

Ecosystem Condition Protocol – Preparation phase – June 2024

First mapping of needs and resources

To readers:

This document is established as part of a first preparation phase of the Ecosystem Condition Protocol (EC Protocol). It goes over the topics which have been identified to date as important to include in an Ecosystem Condition Protocol, with the purpose of mapping questions that would be answered by the Protocol and possible sources of information, in particular it provides:

- The list of topics with key questions on ecosystem condition that could find answers in an Ecosystem Condition Protocol;
- For each topic, already identified sources of information and guidance (acknowledging the sources are not exhaustive).

The content should be considered as temporary and as a first working basis, drafted for a first step of market survey of needs. A public consultation is open until September 15th 2024 and aims to:

- Receive comments and suggestions of modifications or additions on the identified and suggested topics so far;
- Confirming the market needs the Protocol would answer and orienting the future work on the Protocol.
- Provide a first basis for discussion with key stakeholder on their involvement in the initiative.

Based on the feedback received, v0.1 of the Protocol will be drafted and released later in 2024-2025.

Table 1: Topic tackled by the EC Protocol. Sources: (United Nations et al. 2021), (UNEP-WCMC et al. 2023), (GHG Protocol 2004), (Endangered Wildlife Trust 2020), (CDC Biodiversité 2020a)

Topic	Questions that would be addressed
The initiative	Presentation of the initiative: <ul style="list-style-type: none">- What needs does this initiative answers?- How is this initiative complementary to other frameworks?- How will this initiative be built with several stakeholders?- Governance and organisation of the initiative
Definition of ecosystem condition	What is ecosystem condition? What are its components (e.g. composition, function, structure)? What are reference conditions against which ecosystem condition is measured?
Accounting and Reporting Principles	What are key principles to properly measure and account for EC? (e.g. principles could include: relevance, equivalency, completeness, consistency, transparency...)

	Why are they important for companies? How to translate them into rules for reporting and accounting?
Business Goals	What are the business goals to measure and account for ecosystem condition? Business goals could include for example: The assessment of risks, dependencies and opportunities, mandatory disclosure, etc.
Setting Organisational Boundaries	What are the differences between consolidation approaches (e.g. financial or operational control or share of assets owned...)? What do they imply, and how to choose one?
Setting Operational Boundaries	What are the different operational boundaries to be considered? What should be included within a company's operational boundary and how does that is influenced by the choice of organisational boundaries (consolidation approach)? How should ecosystem accounts be further classified into categories of Scope 3 (if the terminology of Scope is used)?
Identifying impacts on ecosystem condition	How to categorize different types of impacts (e.g. negative impacts, reduced impacts, avoided impacts, positive impacts...)? How to consider remaining EC vs impacts on EC? What are the definitions of baseline or counterfactual scenarios? How do impacts calculated using approaches integrating impacts over time relate to this accounting framework? How should actual (realised) and potential (e.g. modelled) impacts be distinguished? What about impacts that will occur in the future?
Measuring and tracking ecosystem condition over time	How should a company measure impacts on ecosystem condition? For example: <ul style="list-style-type: none"> - At which scale (site, landscape, value chain, etc.)? - How to consider ecosystem extent and condition-weighted areas? - Should companies favour direct measurement or modelling? And how to reconcile site level measurement & corporate-level data? - What are the criteria a good ecosystem condition metric should meet? - How to track impacts over time?
Managing Impact assessment quality	What principles should guide impact assessment quality management? What specific aspects and issues should be managed closely?
Accounting for ecosystem condition	What impacts should be accounted for? How to attribute responsibility for impacts in the case of co-products or for sites where ecosystem condition is impacted by what happens at the landscape level? How to account for sold or purchased assets? How to account for no net loss or net positive impact? For potential and future impacts? How to reconcile direct measurement and impact driver-based modelling of ecosystem condition in accounting? Where do biodiversity credits sit in the impact accounting?
Reporting Impacts on ecosystem condition	How to report on the different types of impacts? How to build a narrative? How do the different metrics fit in the reporting on ecosystem condition?

	<i>Complementing existing voluntary and mandatory standards and frameworks (TNFD, GRI, ESRS E-4).</i>
Verification of Impacts on ecosystem condition	Why verification is important? At what scale should it be led? What is the risk of material discrepancy?
Setting targets for ecosystem condition	How to set a baseline for ecosystem condition targets (which year to choose)? What kind of targets can be set and how do they relate with the different kinds of impacts? How does that relate to Nature Positive targets? <i>Complementing the SBTN methodology for ecosystem condition only.</i>

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18 **Reading key:**

19 Indications on the expected content and questions addressed in each topic is displayed over a light green background.

20 Introduction the Ecosystem Condition Protocol

21 A first topic to be discussed is the overall context surrounding the initiative. The questions to be addressed would be:

- 22 • How did the idea of an Ecosystem Condition Protocol appear?
- 23 • Which organisation are involved in the design and drafting of the Protocol?
- 24 • What is the governance scheme hosting the EC Protocol?
- 25 • How does the EC Protocol relate to nature-disclosing frameworks, regulations, and standards?

26 First elements of context and direction of the initiative:

- 27 ➤ Observation that disclosure on ecosystem condition was required by key frameworks and regulations, however clear definitions or guidelines were
- 28 missing to measure and account for it.
- 29 ➤ The EC Protocol would complement already existing frameworks and should be designed to facilitate the reporting by companies against key
- 30 standards and frameworks.
- 31 ➤ Therefore, it must be designed collaboratively with key stakeholders.

32

33 Definition of ecosystem condition

34 Identified sources for an ecosystem condition definition, are the Align project (UNEP-WCMC et al. 2023) and UN SEEA (United Nations et al. 2021).

35 The Protocol would answer the following questions:

- 36 - What is ecosystem condition?
- 37 - What are the components of ecosystem condition (e.g. composition, function, structure)?
- 38 - What are reference conditions against which ecosystem condition is measured? Should one definition of reference condition be favoured?

39 Ecosystem condition is defined as the following by Align:

40 “Ecosystem condition describes the overall quality of an ecosystem measured in terms of its biotic (living) and abiotic (physical rather than biological)

41 characteristics.” (UNEP-WCMC et al. 2023)

Composition	Indicators measure what species are present in the species assemblage as a whole and their relative abundances (rather than the number of individuals)
Structure	Indicators reflect aggregate biophysical properties of ecosystems, irrespective of specific species composition such as vegetation heights or seabed habitat complexity. At a landscape scale, structure also includes levels of fragmentation and connectivity (i.e., how linked one patch of habitat is to another).
Function	Indicators measure a process that the ecosystem completes or reflects the ability to undertake these processes, e.g., net primary production, water filtration

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43 In Align, the landscape is defined in the structure component of an ecosystem. This is not the case for the UN-SEEA, that defines landscape as an ecosystem
 44 characteristic independent of the biotic components of the ecosystem condition.

45 *Table 2: The SEEA Ecosystem Condition Typology (ECT). ECT groups and class. Source: (United Nations et al. 2021)*

Group B: Biotic ecosystem characteristics	Compositional state characteristics	Composition/diversity of ecological communities at a given location and time (e.g. presence/abundance of key species, diversity of relevant species groups)
	Structural state characteristics	Aggregate properties (e.g. mass, density) of the whole ecosystem or its main biotic components (e.g. total biomass, canopy coverage, annual maximum normalized difference vegetation index (NDVI))
	Functional state characteristics	Summary statistics (e.g. frequency, intensity) of the biological, chemical and physical interactions between the main ecosystem compartments (e.g. primary productivity, community age, disturbance frequency)
Group C: Landscape level characteristics	Landscape and seascape characteristics	Metrics describing mosaics of ecosystem types at coarse (landscape, seascape) spatial scales (e.g. landscape diversity, connectivity, fragmentation).

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47 **1. Ecosystem condition Accounting and Reporting Principles**

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49 The core principles for accounting and reporting on ecosystem condition would need to be clearly established. Seven core principles could be considered:
 50 Relevance, Equivalency, Completeness, Consistency, Transparency, Accuracy and Time period assumption. These principles are adapted from the GHG
 51 Protocol (GHG Protocol 2004), the BD protocol (Endangered Wildlife Trust 2020) and other work focused on ecosystem condition (CDC Biodiversité 2020b).
 52 For each principle a clear definition and justification would be provided, to explain clearly why each principle is necessary.

53 Therefore, the EC Protocol would enable companies to answer the following questions:

- 54 - What principles should the company follow when reporting on and accounting for ecosystem condition?
- 55 - Why are those principles important for companies?
- 56 - How do those principles translate into rules for reporting and accounting?

57 Even though, guidance on reporting would not be a core component of the EC Protocol - providing such guidance is the role of disclosure frameworks and
 58 standards such as the TNFD, GRI's biodiversity standard or ESRS-E4 -, reporting principles condition the way ecosystem condition accounts, and by extension
 59 measurement, must be established and prepared. The EC Protocol would thus defer to other frameworks for more detailed reporting principles but could
 60 suggest overall guiding principles which would influence its guidance on measurement and accounting.

61

	BD Protocol (Endangered Wildlife Trust 2020)	Differences to be anticipated in an EC Protocol
Relevance	“Ensure the biodiversity impact inventory appropriately reflects the biodiversity impacts of the company and its value chain. It shall serve the decision-making needs of users, both internal and external to the company.”	“[...] the biodiversity impact inventory appropriately reflects the biodiversity impacts of the company and its value chain. [...]”. Should be reformulated to focus only on ecosystem condition. We propose to replace “dynamic impacts” and “static impacts” with [periodic loss/gains] and [accumulated negative impacts].
Equivalency	“Ensure the notion of equity in the type of biodiversity (i.e. ecological equivalency or like-for-like principle) is integral to biodiversity impact inventory development and accounting. Undertake net impact accounting only for equivalent biodiversity losses (negative impacts) and gains (positive impacts).”	The EC Protocol could focus on several levels of requirement of ecological equivalency: <ul style="list-style-type: none"> - Ecosystem level - Ecoregions level - Realm level - Global level

		<p>In the BD Protocol, only the ecosystem level for ecological equivalency is accepted. For the EC Protocol, a strict level of equivalency could be required for direct operations (Scope 1) but for impacts on the value chain, “only” the ecoregions level for ecological equivalency could be required.</p> <p>We propose to replace “dynamic impacts” and “static impacts” with [periodic loss/gains] and [accumulated negative impacts].</p> <p>We propose to replace “direct impacts” and “indirect impacts” with [scope 1 impacts] or [direct operations impacts] and [scope 2 and 3 impacts] or [value chain impacts].</p>
Completeness	“Account for, and report on, all impacts on ecosystems but only impacts on material taxa, within the chosen organisational and value chain boundaries. Disclose and justify any exclusion.”	<p>“[...] only impacts on material taxa [...]” is out of scope for the EC Protocol that focuses solely on ecosystem condition.</p> <p>We propose to replace “dynamic impacts” and “static impacts” with [periodic loss/gains] and [accumulated negative impacts].</p>
Consistency	“Use consistent methods to allow for meaningful comparisons of biodiversity impacts over time. Transparently document any changes to the data, inventory boundary, methods or any other relevant factors in the time series.”	<p>“[...] biodiversity impacts [...]”. Should be only “impacts” or “impacts on ecosystem condition.”</p> <p>We propose to replace “dynamic impacts” and “static impacts” with [periodic loss/gains] and [accumulated negative impacts].</p>
Transparency	“Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the data collection and estimation methods used.”	<p>We propose to replace “dynamic impacts” and “static impacts” with [periodic loss/gains] and [accumulated negative impacts].</p>
Accuracy	“Ensure the measurement of biodiversity impacts is systematically accurate, as far as can be judged, notably by reducing uncertainties as far as is practicable. Achieve suitable accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information. When no direct observation is possible, estimate impacts on the basis that they are	<p>“[...] biodiversity impacts [...]”. Should be only “impacts” or “impacts on ecosystem condition.”</p> <p>We propose to replace “dynamic impacts” and “static impacts” with [periodic loss/gains] and [accumulated negative impacts].</p>

	reasonably likely to occur, recording all methodological limitations.”	
Time period assumption	“Account for biodiversity impacts consistently across business reporting periods.”	<p>“[...] biodiversity impacts [...]”. Should be only “impacts” or “impacts on ecosystem condition.”</p> <p>We propose to replace “dynamic impacts” and “static impacts” with [periodic loss/gains] and [accumulated negative impacts].</p>

63 Relevance

64 “This first principle ensures that the impact on ecosystem condition assessment of your organisation
65 is useful to its target stakeholders, both internal and/or external for their decision making. This
66 implies building an impact inventory boundary which reflects the reality of your company’s business
67 interests and value chain [concerning ecosystem condition], considering the intended purpose of the
68 information, the needs of the target users, and the materiality of the impacts.” (Endangered Wildlife
69 Trust 2020). “Assessing impacts can be time-consuming, so that assessing all impacts with maximum
70 accuracy is not realistic. Assessors should focus in priority on the most material impacts. For instance,
71 applying the relevance principle ensures that assessors avoid spending 80% of their time assessing
72 impacts representing less than 1% of the overall impacts”(CDC Biodiversité 2020a). “When defining
73 the boundary of your impact inventory, several factors should thus be considered, such as:”
74 (Endangered Wildlife Trust 2020)

75 • Organizational structures: control (operational and financial), ownership, legal agreements,
76 joint ventures, etc. “Define clearly which company’ entities will be included in the assessment, and to
77 what extent their impacts should be attributed to parent company” (CDC Biodiversité 2020b), see
78 topic #3.

79 • “Operational boundaries or business context: on-site and off-site activities, processes,
80 services, impacts and geographic locations.”(GHG Protocol 2004) Those information can influence
81 the needs of stakeholders and information users, and thus the assessment boundaries. This in turns
82 determine the value chain boundaries. See topic #4.

83 • Value chain boundaries: “In principle Scope 1, 2 and relevant categories of Scope 3 should
84 be included. When deviating from this (e.g. when Scope 3 is not relevant), it should be made clear
85 why.” (CDC Biodiversité 2020b)

86

87 Equivalency

88 “Due to variability in biogeography and the type and intensity of human activities, [ecosystems and
89 ecosystem condition] vary significantly from one place to another. The second principle refers to the
90 notion of ecological equivalency, or like-for-like. Although [ecosystems] are a nonfungible asset (i.e.
91 no two [ecosystems] are strictly identical), your business needs to ensure that its impact on
92 [ecosystem condition] inventory is composed of individual accounts of like-for-like or ecologically
93 equivalent [ecosystems features] (i.e. only the same types of [ecosystems] can be aggregated within
94 a single biodiversity impact account). This is derived from the mitigation hierarchy and no-net-
95 loss/net gain policies that oversee the design and implementation of offset measures [...]. This means
96 that net impact accounting can only be undertaken for equivalent biodiversity losses (negative
97 impacts) and gains (positive impacts). Adherence to the equivalency principle is essential to the
98 accounting of [Scope 1 impacts] on [ecosystem condition]. impacts. For [Scope 2 and Scope 3
99 impacts], since specific, verifiable changes in the state of ecosystem condition cannot be traced back
100 to the activities of your business,” (Endangered Wildlife Trust 2020) and as large companies can have
101 thousands of direct and indirect suppliers, and do not necessarily know their exact location, “it may
102 be more challenging, impractical, or impossible to conform to the latter principle given the selected
103 impact assessment approach, notably the impact drivers assessed (e.g. greenhouse gases) and the
104 input data used to model [impacts on ecosystem condition].” (Endangered Wildlife Trust 2020). This
105 issue is even greater when it comes to financial institutions. “Such limitations must be stated clearly,
106 as part of disclosed [impact on ecosystem condition] information, to enable third parties to make
107 informed decisions.” (Endangered Wildlife Trust 2020)

108

109 Completeness

110 “The third principle ensures that all impacts on ecosystems, [and only impacts on material taxa
111 within the chosen boundary] , are accounted for so that a comprehensive and meaningful
112 [ecosystem condition impact inventory] is compiled.” (Endangered Wildlife Trust 2020) “All relevant
113 [impactful activities] within the chosen inventory boundary need to be accounted for so that a
114 comprehensive and meaningful inventory is compiled.”(GHG Protocol 2004) “In line with the
115 Relevance principle, it might be justified to exclude impacts representing very small fractions of the
116 total impact (e.g. less than 1%) whose assessment would require considerable efforts, but such
117 exclusion must be explained. [...]

118 Complying with this principle requires that, within the assessment boundaries, the assessment
119 include impacts across all Scopes, i.e. Scopes 1, 2 and 3, and across all pressures.” (CDC Biodiversité
120 2020b) In practice, a lack of data or the cost of gathering data may be a limiting factor. “Good quality
121 [data] (e.g. spatial distribution of ecosystem types) may only be available in some countries, regions
122 or at a local scale, and many parts of the world may lack quality information on [ecosystem
123 condition].” (Endangered Wildlife Trust 2020)

124 “Sometimes it is tempting to define a minimum [impact on ecosystem condition] accounting
125 threshold (often referred to as a materiality threshold) stating that [an impact] not exceeding a
126 certain size [or materiality] can be omitted from the inventory. Technically, such a threshold is simply
127 a predefined and accepted negative bias in estimates (i.e., an underestimate). (...) In order to utilize a
128 materiality specification, the [impact] from a particular activity would have to be quantified to ensure
129 they were under the threshold. However, once [impacts] are quantified, most of the benefit of
130 having a threshold is lost. A threshold is often used to determine whether an error or omission is a
131 material discrepancy or not. This is not the same as a de minimis for defining a complete inventory.
132 Instead, companies need to make a good faith effort to provide a complete, accurate, and consistent
133 accounting of their [impacts on ecosystem condition].”(GHG Protocol 2004)

134 Any exclusion must be disclosed and justified. “For cases where [impacts] have not been estimated,
135 or estimated at an insufficient level of quality, it is important that this is transparently documented
136 and justified. [...] Verifiers can determine the potential impact and relevance of the exclusion, or lack
137 of quality, on the overall inventory report.”(GHG Protocol 2004) “To enable third parties to make
138 informed decisions, limitations must be clearly stated as part of disclosed [impact on ecosystem
139 condition] information.” (Endangered Wildlife Trust 2020)

140

141

142 Consistency

143 Users of ecosystem condition information will want to track and compare ecosystem condition
144 impacts information over time in order to identify trends and to assess the performance of reporting
145 companies. (Endangered Wildlife Trust 2020). “The consistent application of accounting approaches,
146 inventory boundary, and calculation methodologies is essential to producing comparable [ecosystem
147 condition data over time]” (GHG Protocol 2004). “The [ecosystem condition information] for all
148 operations within an organization’s inventory boundary needs to be compiled in a manner that
149 ensures that the aggregate information is internally consistent and comparable over time. If there
150 are changes in the inventory boundary, methods, data or any other factors affecting emission

151 estimates, they need to be transparently documented and justified. “ (Endangered Wildlife Trust
152 2020).

153

154 Transparency

155 Transparency “relates to the degree to which information on the processes, procedures,
156 assumptions, and limitations of the [ecosystem condition impact] inventory are disclosed in a clear,
157 factual, neutral, and understandable manner based on clear documentation and archives (i.e., an
158 audit trail) in a way that enables internal reviews and external verifiers to attest to its credibility.
159 [Ecosystem condition impacts] information shall therefore be:

160 • Recorded, compiled, aggregated and analysed in a way that (a) enables internal reviewers
161 and external verifiers to attest to its credibility, and (b) ensures ecosystem condition impact
162 inventory continuity in the face of staff changes;

163 • Comprehensive enough, with assumptions disclosed, appropriate references provided for
164 the methods applied and the data sources used, and specific exclusions or inclusions clearly
165 identified and justified. [...] Contracting an independent external auditor would support transparency
166 and help determine whether an appropriate audit trail has been established, and suitable
167 documentation provided.” (Endangered Wildlife Trust 2020) “The information should be sufficient to
168 enable a third party to derive the same results if provided with the same source data. [...]

169

170 A “transparent” report will provide a clear understanding of the issues in the context of the reporting
171 company and a meaningful assessment of performance. An independent external verification is a
172 good way of ensuring transparency and determining that an appropriate audit trail has been
173 established and documentation provided.”(GHG Protocol 2004)

174

175 Accuracy

176 “Data should be sufficiently precise to enable intended users to make decisions with reasonable
177 assurance that the reported information is credible and accurate. [Ecosystem condition]
178 measurements, estimates, or calculations should be systemically neither over nor under the actual
179 emissions value, as far as can be judged, and that uncertainties are reduced as far as practicable. The
180 quantification process should be conducted in a manner that minimizes uncertainty.”(GHG Protocol
181 2004). “Uncertainties may arise from interpreting poor quality data, for instance when modelling
182 impacts from world or regionalised averages (Tier 1 or 2 quality data)instead of data from physical
183 flow or directly from pressures (Tier 3 or 4 quality data).”(Endangered Wildlife Trust 2020) “However,
184 when comprehensive ecological survey data is available, it can be included to verify (and correct) the
185 impacts assessed based on pressure data.” (CDC Biodiversité 2020b)

186 “While accuracy is expected to be higher for Scope 1 impacts on ecosystem condition, Scope 2 and 3
187 impacts can be expected to be less accurate and should be interpreted with caution (see Box 5 on the
188 risk of double counting). This greater uncertainty for indirect impacts can be correlated with the lack
189 of information due to the inaccessibility of the data, and therefore the quality of the data used.”
190 (Endangered Wildlife Trust 2020)

191 “Reporting on measures taken to ensure accuracy in the accounting of [impacts on ecosystem
192 condition] can help promote credibility while enhancing transparency.” (GHG Protocol 2004)

193

194 Time period assumption

195 “The time period assumption, also known as “periodicity assumption” and “accounting time period
196 concept”, refers to the division of the life of a business into equal time periods. Companies prepare
197 their financial statements for each of these time periods, also known as accounting periods. While
198 authorities typically mandate annual financial disclosures, many large companies report more
199 frequently to their internal and external stakeholders, for instance every quarter. It is recommended
200 that:

201 • Your impact inventory be compiled, reviewed and/or updated regularly, typically following
202 your business accounting periods, so that you produce credible, relevant and accurate ecosystem
203 condition impact reports for use by internal and/or external stakeholders.

204 • Ecosystem condition impact assessments are carried out at appropriate intervals given the
205 nature of the impacted ecosystems. For instance, some ecosystem types grow or recover very slowly
206 (e.g. ecosystems within very dry climates), which may warrant undertaking impact assessments every
207 3 to 5 years or more.” (Endangered Wildlife Trust 2020)

208

209 “Account for biodiversity impacts consistently across business reporting periods.” (EWT - NBBN
210 2019). Ideally, companies should measure the dynamic impacts that occurred in the time periods
211 separating two BFA measurements. For example, if a company first measures its impact in 2019, and
212 then again in 2022, the 2020 and 2021 dynamic impacts originating from punctual sources (e.g.
213 buying raw materials) should be included in the analysis and allocated to their respective year of
214 consumption. [...] Auditors should verify that the year considered for the assessment matches with
215 the “time period assumption” principle mentioned above. In particular, auditors must be vigilant to
216 prevent companies from opportunistically cherry-picking the time periods of their assessments,
217 choosing periods when impacts are lower than usual.” (CDC Biodiversité 2020b)

218

219 2. Business Goals

220

221 The Business Goals behind measuring and accounting for ecosystem condition would need to be
222 defined. Several goals are suggested, explaining the different reasons a company could be and should
223 be brought to deep dive into their impacts on ecosystem condition.

224 The main business goals considered so far would be the following:

- 225 - Screening and assessment of risks and opportunities regarding ecosystem condition;
- 226 - Public reporting and communication;
- 227 - Participation in biodiversity credits markets;
- 228 - Assessment and certification by third parties;
- 229 - Comparing options in the conduct of business activities.

230 Those business goals are adapted from the GHG Protocol (GHG Protocol 2004) and the EU Business
231 and Biodiversity (EU B@B) Platform (Lammerant 2022). The former calls them “business goals” and
232 the latter “business application”. Each goal is divided into several sub-goals to highlight that the topic

233 of ecosystem condition can be considered through various ways and answer different questions and
234 company's needs. Examples are also provided to illustrate them.

235

236 [BG1: Screening and assessment of risks and opportunities regarding ecosystem](#)
237 [condition](#)

238 **Assessing the impacts of a company on ecosystem condition, can be used in different cases both**
239 **for companies and financial institutions:**

- 240 - **Mandatory assessment, programs, and legal constraints in the future regarding risks for**
241 **ecosystem condition**
- 242 - **Due diligence assessment as part of mergers and acquisitions, to differentiate investments**
243 **options, or by FI to assess ecosystem conditions risks and inform pricing credits.**
- 244 - **Identifying cost effective reduction opportunities**
- 245 - **Measuring and assessing its present and future performance for ecosystem conditions and**
246 **its impacts**
- 247 - **Setting ecosystem condition targets, measuring and reporting progress**

248

249 *Mandatory assessment and reporting programs*

250 Norms and legal obligations regarding ecosystem condition are becoming much stronger and will
251 continue to move forward in the future (the new European Corporate Sustainability Reporting
252 Directive for example). Therefore, companies need to implement as of today, assessment and
253 reporting to align with mandatory assessment required today and to anticipate future changes in the
254 regulation.

255 *Due diligence assessment*

256 Even though regulation regarding ecosystem condition is still emerging, a large number of actors are
257 already paying attention to companies' performances, such as financial institutions for example, or in
258 order to differentiate investments. This means that the need to assess and monitor risks and
259 opportunities regarding ecosystem condition mustn't be underrated under the pretext that most
260 standard are not yet effective.

261

262 These risks, both presents and future, must therefore be assessed, and understood by companies
263 through measures of impacts on ecosystem condition, that will allow them to propose targets for
264 reducing them.

265 Even though this engagement appears to be costly for companies, it can also reduce costs, through
266 materials and resource management (reduction of water, energy consumption, etc.), the creation of
267 new products that reduce the impacts of customers or suppliers, etc. This in turn can also help the
268 company to differentiate in an increasingly environmentally conscious marketplace.

269

270 [BG2: Public reporting and communication](#)

- 271 - **Reporting to government, NGO and public regarding impacts on ecosystem condition and**
272 **progress towards targets**

273 - **Recognition for early voluntary action (providing information to support baseline, credits,**
274 **etc.)**

275 "As concerns over [nature degradation] grow, NGOs, investors, and other stakeholders are
276 increasingly calling for greater corporate disclosure of [biodiversity] information. They are interested
277 in the actions companies are taking and in how the companies are positioned relative to their
278 competitors in the face of emerging regulations. In response, a growing number of companies are
279 preparing stakeholder reports containing information on [biodiversity and more particularly
280 ecosystem condition]. These may be stand-alone reports on [ecosystem condition] or broader
281 environmental or sustainability reports. Public reporting can also strengthen relationships with other
282 stakeholders. For instance, companies can improve their standing with customers and with the public
283 by being recognized for participating in voluntary [ecosystems condition] programs.

284 A credible inventory may help ensure that a corporation's early, voluntary reductions are recognized
285 in future regulatory programs. To illustrate, suppose that in 2020 a company started reducing its
286 impacts on ecosystem condition by"¹ [*sourcing higher values of recycled-content for the minerals it
287 uses in its manufacturing, reducing the impacts of raw material extraction on ecosystem condition*].
288 "If a mandatory [ecosystem condition impacts] reduction programme is later established in 2025 and
289 it sets 2022 as the base against which reductions are to be measured, the programme might not
290 allow the reductions achieved by" [the higher recycled-content] "prior to 2022 to count toward its
291 target. However, if a company's voluntary impacts reductions have been accounted for, registered,
292 and communicated about, they are more likely to be recognized and taken into account when
293 regulations requiring reductions go into effect."(GHG Protocol 2004)

294

295 [BG3: Participating in biodiversity credits markets](#)

- 296 - **Supporting internal biodiversity credits trading programs**
- 297 - **Calculating biodiversity prices and taxes**

298

299 **Biodiversity credits markets are emerging around the world at a fast pace. Measuring outcomes is**
300 **necessary to demonstrate gains of biodiversity and measuring ecosystem condition is one part of**
301 **that. Already, several biodiversity credits scheme use ecosystem condition as their metrics to**
302 **measure the conservation and/or restoration of lands.**

303 Implementing an additional price depending on the impacts, will allow companies to make informed
304 decisions, and take into account all of the costs of a potential product for example.

305

306 [BG4: Assessment and certification by third parties](#)

- 307 - **Certification by third parties and deliverance of labels**

308

309 [BG5: Comparing options](#)

- 310 - **Compare options regarding the impact of an activity/site/product on ecosystem condition,**
311 **e.g. (list adapted from Lammerant (2022))**

¹ The quotes are from the GHG Protocol. Examples have been adjusted for ecosystem condition.

- 312 ○ Which site offers least harm to ecosystem condition?
- 313 ○ Which mitigation measures offer best result in terms of both ecological and
- 314 economic terms?
- 315 ○ Which product scores best considering both ecosystem condition performance and
- 316 economic return?
- 317 ○ Which investments in ecosystem condition conservation or restoration score offer
- 318 the best value for money?
- 319 ○ Which supply chains are riskier from an ecosystem condition point of view?
- 320 ○ Which companies within a sector are performing best (according to rating agencies)?
- 321 ○ Which sectors are performing best in terms of ecosystem condition(for investment
- 322 decisions by FIs)?

323
324

325 Understanding a company's impacts on ecosystem condition can help them decide between several
326 options and anticipate future taxes on biodiversity linked to the impacts of a product/activity/etc.
327 This applies also for ecosystem condition related topics such as restoration or conservation to
328 understand which can be more advantageous for the company and biodiversity. This can also benefit
329 financial institutions to decide where to invest, companies to understand their risks related to
330 ecosystem condition in the future and globally impact the business plan and development of
331 different stakeholders.

332

333 3. Setting Organisational Boundaries

334

335 The EC Protocol would help companies understand the different organisational boundaries and thus
336 consolidation approaches to be considered.

337 The Protocol would help companies answer the following questions:

- 338 - What are the differences between different consolidation approaches (financial control,
339 operational control and share of the assets owned)?
- 340 - Which one should a company choose to account for ecosystem condition?
- 341 - What are the implications of different choices?

342

343 To report and account for ecosystem condition, a company first needs to establish the perimeter of
344 the assessment. A clear and precise perimeter will help to provide a steady and credible assessment
345 to be used both internally and externally to meet the company's goals.

346

347 Attributing the different impacts between several companies can be complicated, especially if the
348 boundaries of each company are not clearly defined. The EC Protocol would help companies
349 understand the different approaches to their boundaries and select the most appropriate. The goal is
350 to define the perimeter under the direct control of a company. The Greenhouse Gas Protocol already

351 developed such an approach for carbon accounting, that could also be translated for your
352 assessment of your impacts on ecosystem condition. Three approaches could be considered:

- 353 - Financial control: the company “has the ability to direct the financial and operating policies
354 of the [operation] with a view of gaining economic benefits from its activities. [...] Financial
355 control [...] exists if the company has the right to the majority of benefits of the
356 operation.”(GHG Protocol 2004)
- 357 - Operational control: “A company has operational control over an operation if [it] has the full
358 authority to introduce and implement its operating policies at the operation”. (GHG Protocol
359 2004) Under this approach, the company accounts for 100% of impacts on ecosystem
360 condition of the operation.
- 361 - Share of the assets owned: “the entity accounts for [impacts on ecosystem condition]
362 according to its share (pro rata) of the assets owned or enterprise value (sum of debt and
363 equity).” (CDC Biodiversité 2020a)

364

365 “All levels and entities of an organisation or a company should follow the same organizational
366 boundaries, in order to allow for the consolidation of impacts.”(GHG Protocol 2004)

367

368 4. Setting Operational Boundaries

369

370 The EC Protocol would help companies define their operational boundaries. As for organisational
371 boundaries, having clear and detailed operational boundaries enables to deliver a rigorous
372 assessment, usable especially for future assessment, but also for disclosure, legal obligations, etc.

373 The EC Protocol could detail how value chain boundaries can be broken down: Scope 1, Scope 2 and
374 Upstream Scope 3 and Downstream Scope 3 (GHG Protocol 2004). Categories of Scope 3 could be
375 further provided to support a more granular accounting (distinguishing between purchases of goods
376 and services, and areas used but now owned for instance).

377 This would help companies answer the following questions:

- 378 - What are the different operational boundaries to be considered?
- 379 - What should be included within its operational boundary and how does that is influenced by
380 the choice of organisational boundaries (consolidation approach)?
- 381 - How should ecosystem accounts be further classified into categories of Scope 3?

382

383 5. Identifying Impacts on ecosystem condition

384

385 The EC protocol would focus on the identification of impacts. The identified impacts will be then
386 measured and accounted for (two other topics that would also be addressed by the protocol).

387 The objectives are i) to introduce the accounting conceptual framework used in the Protocol, to
388 distinguish between remaining ecosystem condition and impacts on ecosystem condition, ii) to

389 classify the different impacts categories, and give a clear definition for each of them (which will
390 provide a solid basis for measuring and accounting for them in the next steps of the Protocol), iii) to
391 list the different impacts drivers a company may contribute to.

392 The categories of impacts considered at this stage are: negative impacts, reduced impacts, avoided
393 impacts, positive impacts, potential and actual impacts, and future impacts.

394 A key focus will also be the remaining ecosystem condition.

395 The EC Protocol would set the approach to be used for accounting and provide definition for the
396 concepts of periodic losses and gains and accumulated negative impacts.

397 This would help companies answer the following questions:

- 398 - What are the definitions of baseline or counterfactual scenarios? How are avoided impacts,
399 reduced impacts or positive impacts defined with regards to those concepts?
- 400 - How does the remaining amount of biodiversity present at an ecosystem level relate to
401 ongoing losses during the period assessed and the losses accumulated over time?
- 402 - How do impacts calculated using approaches integrating impacts over time relate to this
403 accounting framework?
- 404 - How should actual (realised) and potential (e.g. modelled) impacts be distinguished? What
405 about impacts that will occur in the future?

406

407 Remaining ecosystem condition

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409 Periodic losses & gains and accumulated negative impacts

410

411 Negative impacts on ecosystem condition

412

413 Reduced and avoided impacts

414

415 Positive impacts

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417 Potential vs actual impacts

418

419 Future impacts

420

421 Impacts, impacts pathway and impacts drivers

422

6. Measuring and tracking ecosystem condition over time

After identifying the different impacts a company can have on ecosystem condition, they must be measured and tracked over time.

The EC Protocol, based on the work of Align (UNEP-WCMC et al. 2023), the BD Protocol (Endangered Wildlife Trust 2020) and the GHG Protocol (GHG Protocol 2004), would help understand the different key aspects when measuring ecosystem condition (condition and extent) and how ecosystem conditions and associated impacts can be measured.

This would help companies answer the following questions:

- At which scales (site, landscape, value chain, sector, transformational) should impacts on ecosystem condition be measured? How do those scales influence measurement?
- What is the role ecosystem extent and condition-weighted area in ecosystem condition measurement?
- Which methods can be used to measure impacts on ecosystem condition (direct measurement vs modelling)? What are the pro and cons to each methods? What criteria should guide the choice of measurement approach?
- How to reconcile site level measurement (bottom-up) and measurement based on corporate-level data (top-down)?
- What are the criteria a good ecosystem condition metric should meet? What are the different metrics currently used to measure ecosystem condition and how do they match those criteria? How do realm-agnostic and ecosystem-specific metrics of ecosystem condition relate to each other?
- How can a company measure ecosystem condition in practice? How do the main measurement approaches work and what guidance can be provided? What are the different tools available?
- How to track impacts over time?
- How do the different possible business goals influence answers to all those questions?

7. Managing Impact assessment quality

Making sure that an impact assessment is of good quality is crucial for companies. Being able to prove that their impacts are correctly measured and accounted for will be the cornerstone of reporting and communicating results to achieve their goals.

Inspired from the GHG and BD Protocol, the EC Protocol would help companies understand the different limits and point of attention they should focus on during their assessment. It focuses on how to ensure the quality of the impact assessment, from the quality of the data, process, systems, to how to deal with uncertainties and account for them in the assessment.

This would help companies answer the following questions:

- 461 - What principles should guide impact assessment quality management?
- 462 - What specific aspects and issues should especially warrant scrutiny, especially depending on
- 463 the business objectives and measurement approach?

464

465 8. Accounting for ecosystem condition

466

467 Once impacts are measured and calculated, they must be accounted for. The Protocol would help
468 companies provide a tangible and strong assessment for ecosystem condition that can be used to
469 evaluate a company's performance, but also to track it throughout the years.

470 Having an accounting methodology ensures a concrete record build on accounting equations.

471 The goal here, would be to help companies understand how the different impacts should be
472 accounted for depending on their characteristics, how the accounting record of the company on
473 ecosystem condition should be structured, and how it should be filled. The considered approach at
474 this stage would be to broadly aligned with the BD Protocol's accounting system (Endangered
475 Wildlife Trust 2020) while providing guidance and flexibility to apply it to supply chains and to
476 account for impacts which cannot be tracked down to one specific geolocated ecosystems (e.g.
477 climate change impacts on ecosystem condition).

478 The EC Protocol would also link with existing initiatives such as the Nature Positive Initiative on the
479 measurement and accounting for "Nature Positive-aligned" companies.

480 This would help companies answer the following questions:

- 481 - What is the difference between measuring, accounting and reporting for impacts?
- 482 - What are the different impacts that should be accounted for, and what are the specificity to
- 483 account for them?
- 484 - What types of impacts should be accounted for separately (e.g. those from climate change)
- 485 and why?
- 486 - How to ensure consistency between accounts?
- 487 - How to attribute responsibility for impacts to companies in the case of co-products (e.g.
- 488 leather vs milk vs meat) or for sites where ecosystem condition is impacted by what happens
- 489 at the landscape level?
- 490 - How do impact accounting work when assets are sold or purchased?
- 491 - Where do biodiversity credits sit in the broader impact accounting?
- 492 - What does no net loss or net positive impact mean in ecosystem condition accounting
- 493 terms?
- 494 - How should potential impacts and future impacts be treated in accounting? And more
- 495 broadly, how to reconcile direct measurement and impact driver-based modelling of
- 496 ecosystem condition in accounting?
- 497 - How do the different possible business goals influence answers to all those questions?

9. Reporting on ecosystem condition

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499

500 Reporting impacts on ecosystem condition is a key step for companies. The reporting and disclosure
501 can be internal and/or external, depending on one's purpose.

502 The EC Protocol would help companies understand how to build a narrative in accordance with the
503 company's goals from the assessment and how to present the different information. It would be
504 limited to covering aspects not already covered by existing disclosure frameworks such as ESRS, GRI
505 or TNFD. Those frameworks already provide guidance on what should be reported, what is optional
506 to report, etc. and the Protocol would not duplicate such guidance, instead focusing on providing any
507 missing guidance on reporting on ecosystem condition.

508 Beyond the three frameworks mentioned, the considered source for this content is the GHG
509 Protocol, adapted for ecosystem condition.

510 This would help companies answering the following questions:

- 511 - How to report and disclose the different types of impacts?
- 512 - How to report correctly and clearly the different hypothesis?
- 513 - How to build a narrative in accordance with the company's impacts and goals?
- 514 - What are the different indicators that can be used to report and disclose impacts, and the
515 best ones for ecosystem condition?
- 516 - Can reporting distinguish between "primary" metric and "secondary" metrics to limit the
517 number of metrics used to report on ecosystem condition? Under which circumstances (e.g.
518 only if the secondary metrics provide broadly similar trends than the primary metrics)?

519

10. Verification of Impacts on ecosystem condition

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522 Once measuring, calculating, accounting, and reporting is completed, validating and verifying the
523 impacts on ecosystem condition is a crucial step. This step will help ensure that the reporting present
524 a credible and unbiased representation of the company's true impacts on ecosystem condition.

525 The EC Protocol would help evaluate at which level the verification process should be led
526 (assessment and/or results), detail the different options for a company to verify and validate the
527 accounting, as well as detail how to take into account the risk of material discrepancy.

528 Similarly to reporting, a number of guidelines already exist or are being developed to provide
529 guidance on verification of disclosures. The Protocol would not duplicate them but will rather seek to
530 provide specific guidance for ecosystem condition.

531 Based on principles established by the GHG Protocol and the BD Protocol, the EC Protocol would
532 therefore help companies answer the following questions:

- 533 - What is the difference between management of impact assessment quality and verification
534 and validation of impacts? Why are both processes crucial to ensure the quality of the
535 assessment and the results?

- 536 - At what scale should the verification process be led?
- 537 - What are the different options to lead such a verification and validation?
- 538 - What is the risk of material discrepancy?
- 539 - What thresholds to choose to ensure that the risk of material discrepancy is properly
- 540 considered?

541

542 11. Setting ecosystem condition targets

543

544 The EC Protocol would also help companies to set credible, strong and internationally aligned targets

545 on ecosystem condition. It would provide insights on the different levels of objectives that can be

546 defined by a company (ambition, goals and targets), how to choose a level of ambition and how to

547 adapt the goals to that level of ambition.

548 The EC Protocol would not provide a step-by-step guideline on how to build a target, as this purpose

549 is fulfilled by the SBTN methodology, to which the protocol will refer, but rather would provide

550 companies with guidelines tailored to ecosystem condition, supporting the SBTN approach wherever

551 needed.

552 Therefore, this would help companies answer the following questions:

- 553 - What are the options to set a baseline (which year to choose, etc.)?
- 554 - What are the options in terms of ecosystem condition targets? How do they relate to
- 555 ecosystem condition accounting, positive impacts, reduced impacts, avoided impacts, Nature
- 556 Positive?
- 557 - What criteria can guide the choice of a target that is both clear and simple, and yet precise
- 558 enough to be consistent with a company's impacts?