration and flood protection provided by the wetland ecosystems at the site. It used an ecosystem service valuation database and applied a value transfer approach to the site. The benefit of water filtration is given a monetary value through replacement cost, i.e., the cost for buying a similar amount of good water quality from the public water supply company. The benefit of flood protection by natural ecosystems such as wetlands is valued as the damage cost that would occur due to flooding if the wetland ecosystem was not present.

Alloybar acknowledges however, that a lot of the instrumental value of the wetland will not be fully captured using monetary valuation methods alone. It also acknowledges that the values of the wetland go beyond instrumental values and include intrinsic and relational values that cannot be adequately captured through a human-centered lens.

7. ANNEX 1 – EXAMPLES OF NAMED TOOLS FOR APPROACHES MENTIONED IN CASE STUDIES

Approach from case study	Category	Examples	Source
[1] Field surveys	**Primary data collection method**	• *threatened species mapping (via the red list of species and ecosystems (IUCN))* • *wildlife population monitoring* • *ecosystem extent and condition mapping*	IUCN Red List of Threatened Species / local Red Lists of threatened species Cross Sector Biodiversity Initiative (Good Practices For The Collection Of Biodiversity Baseline Data – CSBI)
[2] eDNA and bioacoustics	**Primary data collection method**	• *eDNA sampling of soil, freshwater and marine environment* • *eDNA sampling of pollen for identification of wild pollinator species and pollution in agricultural areas* • *bioacoustics for measuring presence of bats, birds, insects and amphibians*	non-exhaustive list of eDNA service providers on eDNA RESOURCES) See also the thematic report 2022 of the EU B&B Platform on biodiversity data which discusses eDNA and bioacoustics
[3] Questionnaires to site managers	**Primary data collection method**	*e.g. to gather information on local stakeholder concerns regarding biodiversity significance, including from groups considered most vulnerable (e.g., women associations, Indigenous Peoples and local communities).*	
[4] Designated area layers	**Secondary Data layer**	**World Database of Protected Areas (available through IBAT)**	**Protected Planet**
		World Database of Key Biodiversity areas (available through IBAT)	**KBA partnership**
		Natura 2000 data viewer	**EEA**

[5] Secondary data layers on ecosystem extent and condition	Secondary data layer	Ecosystem Integrity Index (EII) global layer	UNEP-WCMC
		Global Forest Watch Open Data Portal	Global Forest Watch
		Red List of Ecosystems	IUCN RLE
		Mean Species Abundance (MSA) global layer	GLOBIO
[6] Critical Habitat screening layers	Secondary data layer	Critical Habitat screening layer	UNEP-WCMC
[7] Species and habitats sensitivity to impact drivers	Secondary information	Specialized literature and habitat sensitivity databases e.g Marlin for Marine habitats	e.g MarLIN for marine habitats
		Red List of Threatened Species	IUCN
[8] Species range and threat layers and migratory flyway maps	Secondary data layer	IUCN Species Threat Abatement and Restoration (STAR) Metrics data layer	IBAT
		The wildlife sensitivity mapping manual	Publications Office of the EU (europa.eu)
[9] Measurement approaches in the context of No Net Loss/Net Gain	Measurement method	The Biodiversity Metric 4.0	Natural England
		The Biodiversity Net Gain Calculator (BNGC)	Circabc (europa.eu)
[10] Model-based footprinting approaches (suitable for screening sites)	Measurement method	Global Biodiversity Score	CDC BIODIVERSITÉ

		Biodiversity Footprint Methodology (BFM)	**Plansup**
[11] (Specialized) impact driver modelling techniques	**Measurement method**	*Air pollutants dispersion, noise dispersion, hydro-ecological modelling*	
[12] Dependency screening tool	**Dependency tool**	**ENCORE database**	**ENCORE**
		WWF Risk Filters	**WWF Water Risk Filter, WWF Biodiversity Risk Filter,**
		Aqueduct	**Aqueduct**
[13] Ecosystem Service Valuation approaches	**Valuation method**	**Ecosystem services valuation of different ecosystem types**	**ESV database**
[14] Corporate biodiversity accounting framework	**Accounting method**	**Biological Diversity Protocol**	**Endangered Wildlife Trust**