



TOWARDS SUSTAINABLE MINING



Biodiversity Conservation Management Protocol

TSM ASSESSMENT PROTOCOL

A Tool for Assessing Biodiversity Conservation Management Performance

Purpose

The purpose of the assessment protocol is to provide guidance to facilities in completing their evaluation of biodiversity conservation management against TSM indicators. The assessment protocol sets out the general expectations for biodiversity conservation management as part of the TSM initiative. This protocol supports implementation of the TSM Mining and Biodiversity Conservation Framework.

As with any assessment of a management system, professional judgment is required in assessing the degree of implementation of a system indicator and the quality of management processes and intervention. Application of this protocol will therefore require a level of expertise in auditing and systems assessment and knowledge of and experience in the practice of biodiversity conservation management, including relevant regulatory regimes and requirements. This assessment protocol provides an indicator of the level of implementation of biodiversity conservation management as part of the TSM initiative. It is not, of itself, a guarantee of the effectiveness of biodiversity conservation management activities.

Performance Indicators

To assess performance and measure progress towards achieving this purpose, the Biodiversity Conservation Management Protocol specifies criteria associated with three indicators:

1. Corporate biodiversity conservation commitment, accountability, and communications
2. Facility-level biodiversity conservation planning and implementation
3. Biodiversity conservation reporting



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Indicator 1: Corporate Biodiversity Conservation Commitment, Accountability and Communications

Purpose

To confirm that corporate commitment and accountabilities are in place and communicated to relevant employees to support the management of biodiversity conservation issues.

Assessment Criteria:

Level	Criteria
C	The company does not meet all Level B criteria.
B	<ol style="list-style-type: none"> 1. Demonstrated senior management biodiversity commitment is in place but may not be consistent with the intent of the TSM Mining and Biodiversity Conservation Framework. 2. Plans are in place to achieve Level A performance.
A	<ol style="list-style-type: none"> 1. Demonstrated senior management commitment, consistent with the intent of the TSM Mining and Biodiversity Conservation Framework and to the application of the mitigation hierarchy to achieve stated biodiversity outcomes. 2. Commitment to biodiversity conservation has been communicated to relevant employees, contractors, and facility-level Communities of Interest (COI). 3. Roles, responsibilities, and accountabilities for implementation of the commitment are clear, and resources have been assigned to support implementation of the commitment.
AA	<ol style="list-style-type: none"> 1. Biodiversity conservation commitment and its implementation are subject to independent verification/review (internal or external).
AAA	<ol style="list-style-type: none"> 1. Biodiversity conservation commitment includes a stated ambition of no net loss and commitment to actively partner with other organizations for biodiversity conservation, and roles, responsibilities and resources have been assigned to support this commitment.



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FAQs: Corporate Biodiversity Conservation Commitment, Accountability and Communications

#	FAQ
1	What are good sources of guidance on biodiversity conservation?
2	Does a biodiversity conservation policy have to be a stand-alone document?
3	How do you integrate biodiversity conservation into corporate and facility business planning?
4	Does the No Net Loss commitment in Indicator 1 Level AAA apply to existing projects?
10	Can corporate documentation be used to demonstrate facility-level commitment?
13	What is the definition of "conservation"?
14	How is "senior management" defined?
15	How is No Net Loss considered across the lifecycle of a facility?
16	What is the mitigation hierarchy?



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Indicator 2: Facility-Level Biodiversity Conservation Planning and Implementation

Purpose

To confirm that effective plans and management systems are implemented at the facility level to manage significant biodiversity aspects.

Assessment Criteria:

Level	Criteria
C	The facility does not meet all Level B criteria.
B	<ol style="list-style-type: none">1. Facility-level biodiversity conservation plan or management system has been developed including:<ol style="list-style-type: none">a. Assessment of facility-level baseline data and, where available, local ecological knowledge.b. Facility-level monitoring of biodiversity.c. Identification of significant biodiversity aspects.d. Identify key COI.2. The plan has been approved by facility-level senior management and is under implementation.
A	<ol style="list-style-type: none">1. Facility-level plan or management system to manage significant biodiversity aspects is implemented. Facility-level plan or management system includes, at a minimum, these elements:<ol style="list-style-type: none">a. Potential impacts/risks to biodiversity are assessed.b. Specific objectives for significant biodiversity aspects are identified.c. Action plans are developed and implemented to specifically address biodiversity objectives.d. Facility-level personnel have been assigned responsibility for biodiversity conservation management.e. Biodiversity conservation awareness is included in facility training programs for relevant personnel.f. The facility has consulted with and/or engaged key COI (e.g., governments, Indigenous communities, and conservation organizations) regarding biodiversity conservation management.g. Implementation of the facility-level biodiversity conservation plan and progress towards biodiversity objectives are regularly tracked and reported to facility-level senior management.



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AA	<ol style="list-style-type: none"> 1. The facility demonstrates that biodiversity conservation management is integrated into core business planning processes and tools, including: <ol style="list-style-type: none"> a. Annual business planning process. b. Annual budget process. 2. Independent verification/review has been conducted of biodiversity conservation management system implementation (internal or external). 3. The facility participates with COI or other biodiversity conservation organizations (local, regional, or national) to support biodiversity conservation.
AAA	<ol style="list-style-type: none"> 1. Biodiversity conservation management is integrated into a broader business strategy that includes at least two of the following: <ol style="list-style-type: none"> a. Investments in research and development that enhance the industry's understanding of and contribution to biodiversity conservation, science, and traditional knowledge. b. Contributing to a greater scientific understanding to the protection of biodiversity. c. Contributing to industry or region-specific guidance documents that foster biodiversity conservation. d. Enhancing biodiversity in areas outside of the facility's property. e. Achieving national or regional recognition in biodiversity conservation. f. Conducting ecosystem service valuation. g. Encouraging employee volunteerism in community-based biodiversity initiatives.



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FAQs: Facility-Level Biodiversity Conservation Planning and Implementation

#	FAQ
1	What are good sources of guidance on biodiversity conservation?
3	How do you integrate biodiversity conservation into corporate and facility business planning?
4	What are “significant biodiversity aspects”?
5	What is a biodiversity conservation action plan?
6	What types of biodiversity conservation objectives might a facility establish?
7	What is baseline data?
10	Can corporate documentation be used to demonstrate facility-level commitment?
14	What is the definition of "conservation"?
15	How is “senior management” defined?



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Indicator 3: Biodiversity Conservation Reporting

Purpose

To confirm that biodiversity conservation reporting is in place to inform decision-making and to communicate performance publicly. Biodiversity conservation reporting includes elements such as policy, monitoring and conservation initiatives.

Assessment Criteria:

Level	Criteria
C	The company does not meet all Level B criteria.
B	1. The facility reports on biodiversity conservation to facility-level senior management on a regular basis.
A	1. Reporting on biodiversity conservation occurs and includes: <ul style="list-style-type: none"> a. Internal reporting on biodiversity conservation, which supports management decision-making processes at the facility. b. Routine public reporting on biodiversity conservation performance.
AA	1. The public reporting on biodiversity conservation is independently verified or reviewed (internal or external).
AAA	1. COI feedback on biodiversity conservation reporting is actively sought and reported publicly.

FAQs: Biodiversity Conservation Reporting

#	FAQ
1	What are good sources of guidance on biodiversity conservation?
8	How is biodiversity conservation reporting externally verified or reviewed (Indicator 3)?
10	Can corporate documentation be used to demonstrate facility-level commitment?
14	What is the definition of "conservation"?
15	How is "senior management" defined?



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Appendix 1: Frequently Asked Questions

1. What are good sources of guidance on biodiversity conservation?

The ICMM has produced a Good Practice Guidance Document for Mining and Biodiversity (<https://guidance.miningwithprinciples.com/good-practice-guide-mining-biodiversity>)

2. How do you determine if biodiversity conservation management commitments are consistent with the TSM Mining and Biodiversity Conservation Framework?

The spirit and intent of a company's biodiversity conservation commitments should be consistent with the spirit and intent of the Mining and Biodiversity Conservation Framework. While it is not required that corporate commitments include all the specific commitments identified in the Framework, the commitments should demonstrate general alignment with the Framework, without expressly referring to it.

3. How do you integrate biodiversity conservation into corporate and facility business planning?

The facility must be able to demonstrate that biodiversity conservation management considerations are integrated within its key business management processes and practices. Key business planning processes (such as the annual business plan, annual budget, and project scoping and charter documents) should demonstrate that biodiversity aspects are identified and considered during the planning process and that adequate budgetary provisions are made.

4. Does the No Net Loss commitment in Indicator 1 Level AAA apply to existing projects?

No, the No Net Loss commitment is intended to apply to new projects and major expansions though existing projects are encouraged to find opportunities to offset existing impacts where practical.

5. What are “significant biodiversity aspects”?

Significant biodiversity aspects are significant issues that have been identified by the facility for specific management to meet regulatory requirements, to avoid or mitigate potential impacts on biodiversity or to address community or other stakeholder concerns. Examples include endangered and threatened species, protected areas, critical habitats (e.g., for wildlife, fish, or endangered plants) or valued ecosystem components (e.g., wetlands), or ecosystem services (provision of clean water).

6. What is a biodiversity conservation action plan?

A biodiversity action plan is a mechanism by which the objectives for biodiversity conservation can be achieved. They can be either stand-alone plans or be incorporated in a management system. Numerous elements may be covered in the plan, dependent on the risks that have been identified. They can range from control of access to significant biodiversity areas, plans



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for clearing land i.e.: removal and salvage of soils and vegetation, management of land reclamation and weeds, research and development programs for better land or wildlife management, etc.

A biodiversity conservation plan is a plan that accomplishes the following:

- **Establishes baseline data, including an inventory of the distribution, abundance and status of significant biodiversity aspects (FAQ #4) within a geographic range appropriate to the facility, claim area and adjacent areas of traditional or other community/stakeholder use, including areas potentially subject to downstream impacts (e.g., water, air).**
- **Contains a risk assessment procedure to determine what the possible impacts are to the key biodiversity aspects from mining activities and establishes a risk profile.**
- **Creates an action plan based on the risk profile on how to conserve, and, where possible, enhance the significant biodiversity aspects characterized in the baseline inventory.**

7. What types of biodiversity conservation objectives might a facility establish?

Biodiversity conservation objectives by their nature will be site specific. They should be established for significant biodiversity aspects and may be related to maintaining specific conditions or populations during operation, enhancing conditions or specific habitat, and/or the type(s) of ecosystem to which the site will be returned post-mining.

8. What is baseline data?

Baseline data is the data collected prior to the mine development to assess local biodiversity. For older, established mines, baseline data may include data from a neighboring unaffected watershed or some other location similar in nature to the facility, while recognizing that historic mining activity may have permanently altered local biodiversity. Recognizing that typical baseline data may not be available for all facilities, sites that predate the requirement to include baseline data in their environmental assessment process may choose to use alternative approaches. For example, but not limited to, a facility may choose to look at trends over time, or use collected data from a neighboring location.

9. 9. How is biodiversity conservation reporting externally verified or reviewed (Indicator 3)?

The focus of the verification/review will be on the accuracy and replicability of the key biodiversity performance indicators that were publicly reported. The verification/review considers not only how the indicators are determined, but also the management and reporting systems used to ensure the indicators are consistently determined and reported over time. External verification/review is conducted by a third party.



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10. For how long are internal and external verifications/reviews valid?

An internal or external verification/review that was completed within the last three (3) years meets the requirements for an internal or external verification/review as required by Level AA in all indicators of the Biodiversity Conservation Management Assessment Protocol.

11. Can corporate documentation be used to demonstrate facility-level commitment?

Written senior management commitment at the corporate level (e.g. a corporate policy) can only be accepted as evidence during a facility-level self-assessment or TSM external verification if it is accompanied by evidence that the corporate commitment is being applied and adhered to at the facility level. There must be evidence of a link between the corporate documentation and facility-level practices. If this linkage is established, then the corporate documentation can be accepted as evidence of facility-level commitment.

12. How should regional biodiversity conservation approaches be reflected within the assessment?

Where multiple facilities are operating within a single ecosystem, the company may choose to adopt a regional approach to biodiversity conservation. This could also include collaboration between different companies. In these cases, the division of roles and responsibilities between facility-level personnel and regional personnel should be clearly understood and documented and supporting systems should be developed and implemented at the appropriate level. The TSM assessment should consider both facility-level and regional systems when assessing performance for each facility included within the region.

13. How is No Net Loss considered across the lifecycle of a facility?

Facilities with a stated ambition to achieve No Net Loss should consider this objective in the context of the full lifecycle of the facility and not at any single point during the operational stages in this lifecycle. It is important to recognize that, at certain stages, biodiversity losses may exceed the sum of impacts avoided, minimized, mitigated, and offset based on the mitigation hierarchy. Facilities should consider measures to mitigate the heightened risk of long-term biodiversity impacts in their biodiversity action plans; for example, by introducing biodiversity offsets in advance of certain impacts that cannot be addressed through higher levels of the mitigation hierarchy. The No Net Loss calculation should also consider reclamation and closure planning and rehabilitation activities that will return identified biodiversity values to previously impacted land.

Definition of Key Terms

14. What is the definition of "conservation"?

Conservation is "The maintenance of environmental quality and resources or a particular balance among the species present in a given area. The resources may be physical (e.g. fossil fuels), biological (e.g. tropical forests), or cultural (e.g. ancient monuments). In modern scientific usage, conservation implies sound biosphere management within given social and



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economic constraints, producing goods and services for humans without depleting natural ecosystem diversity, and acknowledging the naturally dynamic character of biological systems. This contrasts with the preservationist approach which, it is argued, protects species or landscapes without reference to natural change in living systems or to human requirements." (Source: Michael Allaby, The Concise Oxford Dictionary of Ecology [Oxford: Oxford University Press, 1994], 92.)

15. How is “senior management” defined?

For the purposes of biodiversity conservation policy, senior management refers to corporate management (CEO and/or Board). For management performance measurement, senior management refers to the corporate and/or facility-level personnel with overall accountability for biodiversity conservation management.

16. What is the mitigation hierarchy?

The mitigation hierarchy is based on a series of essential, sequential steps that must be taken throughout the project's life cycle to limit any negative impacts on biodiversity. These steps include:

1. Avoidance – Measures taken to avoid creating impacts from the outset
2. Minimization – Measures taken to reduce the duration, intensity and extent of impacts that cannot be completely avoided
3. Rehabilitation and Restoration – Measures taken to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised
4. Offset – Measures taken to compensate for any residual, adverse impacts after full implementation of the previous three steps of the mitigation hierarchy

For more information on the mitigation hierarchy, please consult A cross-sector guide for implementing the mitigation hierarchy from the International Council on Mining & Metals here:

<https://www.icmm.com/en-gb/publications/biodiversity/a-cross-sector-guide-for-implementing-the-mitigation-hierarchy> .



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APPENDIX 2: TSM SELF ASSESSMENT CHECKLIST

Biodiversity Conservation Management

Facility Name:		Company Name:	
Assessed By:		Date Submitted:	

Supporting Documentation / Evidence:	
Name of Document	Location

Interviewees:			
Name	Position	Name	Position



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	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
INDICATOR 1: CORPORATE BIODIVERSITY CONSERVATION COMMITMENT, ACCOUNTABILITY AND COMMUNICATIONS					
Indicator 1 Level B	1. Is there a demonstrated senior management biodiversity commitment in place (consistent or not with the intent of the TSM Mining and Biodiversity Conservation Framework)?				
	2. Are plans in place to achieve Level A performance?				
	<i>If you have answered "Yes" to all the Level B questions, continue to the Level A questions. If you have not answered "Yes" to all the Level B questions, assess the facility as a Level C.</i>				
Indicator 1 Level A	1. Is there a demonstrated senior management commitment, consistent with the intent of the TSM Mining and Biodiversity Conservation Framework and to the application of the mitigation hierarchy to achieve stated biodiversity outcomes?				
	2. Has the commitment to biodiversity conservation been communicated to relevant employees, contractors, and facility-level COI?				
	3. Are roles, responsibilities, and accountabilities for implementation of the commitment clear and have resources been assigned to support implementation of the commitment?				
	<i>If you have answered "Yes" to all the Level A questions, continue to the Level AA questions. If you have not answered "Yes" to all the Level A questions, assess the facility as a Level B.</i>				
Indicator 1 Level AA	1. Has the biodiversity conservation commitment and its implementation been subject to independent verification/review (internal or external)?				
	<i>If you have answered "Yes" to all the Level AA questions, continue to the Level AAA questions. If you have not answered "Yes" to all the Level AA questions, assess the facility as a Level A.</i>				
Indicator 1 Level AAA	1. Does the biodiversity conservation management commitment include a stated ambition of no net loss and commitment to actively partner with other organizations for biodiversity conservation, and have roles, responsibilities and resources been assigned to support this commitment?				



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	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
	<i>If you have answered "Yes" to all the Level AA questions, continue to the Level AAA questions. If you have not answered "Yes" to all the Level AA questions, assess the facility as a Level A.</i>				
	ASSESSED LEVEL OF PERFORMANCE FOR INDICATOR 2				Level: _____



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	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
INDICATOR 2: BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION					
Indicator 2 Level B	1. Has a facility-level biodiversity conservation plan or management system been developed that includes:				
	a. Assessment of facility-level baseline data and, where available, local ecological knowledge?				
	b. Facility-level monitoring of biodiversity?				
	c. Identification of significant biodiversity aspects?				
	d. Identification of key COI?				
	2. Has the plan been approved by facility-level senior management and is it under implementation?				
	<i>If you have answered "Yes" to all the Level B questions, continue to the Level A questions. If you have not answered "Yes" to all the Level B questions, assess the facility as a Level C.</i>				
Indicator 2 Level A	1. Is the facility-level plan or management system to manage significant biodiversity aspects implemented and does the facility-level plan or management system include, at a minimum, the following elements:				
	a. An assessment of potential impacts/risks to biodiversity?				
	b. Specific objectives for significant biodiversity aspects?				
	c. Action plans are developed and implemented to specifically address biodiversity objectives?				
	d. Responsibility assigned to facility-level personnel for biodiversity conservation management?				
	e. Biodiversity conservation awareness included in facility training programs for relevant personnel?				



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	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
	f. Consultation with and/or engaged key COI (e.g., governments, Indigenous communities, and conservation organizations) regarding biodiversity conservation management?				
	g. Implementation of the facility-level biodiversity conservation plan and progress towards biodiversity objectives regularly tracked and reported to facility-level senior management?				
	<i>If you have answered "Yes" to all the Level A questions, continue to the Level AA questions. If you have not answered "Yes" to all the Level A questions, assess the facility as a Level B.</i>				
Indicator 2 Level AA	1. Can the facility demonstrate that biodiversity conservation management is integrated into business planning processes and tools, including:				
	a. Annual business planning process?				
	b. Annual budget process?				
	2. Has an independent verification/review been conducted of the biodiversity conservation management system implementation (either internal or external)?				
	3. Does the facility participate with COI or other biodiversity conservation organizations (local, regional, or national) to support biodiversity conservation?				
	<i>If you have answered "Yes" to all the Level AA questions, continue to the Level AAA questions. If you have not answered "Yes" to all the Level AA questions, assess the facility as a Level A.</i>				
Indicator 2 Level AAA	1. Has biodiversity conservation management been integrated into the facility's broader business strategy that includes at least two of the following:				



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	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
	a. Investments in research and development that enhance the industry's understanding of and contribution to biodiversity conservation, science, and traditional knowledge?				
	b. Contributing to a greater scientific understanding for the protection of biodiversity?				
	c. Contributing to industry or region-specific guidance documents which foster biodiversity conservation?				
	d. Enhancing biodiversity in areas outside of the facility?				
	e. Achieving national or regional recognition for biodiversity conservation?				
	f. Conducting an ecosystem service valuation				
	g. Encouraging employee volunteerism in community-based biodiversity initiatives?				
<i>If you have answered "Yes" to all the Level AAA questions, assess the facility as a Level AAA. If you have not answered "Yes" to all the Level AAA questions, assess the facility as a Level AA.</i>					
	ASSESSED LEVEL OF PERFORMANCE FOR INDICATOR 2				Level: _____



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	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
INDICATOR 3: BIODIVERSITY CONSERVATION REPORTING					
Indicator 3 Level B	1. Does the facility report on biodiversity conservation to facility-level senior management on a regular basis?				
	<i>If you have answered "Yes" to all the Level B questions, continue to the Level A questions. If you have not answered "Yes" to all the Level B questions, assess the facility as a Level C.</i>				
Indicator 3 Level A	1. Does reporting on biodiversity conservation occur and include:				
	a. Internal reporting on biodiversity conservation which supports management decision-making processes at the facility?				
	b. Routine public reporting on biodiversity conservation performance?				
	<i>If you have answered "Yes" to all the Level A questions, continue to the Level AA questions. If you have not answered "Yes" to all the Level A questions, assess the facility as a Level B.</i>				
Indicator 3 AA	1. Has the facility's public reporting on biodiversity conservation been independently verified/reviewed (either internal or external)?				
	<i>If you have answered "Yes" to all the Level AA questions, continue to the Level AAA questions. If you have not answered "Yes" to all the Level AA questions, assess the facility as a Level A.</i>				
Indicator 3 Level AAA	1. Has COI feedback on biodiversity conservation reporting been actively sought and reported publicly?				
	<i>If you have answered "Yes" to all the Level AAA questions, assess the facility as a Level AAA. If you have not answered "Yes" to all the Level AAA questions, assess the facility as a Level AA.</i>				
	ASSESSED LEVEL OF PERFORMANCE FOR INDICATOR 3				Level: _____



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For more information about the TSM initiative, visit:

www.TSMInitiative.com

or

The Mining Association of Canada

www.mining.ca/tsm

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