



Initiative for Responsible
Mining Assurance

Excerpt from the DRAFT Standard for Responsible Mining and Mineral Processing 2.0

Chapter 4.6 – Biodiversity, Ecosystem Services and Protected Areas

Context & Disclaimer on IRMA DRAFT Standard 2.0

IRMA DRAFT Standard for Responsible Mining and Minerals Processing 2.0 is being released for public consultation, inviting the world to join in a conversation around expectations that drive value for greater environmental and social responsibility in mining and mineral processing.

This draft document invites a global conversation to improve and update the 2018 IRMA Standard for Responsible Mining Version 1.0. It is not a finished document, nor seeking final review, but rather is structured to invite a full range of questions, comments and recommendations to improve the IRMA Standard.

This IRMA DRAFT Standard for Responsible Mining and Minerals Processing (v.2.0) has been prepared and updated by the IRMA Secretariat based on learnings from the implementation of the Standard (v.1.0), experience from the first mines independently audited, evolving expectations for best practices in mining to reduce harm, comments and recommendations received from stakeholders and Indigenous rights holders, and the input of subject-specific expert Working Groups convened by IRMA in 2022.

IRMA's Standard has a global reputation for comprehensive in-depth coverage addressing the range of impacts, as well as opportunities for improved benefit sharing, associated with industrial scale mining. This consultation draft proposes a number of new requirements; some may wonder whether IRMA's Standard already includes too many requirements. The proposed additions are suggested for a range of reasons (explained in the text following), including improving auditability by separating multiple expectations that were previously bundled into a single requirement, addressing issues that previously weren't sufficiently covered (e.g. gender, greenhouse gas emissions), and providing more opportunities for mining companies to receive recognition for efforts to improve social and environmental protection.

Please note, expert Working Groups were created to catalyze suggestions for solutions on issues we knew most needed attention in this update process. They were not tasked to come to consensus nor make formal recommendations. Their expertise has made this consultation document wiser and more focused, but work still lies ahead to resolve challenging issues. We encourage all readers to share perspectives to improve how the IRMA system can serve as a tool to promote greater environmental and social responsibility, and create value for improved practices, where mining and minerals processing happens.

The DRAFT Standard 2.0 is thus shared in its current form to begin to catalyze global conversation and stakeholder input. It does not represent content that has been endorsed by IRMA's multistakeholder Board of Directors. IRMA's Board leaders seek the wisdom and guidance of all readers to answer the questions in this document and inform this opportunity to improve the IRMA Standard for Responsible Mining.

IRMA is dedicated to a participatory process including public consultation with a wide range of affected people globally and seeks feedback, comments, questions, and recommendations for improvement of this Standard. IRMA believes that diverse participation and input is a crucial and determining factor in the effectiveness of a Standard that is used to improve environmental and social performance in a sector. To this end, every submission received will be reviewed and considered.

The DRAFT Standard 2.0 is based on content already in practice in the IRMA Standard for Responsible Mining Version 1.0 (2018) for mines in production, combined with the content drafted in the IRMA Standard for Responsible Mineral Development and Exploration (the 'IRMA-Ready' Standard – Draft v1.0 December 2021) and in the IRMA Standard for Responsible Minerals Processing (Draft v1.0 June 2021).

Chapter Structure

BACKGROUND

Each chapter has a short introduction to the issue covered in the chapter, which may include an explanation of why the issue is important, a description of key issues of concern, and the identification of key aspects of recognized or emerging best practice that the standard aims to reflect.

OBJECTIVES/INTENT STATEMENT

A description of the key objectives that the chapter is intended to contribute to or meet.

SCOPE OF APPLICATION

A description of the conditions under which the chapter may or may not be relevant for particular mines or mineral processing sites. If the entity can provide evidence that a chapter is not relevant, that chapter will not need to be included in the scope of the IRMA assessment. A requirement is 'not relevant' if the issue to which a requirement relates is not applicable at the site. For example, requirements related to the use of cyanide would not be relevant at a site at which cyanide is never used.

TERMS USED IN THIS CHAPTER

This is a list of the terms used in the chapter ■ Each term is separated with ■

Terms listed here are identified in the chapter with a dashed underline. And they are defined in the [Glossary of Terms](#) at the end of the chapter.

Chapter Requirements

X.X.X. These are criteria headings

X.X.X.X. And these are the requirements that must be met for an IRMA assessment to be issued and subsequently maintained by a site. Most criteria have more than one requirement. All requirements must be met in order to comply fully with the criterion.

- a. Some requirements consist of hierarchical elements:
 - i. At more than one level.
 - ii. Operations may be required to meet all elements in a list, or one or more of the elements of such a list, as specified.

NOTES

Any additional notes related to the chapter and its requirements are explained here.

GLOSSARY OF TERMS USED IN THIS CHAPTER

Terms used in the chapter are defined here.

ANNEXES AND TABLES

Annexes or Tables are found here.

IRMA Critical Requirements

The 2018 IRMA Standard for Responsible Mining v. 1.0 includes a set of requirements identified as being critical requirements. Operations being audited in the IRMA system must at least substantially meet these critical requirements in order to be recognized as achieving the achievement level of IRMA 50 and higher, and any critical requirements not fully met would need to have a corrective action plan in place describing how the requirement will be fully met within specified time frames.

The 2023 updates to the 2018 Standard may edit some critical requirements in the process of revising and therefore there will be a further review specific to the language and implications of critical requirements that follows the overall Standard review.

Associated Documents

This document is an extract of the full DRAFT IRMA FOR RESPONSIBLE MINING AND MINERAL PROCESSING (Version 2.0) – DRAFT VERSION 1.0, released in October 2023 for a public-comment period. The English-language full version should be taken as the definitive version. IRMA reserves the right to publish corrigenda on its web page, and readers of this document should consult the corresponding web page for corrections or clarifications.

Readers should note that in addition to the DRAFT Standard, there are additional policies and guidance materials maintained in other IRMA documents, such as IRMA’s Principles of Engagement and Membership Principles, IRMA Guidance Documents for the Standard or specific chapters in the Standard, IRMA Claims and Communications Policy and other resources. These can be found on the IRMA website in the Resources section. Learn more at responsiblemining.net

Comment on the IRMA Standard

Comments on the IRMA Standard and system are always welcome.

They may be emailed to IRMA at: comments@responsiblemining.net

Additional information about IRMA is available on our website: responsiblemining.net

Chapter 4.6

Biodiversity, Ecosystem Services and Protected Areas

NOTES ON THIS CHAPTER: The proposed changes in this chapter have been informed by experiences auditing the 2018 Mining Standard, as well as necessary changes to make this chapter applicable to all stages of mineral development (from exploration through to mineral processing and mine closure).

Proposed additions and changes:

- There are numerous structural changes to this chapter. The previous criterion 4.6.1 in the 2018 Mining Standard, which included ‘General Stipulations’ related to use of competent professionals, stakeholder engagement, and access to information, has been deleted and the contents integrated into relevant requirements throughout the chapter.
- Also, in criteria 4.6.1 ‘Scoping’ and 4.6.4 ‘Management Plans’ we have separated out the biodiversity, the ecosystem services requirements and the protected area requirements. Previously, the requirements contained all three elements. During audits it was difficult to know how to rate performance if an entity did well on one element (e.g., did a thorough scoping of biodiversity issues), but did not do an assessment of ecosystem services, etc. Also, a few more expectations are being proposed as scoping elements for biodiversity and ecosystem services, including taking into consideration the risks identified in other chapters (e.g., risks from waste management, risks to water, air, soils) that could, in turn, impact protected areas, biodiversity and ecosystem services.
- We have added specific references to fungi as an aspect of biodiversity that needs to be considered (see 4.6.1.3).
- We have combined some requirements related to protected areas management (see 4.6.5) and tried to increase consistency across requirements in that section regarding protected area management plans.
- Other changes have been made to add consistency in expectations between chapters in this proposed update to the 2018 Mining Standard. For example, other chapters require that risk assessments be updated if there are changes in operations or the operating environment that may create new or increased impacts. This was a gap in Chapter 4.6 that we’re proposing to fill.

Glossary:

- We are proposing other new/revised definitions for several glossary terms. The ‘Terms Used In This Chapter’ box shows which terms are new, and the proposed definitions can be found in the glossary at the end of the chapter requirements (and before the Annexes). Feedback on definitions is welcome.

BACKGROUND

Biological diversity, or biodiversity, describes the variety of life on Earth. It refers to the wide variety of ecosystems and living organisms: animals, plants, fungi and their habitats and genes. Biodiversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being, it is a central component of many belief systems, world views and identities, it provides for food security, human health, clean air and water, and contributes to local livelihoods and economic development. Despite its fundamental importance, however, biodiversity continues to be lost.¹

Mineral development may take place in landscapes that are already heavily modified or degraded, and therefore, pose little or no threat to global biodiversity loss. When located in areas of high biodiversity value, however, there is the potential that mining and associated activities may lead to a temporary or permanent loss in biodiversity and ecosystem services.

¹ Adopted from the Convention on Biological Diversity (CBD) Strategic Plan for Biodiversity 2011-2020. Available at: www.cbd.int/sp/

In some cases, mines may permanently remove entire ecosystems, particularly where biota have co-evolved with specific mineral substrates. In other cases, biodiversity may be unaffected by mineral development, or mining may cause less damage than alternative land uses.² However, even where one mining or mineral processing operation does not create significant impacts on biodiversity on its own, there may be larger indirect impacts caused by its development, such as the exacerbation of deforestation,³ or a single operation may contribute to significant impacts when considered cumulatively with other developments (either on a spatial or temporal basis).⁴

Globally, a network of protected areas has been put in place, offering various levels of protection for biodiversity, landscapes, and seascapes. Developments such as exploration, mining and mineral processing are expected to respect those protections and operate in manner that safeguards biodiversity and other values that led to a protected area designation (e.g., cultural, spiritual, or scenic values). In many areas of the world, however, an adequate system of protected areas has yet to be established, or where protections exist further opportunities to conserve biodiversity and other important values remain.

Through adherence to the mitigation hierarchy during the most appropriate stages in project development, mineral development can proceed in a manner that supports global biodiversity, maintains the ecosystem services that communities need to survive and thrive, and leaves behind structurally safe and functioning ecosystems upon closure. This chapter puts forward a framework for mining-related projects and operation to proactively assess and manage impacts on biodiversity and ecosystem services according to the mitigation hierarchy of avoiding and minimizing impacts early in the project life cycle, and if impacts cannot be avoided, restoring and, if necessary, offsetting or compensating for residual impacts throughout the remainder of the mine's life.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect biodiversity, maintain the benefits of ecosystem services and respect the values being safeguarded in protected areas.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all exploration, mining and mineral processing projects and operations.

NOTE ON SCOPE OF APPLICATION: This proposed version of the IRMA Standard is meant to apply to exploration, mining, and mineral processing projects and operations (see definitions of project and operation), but not all requirements will be relevant in all cases. We have provided some high-level information below, but the IRMA Secretariat will produce a detailed Scope of Application for each chapter that will indicate relevancy on a requirement-by-requirement basis (and will provide some normative

TERMS USED IN THIS CHAPTER

Additional Conservation Actions ■ Affected Community ■ Area of Influence ■ Associated Facility ■ Avoidance ■ Baseline ■ Biodiversity ■ Biosphere Reserves ■ Closure ■ Collaborate ■ Competent Professionals ■ Conservation Outcomes ■ Conservation Values ■ Consultation ■ Critical Habitat ■ Cumulative Impacts ■ Direct Impacts **NEW** ■ Ecological Processes ■ Ecosystem ■ Ecosystem Service ■ Enhancement ■ Entity **NEW** ■ Exploration **NEW** ■ Habitat ■ Important Biodiversity Values ■ Indirect Impacts **NEW** ■ Key Biodiversity Areas ■ Mineral Development Life Cycle **NEW** ■ Mineral Processing **NEW** ■ Mining **NEW** ■ Mining-Related Activities ■ Minimize ■ Mitigation ■ Mitigation Hierarchy ■ Modified Habitat ■ Natural Habitat ■ No Net Loss and Net Gain ■ Offset ■ Operation **NEW** ■ Priority Ecosystem Services ■ Project **NEW** ■ Protected Area ■ Protected Area Management Categories ■ Residual Impacts ■ Restoration ■ Scoping **NEW** ■ Stakeholder ■ Tentative List for World Heritage Site Inscription ■ World Heritage Site ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the chapter.

² Mining and biodiversity: key issues and research needs in conservation science. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6283941/>

³ World Wildlife Fund. 2023. Extracted Forests. pp. 22, 23. <https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/Wald/WWF-Studie-Extracted-Forests.pdf>

⁴ Mining and biodiversity: key issues and research needs in conservation science. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6283941/>

language where the expectations may slightly differ for proposed projects versus operations, or for mining versus mineral processing, etc.).

CRITICAL REQUIREMENTS IN THIS CHAPTER

The entity has carried out scoping to evaluate its potential impacts on protected areas (4.6.1.2), biodiversity (4.6.1.3), and ecosystem services (4.6.1.4), and that mitigation is developed in a manner that aligns with the mitigation hierarchy (4.6.3.1).

Projects are not proposed in nor will they adversely affect World Heritage Sites (WHS), areas on a State Party's official Tentative List for WHS Inscription, IUCN protected area management categories I-III, or core areas of UNESCO biosphere reserves, exploration, mining and mineral processing operations that are already located in those areas ensure that activities during the remaining life cycle will not permanently and materially damage the integrity of the special values for which the area was designated or recognized (4.6.4.2).

NOTE ON CRITICAL REQUIREMENTS: In the 2018 Mining Standard, requirement 4.6.2.1, which related to protected area, biodiversity, and ecosystem services 'screening' (now scoping), was a critical requirement. We are proposing that all three scoping-related requirements proposed in this version of the Standard remain critical (4.6.1.2, 4.6.1.3 and 4.6.1.4). One critical requirement has been deleted because 4.6.4.2 combines two requirements that were critical in the 2018 Mining Standard.

The 2018 IRMA Standard includes a set of requirements identified as being critical. Projects/operations being audited in the IRMA system must at least substantially meet all critical requirements in order to be recognized at the achievement level of IRMA 50 and higher, and any critical requirements not fully met need a corrective action plan for meeting them within specified time frames.

INPUT WELCOME: The proposed revisions to the 2018 Standard have led to new content, as well as edits of some critical requirements in the process. Therefore, there will be a further review of the language and implications of critical requirements prior to the release of a final v.2.0 of the IRMA Standard. During this consultation period we welcome input on any existing critical requirement, as well as suggestions for others you think should be deemed critical. A rationale for any suggested changes or additions would be appreciated.

Biodiversity, Ecosystem Services and Protected Areas Requirements

4.6.1. Biodiversity, Ecosystem Services and Protected Areas Scoping

NOTE FOR 4.6.1: REVISED. In the 2018 Mining Standard, criterion 4.6.1 was called General Stipulations. It contained three requirements relating to use of competent professionals, consultations with stakeholders and public availability of information produced by the entity on actions taken on biodiversity, ecosystem services and protected areas. We are proposing to delete that criterion and the three requirements within, and instead add the expectations into the relevant sections in the rest of the chapter, to make it clear what the expectations are for each step in the process – when to engage stakeholders, whether the information at that stage needs to be publicly available, etc.

The new 4.6.1 was previously 4.6.2 in the 2018 Mining Standard. Previously it was called 'Biodiversity, Ecosystem Services and Protected Areas Screening'. We are changing the term screening to scoping to be more consistent with the other IRMA chapters.

We are proposing the following definition of scoping, however, if this term is confusing, we are open to reverting to screening, or adopting another term altogether:

Scoping

The interactive process of determining potential issues and impacts and producing information necessary to inform decision-making regarding whether additional evaluation and actions are necessary.

Also, there were two screening requirements in which biodiversity, ecosystem services and protected areas were all included. We are proposing to create three separate requirements so that the scoping of protected areas (4.6.2.1), the scoping of biodiversity (4.6.2.2) and the scoping of ecosystem services (4.6.2.3) are all assessed on their own merits, so that the strengths and gaps with each are more clearly reflected.

Finally, In the 2018 Mining Standard, the collection of baseline data was mentioned in the same requirement as impact assessment. We are proposing that it be included with scoping, instead, because ideally, the collection of baseline data starts early in the project development phase and feeds into the scoping of risks/impacts. The scoping process may also identify additional baseline data to be collected to inform impact assessment, and so combining the two helps to reflect that this may be an iterative process.⁵

CONSULTATION QUESTION 4.6-1

Background: According to the United Nations Environment Program, “Indigenous and Community Conserved Areas (ICCAs) are a globally significant type of managed area governed by local or Indigenous communities for conservation and cultural purposes.”⁶ Since 2008, ICCAs have been recognized by the International Union for the Conservation of Nature (IUCN) as key governance actors in nature conservation.⁷

ICCAs are defined by three characteristics:

- 1) There is a close and deep connection between a territory or area and an Indigenous people or local community. This relationship is generally embedded in history, social and cultural identity, spirituality and/or people’s reliance on the territory for their material and non-material wellbeing.
- 2) The custodian people or community makes and enforces decisions and rules (e.g., access and use) about the territory, area or species’ habitat through a functioning governance institution.
- 3) The governance decisions and management efforts of the concerned people or community contribute to the conservation of nature (ecosystems, habitats, species, natural resources), as well as to community wellbeing.

ICCAs may include lands, inland waters, coast and marine territories that overlap with protected areas, but also may encompass territories that are not recognized as “protected” by either national governments or IUCN, as the conservation of nature may not always be the primary objective of an ICCA.⁸

Question: Should mining entities be required to identify ICCAs as part of their scoping? If so, and if they are identified in the area of influence, would the next steps be: consultation with ICCA custodians to determine what values are being conserved and identify potential impacts on the ICCA, free, prior and informed consent from Indigenous Peoples for proposed activities that would affect their rights or interests, collaboration with affected local stakeholders to determine mitigation strategies as per the mitigation hierarchy, implementation, monitoring and reporting on effectiveness of mitigation (in other words, steps outlined in this chapter)?

4.6.1.1. The entity identifies and maps the proposed or actual area of influence of the project/operation, including areas that may be or are affected by associated activities.

NOTE FOR 4.6.1.1: NEW. This has been added so that the boundaries of proposed (or actual) development are clear, and the potential area for baseline study is defined.

⁵ Gullison, T, Hardner, J., Anstee, S. and Meyer, M. 2015. Good Practices for the Collection of Biodiversity Baseline Data. P. 13. <https://publications.iadb.org/en/good-practices-collection-biodiversity-baseline-data>

⁶ United Nations Environment Programme’s World Conservation Monitoring Centre (UNEP-WCMC). 2017. A handbook for the Indigenous and Community Conserved Areas Registry p. 26. https://wedocs.unep.org/bitstream/handle/20.500.11822/8448/-A%20handbook%20for%20the%20indigenous%20and%20community%20conserved%20areas%20registry-2010%20ICCA_Handbook.pdf?sequence=3&%3BisAllowed=

⁷ IUCN web site: “ICCAs for biological and cultural diversity.” <https://www.iucn.org/news/protected-areas/201905/iccas-biological-and-cultural-diversity>

⁸ Borrini-Feyerabend, G. et al. 2014. A Primer on Governance for Protected and Conserved Areas. (IUCN). See pages 10-15. <https://portals.iucn.org/library/sites/library/files/documents/2014-033.pdf>

4.6.1.2. (Critical Requirement)

The entity implements a protected areas scoping process (or equivalent) that:

- a. Is carried out and documented by competent professionals;
- b. Includes consultations with stakeholders, including, where relevant, affected communities and external experts; and
- c. Includes the identification of the boundaries of the following areas that are located in the vicinity of the project/operation:
 - i. Protected areas with international recognition, including: World Heritage Sites, and areas on a state party's official Tentative List for World Heritage Site Inscription; IUCN protected area management categories I-VI; United Nations Educational, Scientific and Cultural Organization (UNESCO) biosphere reserves; and Ramsar sites;
 - ii. Regional, national, sub-national and local legally protected areas; ⁹
- d. Includes a description of the values (e.g., ecological, biological, geological, geomorphological, cultural, spiritual, historical, scenic, etc.) being protected in the identified protected areas; ¹⁰
- e. Takes into consideration how risks related to waste management (Chapter 4.1), water management (Chapter 4.2), physical stability of facilities (proposed Chapter 4.X), air quality management (Chapter 4.3) and soil management (proposed Chapter 4.XX) may result in impacts on the values in protect areas; and
- f. Results in the identification of whether or not any protected areas, or the values for which the area was designated:
 - i. May be affected by a proposed project; and/or
 - ii. Have been affected by past mining-related activities (including exploration); and/or
 - iii. Are being affected by current operations.

NOTE FOR 4.6.1.2: REVISED. This proposed requirement combines elements from the following requirements from the 2018 Mining Standard: 4.6.1.1 (competent professionals), 4.6.1.2 (Stakeholder engagement), 4.6.2.1 (general requirement for screening), and 4.6.2.2 (identification of boundaries of legally protected areas and the values being protected). See the note that accompanies 'Critical Requirements In This Chapter,' above.

There is **NEW** content in 4.6.1.2.b. We are proposing that this requirement includes collection of information that will be necessary to provide evidence later in the chapter. In particular, there are several requirements that mention particular types of protected areas. If no such areas are identified during scoping, then that can be used as evidence to mark those later requirements as "not relevant".

4.6.1.2.e is **NEW**. It has been added so that it is clear that information related to waste, water, air and soil management be incorporated into the scoping of potential impacts on protected areas. These are all elements that if not managed well can impact the values in protected areas, and therefore, the risks identified in those chapters must feed into this scoping process.

4.6.1.3. (Critical Requirement)

The entity establishes a biodiversity baseline for the project's/operation's area of influence, and implements a scoping process (or equivalent) that:

- a. Is carried out and documented by competent professionals;
- b. Includes consultations with stakeholders, including, where relevant, affected communities and external experts;
- c. Includes the identification of:

⁹ Regional protected areas could include, for example, those in the European Union's Natura 2000 network. National, subnational and local areas may include parks, wilderness areas, wildlife preserves, etc.

¹⁰ NOTE: If protected areas have been designated as such to provide protection of cultural values, this needs to feed into Chapter 3.7—Cultural Heritage.

- i. Boundaries of Key Biodiversity Areas (KBA)¹¹ and the important biodiversity values and ecological processes and habitats supporting those values; and
 - ii. Areas of modified habitat, natural habitat, and critical habitat within the mine’s proposed or actual area of influence;¹²
- d. Identifies and describes the natural habitats and species of flora, fauna, and fungi within the baseline study area, including quantitative measures of abundance, distribution and other measures of viability and/or function for each species (terrestrial and aquatic);
- e. Identifies the important biodiversity values present in the areas of modified habitat, natural habitat, and critical habitat, and provides information on the importance of the habitats and species relative to their global distribution;
- f. Takes into consideration how risks related to waste management (Chapter 4.1), water management (Chapter 4.2), the physical stability of facilities (proposed Chapter 4.X), air quality management (Chapter 4.3) and soil management (proposed Chapter 4.XX) may result in impacts on biodiversity;
- g. Results in the identification of whether or not there are any areas of potentially important global, national or local biodiversity that:
- i. May be affected by a proposed project; and/or
 - ii. Have been affected by past mining-related activities (including exploration); and/or
 - iii. Are being affected by current operations.

NOTE FOR 4.6.1.3: REVISED. This proposed requirement combines elements from the following requirements from the 2018 Mining Standard: 4.6.1.1 (competent professionals), 4.6.1.2 (Stakeholder engagement), 4.6.2.1 (screening of biodiversity), and 4.6.2.2 (identification KBAs, modified habitat, natural habitat and critical habitat, and biodiversity values contained therein). See the note that accompanies ‘Critical Requirements In This Chapter,’ above.

4.6.1.3.d and e add **NEW** content. This content adds more detail on the baseline data that should be collected. These sub-requirements are aligned with good practice guidance prepared for the Multilateral Financing Institutions Biodiversity Working Group and Cross Sector Biodiversity Initiative, which included both finance institutions and extractive industries representatives.¹³

We have specified that species of flora, fauna and fungi be identified. Increasingly, fungi are being recognized for their critical role in maintaining life on earth. According to IUCN: “There would be no life on Earth without fungi: the yeasts, molds and mushrooms that are critical to decomposition and forest regeneration, mammalian digestion, carbon sequestration, the global nutrient cycle, antibiotic medication, and the bread, beer and chocolate we consume. Trees would not be able to live on land without fungi.”¹⁴

¹¹ KBAs include Alliance for Zero Extinction (AZE) sites, Important Bird and Biodiversity Areas (IBA), Important Plant Areas (IPA).

¹² See glossary definitions at the end of the chapter. Modified, natural and critical habitat refers to the biodiversity value of the area as determined by species, ecosystems and ecological processes. In practice, natural and modified habitats exist on a continuum that ranges from largely untouched, pristine natural habitats to intensively managed modified habitats. Critical habitats are a subset of modified or natural habitats. (See: International Finance Corporation. 2012. Performance Standard 6, Guidance Notes. (GN26 and Para.9) https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps6

¹³ Gullison, T., Hardner, J., Anstee, S. and Meyer, M. 2015. Good Practices for the Collection of Biodiversity Baseline Data. p. 47. <https://publications.iadb.org/en/good-practices-collection-biodiversity-baseline-data>

¹⁴ International Union for the Conservation of Nature. 3 August 2021. “Re:wild and IUCN SSC become first global organizations to call for the recognition of fungi as one of the three kingdoms of life critical to protecting and restoring Earth.” <https://www.iucn.org/news/species-survival-commission/202108/rewild-and-iucn-ssc-become-first-global-organizations-call-recognition-fungi-one-three-kingdoms-life-critical-protecting-and-restoring-earth>

The extent of the role that fungi plays as a global carbon sink, and potential to increase their storage capacity, is gaining increased attention. A recent peer reviewed study estimates that mycorrhizal fungi currently store more than 13 gigatons of carbon, which is more than a third of annual global fossil fuel emissions.¹⁵

4.6.1.3.f is **NEW**. It has been added so that it is clear that information related to waste, water, air and soil management be incorporated into the scoping of potential impacts on biodiversity. These are all elements that if not managed well can impact ecosystem health and biodiversity, and therefore, the risks identified in those chapters must feed into this scoping process.

4.6.1.4. (Critical Requirement)

The entity establishes an ecosystem services baseline for the project's/operation's area of influence, and implements a scoping process (or equivalent) that:

- a. Is carried out and documented by competent professionals;
- b. Includes consultations with stakeholders, including, where relevant, affected communities and external experts;
- c. Includes the identification of ecosystems or processes within the proposed or actual area of influence that may provide or do provide provisioning, regulating, cultural and supporting ecosystem services;¹⁶
- d. Identifies the beneficiaries of the ecosystem services;
- e. Takes into consideration how risks related to waste management (Chapter 4.1), water management (Chapter 4.2), the physical stability of facilities (proposed Chapter 4.X), air quality management (Chapter 4.3) and soil management (proposed Chapter 4.XX) may result in impacts on ecosystem services;
- f. Results in the identification of whether or not any ecosystem services:
 - i. May be affected by a proposed project; and/or
 - ii. Have been affected by past mining-related activities (including exploration); and/or
 - iii. Are being affected by current operations.

NOTE FOR 4.6.1.4: This proposed requirement combines elements from the following requirements from the 2018 Mining Standard: 4.6.1.1 (competent professionals), 4.6.1.2 (Stakeholder engagement), 4.6.2.1 (screening of ecosystem services), and 4.6.2.2 (identification of ecosystem services). See the note that accompanies 'Critical Requirements In This Chapter,' above.

4.6.1.4.d adds **NEW** content based on good practices.¹⁷ Identification of beneficiaries will also aid in the identification of rights holders and stakeholders who may be affected by the project/operation.

4.6.1.4.e is **NEW**. It has been added so that it is clear that information related to waste, water, air and soil management be incorporated into the scoping of potential impacts on ecosystem services. These are all elements that if not managed well can impact ecosystem health and the services that these ecosystems provide to affected communities, and therefore, the risks identified in those chapters must feed into this scoping process.

¹⁵ University of Sheffield. 5 June 2023. "Fungi stores a third of carbon from fossil fuel emissions and could be essential to reaching net zero, new study reveals." News Release. <https://www.eurekalert.org/news-releases/991288>

¹⁶ NOTE: If ecosystem services have been designated as cultural in nature, this needs to feed into Chapter 3.7 (Cultural Heritage).

¹⁷ Gullison, T., Hardner, J., Anstee, S. and Meyer, M. 2015. Good Practices for the Collection of Biodiversity Baseline Data. p. 9. <https://publications.iadb.org/en/good-practices-collection-biodiversity-baseline-data>

4.6.2. Risk/Impact Assessment

NOTE FOR 4.6.2: REVISED. This was 4.6.3 in the 2018 Mining Standard. The title has changed to risk/impact assessment, as both risks and impacts should be assessed.

4.6.2.1. When scoping identifies protected areas, or potentially important global, national, or local biodiversity or ecosystems services that have been or may be affected by a project/operation, an impact (and/or risk) assessment:

- a. Is carried out and documented by competent professionals;
- b. Includes consultations with stakeholders, including, where relevant, affected communities and external experts;
- c. Determines the potentially significant direct impacts, indirect impacts, and cumulative impacts of past and proposed mining-related activities, facilities, associated facilities, and infrastructure, on, as relevant:
 - i. Biodiversity;
 - ii. Ecosystem services; and
 - iii. The conservation values of protected areas.
- d. Evaluates options to mitigate potentially significant impacts on biodiversity, ecosystem services and the conservation values in protected areas in a manner that aligns with the mitigation hierarchy as follows:¹⁸
 - i. Prioritizing the avoidance of impacts on important biodiversity values, priority ecosystem services, and conservation values in protected areas;¹⁹
 - ii. Minimizing impacts to the extent possible;
 - iii. Restoring biodiversity, ecosystem services and the ecological processes and habitats that support them; and
 - iv. As a last resort, offsetting the residual impacts.
- e. Identifies and evaluates opportunities for partnerships and additional conservation actions to enhance the long-term sustainable management of protected areas and/or biodiversity and ecosystem services.

NOTE FOR 4.6.2.1: REVISED. This was 4.6.3.1 in the 2018 Mining Standard. This proposed requirement combines elements from the following requirements from the 2018 Mining Standard: 4.6.1.1 (competent professionals), 4.6.1.2 (stakeholder engagement), 4.6.3.1 (impact assessment).

4.5.2.1.c (was 4.6.3.1.b) adds impacts related to facilities and infrastructure in addition to impacts from mining-related activities, because the footprint of facilities and infrastructure can also impact biodiversity, ecosystem services and protected areas.

In 4.5.2.1.d (was 4.6.3.1.c), we moved the information on the mitigation hierarchy from requirement 4.6.4.1 in the 2018 Mining Standard. This is the first place where we mention mitigation hierarchy, and so it makes sense to elaborate on it here.

4.6.2.1.e was 4.6.3.1.d, but is otherwise unchanged.

4.6.2.2. Assessments are updated throughout the project/operation's life cycle when there are proposed changes to mining-related activities or changes in the operational, environmental, or social context that may create new risks to biodiversity, ecosystem services or protected areas or change the nature or degree of an existing impact.

NOTE FOR 4.6.2.2: NEW. This has been added to reflect that impact assessments are not a one-time thing. For example, issues such as climate change may affect the types of ecosystem services affected by the operation,

¹⁸ This section is meant to align with many other standards and guidelines that address impacts on biodiversity, such as IFC's Performance Standard 6 (see Para. 10 and 14) and the KBA Partners Guidelines on Business and KBAs (KBA Partners. 2018. Guidelines on Business and KBAs: Managing Risk to Biodiversity. <https://portals.iucn.org/library/sites/library/files/documents/2018-005-En.pdf>)

¹⁹ This includes prioritizing avoidance of impacts on the ecological processes and habitats necessary to support the identified biodiversity, ecosystem services and conservation values.

or increased hunting pressures due to in-migration may warrant a re-evaluation of measures to best mitigation the impacts to important species, etc.

This requirement is aligned with other IRMA chapters, which require an updating of risk assessments when there are changes in the operation or operational context.

4.6.3. Biodiversity and Ecosystem Services Mitigation and Management

NOTE FOR 4.6.3: REVISED. This was 4.6.4 in the 2018 Mining Standard. The title has changed slightly (removed the word impact, as some of the mitigation may be related to risks).

CONSULTATION QUESTION 4.6-2

Background: Currently, this chapter focuses on the conservation and management of the most important or critical areas of biodiversity (in some cases these have been designated as protected areas or Key Biodiversity Areas, in other cases they will not have been officially designated but still contain important biodiversity values) and priority ecosystem services. This is based on an assumption is that halting biodiversity loss (on the global, regional or local scale), and preserving ecosystem services that are important to affected communities deserve the priority attention.

Important Biodiversity Values are defined as:

The particular biodiversity elements or features, such as individual species, assemblages of species, particular ecological processes, etc., that trigger an area’s designation as having significant biodiversity value (e.g., designation as critical habitat, a Key Biodiversity Area, a Protected Area), as well as the ecological context needed to support the maintenance of the trigger elements.

Critical Habitat is defined as:

Areas with high biodiversity value, including but not necessarily limited to: (i) habitat of significant importance to critically endangered, endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes. Other recognized high biodiversity values might also support a critical habitat designation, based on case-by-case evaluation.

Priority Ecosystem Services are defined as: “Ecosystem services are considered priority under the following circumstances: (i) Project operations are likely to result in a significant impact on the ecosystem service; the impact will result in a direct adverse impact on affected communities’ livelihood, health, safety and/or cultural heritage; and the project has direct management control or significant influence over the service; or (ii) The project directly depends on the service for its primary operations; and the project has direct management control or significant influence over the service.

Question: Should IRMA also include specific requirements to manage and minimize impacts on plant or animal populations or species even if those plants/animals do not provide a priority ecosystem service or if impacts on them will not lead to an overall loss of biodiversity? Or should IRMA keep this chapter focused on the most critical/material impacts on biodiversity and ecosystem services?

4.6.3.1. (Critical Requirement)

Mitigation measures to address potential impacts on biodiversity and ecosystem services:

- a. Are designed and implemented by competent professionals;
- b. Are developed in consultation with affected stakeholders;
- c. Prioritize avoidance of impacts on important biodiversity values and priority ecosystem services, and, where that is not possible, prioritize minimization of impacts before restoring biodiversity and ecosystem services;
- d. Offsetting is used as a last resort, and, if required, is aligned with international best practice; and
- e. Include documentation of the entity’s rationale when measures do not conform to the mitigation hierarchy.

NOTE FOR 4.6.3.1: REVISED. This combines three requirements from the 2018 Mining Standard: 4.6.1.1 (mitigation developed by competent professionals), 4.6.2.1 (stakeholder engagement in development of mitigation) and 4.6.4.1.b which referred to prioritizing the avoidance of impacts on important biodiversity and ecosystem services. In the 2018 Mining Standard requirement 4.6.4.1 was a critical requirement, so it is also designated as critical in this version (for more on critical requirements see the note that accompanies ‘Critical Requirements In This Chapter,’ above).

There is one **NEW** sub-requirement being proposed. In 4.6.3.1.d, we are proposing also that entities be required provide a rationale for why they are implementing measures that are lower on the mitigation hierarchy. Without this documentation, it is difficult to audit whether or not due consideration was given to options such as avoidance, or minimization of impacts, which area higher up the hierarchy.

4.6.3.2. Mitigation measures are designed and implemented:

- a. To deliver at least no net loss, and preferably a net gain, in important biodiversity values, and priority ecosystem services;
- b. On an appropriate geographic scale; and
- c. To be self-sustaining after closure.

NOTE FOR 4.6.3.2: This was 4.6.4.1.c in the 2018 Mining Standard.

CONSULTATION QUESTION 4.6-3:

Background: Previously, this requirement applied to new mines, but we have removed the distinction between new and existing mines in this revised standard. As a result, we are proposing that in all cases (for proposed projects or existing operations) that entities be required to demonstrate that their management of biodiversity and ecosystem services will lead to no net loss and preferably a net gain, at least in the important biodiversity values, and in priority ecosystem services.

Question: Do you agree that all projects and operations should be required to demonstrate no net loss and preferably a net gain in important biodiversity values, and in priority ecosystem services?

4.6.3.3. A biodiversity management plan (or equivalent) is developed and implemented. The management plan:

- a. Is developed by competent professionals;
- b. Outlines specific objectives (e.g., no net loss/net gain, no additional loss) with measurable conservation outcomes, timelines, locations, and activities that will be implemented to mitigate impacts on biodiversity (see 4.6.3.1);
- c. Identifies key indicators, and ensures that there is an adequate baseline for the indicators to enable measurement of the effectiveness of mitigation activities over time;
- d. Assigns implementation of actions, or oversight of implementation, to responsible staff;²⁰
- e. Includes an implementation schedule; and
- f. Includes estimates of human resources and budget required and a financing plan to ensure that funding is available for the effective implementation of the plan.

NOTE FOR 4.6.3.3: REVISED. This was 4.6.4.4 in the 2018 Mining Standard. Added 4.6.3.3.c and d, as we are trying to increase consistency in expectations for all management plans across the IRMA Standard.

²⁰ If work is carried out by third party contractors, then there needs to be a staff employee responsible for overseeing the quality of work, timelines, etc.

4.6.3.4. An ecosystem services management plan (or equivalent) is developed and implemented. The management plan:

- a. Is developed by competent professionals;
- b. Outlines specific objectives (e.g., no net loss/net gain, no additional loss) with measurable conservation outcomes, timelines, locations, and activities that will be implemented mitigate impacts on ecosystem services (see 4.6.3.1);
- c. Identifies key indicators, and ensures that there is an adequate baseline for the indicators to enable measurement of the effectiveness of mitigation activities over time;
- d. Assigns implementation of actions, or oversight of implementation, to responsible staff;²¹
- e. Includes an implementation schedule; and
- f. Includes estimates of human resources and budget required and a financing plan to ensure that funding is available for the effective implementation of the plan.

NOTE FOR 4.6.3.4: NEW. We have created a requirement for an ecosystem services management plan to ensure that due attention is paid and weight given to the management of ecosystem services. In reality, these elements are likely to be integrated into a single management plan with biodiversity, but the entity's performance on management of ecosystem services will be scored separately.

4.6.3.5. Biodiversity and ecosystem services management plans are reviewed and updated as necessary, for example, if new information on increased or additional risks to biodiversity or ecosystem services becomes available during the mineral development life cycle (see 4.6.2.2), or monitoring indicates that mitigation measures are not being effective (see 4.6.5.3).

NOTE FOR 4.6.3.5: REVISED. This was 4.6.4.5 in the 2018 Mining Standard. It has been revised slightly to add that updates to risk/impact assessments and monitoring results also feed into the review and update of management plans.

4.6.4. Protected Areas Mitigation and Management

4.6.4.1. Mining-related activities do not occur in legally protected areas unless the entity:

- a. Demonstrates that the proposed activities are legally permitted in those areas;
- b. Consults with protected area sponsors, managers, and relevant stakeholders on the proposed activities;
- c. Develops and implements a protected area management plan that:
 - i. Outlines how mining-related activities will be carried out in a manner consistent with the protected area management plans developed by relevant management authorities for such areas;
 - i. If relevant (i.e., if there is the potential that they project will impact important conservation values of the protected area), the plan includes activities/actions to mitigate those impacts, identifies key indicators, and ensures that there is an adequate baseline for the indicators to enable measurement of the effectiveness of mitigation activities over time;
 - ii. Includes additional conservation actions or programs to promote and enhance the conservation aims and/or effective management of the area;
 - iii. Assigns implementation of actions, or oversight of implementation, to responsible staff;²²
 - iv. Includes an implementation schedule; and
 - v. Includes estimates of human resources and budget required and a financing plan to ensure that funding is available for the effective implementation of the plan.
- d. Meets other applicable requirements in this this chapter.²³

²¹ If work is carried out by third party contractors, then there needs to be a staff employee responsible for overseeing the quality of work, timelines, etc.

²² If work is carried out by third party contractors, then there needs to be a staff employee responsible for overseeing the quality of work, timelines, etc.

²³ Other applicable requirements include 4.6.1.1, 4.6.1.2, 4.6.2.1, and 4.6.2.2.

NOTE FOR 4.6.4.1: REVISED. This was 4.6.5.1 in the 2018 Mining Standard. Previously, this requirement said it applied to new exploration or new mines, but we have removed that distinction in this revised standard. Instead, we refer to mining-related activities generally, which in our proposed definition includes exploration, mining and mineral processing activities.

The content in 4.6.4.1.c is **NEW** except for c.iii. The requirement for a management plan was added because there would need to be a plan in place to demonstrate how impacts will be mitigated and additional conservation actions implemented. The elements in the management plan are consistent with other management plans in the IRMA Standard.

4.6.4.2. (Critical Requirement)

Mining-related activities:

- a. Do not take place in or adversely affect the following protected areas:
 - i. World Heritage Sites;
 - ii. Areas on a state party's official Tentative List for World Heritage Site Inscription;
 - iii. Areas classified as IUCN protected area management categories I-III; and
 - iv. Core areas of UNESCO biosphere reserves.
- b. Unless it can be demonstrated that:
 - i. The operation was in place prior to the area's official designation;
 - ii. The entity collaborates with protected area sponsors, managers, and relevant stakeholders to develop acceptable mitigation actions to protect, and if necessary, restore the integrity of the special values for which the area was designated or recognized;
 - iii. The entity develops and implements a protected area management plan that aligns with 4.6.4.1.c and integrates mitigation measures agreed in 4.6.4.2.b.ii; and
 - iv. The entity collaborates with relevant management authorities to integrate the operation's management strategies into the protected area's management plan.

NOTE FOR 4.6.4.3: REVISED. This requirement combines two requirements from the 2018 Mining Standard (4.6.5.3 and 4.6.5.4) because 4.6.5.4 was an exception to 4.6.5.3, and it makes sense to combine them and only audit a single requirement. In the 2018 Mining Standard requirement these were critical requirements, so 4.6.4.2 in this version is also designated as critical (for more on critical requirements see the note that accompanies 'Critical Requirements In This Chapter,' above).

Previously, those requirements referred to new and existing mines, but we have removed that distinction in this revised standard. Instead, we refer to mining-related activities generally, which in our proposed definition includes exploration, mining and mineral processing activities. 4.6.4.2, which previously referred to existing mines now refers to operations, which maintains the original intent.

In 4.6.4.2.b, we are proposing to **REVISE** the previous requirement 4.6.5.4.b, which referred to a management plan, and replace it with sub-requirements 4.6.4.2.b.ii and 4.6.4.2.b.iii. The notable changes being proposed are that the entity's management plan align with 4.6.4.1.c (so there are more consistent expectations for management plans for all types of protected areas), and rather than saying the management plans "ensure that activities during the remaining mine life cycle will not permanently and materially damage the integrity of the special values for which the area was designated or recognized," which is difficult to audit, we are proposing to require instead that entities collaborate with relevant stakeholders to develop the mitigation measures to protect or restore the integrity of the special values for which the area was designated or recognized.

4.6.4.3. Mining-related activities:

- a. Do not take place in or adversely affect the following protected areas:
 - i. IUCN protected areas designated as protected area management category IV;
 - ii. Ramsar sites that are not in areas classified as IUCN protected area management categories I-III;²⁴ and
 - iii. Buffer zones of UNESCO biosphere reserves.
- b. Unless it can be demonstrated that:
 - i. Mining-related activities are legally permitted in those areas;
 - ii. An operation was in place prior to the area's official designation;
 - iii. For proposed mining-related activities, an assessment, carried out or peer-reviewed by a reputable conservation organization and/or academic institution,²⁵ concludes that mining-related activities will not damage the integrity of the special values for which the area was designated or recognized;
 - iv. The entity collaborates with protected area sponsors, managers, and relevant stakeholders to develop acceptable mitigation actions to protect the integrity²⁶ of the special values for which the area was designated or recognized;
 - v. The entity develops and implements a protected area management plan that aligns with 4.6.4.1.c and integrates mitigation measures agreed in 4.6.4.3.b.iii; and
 - vi. The entity collaborates with relevant management authorities to integrate the operation's management strategies into the protected area's management plan.

NOTE FOR 4.6.4.3: REVISED. This requirement has been restructured.

Previously, this requirement referred to new mining activities. We have removed the distinction between new and existing mines in this revised standard.

We are proposing instead that the majority of these requirements apply to any mining-related activities, regardless of whether they are in the proposal stage or are already in place. The exceptions are that: 1) proposed mining activities need to carry out the study in 4.6.4.3.b (which was required in the 2018 Standard); and 2) if an operation was in place before the area received its designation, then like 4.6.4.2, then mitigation is required to be developed in collaboration with relevant stakeholders to protect, or if necessary, restore the integrity of the special values for which the areas was designated.

4.6.5. Monitoring

4.6.5.1. A program is in place to monitor the implementation of its protected areas and/or biodiversity and ecosystem services management plan(s) throughout the project/operation life cycle. Monitoring of key indicators occurs with sufficient frequency to enable evaluation of the effectiveness of mitigation strategies and progress toward the objectives of at least no net loss or net gain in biodiversity and ecosystem services over time.

NOTE FOR 4.6.5.1: This combines 4.6.6.1 and 4.6.6.2 from the 2018 Mining Standard.

4.6.5.2. Monitoring is carried out by credible professionals who are independent third parties, or by in-house credible professionals. If in-house staff perform the work, then the findings of monitoring program are reviewed by an independent third party.

²⁴ If Ramsar sites are in areas classified as IUCN protected area management categories I-III, see requirement 4.6.4.2.

²⁵ E.g., Peer review should be undertaken by an academic institution or environmental NGO with experience in biodiversity assessments. Also, the personnel responsible for carrying out the peer-review or assessment are expected to be competent professionals (i.e., in-house staff or external consultants with relevant education, knowledge, proven experience and necessary skill-sets and training to carry out the required work. Competent professionals are expected to follow scientifically robust methodologies to carry out their work).

²⁶ For existing operations that were in place prior to the area's official designation, there may need to be efforts to restore the integrity.

NOTE FOR 4.6.5.2: REVISED. This requirement combines two requirements from the 2018 Mining Standard: 4.6.1.1 (monitoring is carried out by competent professionals), and 4.6.6.4 (findings of the monitoring program are subject to independent review).

We are proposing that this requirement be changed to also allow that the monitoring be carried out by independent third parties, and if that is done, then independent review would not be necessary.

4.6.5.3. If monitoring reveals that the entity's protected areas and/or biodiversity and ecosystem services management objectives are not being achieved as expected or mitigation strategies are not being effective, timely and effective corrective actions are developed in consultation with relevant stakeholders, and these changes are implemented and integrated into the relevant management plans.

NOTE FOR 4.6.5.3: REVISED. Added that if corrective actions are necessary, that they be integrated into the management plan.

4.6.6. Reporting and Disclosure

NOTE FOR 4.6.6: NEW. This criterion has been added to provide more consistency with the structure of other IRMA Standards, but the content is not new.

CONSULTATION QUESTION 4.6-4

Background: Currently, there are no reporting requirements in this chapter. In other chapters there are expectations that entities annually report on water management, waste management, human rights due diligence, etc. Sometimes the reporting can be in the form of a published report, and in other cases it is expected that there be a meeting with stakeholders where information on management actions or progress toward various targets be verbally shared.

There is no similar requirement in this chapter.

Question: Do you think that a reporting requirement should be added to this chapter? If so, what would be some of the information that should be shared on an annual basis? And would a written report suffice, or should entities be engaging directly with stakeholders?

4.6.6.1. Biodiversity, ecosystem services and protected areas impact assessments, management plans and monitoring data are:

- a. Publicly available; or
- b. A publicly available access to information (or equivalent) policy that commits the entity to providing stakeholders with this information upon request is in place and shared with stakeholders.²⁷

NOTE FOR 4.6.6.1: REVISED. This was 4.6.1.3 in the 2018 Mining Standard. Previously, the requirement included both elements – i.e., that either the information was publicly available, or it would be made available to stakeholders upon request.

There were numerous places in the IRMA Standard that mentioned provision of information to stakeholders “upon request”. Those requirements have proven very difficult to audit as written, because if the auditee tells auditors that there were no requests for information then the auditor has two choices – mark it as fully meets (which isn’t accurate, since there is no evidence, other than perhaps a verbal guarantee, that if asked the entity would provide the information) or mark it as not relevant (which is more accurate, since there were not requests, but is problematic because if stakeholders are not aware that they can request information, then there may never be any requests).

In Chapter 1.2, we are proposing that instead of the approach in the 2018 Mining Standard, which was essentially a blanket statement saying “information shall be made available upon request,” that entities have

²⁷ As per Chapter 1.2, requirement 1.2.4.3, an access to information policy is proposed for requirement in the revised IRMA Standard. It is expected that this policy could include the relevant provisions related to stakeholder access to entity-generated information and data on biodiversity, ecosystem services and protected areas.

in place a publicly available “access to information” or similar policy that commits the entity to providing information to stakeholders if requests are made, and that this policy be communicated to stakeholders (see [Note for requirement 1.2.4.3](#)).

NOTES

Although presented in a different format, many of the requirements in this chapter are meant to generally align with the International Finance Corporation’s (IFC) Performance Standard 6—Biodiversity Conservation and Sustainable Management of Living Natural Resources, and also the KBA Partners’ Guidelines on Business and Key Biodiversity Areas (KBAs).²⁸

Several requirements reference the International Union for the Conservation of Nature (IUCN) Protected Areas Management Categories. These categories are defined in the glossary definition for ‘Protected Area / Protected Area Management Categories.’²⁹

This chapter focuses on the conservation of the most important or critical areas of biodiversity (in some cases these have been designated as protected areas or Key Biodiversity Areas, in other cases they will not have been officially designated but still contain important biodiversity values). While the objectives of no net loss and preferably net gain are explicitly required to be planned for in the case of impacts on important biodiversity values and priority ecosystem services, it is strongly encouraged that such objectives be considered for any impacts on biodiversity or ecosystem services (e.g., IFC PS6 states that in areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible).

CROSS REFERENCES TO OTHER CHAPTERS

This table will be added when the new content for all chapters is finalized and approved.

GLOSSARY OF TERMS USED IN THIS CHAPTER

PROPOSED NEW DEFINITIONS

Direct Impacts

Direct impacts are those caused by activities that are undertaken and facilities that are owned and managed by an entity, and occur at the same time and in the same place that the action is occurring. See also 'Indirect Impacts'.

Entity

A company, corporation, partnership, individual, or other type of organization that is effectively in control of managing an exploration, mining or mineral processing project or operation.

Exploration

A process or range of activities undertaken to find commercially viable concentrations of minerals to mine and to define the available mineral reserve and resource. May occur concurrent with and on the same site as existing mining operations.

²⁸ IFC. 2012. Performance Standard 6— Biodiversity Conservation and Sustainable Management of Living Natural Resources with Guidance Notes. Available at: <https://www.ifc.org/en/insights-reports/2012/ifc-performance-standards>

KBA Partners. 2018. Guidelines on Business and KBAs: Managing Risk to Biodiversity. <https://portals.iucn.org/library/sites/library/files/documents/2018-005-En.pdf>

²⁹ For more information see Dudley, N. 2008. Guidelines for Applying Protected Area Management Categories. <https://portals.iucn.org/library/sites/library/files/documents/pag-021.pdf>

Indirect Impacts

Impacts that are caused by a project or operation but occur later in time or are farther removed in distance than a direct impact. See also 'Direct Impacts'.

Mineral Development Life Cycle

All of the stages from cradle to grave required to produce a saleable mineral/metal product. Includes exploration, project development, permitting, construction, mining and mineral processing operations, reclamation and closure, and post-closure stages.

Mineral Processing

Activities undertaken to separate valuable and non-valuable minerals and convert the former into an intermediate or final form required by downstream users. In IRMA this includes all forms of physical, chemical, biological and other processes used in the separation and purification of the minerals.

Mining

Activities undertaken to extract minerals, metals and other geologic materials from the earth. Includes extraction of minerals in solid (e.g., rock or ore) and liquid (e.g., brine or solution) forms.

Operation

The set of activities being undertaken for the purpose of extracting and/or processing mineral resources, including the running and management of facilities and infrastructure required to support the activities, and the ongoing legal, environmental, social and governance activities necessary to maintain the business endeavor.

Project

The development phases before a mining or mineral processing operation can begin (e.g., exploration, pre-feasibility, feasibility, conceptual design, planning, permitting). Includes all desk-top and field-based activities, including exploration activities, needed to inform and develop a project proposal, support the environmental and social impact assessment of a proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain the entity's business endeavor.

Scoping

The process of determining potential issues and impacts and producing information necessary to inform decision-making regarding whether additional evaluation and actions are necessary.

EXISTING DEFINITIONS

Additional Conservation Actions

A broad range of activities that are intended to benefit biodiversity, where the effects or outcomes can be difficult to quantify.

Affected Community

A community that is subject to risks or impacts from a project/operation.

REVISED. Changed wording from project to project/operation.

Area of Influence

The area likely to be affected by the project/operation and facilities, including associated facilities, that are directly owned, operated or managed by the entity, as well the area affected by any unplanned but reasonably foreseeable developments induced by a project/operation and cumulative impacts from the project/operation.

REVISED. Streamlined - removed examples.

Associated Facility

Any facility owned or managed by the entity that would not have been constructed, expanded or acquired but for the project/operation and without which the project/operation would not be viable. Examples include but are not limited to stationary physical property such as power plants, port sites, roads, railroads, pipelines, borrow areas, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, construction camps, storage facilities, etc. Associated facilities may be geographically separated from the area hosting the project/operation (i.e., the site). See also 'Facility'.

REVISED. Revised to indicate that a mineral processing facility could be an associated facility for a mining operation if not co-located with the mine.

Baseline

A description of existing conditions to provide a starting point (e.g., pre-project condition) against which comparisons can be made (e.g., post-impact condition), allowing the change to be quantified.

Biodiversity/Biological Diversity

The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems.

Biosphere Reserves

Biosphere reserves are areas comprising terrestrial, marine, and coastal ecosystems. Each reserve promotes solutions reconciling the conservation of biodiversity with its sustainable use. Biosphere reserves are 'Science for Sustainability support sites' – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Their status is internationally recognized.

Closure

Refers to the post-reclamation activities that are required to close and secure a site to maintain compliance with environmental and health and safety regulations. It includes interim fluid and site management in addition to post-reclamation monitoring and maintenance during the period when the success of reclamation measures to achieve site-safety, stability, revegetation, and water quality as well as other reclamation objectives is measured and maintained. The closure period is finite and typically no more than ten years in duration.

REVISED. Changed term from 'Mine Closure' to 'Closure', as the term can also apply to stand-alone mineral processing facilities, and some language changed to be less mining-specific.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, and necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional.

REVISED. Deleted reference to Chapter 4.1.

Conservation Outcome

A conservation outcome is the result of a conservation intervention aimed at addressing direct threats to biodiversity or their underlying socio-political, cultural, and/or economic causes. Conservation outcomes are typically in the form of: (a) extinctions avoided (i.e., outcomes that lead to improvements in a species' national or global threat status); (b) sites protected (i.e., outcomes that lead to designation of a site as a formal or informal protection area, or to improvement in the management effectiveness of an existing protected area); and (c) corridors created (i.e., outcomes that lead to the creation of interconnected networks of sites at the landscape scale, capable of maintaining intact biotic assemblages and natural processes, and, thereby, enhancing the long-term viability of natural ecosystems). Conservation outcomes would also include any other intervention that leads to conservation gains.

Conservation Values

The ecological, biological, geomorphological, geological, cultural, spiritual, scenic, or amenity values, features, processes, or attributes that are being conserved.

Critical Habitat

Areas with high biodiversity value, including but not necessarily limited to: (i) habitat of significant importance to critically endangered, endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes. Other recognized high biodiversity values might also support a critical habitat designation, based on case-by-case evaluation.

Cumulative Impacts

Additive, synergistic, interactive or nonlinear outcomes of multiple development or disturbance events that aggregate over time and space. Examples of cumulative impacts (or effects) may include reduction of water flows in a watershed due to multiple withdrawals; increases in sediment loads to a watershed over time; interference with migratory routes or wildlife movement; or more traffic congestion and accidents due to increases in vehicular traffic on community roadways.

Ecological Processes

Biophysical processes (e.g., hydrologic regimes, local climatic regimes, soil chemistry/nutrient cycling, fires, floods and other natural disturbance regimes, herbivory, predation, ecological corridors, migration routes) necessary for the habitat to persist in a landscape or seascape for the long term.

Ecosystem

A dynamic complex of plant, animal, and micro-organism communities and their non-living environment interacting as a functional unit.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fiber; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Enhancement (of biodiversity values)

The improvement of the ability of a degraded ecosystem to support biodiversity, through conservation measures such as alteration to the soils, vegetation, and/or hydrology. The term is sometimes used for a type of restoration that enhances the biodiversity present but is not couched in terms of restoring the ecosystem to some prior state.

Habitat

A terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment. The place or type of site where an organism or population naturally occurs.

Important Biodiversity Values

The particular biodiversity elements or features, such as individual species, assemblages of species, particular ecological processes, etc., that trigger an area's designation as having significant biodiversity value (e.g., designation as critical habitat, a Key Biodiversity Area, a protected area), as well as the ecological context needed to support the maintenance of the trigger elements.

Key Biodiversity Areas (KBA)

Sites that contribute to the global persistence of biodiversity, including vital habitat for threatened or geographically restricted plant and animal species in terrestrial, freshwater, and marine ecosystems.

Livelihood

The full range of means that individuals, families, and communities utilize to make a living, such as wage-based income, agriculture, fishing, foraging, other natural resource-based livelihoods, petty trade, and bartering.

Mining-Related Activities

Any activities carried out during any phase of the mineral development life cycle for the purpose of locating, extracting and/or producing mineral or metal products. Includes physical activities (e.g., land disturbance and clearing, road building, sampling, drilling, airborne surveys, field studies, construction, ore removal, brine extraction, beneficiation, mineral or brine processing, transport of materials and wastes, waste management, monitoring, reclamation, etc.) and non-physical activities (e.g., project or operational planning, permitting, stakeholder engagement, etc.).

REVISED. Added reference to mineral development life cycle, project/operation, brine.

Mitigation

Actions taken to reduce the likelihood of the occurrence of a certain adverse impact. (See also 'Mitigation Hierarchy')

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible through avoidance, minimization, and restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization, and restoration measures have been applied. The biodiversity mitigation hierarchy is as follows (but the steps can be applied for any environmental or social impacts, although waste management has its own hierarchy. For waste, see definition of Waste Mitigation Hierarchy):

- i. Avoidance:* measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure in order to completely avoid impacts on certain components of biodiversity. This results in a change to a 'business as usual' approach.
- ii. Minimization:* measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided, as far as is practically feasible.
- iii. Restoration:* measures taken to assist the recovery of ecosystems that have been degraded, damaged, or destroyed. Involves altering an area in such a way as to re-establish an ecosystem's composition, structure, and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.
- iv. Offset:* measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity

on the ground with respect to species composition, habitat structure, ecosystem function, and people's use and cultural values associated with biodiversity.

REVISED. Added reference to waste mitigation hierarchy, which is slightly different.

Modified Habitat

Areas that may contain a large proportion of plant and/or animal species of non-native origin and/or where human activity has substantially modified an area's primary ecological functions and species composition (this excludes habitat that has been converted in anticipation of the project). Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands.

Natural Habitat

Areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.

No Net Loss and Net Gain (of biodiversity)

Targets for development projects in which the impacts on biodiversity caused by the project are balanced or outweighed by measures taken to first avoid and minimize the impacts, then to undertake on-site rehabilitation and/or restoration, and finally to offset the residual impacts (if appropriate). No net loss, in essence, refers to the point where biodiversity gains from targeted conservation activities match the losses of biodiversity due to the impacts of a specific development project, so that there is no net reduction overall in the type, amount, and condition (or quality) of biodiversity over space and time. A net gain (sometimes referred to as net positive impact) means that biodiversity gains exceed a specific set of losses.

Offset (biodiversity)

As it relates to biodiversity, measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function, and people's use and cultural values associated with biodiversity. (See also mitigation hierarchy)

Priority Ecosystem Services

Ecosystem services are considered priority under the following circumstances: (i) operations are likely to result in a significant impact on the ecosystem service; the impact will result in a direct adverse impact on affected communities' livelihood, health, safety and/or cultural heritage; and the entity has direct management control or significant influence over the service; or (ii) the operation directly depends on the service for its primary operations; and the operation has direct management control or significant influence over the service.

Protected Area/Protected Area Management Categories (IUCN)

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. The definition is expanded by six "protected area management categories" (one with a sub-division), summarized below.

Ia *Strict nature reserve*: Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values.

Ib *Wilderness area*: Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition.

II *National park*: Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.

III *Natural monument or feature*: Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove.

IV *Habitat/species management area*: Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category.

V *Protected landscape or seascape*: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

VI *Protected areas with sustainable use of natural resources*: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

Residual Impacts

Impacts that remain after on-site mitigation measures (avoidance, minimization, restoration) have been applied.

Restoration

Measures taken to assist the recovery of ecosystems that have been degraded, damaged or destroyed. Involves altering an area in such a way as to re-establish an ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.

Stakeholders

Individuals or groups who are directly or indirectly affected by a project/operation, such as rights holders, as well as those who may have interests in a project/operation and/or the ability to influence its outcome, either positively or negatively.

REVISED Changed wording from persons to individuals, and from project to project/operation.

Tentative List for World Heritage Site Inscription

The list of sites that relevant state parties are formally considering for nomination as a World Heritage Site in the next five to ten years.

World Heritage Site

A site/property inscribed on the World Heritage List, which has outstanding universal value and meets the conditions of authenticity and integrity. The World Heritage property includes within its borders all of the attributes that are recognized as being of outstanding universal value.