



BIOLOGY VOL 1

BASELINE METHODS AND DATA

TWIN METALS MINNESOTA PROJECT

Environmental Review Support Document

Prepared for Twin Metals Minnesota, LLC
Prepared by

Document No. TMM-ES-025-0146-01
Revision 0A
November 20, 2020

REVISION RECORD

Revision	Date	Description	EDMS Download Date	Project Configuration Version
0A	11-20-2020	Submitted for Agency Review – TOC		

REVISION NARRATIVE

DISCLAIMER

This document is a working document. This document may change over time because of new information, or further analysis or deliberation.

TABLE OF CONTENTS

1.0 INTRODUCTION.....1

2.0 SUMMARY.....1

3.0 PROPOSED ACTION AND ALTERNATIVES.....1

3.1 PROPOSED ACTION.....1

3.2 ALTERNATIVES TO THE PROPOSED ACTION.....2

3.3 NO ACTION ALTERNATIVE.....2

4.0 REGULATORY FRAMEWORK.....2

4.1 HABITAT.....2

4.2 SENSITIVE SPECIES.....2

4.3 WILD RICE.....2

5.0 AFFECTED ENVIRONMENT.....3

5.1 AREAS OF ANALYSIS.....3

 5.1.1 Habitat.....3

 5.1.2 Vegetation.....4

 5.1.3 Wildlife.....4

5.2 METHODS.....5

 5.2.1 Desktop Review.....5

 5.2.2 Field Surveys.....6

 5.2.3 Quality Control.....7

5.3 EXISTING CONDITIONS.....7

 5.3.1 Habitat.....7

 5.3.2 Vegetation.....8

 5.3.3 Wildlife.....8

6.0 REFERENCES.....9

TABLES

FIGURES



APPENDICES

LIST OF ABBREVIATIONS, ACRONYMS, AND SYMBOLS

TMM

Twin Metals Minnesota, LLC

1.0 INTRODUCTION

The Twin Metals Minnesota, LLC (TMM) Project (Project) is focused on designing, permitting, constructing, and operating an underground copper, nickel, cobalt, platinum, palladium, gold, and silver mining project. Located approximately nine miles (14 kilometers [km]) southeast of Ely, Minnesota, and 11 miles (18 km) northeast of Babbitt, Minnesota, the Project targets valuable state, federal, and private minerals within the Maturi deposit, which is a part of the Duluth Complex geologic formation.

All potential Project infrastructure locations presented herein are considered preliminary and are undergoing further design and engineering evaluations which will dictate final design and locations. Further information about TMM and the Project is located at <http://www.twin-metals.com/>.

The purpose of this document is to provide necessary information for the environmental review and permitting process. TMM retained [insert Consultant name] (insert abbreviated Consultant name) to complete [insert text].

2.0 SUMMARY

This report will:

- Describe the proposed action and alternatives;
- Establish the area where baseline conditions of biological resources – including habitat, vegetation, and wildlife need to be assessed;
- Define the methodology used to assess the baseline conditions;
- Describe the baseline conditions; and
- Reference relevant sections of the FSDD, SEAW, and / or federal documents to remind the reader there is a defined scope that is being followed.

The baseline conditions will be used with the other volumes of the *Biology Data Package* to define and describe the environmental effects of the proposed action and alternatives.

3.0 PROPOSED ACTION AND ALTERNATIVES

3.1 Proposed Action

- Reference the TMM Project Description and Alternatives document and indicate the proposed action is defined within this document.

3.2 Alternatives to the Proposed Action

- Reference the TMM Project Description and Alternatives document and indicate the alternatives to the proposed action are defined within this document.

3.3 No Action Alternative

- Reference the TMM Project Description and Alternatives document and indicate the no action alternative is defined within this document.

4.0 REGULATORY FRAMEWORK

Establish Regulatory Framework by discussing the following:

4.1 Habitat

- Minnesota Department of Natural Resources (MDNR) Minnesota Biological Survey (MBS) Sites of Biodiversity Significance;
- Rare Natural Communities (Minn. Stat § 103G.2242, subd. 1(d) and Minn. R. 8420.0515, subp. 3); and
- Critical habitat under the Endangered Species Act of 1973 (ESA).

4.2 Sensitive Species

- Endangered Species Act of 1973;
- The Migratory Bird Treaty Act;
- Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds;
- Bald and Golden Eagle Protection Act;
- U.S. Forest Service (USFS) Regional Forester Sensitive Species (RFSS); and
- Minnesota state-listed Endangered, Threatened, or Special Concern species.

4.3 Wild Rice

- Regulation of water that contains wild rice
 - Minnesota Rules part 7050.0220
 - Minnesota Rules part 7050.0224
 - Minnesota Rules part 7050.0471

5.0 AFFECTED ENVIRONMENT

The affected environment will be deconstructed by features and / or activities of the proposed action and alternatives that would cause the potential effects to biological resources. For example:

- tailings management site;
- plant site;
- roads;
- construction;
- operation;
- closure; or
- reclamation.

5.1 Areas of Analysis

The method for defining the area of analysis should match the areas of effects discussed in the other volumes of the *Biology Data Package*. Baseline conditions should be assessed for anywhere that the proposed action or alternative could have effects on biological resources. Within this area of effects the baseline conditions will be characterized.

5.1.1 Habitat

Terrestrial

Area of analysis will be developed accounting for the following:

- Areas of direct effects to the baseline conditions will be determined from the construction limits of the proposed action and alternatives, or any area where existing habitat would be cleared.
- Area of indirect effects to the baseline conditions will be determined from edge effects related to clearing and any areas that would be impacted by change in hydrology or dust deposition, part of the water and air modeling from the *Water Resources Data Package* and the *Multimedia Screening Assessment Data Package*.

Aquatic

Area of analysis will be developed accounting for the following:

- Area of direct effects to the baseline conditions will be determined from the construction limits of the proposed action and alternatives which would include any physical changes to lakes or stream or discharge / intake points.

- Area of indirect effects to the baseline conditions will be determined from changes to hydrology or water quality which would be determined by modeling in the future scopes of work in the *Water Resources Data Package*.

5.1.2 Vegetation

Area of analysis will be developed accounting for the following:

- Areas of direct effects to the baseline conditions will be determined from the construction limits of the proposed action and alternatives, or any area where existing vegetation would be cleared.
- Area of indirect effects to the baseline conditions will be any areas that would be impacted by change in hydrology or dust deposition, part of the water and air modeling from the *Water Resources Data Package* and the *Multimedia Screening Assessment Data Package*.

5.1.3 Wildlife

Terrestrial

Area of analysis will be developed accounting for the following:

- Area of direct effects to the baseline conditions will be determined from the construction limits of the proposed action and alternatives where existing habitat would be cleared and there is the potential to take a species. Area of direct effects to the baseline conditions will also include discharge points, transportation corridors where there is an increase in potential for wildlife/vehicle encounters, and enclosure from previous habitat areas.
- Area of indirect effects to the baseline conditions will be determined areas where there could be increased habitat fragmentation, modified wildlife corridors, or areas with increased noise and vibration which would be determined in the *Noise and Vibration Data Package*.

Aquatic

Area of analysis will be developed accounting for the following:

- Area of direct effects to the baseline conditions will be determined from the construction limits of the proposed action including any physical changes to lakes or stream or discharge / intake points and there is potential take a species.
- Area of indirect effects to the baseline conditions will be determined from changes to hydrology or water quality which would be determined by modeling in the future scopes of work in the *Water Resources Data Package*.

5.2 Methods

Description of the methods used to identify, quantify, and qualify biological resources.

5.2.1 Desktop Review

Will describe the rationale, data, and methods employed for desktop review. This will include review of publicly available data. This will include both the spatial extent of land cover and habitat in the area of the proposed action as well as occurrence of sensitive species as well as wildlife associations. The desktop review will be used as the basis for the field work. Sources reviewed will include:

Habitat

Terrestrial

- U.S. Geological Survey (USGS) Gap Analysis Program (GAP) / LANDFIRE;
- USGS National Land Cover Database (NLCD);
- MDNR / USFS Ecological Classification System;
- MDNR MBS;
- MBS Sites of Biodiversity Significance; and
- National Hierarchical Framework of Ecological Units.

Aquatic

- MPCA Environmental Data Access;
 - Biological Survey Stream Sites
- MDNR Fishes of Minnesota Mapper; and
- MPCA Rainy River-Headwaters Monitoring and Assessment Report.

Vegetation

Sensitive Species

- MDNR Rare Species Guide;
- MDNR Natural Heritage Information System (NHIS) Database; and
- USFS RFSS;

Wild Rice

- MDNR fisheries data
- 1854 Treaty Authority data
- USGS topographic maps
- Review publicly available information

Wildlife

Sensitive Species

- MDNR Rare Species Guide;
- MDNR NHIS Database;
- USFS RFSS;
- U.S. Fish and Wildlife Service (USFWS) Midwest Region Endangered Species;
- USFWS Information for Planning and Consultation; and
- MDNR Wildlife Action Plan 2015-25.

5.2.2 Field Surveys

Discussion of the methodology used during field surveys.

Habitat

Terrestrial

Describe methodology and procedures used for habitat surveys:

- Plant Community Surveys
 - Describe methodology used for habitat / plant community surveys:
 - e.g., “meanders surveys”
 - determining important or critical habitat for state and federal threatened or endangered species
 - Include description of mapping conducted:
 - composition
 - structure
 - function
 - evidence of disturbance

Aquatic

Describe methodology used for aquatic surveys

- Stream and lake sampling

Vegetation

Describe methodology to find:

- invasive non-native plant species and species identified as “prohibited” under the Minnesota Noxious Weed Law and
- sensitive species and rare plant populations

Wild Rice

- Wild rice survey methods
- Wild rice plant collection and processing
- Macrophyte sample methods
- Water quality / sediment sampling

Wildlife

Describe methodology and procedures used for wildlife surveys, including surveys for:

Terrestrial

- Birds
- Bats
- Reptiles and amphibians
- Mammals

Aquatic

- Fish
- Macroinvertebrates

5.2.3 Quality Control

- Discussion of QA/QC or QAPP

5.3 Existing Conditions

Using the defined areas of analysis and methods, existing conditions will be described within this section including the following:

- Discussion of regional setting - MDNR-designated Border Lakes Subsection

5.3.1 Habitat

Terrestrial

- Discussion of publically available data in the proposed action:
 - USGS GAP / LANDFIRE
 - USGS NLCD
 - MDNR / USFS Ecological Classification System
 - MDNR Minnesota Biological Survey
 - National Hierarchical Framework of Ecological Units

- Descriptions of habitats and land covers
- Discussion of project specific surveys in the proposed action
 - Plant community surveys
 - critical habitat
 - composition
 - structure
 - function
 - evidence of disturbance

Aquatic

- Discussion of publically available data in the proposed action:
 - MPCA Environmental Data Access
 - Biological Survey Stream Sites
 - MDNR Fishes of Minnesota Mapper
 - MPCA Rainy River-Headwaters Monitoring and Assessment Report
- Discussion of project specific surveys in the proposed action
 - Stream and lake sampling

5.3.2 Vegetation

- Discussion of publically available data in the proposed action:
 - MDNR Rare Species Guide
 - MDNR NHIS Database
 - USFS RFSS
- Discussion of project specific surveys in the proposed action
 - rare natural plant communities
 - non-native invasive plants

5.3.3 Wildlife

Sensitive Species

- Discussion of publically available data in the proposed action:
 - MDNR Rare Species Guide
 - MDNR NHIS Database
 - USFS RFSS
 - USFWS Midwest Region Endangered Species
 - USFWS Information for Planning and Consultation
 - MDNR Wildlife Action Plan 2015-25.
- Discussion of project-specific surveys in the proposed action
 - Any occurrences of sensitive species observed in the wildlife surveys

Terrestrial

- Discussion of project-specific survey results in the proposed action for endemic terrestrial species.
 - Birds
 - Bats
 - Reptiles and amphibians
 - Mammals

Aquatic

- Discussion of project-specific survey results in the proposed action for endemic aquatic species.
 - Fish
 - Macroinvertebrates

6.0 REFERENCES



TABLES

FIGURES



APPENDICES



APPENDIX [#A, B, C, D]

[APPENDIX TITLE]

APPENDIX [#A, B, C, D]

[APPENDIX TITLE]

[Insert page break for each additional appendix.]