

CURRAGHINALT GOLD PROJECT, COUNTY TYRONE, NORTHERN IRELAND

Marsh Fritillary Butterfly Survey Report
Prepared for: Dalradian Gold Limited

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GOLD

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SLR 

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EXECUTIVE SUMMARY

This report has been prepared by SLR Consulting Ireland on behalf of Dalradian Gold Limited. It presents the results of the marsh fritillary butterfly survey to inform the baseline ecological conditions at the site of the proposed gold mine development as part of the Curraghinalt Project, County Tyrone.

Records would show that a colony of marsh fritillary has historically been present within part of the application site. However, marsh fritillary was not confirmed as present during the survey carried out by SLR in 2016 and it is likely that this species is extinct in this location.

Nonetheless, as marsh fritillary populations function at a landscape scale and are able to colonise sites within a range of 10 km, then consideration must be given to ensure that any loss of potential habitat for this butterfly species through the gold mine development is adequately compensated for.

Although there is all reasonable likelihood of absence of marsh fritillary at this current time, the habitat areas supporting devil's-bit scabious are considered to be at least County value for marsh fritillary within the context of potential colonisation by marsh fritillary at a wider landscape scale.

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1.0 INTRODUCTION

1.1 Background

This report presents the findings of the marsh fritillary butterfly survey undertaken during 2015 and 2016 to inform the baseline ecological conditions at the site of the proposed gold mine development as part of the Curraghinalt Project, County Tyrone.

It has been prepared by SLR Consulting Ireland (SLR) on behalf of Dalradian Gold Limited (DGL) to inform the Environmental Impact Assessment (EIA) process as part of the planning application for the development of a gold mine as part of the Curraghinalt Project.

1.2 Legislative and Planning Context

The marsh fritillary butterfly (*Eurodyras aurinia*) is afforded protection under Schedules 5 and 7 of the Wildlife (Northern Ireland) Order 1985 (as amended) that fully protects this species and its habitat, that amongst other actions, makes it an offence to intentionally or recklessly:

- kill, injure or take a marsh fritillary;
- damage, destroy or obstruct access to any structure or place that a marsh fritillary uses for shelter or protection;
- damage or destroy anything which conceals or protects any structure or place that a marsh fritillary uses; and
- disturb a marsh fritillary whilst it is occupying a structure or place which it uses for shelter or protection.

The marsh fritillary is also afforded protection as an Annex II species of the European Habitats Directive 92/43/EEC which places a duty on the Northern Ireland Environment Agency (NIEA) to maintain this species at a favourable conservation status.

Planning Policy Statement 2 (PPS2): Natural Heritage, published in July 2013 states that planning permission will only be granted for a development proposal that is not likely to harm a statutorily protected species, that includes the marsh fritillary, and which can be adequately mitigated or compensated against.

The marsh fritillary is listed as a Northern Ireland Priority Species (NIPS) and in the draft Fermanagh & Omagh Local Biodiversity Action Plan which also lists its devil's-bit scabious (*Succisa pratensis*) the only known food plant for this butterfly species.

1.3 Study Aims and Objectives

The aims and objectives of the marsh fritillary survey undertaken in spring 2016 were to:

- confirm the presence, or all reasonable likelihood of absence of marsh fritillary within the study area in accordance with the specific requirements of NIEA^{1 2}; and
- map the distribution of all devil's-bit scabious in the study area.

¹ NIEA (2011). *Marsh Fritillary Habitat Surveys – Specific Requirements* revised 8/12/2011.

² NIEA (2011). *Marsh Fritillary Butterfly Surveys – Specific Requirements* revised 8/12/2011.

2.0 METHODOLOGY

Baseline ecological data were collated through a combination of desk-based study and field survey in accordance with current standard methodologies and published good practice guidelines.

2.1 Study Area

The Curraghinalt gold deposit is located in the South Sperrin Mountains approximately 7.5 km east of the village of Gortin, and between the settlements of Rouskey and Greencastle County Tyrone.

The application area has five component project sites that include:

- i. **Proposed Infrastructure Site (Area A).** The site where the process plant and dry stack facility (DSF) will be located and includes the proposed access road of from the Crockanboy Road.
- ii. **Proposed Mineral Extraction Area (Area B).** The area where the mineral deposit is known to occur and the maximum extent of the underground mine workings.
- iii. **The Existing Surface Infrastructure Site (Area C).** The existing surface infrastructure that was developed for the underground exploration programme that will be retained for use as an early works base and for underground development and future training.
- iv. **Passing Bays on Camcosy Road (Area D).** The existing passing bays developed for the Curraghinalt Underground Exploration Programme and proposed turning point for heavy goods vehicles during the construction phase of the development.
- v. **Proposed Mineral Exploration Area (Area E).** The target area for future exploration of the Curraghinalt deposit by means of underground drifts (essentially exploration tunnels). All tunnels will be more than 100 m below the surface.

The area of study for the marsh fritillary butterfly survey included two sites where devil's-bit scabious was recorded during the Phase 1 Habitat Survey both of which lie within the proposed infrastructure site (Area A) of the application site (Figure 1).

2.2 Desk-based Study

A preliminary desk-based study was undertaken and involved collating data from a number of organisations and examining published data relating to the presence of marsh fritillary at and up to a 10km radius of the study area. Data sources included any records for marsh fritillary held by the Centre for Environmental Data and Recording (CEDaR), by the National Biodiversity Data Centre (NBDC) (www.biodiversityireland.ie) and Butterfly Conservation Northern Ireland.

2.3 Field Survey

2.3.1 Butterfly Survey

Each site supporting devil's-bit scabious was visited and surveyed in May, June and July 2016, the main flight period for adult marsh fritillary butterflies.

During each survey visit each of the sites supporting devil's-bit scabious was observed from a suitable vantage and for a period of one hour between the hours of 10:30 and 16:30, during suitable weather conditions to record any butterflies in flight.

Following the hour of observation, individual leaves of the devil's-bit scabious were inspected for any evidence of eggs and the basal leaves for any caterpillars and early development larval webs (June and July only).

2.3.2 Larval Web Survey

Larval web survey of the complete areas supporting devil's-bit scabious was undertaken on 12th August 2016 and repeated on 25th September 2016. Parallel transects 2 m apart were walked through the areas supporting devil's-bit scabious plant and the areas around each plant systematically searched for any larval webs with or without larvae.

2.4 Survey Personnel

The surveys and surveillance were led by Steve Judge MCIEEM an ecologist and employee of SLR who is highly experienced in carrying out butterfly surveys. The survey was carried out under Licence No. SBP/2/16 issued by the NIEA Wildlife Licensing Unit.

2.5 Uncertainty of Data and Limitations

The surveys for marsh fritillary were conducted during the main flight period for this species and when it would be expected to find any larval webs. All surveys were carried out in optimum conditions where it would be expected that butterflies would be detected if present and in flight and for the detection of larval webs. However, the lack of evidence of a marsh fritillary does not necessarily preclude their presence at a later date.

3.0 RESULTS

3.1 Contextual Information and Historical Records

3.1.1 Historical Records for Marsh Fritillary Butterfly

Four records for marsh fritillary were returned by CEDaR / NBDC all to the east of the study area, the closest of which was approximately 3 km from the application site.

The Butterfly Conservation Northern Ireland returned a record made in 2010 for one larval web within a field lying within the proposed infrastructure site (Area A) of the application site. It is believed that this site corresponds to site reference Sp2 as detailed below.

As far as can be ascertained no detailed surveys for marsh fritillary have taken place within the study area, with the exception of the record made by Butterfly Conservation Northern Ireland in 2010 for this species.

3.2 Marsh Fritillary Habitat Survey / Presence of Devils-bit Scabious

Two areas were found to support devil's-bit scabious in the study area as shown in Figure 1.

3.2.1 Sp1 – Mire (Grid Reference H58998427)

Sp1 is located within part of a relatively extensive mire area adjacent to the Pollanroe Burn. The devil's-bit scabious is found in a small patch extending over an area of 132 m² with a total of 102 individual plants counted. The plants are found along the top of the right bank of the Pollanroe Burn and in a relatively dry area largely dominated by purple moor-grass (*Molinia caerulea*) with hummocks of *Sphagnum* and on the edge of permanently wet area dominated by rushes. The sward height ranges from 30 cm to up to 1 m in places. Plate 1 shows the typical sward structure where devil's-bit scabious is present. The habitat is assessed as suitable (under-grazed) habitat for marsh fritillary (Fowles 2003)³.

3.2.2 Sp2 – Mire (Grid Reference H58268365)

Sp2 is located within small isolated mire. Devil's-bit scabious is found throughout this field with over 500 plants estimated at this site over an area of 1269 m². The sward height ranges from 30 to 50 cm. Plate 2 shows the typical sward structure where devil's-bit scabious is present. The habitat is assessed as being good condition habitat for marsh fritillary.

3



Plate 1: Typical Sward Supporting Devil's-bit Scabious at Sp1



Plate 1: Typical Sward Supporting Devil's-bit Scabious at Sp2

3.3 Field Survey Result

The results of the marsh fritillary survey are presented in Table 1.

Table 1: Marsh Fritillary Survey Butterfly and Larval Web Survey Results

Date	Weather	Sp1	Sp2
31/05/16	Clear skies, warm with a light north easterly breeze Temperature 18 °C	Observation from 13:30 to 14:00 No marsh fritillary butterflies observed and no eggs found Butterflies in flight included: orange-tip (<i>Anthocharis cardamines</i>)	Observation from 14:30 to 15:30 No marsh fritillary butterflies observed and no eggs found Butterflies in flight included: orange-tip
10/06/16	Broken cloud, still and dry Temperature 19 °C	Observation from 12:00 to 13:00 No marsh fritillary butterflies observed, no eggs found and no caterpillars or larval webs Butterflies in flight included: orange-tip and meadow brown (<i>Maniola jurtina</i>)	Observation from 10:30 to 11:30 No marsh fritillary butterflies observed, no eggs found and no caterpillars or larval webs Butterflies in flight included: orange-tip and small heath (<i>Coenonympha pamphilus</i>)
07/07/16	Overcast, moderate southerly breeze and dry Temperature 15 °C	Observation from 10:30 to 11:30 No marsh fritillary butterflies observed, no eggs found and no caterpillars or larval webs Butterflies in flight included: green-veined white (<i>Artogeia napi</i>), small heath and meadow brown	Observation from 12:00 to 13:00 No marsh fritillary butterflies observed, no eggs found and no caterpillars or larval webs Butterflies in flight included: green-veined white
12/08/16	Broken cloud, still and dry Temperature 18 °C	Larval Web Check (pm) No larval webs found	Larval Web Check (pm) No larval webs found
25/09/16	Clear skies, slight westerly breeze and dry Temperature 15 °C	Larval Web Check (am) No larval webs found	Larval Web Check (am) No larval webs found

4.0 DISCUSSION AND EVALUATION

4.1 Discussion of Results

Marsh fritillary was not confirmed as present during the surveys carried out by SLR in 2016. However, records would show that a colony of this species has historically been present at Sp2.

Populations of marsh fritillary can fluctuate greatly in size from year to year with small colonies prone to extinction where there is a small population in isolated areas of habitat. The habitat areas supporting devil's-bit scabious within the study area are considered to be small isolated areas within the context of the local landscape. In addition, very poor weather conditions for all butterfly species in 2015 may have impacted upon the colony historically recorded at Sp2. The survey results would indicate that there is all reasonable likelihood of absence of marsh fritillary within the proposed infrastructure site for the proposed gold mine development.

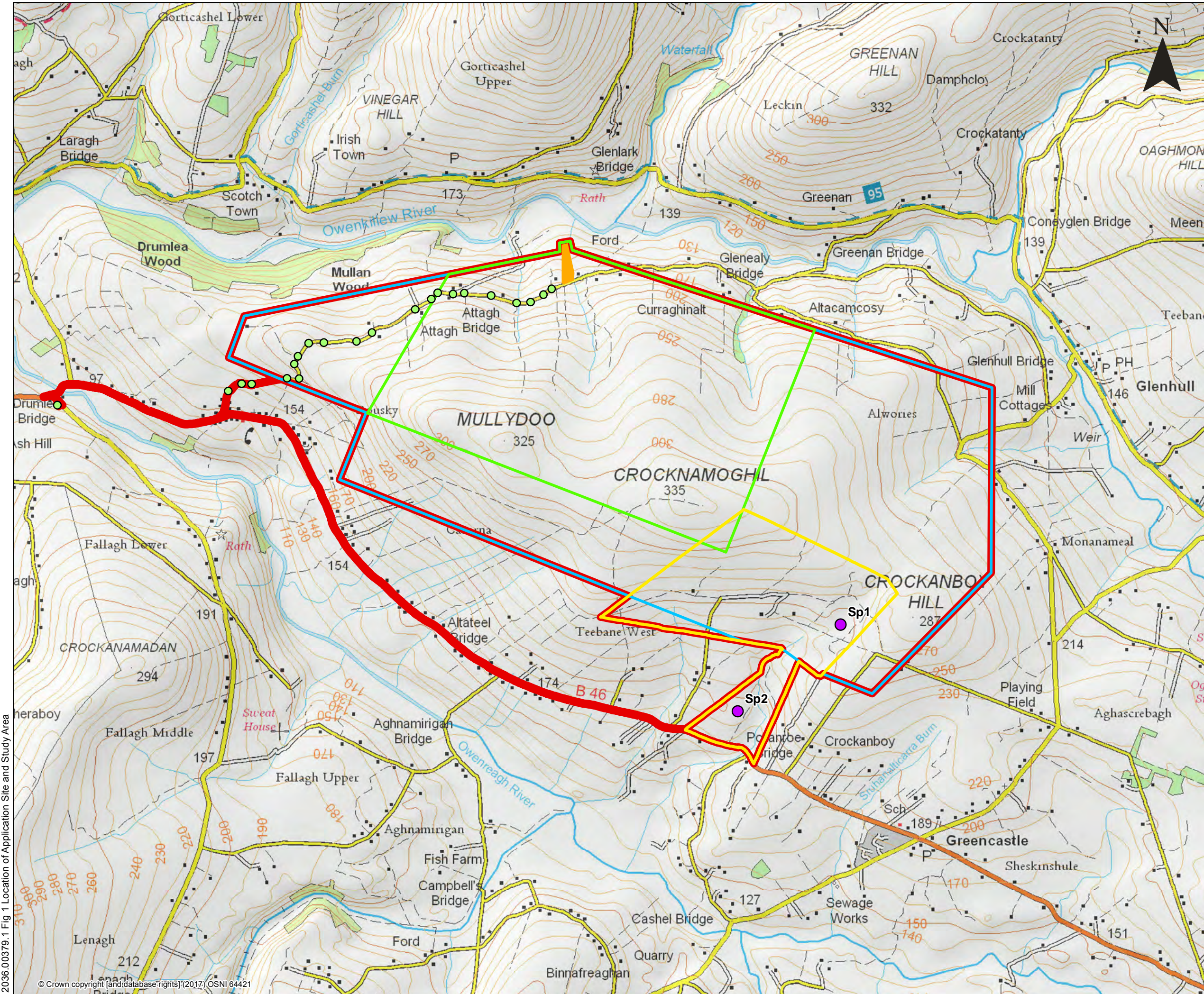
Nonetheless as marsh fritillary populations function at a landscape scale and are able to colonise sites within a range of 10 km, then consideration must be given to ensure that any loss of potential habitat for this butterfly species through the gold mine development is adequately compensated for.

4.2 Evaluation







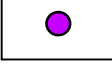
The marsh fritillary is a threatened species that is considered in need of urgent conservation action. Once a species widely distributed across Northern Ireland it is now confined to a few sites that include County Tyrone.

Although there is all reasonable likelihood of absence at this current time, the habitat areas supporting devil's-bit scabious are considered to be at least County value for marsh fritillary within the context of potential colonisation by marsh fritillary at a wider landscape scale.

FIGURES



LEGEND

-  APPLICATION BOUNDARY
-  PROPOSED INFRASTRUCTURE SITE (AREA A)
-  PROPOSED MINERAL EXTRACTION AREA (AREA B)
-  EXISTING SURFACE INFRASTRUCTURE SITE (AREA C)
-  PASSING BAYS ON CAMCOSY ROAD AND TURNING POINT ON LENAGH ROAD (AREA D)
-  PROPOSED MINERAL EXPLORATION AREA (AREA E)
-  LOCATION OF DEVILS'-BIT SCABIOUS

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SURVEY REPORT**

**LOCATION OF APPLICATION SITE
& STUDY AREA**

FIGURE 1

Scale 1:25,000 @ A3 Date SEPTEMBER 2017

2036.00379.1 Fig 1 Location of Application Site and Study Area

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