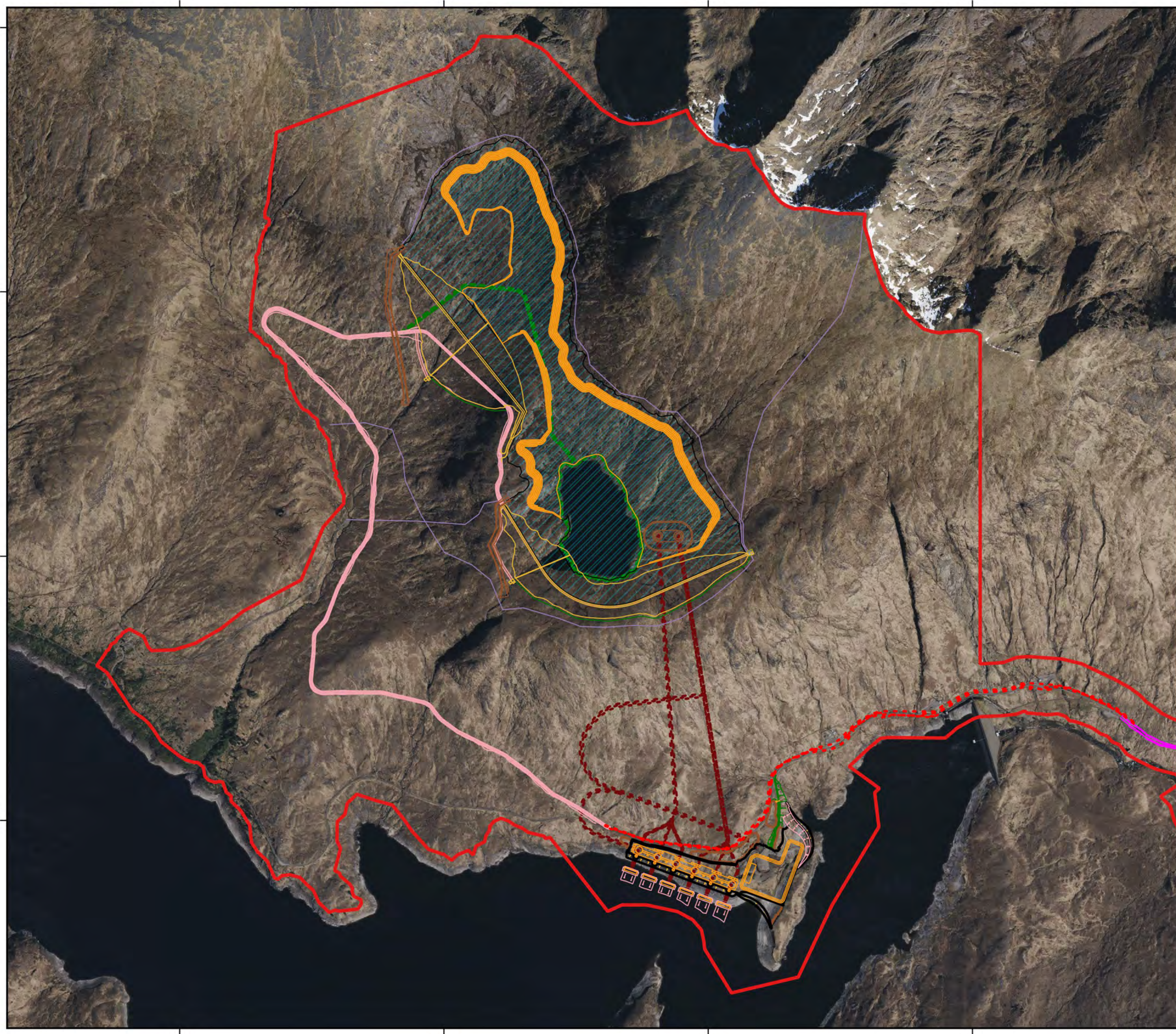




Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.1.0
The Proposed Development

- Key
- Planning Boundary
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels

N

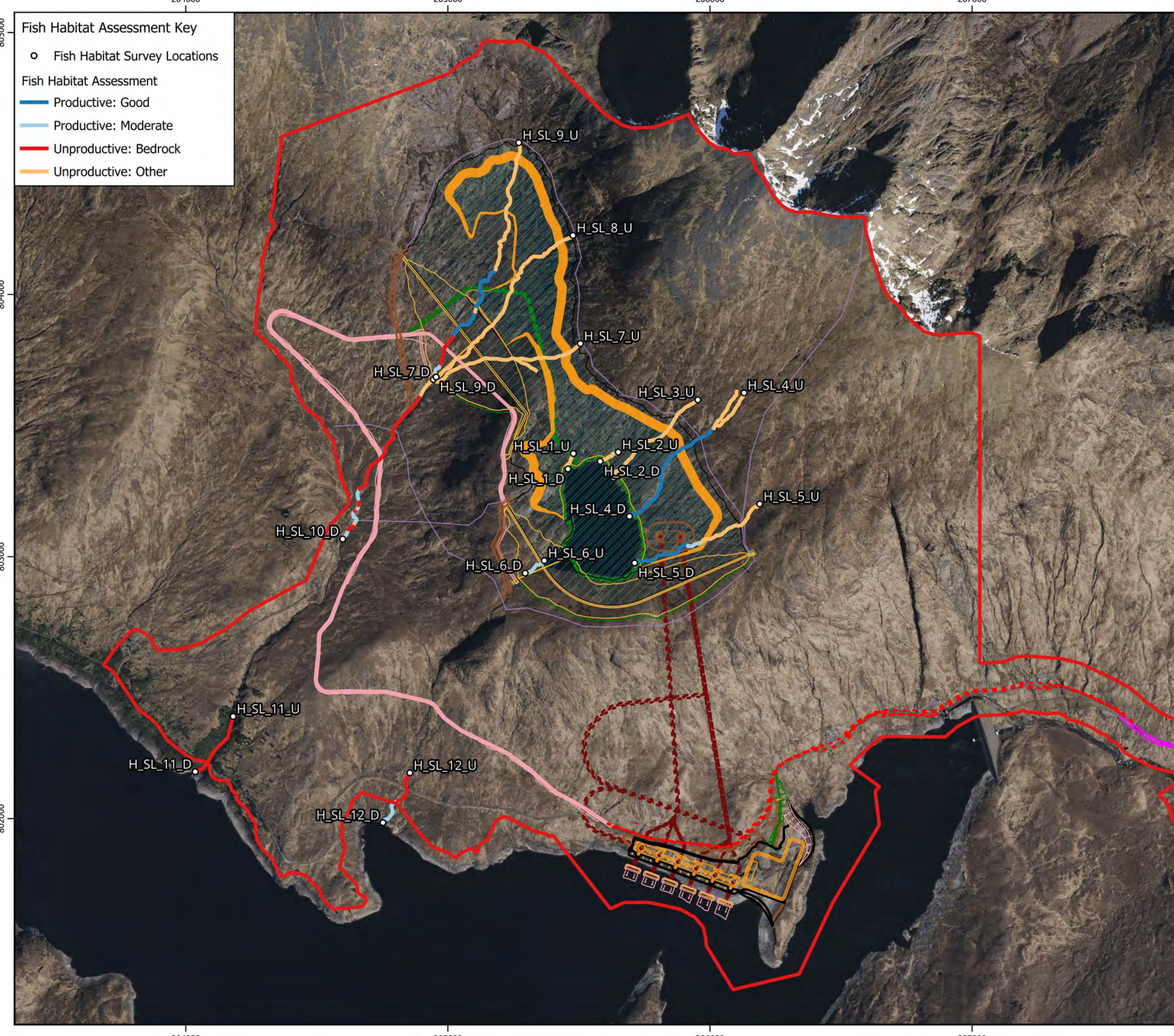
Scale @ A3: 1:14,000

0 250 500 m

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Date: 24-02-2025
Prepared By: AB
Reviewed By: DM
Approved By: MA



Fish Habitat Assessment Key

- Fish Habitat Survey Locations
- Fish Habitat Assessment
 - Productive: Good
 - Productive: Moderate
 - Unproductive: Bedrock
 - Unproductive: Other

Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.2.0
Fish Habitat Assessment
Overview

Key

- Planning Boundary
- Infrastructure Layout
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels



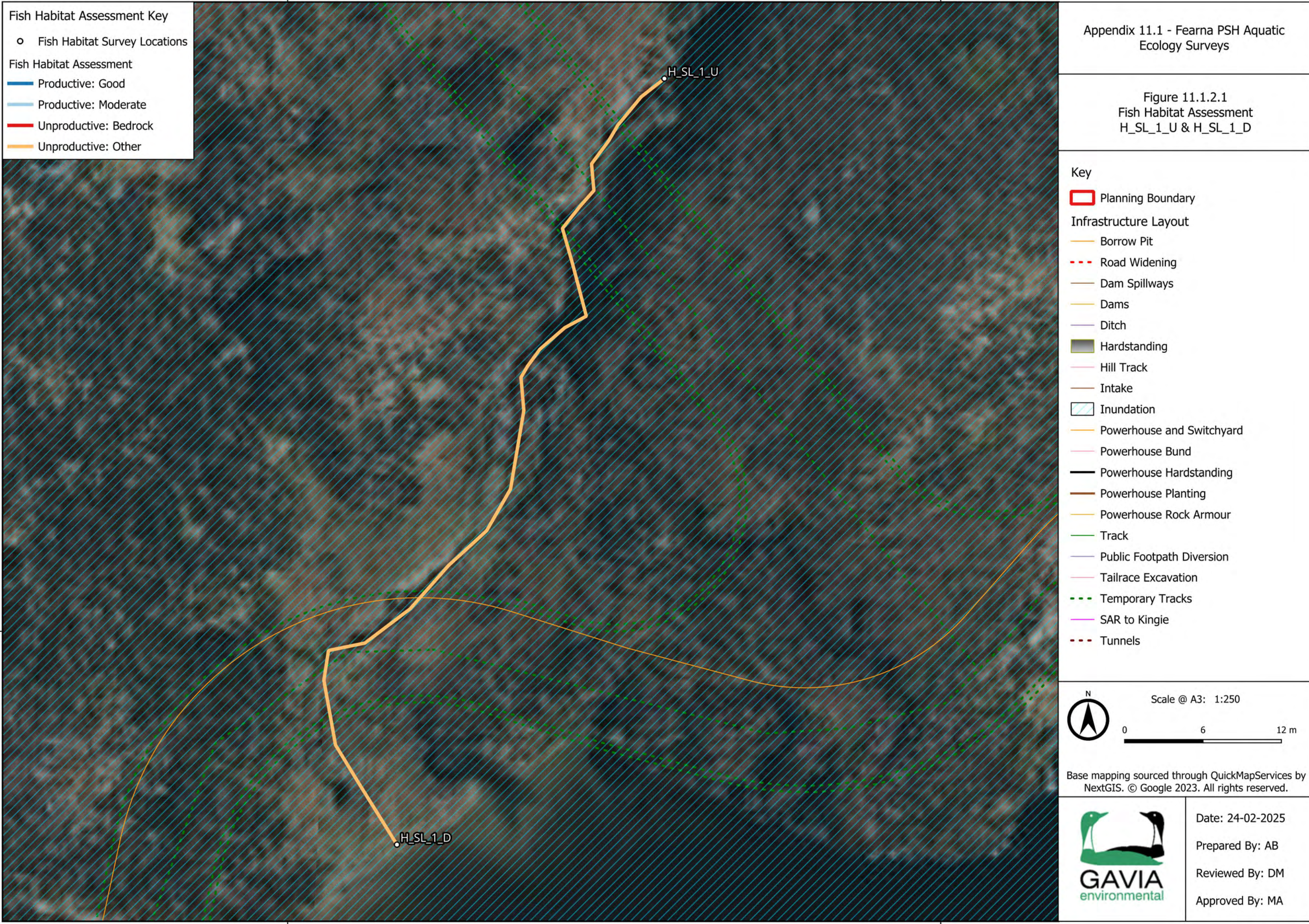
Scale @ A3: 1:14,000

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Date: 24-02-2025
Prepared By: AB
Reviewed By: DM
Approved By: MA



Fish Habitat Assessment Key

○ Fish Habitat Survey Locations

Fish Habitat Assessment

Productive: Good

Productive: Moderate

Unproductive: Bedrock

Unproductive: Other

Figure 11.1.2.2

Fish Habitat Assessment

H_SL_2_U & H_SL_2_D

Key

- Planning Boundary

Infrastructure Layout

Borrow Pit

Road Widening

Dam Spillways

Dams

Ditch

Hardstanding

Hill Track

Intake

Inundation

Powerhouse and Switchyard

Powerhouse Bund

Powerhouse Hardstanding

Powerhouse Planting

Powerhouse Rock Armour

Track

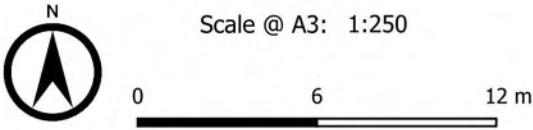
Public Footpath Diversion

Tailrace Excavation

Temporary Tracks

SAR to Kingie

Tunnels



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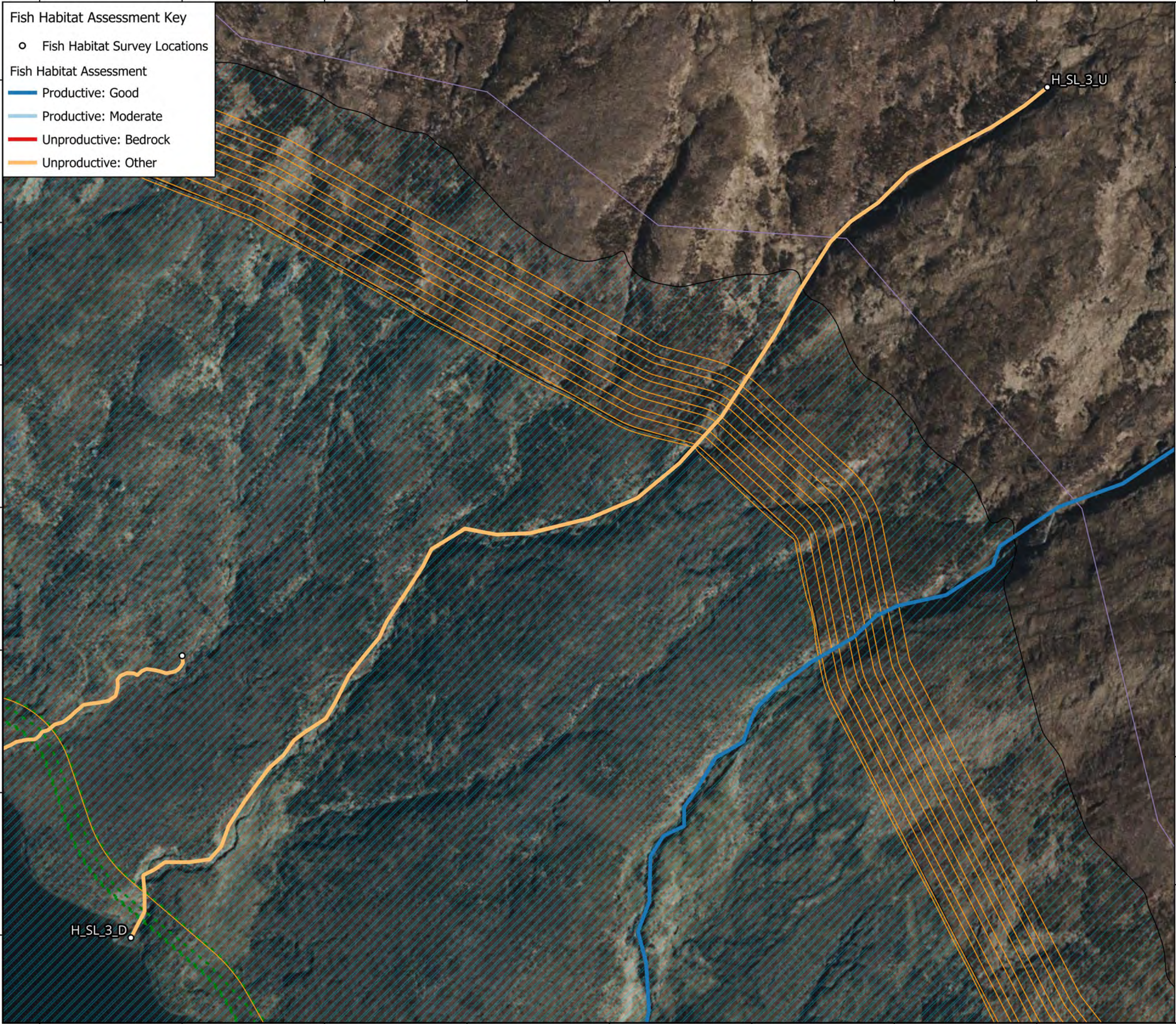


Date: 24-02-2025

Prepared By: AB

Reviewed By: DM

Approved By: MA



Fish Habitat Assessment Key

○ Fish Habitat Survey Locations

Fish Habitat Assessment

- Productive: Good
- Productive: Moderate
- Unproductive: Bedrock
- Unproductive: Other

Appendix 11.1 - Fearn PSH Aquatic Ecology Surveys

Figure 11.1.2.3
Fish Habitat Assessment
H_SL_3_U & H_SL_3_D

Key

Planning Boundary

Infrastructure Layout

- Borrow Pit
- Road Widening
- Dam Spillways
- Dams
- Ditch
- Hardstanding
- Hill Track
- Intake
- Inundation
- Powerhouse and Switchyard
- Powerhouse Bund
- Powerhouse Hardstanding
- Powerhouse Planting
- Powerhouse Rock Armour
- Track
- Public Footpath Diversion
- Tailrace Excavation
- Temporary Tracks
- SAR to Kingie
- Tunnels

N

Scale @ A3: 1:1,300

0 30 60 m

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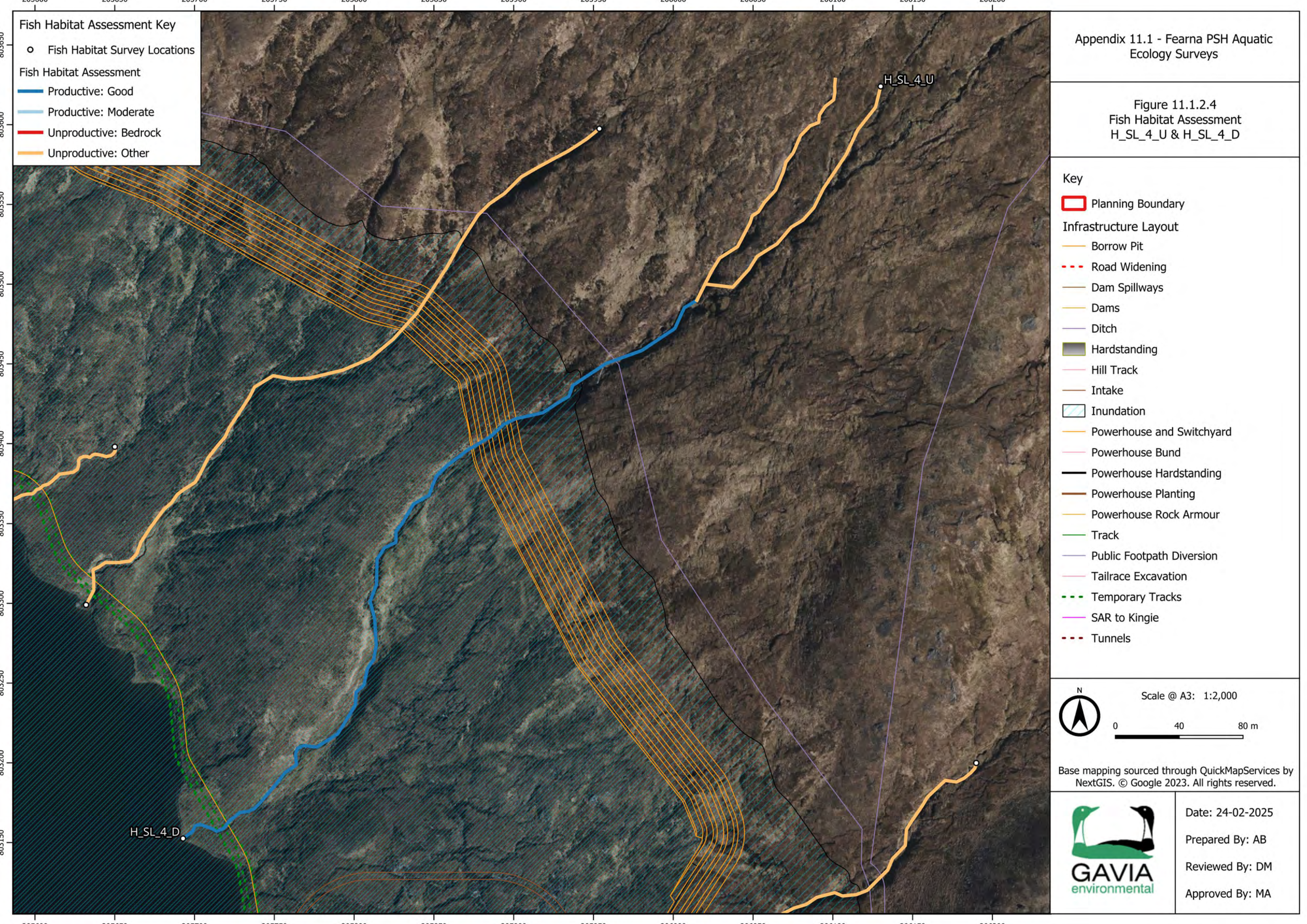


Date: 24-02-2025

Prepared By: AB

Reviewed By: DM

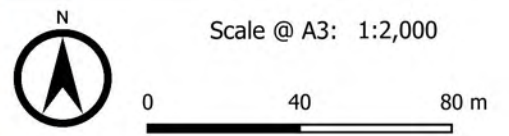
Approved By: MA



Appendix 11.1 - Fearn PSH Aquatic Ecology Surveys

Figure 11.1.2.4
Fish Habitat Assessment
H_SL_4_U & H_SL_4_D

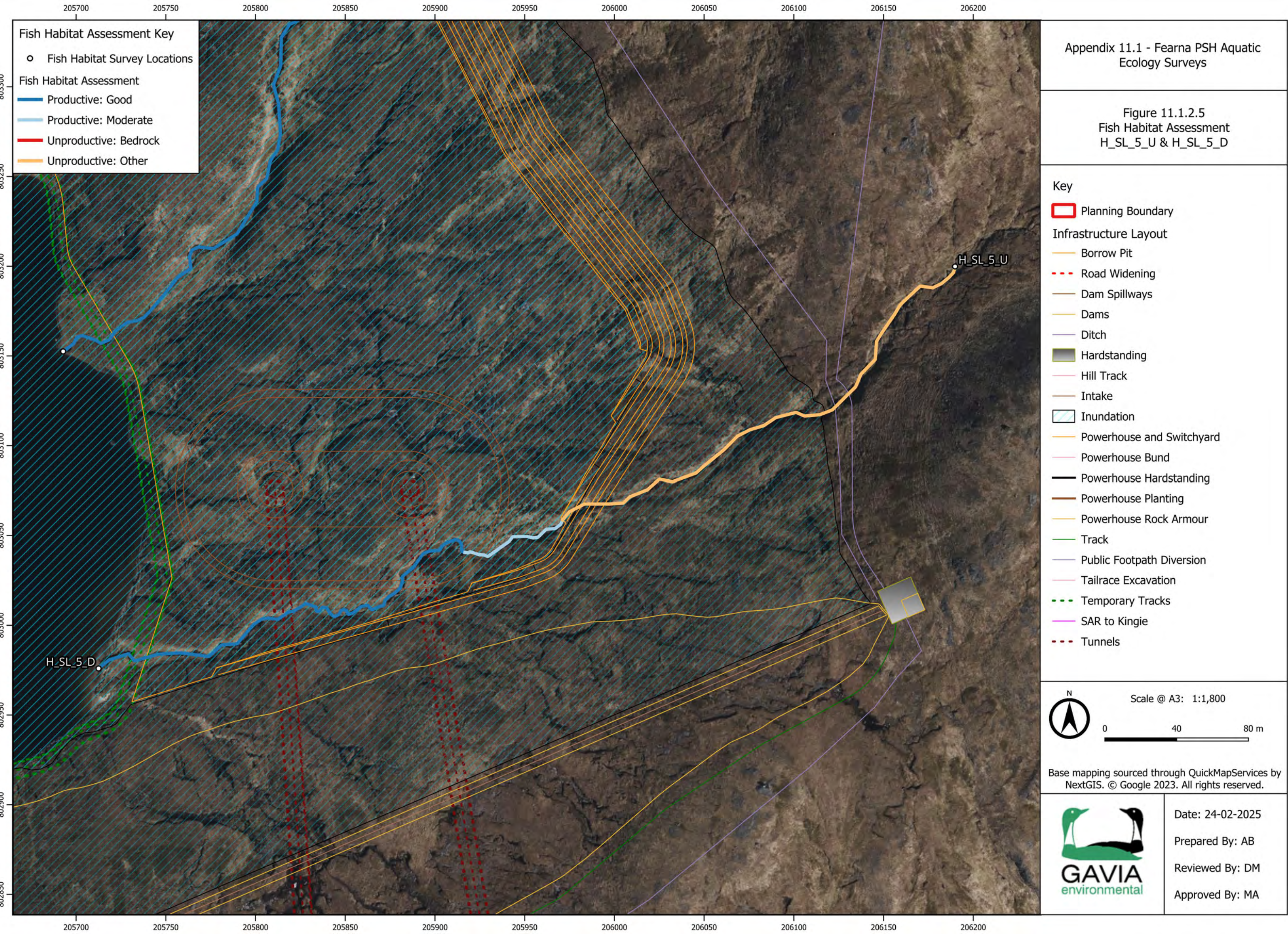
- Key
- Planning Boundary
 - Infrastructure Layout
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels



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Reviewed By: DM
Approved By: MA





Fish Habitat Assessment Key

○ Fish Habitat Survey Locations

Fish Habitat Assessment

Productive: Good

Productive: Moderate

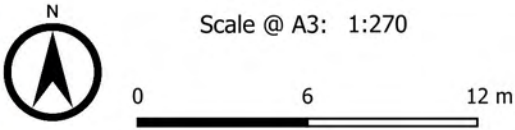
Unproductive: Bedrock

Unproductive: Other

Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.2.6
Fish Habitat Assessment
H_SL_6_U & H_SL_6_D

- Key**
- Planning Boundary
 - Infrastructure Layout**
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels



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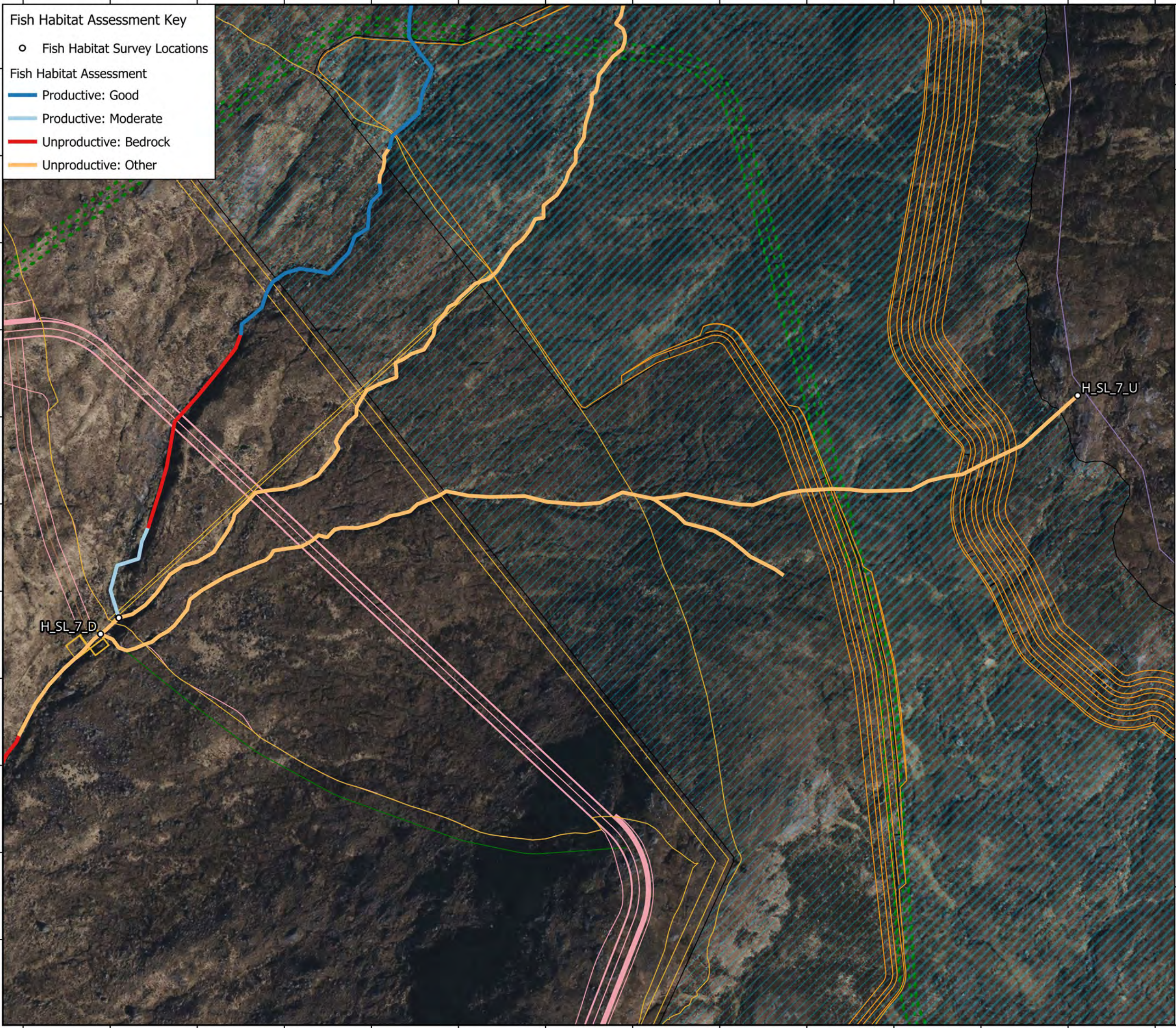


Date: 24-02-2025

Prepared By: AB

Reviewed By: DM

Approved By: MA



Fish Habitat Assessment Key

○ Fish Habitat Survey Locations

Fish Habitat Assessment

- Productive: Good
- Productive: Moderate
- Unproductive: Bedrock
- Unproductive: Other

Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.2.7
Fish Habitat Assessment
H_SL_7_U & H_SL_7_D

Key

- Planning Boundary
- Infrastructure Layout**
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels

N

Scale @ A3: 1:2,100

0 50 100 m

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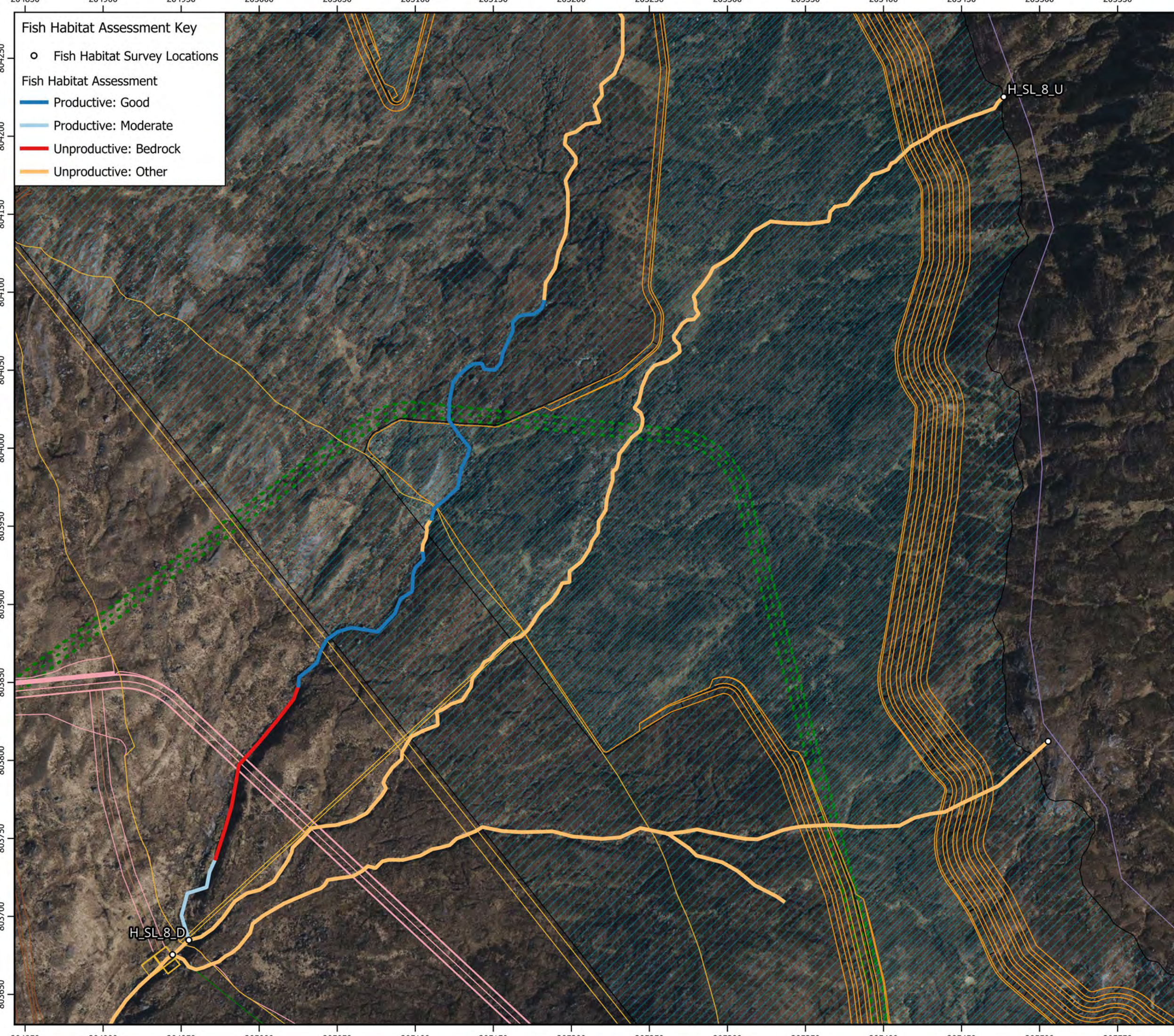


Date: 24-02-2025

Prepared By: AB

Reviewed By: DM

Approved By: MA



Fish Habitat Assessment Key

- Fish Habitat Survey Locations
- Fish Habitat Assessment
 - Productive: Good
 - Productive: Moderate
 - Unproductive: Bedrock
 - Unproductive: Other

Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.2.8
Fish Habitat Assessment
H_SL_8_U & H_SL_8_D

Key

- Planning Boundary
- Infrastructure Layout
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels

N

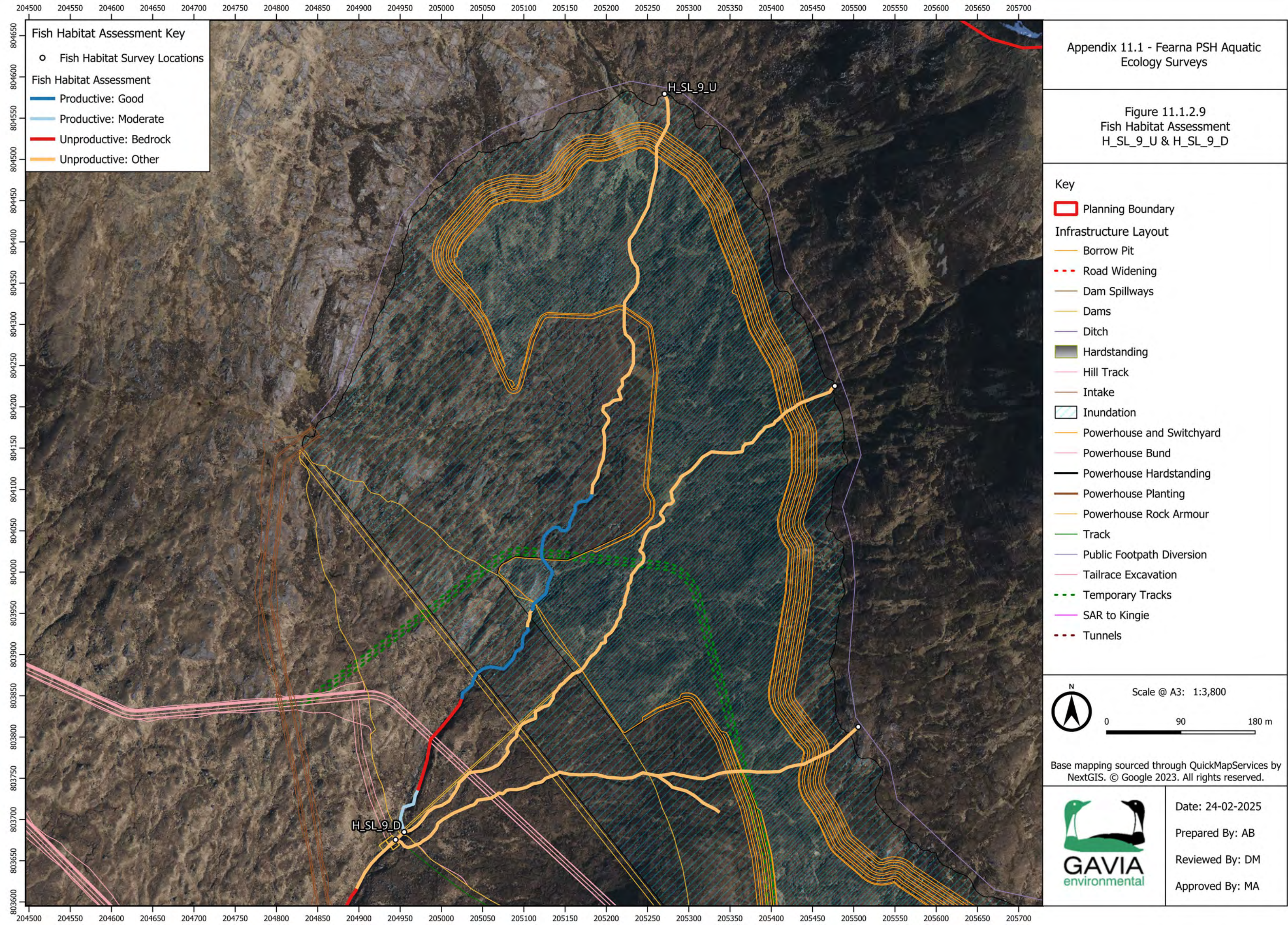
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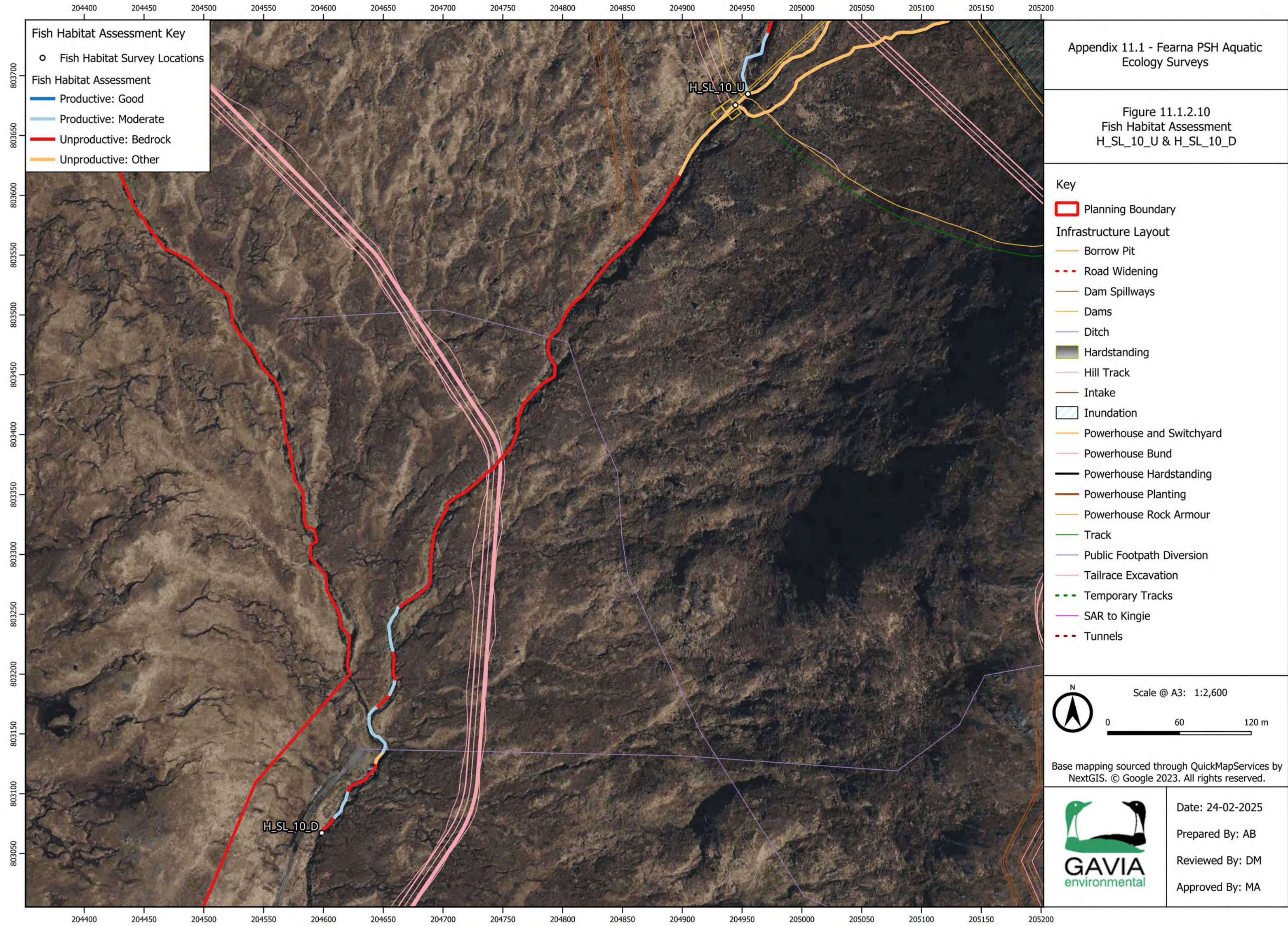
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Reviewed By: DM
Approved By: MA







Fish Habitat Assessment Key

○ Fish Habitat Survey Locations

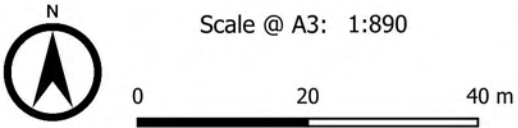
Fish Habitat Assessment

- Productive: Good
- Productive: Moderate
- Unproductive: Bedrock
- Unproductive: Other

Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.2.11
Fish Habitat Assessment
H_SL_11_U & H_SL_11_D

- Key**
- Planning Boundary
 - Infrastructure Layout**
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels



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Prepared By: AB

Reviewed By: DM

Approved By: MA

Fish Habitat Assessment Key

○ Fish Habitat Survey Locations

Fish Habitat Assessment

- Productive: Good
- Productive: Moderate
- Unproductive: Bedrock
- Unproductive: Other

Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.2.12
Fish Habitat Assessment
H_SL_12_U & H_SL_12_D

Key

- Planning Boundary
- Infrastructure Layout**
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels

N

Scale @ A3: 1:800

0

20

40 m

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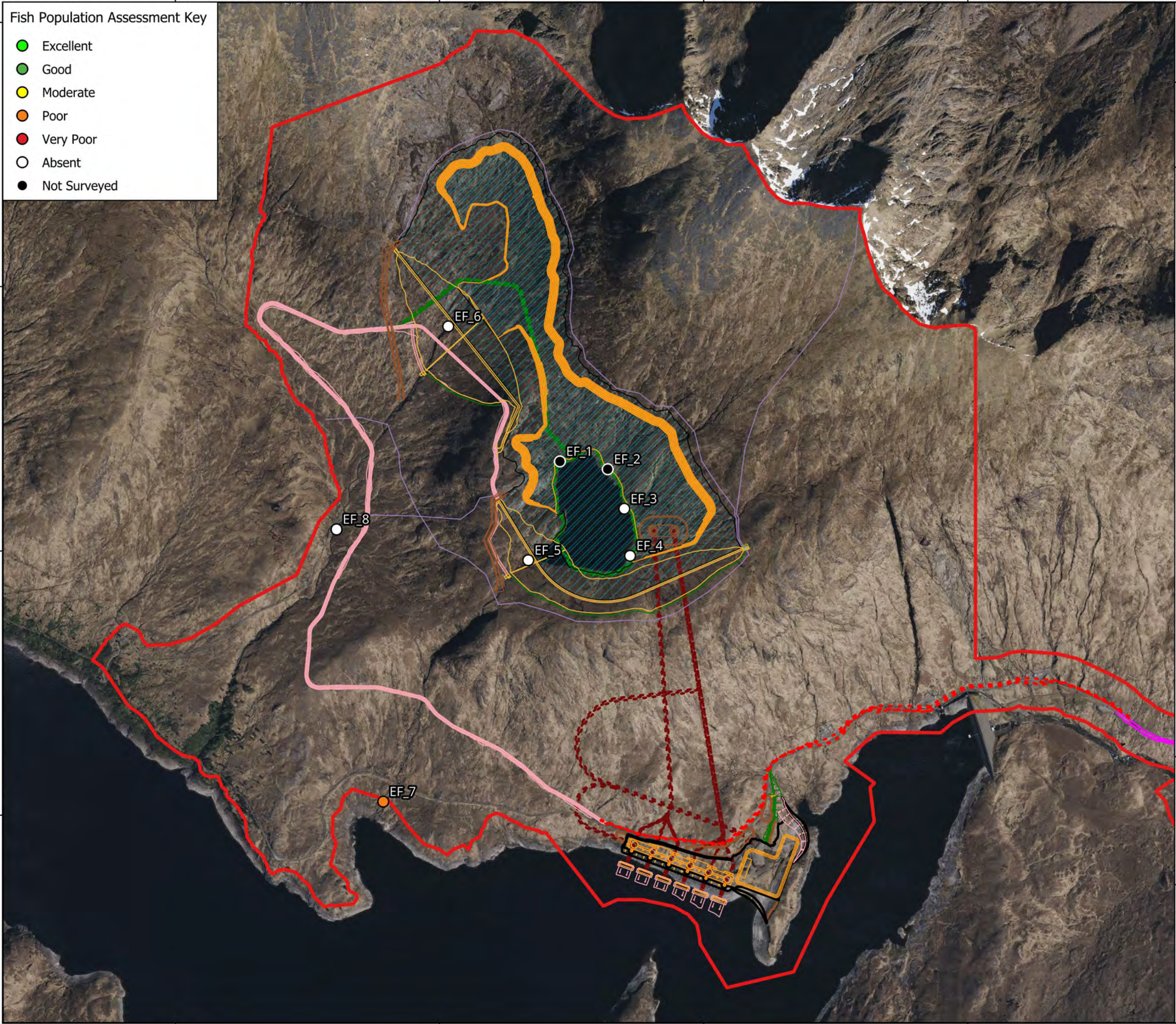


Date: 24-02-2025

Prepared By: AB

Reviewed By: DM

Approved By: MA



Fish Population Assessment Key

- Excellent
- Good
- Moderate
- Poor
- Very Poor
- Absent
- Not Surveyed

Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.3.1
Fish Population Assessment
Brown Trout Fry

Key

- Planning Boundary
- Infrastructure Layout
 - Borrow Pit
 - Road Widening
 - Dam Spillways
 - Dams
 - Ditch
 - Hardstanding
 - Hill Track
 - Intake
 - Inundation
 - Powerhouse and Switchyard
 - Powerhouse Bund
 - Powerhouse Hardstanding
 - Powerhouse Planting
 - Powerhouse Rock Armour
 - Track
 - Public Footpath Diversion
 - Tailrace Excavation
 - Temporary Tracks
 - SAR to Kingie
 - Tunnels



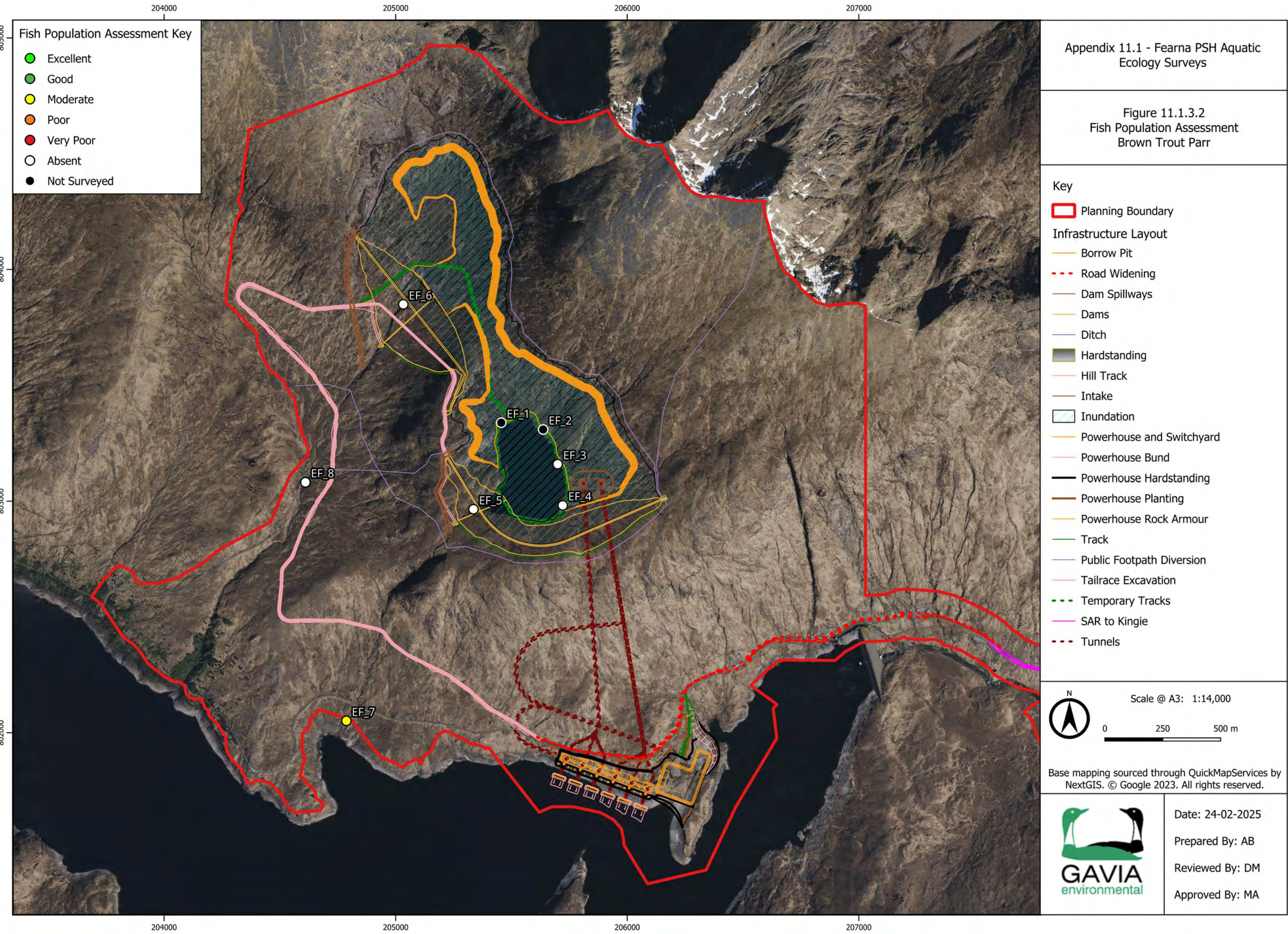
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0 250 500 m

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Reviewed By: DM
Approved By: MA





Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.4.0
eDNA Sampling Locations 2023

Key

- Planning Boundary
- eDNA Sampling Locations 2023

Infrastructure Layout

- Borrow Pit
- Road Widening
- Dam Spillways
- Dams
- Ditch
- Hardstanding
- Hill Track
- Intake
- Inundation
- Powerhouse and Switchyard
- Powerhouse Bund
- Powerhouse Hardstanding
- Powerhouse Planting
- Powerhouse Rock Armour
- Track
- Public Footpath Diversion
- Tailrace Excavation
- Temporary Tracks
- SAR to Kingie
- Tunnels

N

Scale @ A3: 1:19,000

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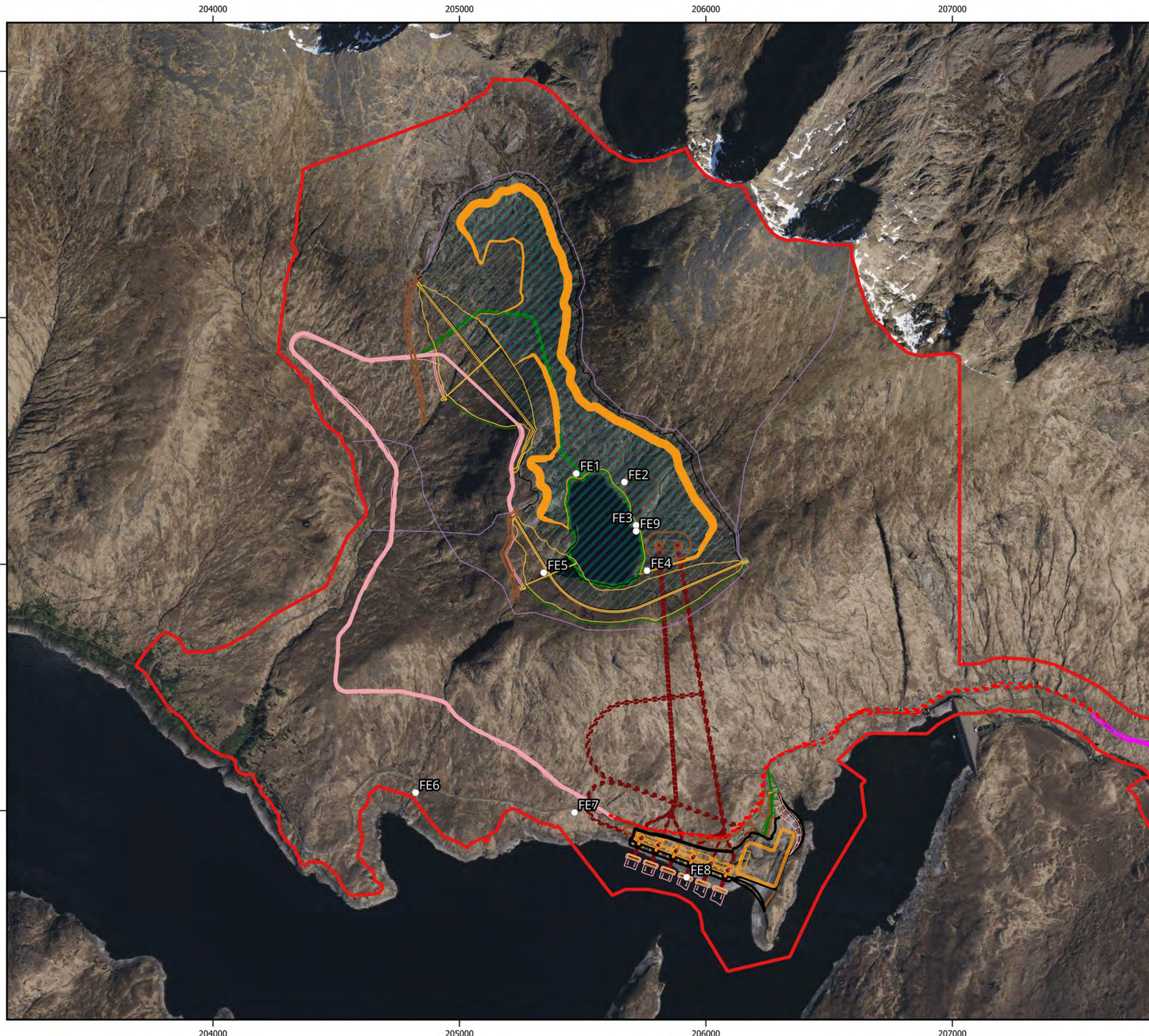
GAVIA
environmental

Date: 24-02-2025

Prepared By: AB

Reviewed By: DM

Approved By: MA



Appendix 11.1 - Fearna PSH Aquatic Ecology Surveys

Figure 11.1.5.0
Macroinvertebrate Sampling Locations

Key

- Planning Boundary
- Macroinvertebrate Sampling Locations

Infrastructure Layout

- Borrow Pit
- Road Widening
- Dam Spillways
- Dams
- Ditch
- Hardstanding
- Hill Track
- Intake
- Inundation
- Powerhouse and Switchyard
- Powerhouse Bund
- Powerhouse Hardstanding
- Powerhouse Planting
- Powerhouse Rock Armour
- Track
- Public Footpath Diversion
- Tailrace Excavation
- Temporary Tracks
- SAR to Kingie
- Tunnels

N

Scale @ A3: 1:14,000

0 250 500 m

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GAVIA
environmental

Date: 24-02-2025

Prepared By: AB

Reviewed By: DM

Approved By: MA