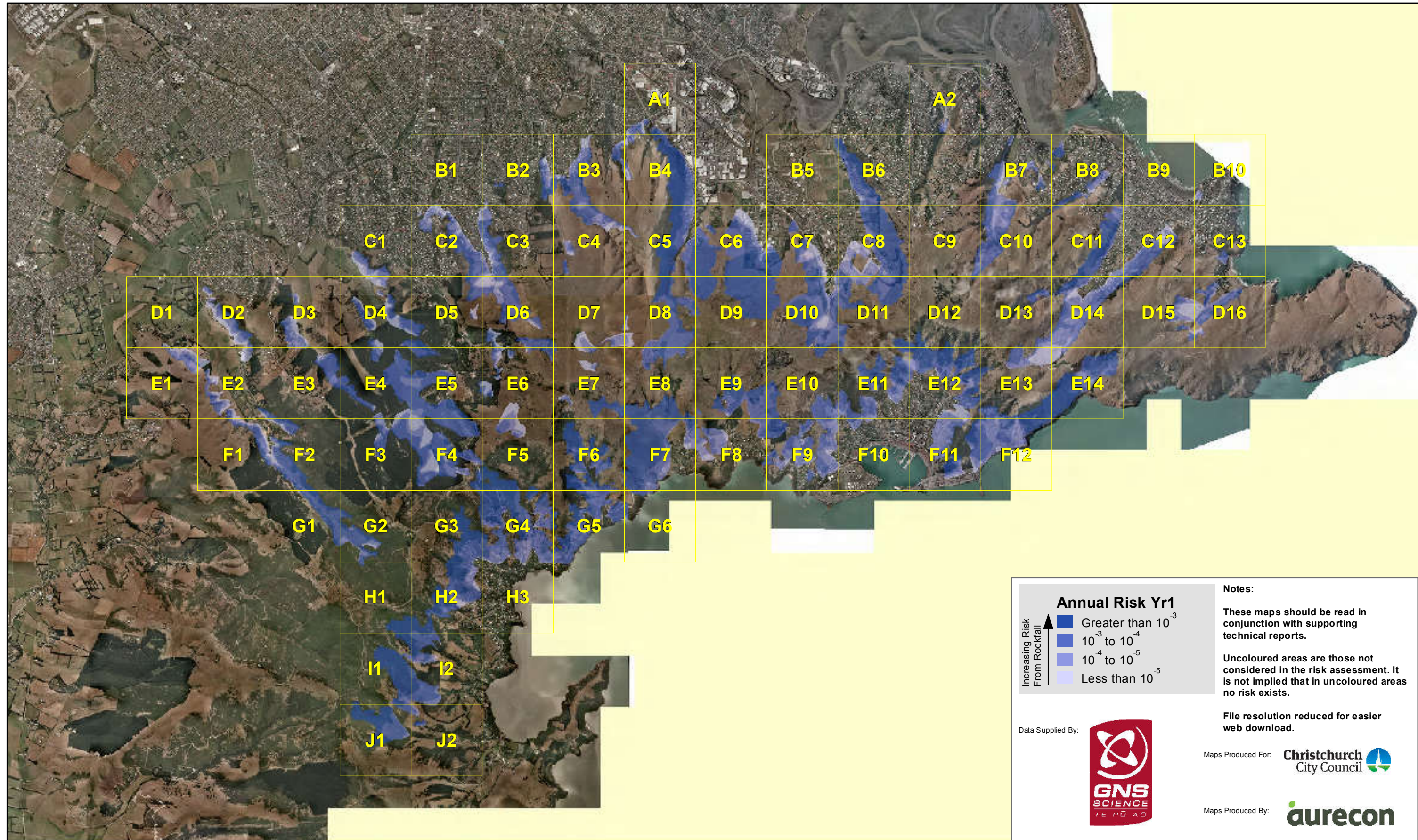




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# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013



**Annual Risk Yr1**

Dark Blue	Greater than $10^{-3}$
Medium Blue	$10^{-3}$ to $10^{-4}$
Light Blue	$10^{-4}$ to $10^{-5}$
Very Light Blue	Less than $10^{-5}$


Increasing Risk From Rockfall ↑


**Notes:**


These maps should be read in conjunction with supporting technical reports.

Uncoloured areas are those not considered in the risk assessment. It is not implied that in uncoloured areas no risk exists.

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Maps Produced For: 

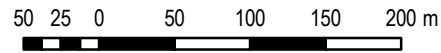
Maps Produced By: 

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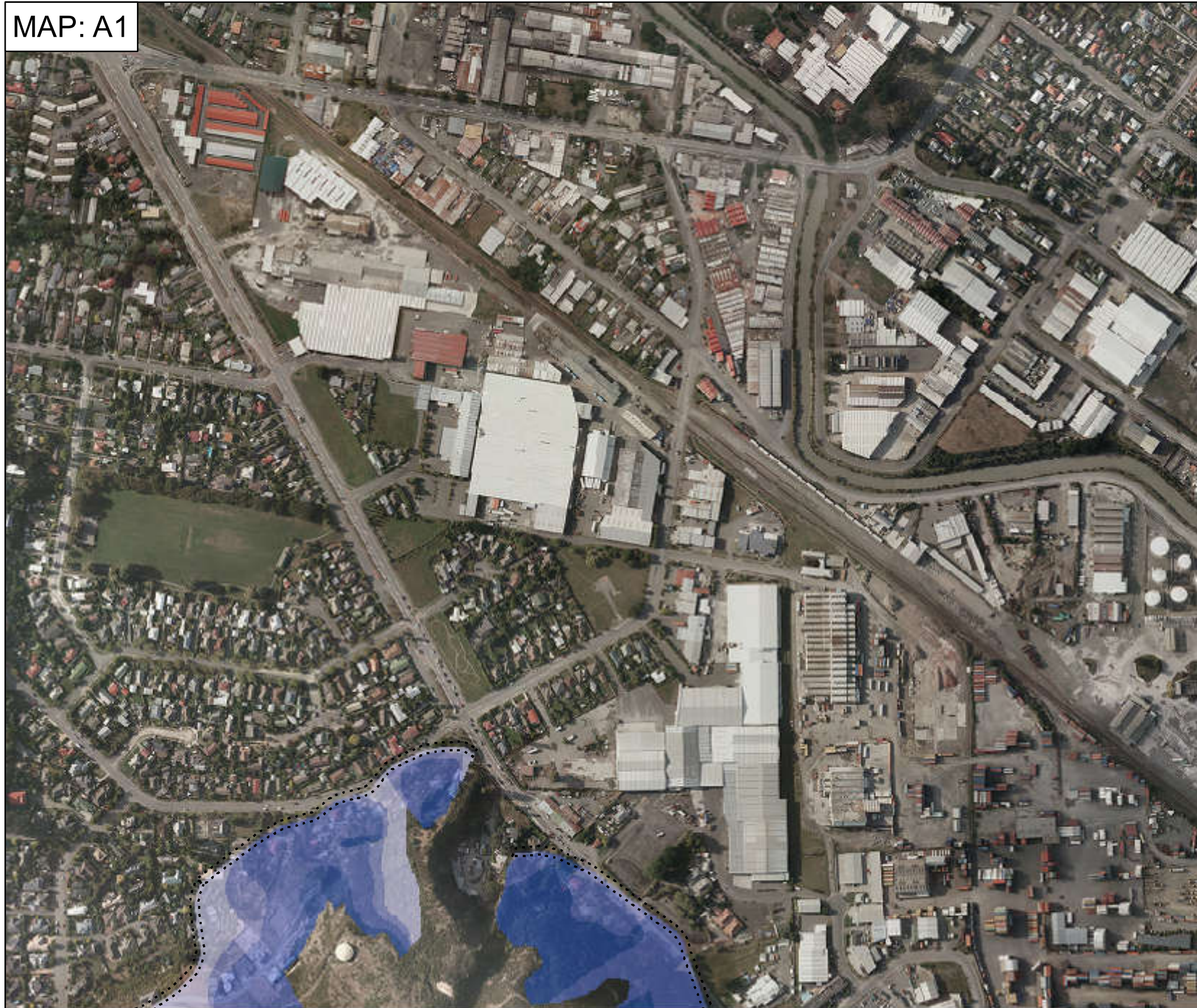


# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

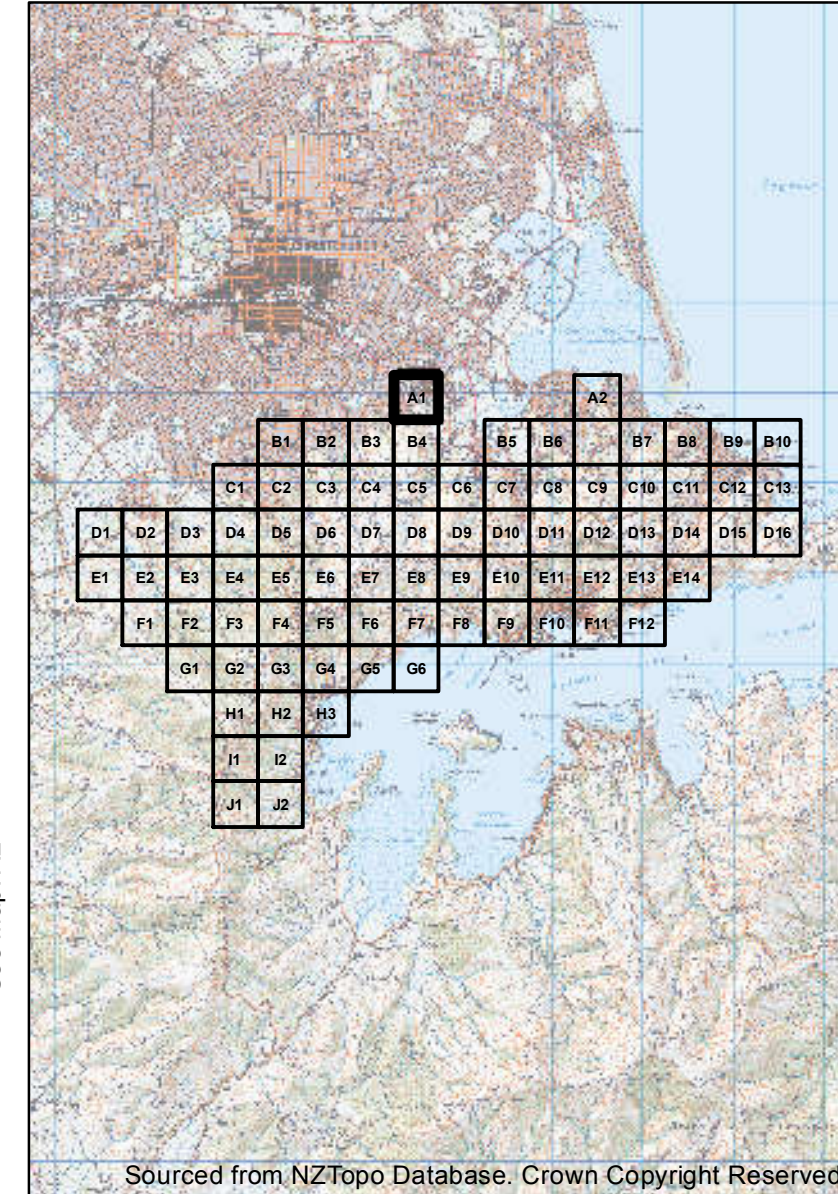
See Map:

MAP: A1



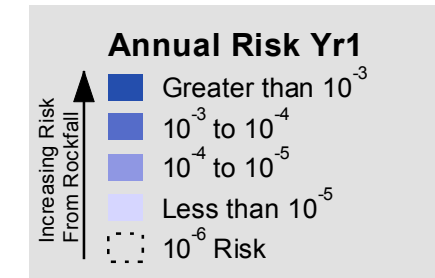
See Map:

See Map: B4



See Map: A2

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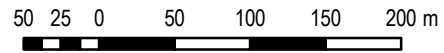


Maps Produced For: **Christchurch City Council**

Maps Produced By: **aurecon**



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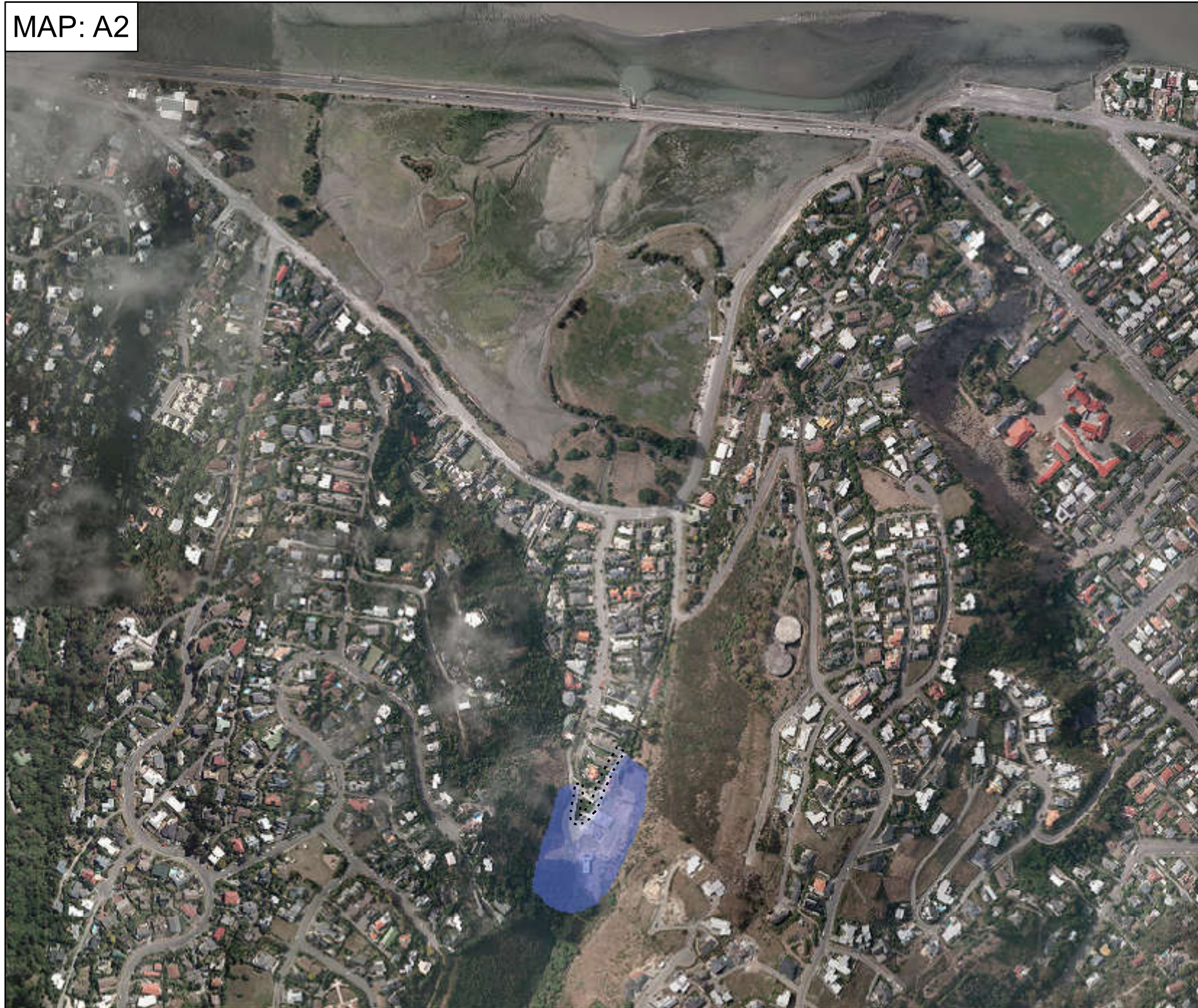


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Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

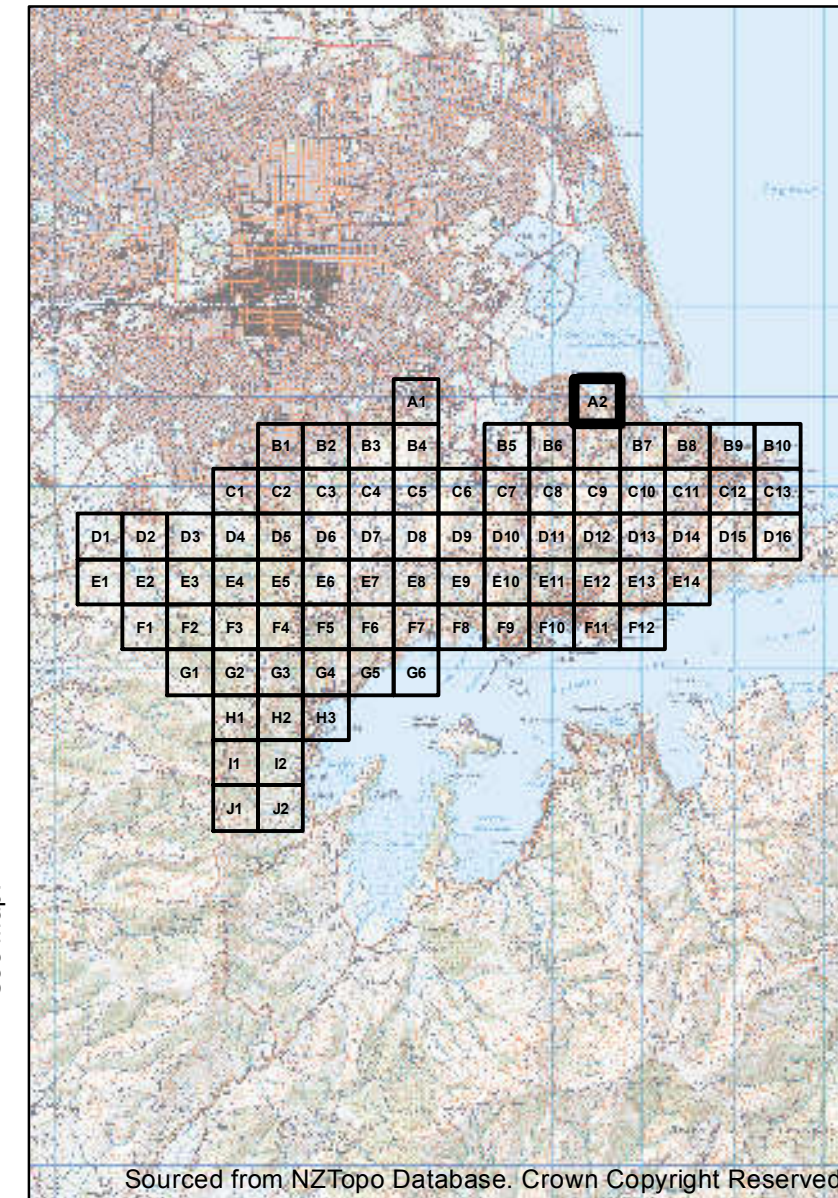
See Map:

MAP: A2



See Map: A2

See Map:



See Map:

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

**Notes:**

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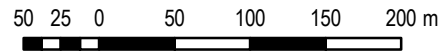


Maps Produced For: Christchurch City Council

Maps Produced By: aurecon



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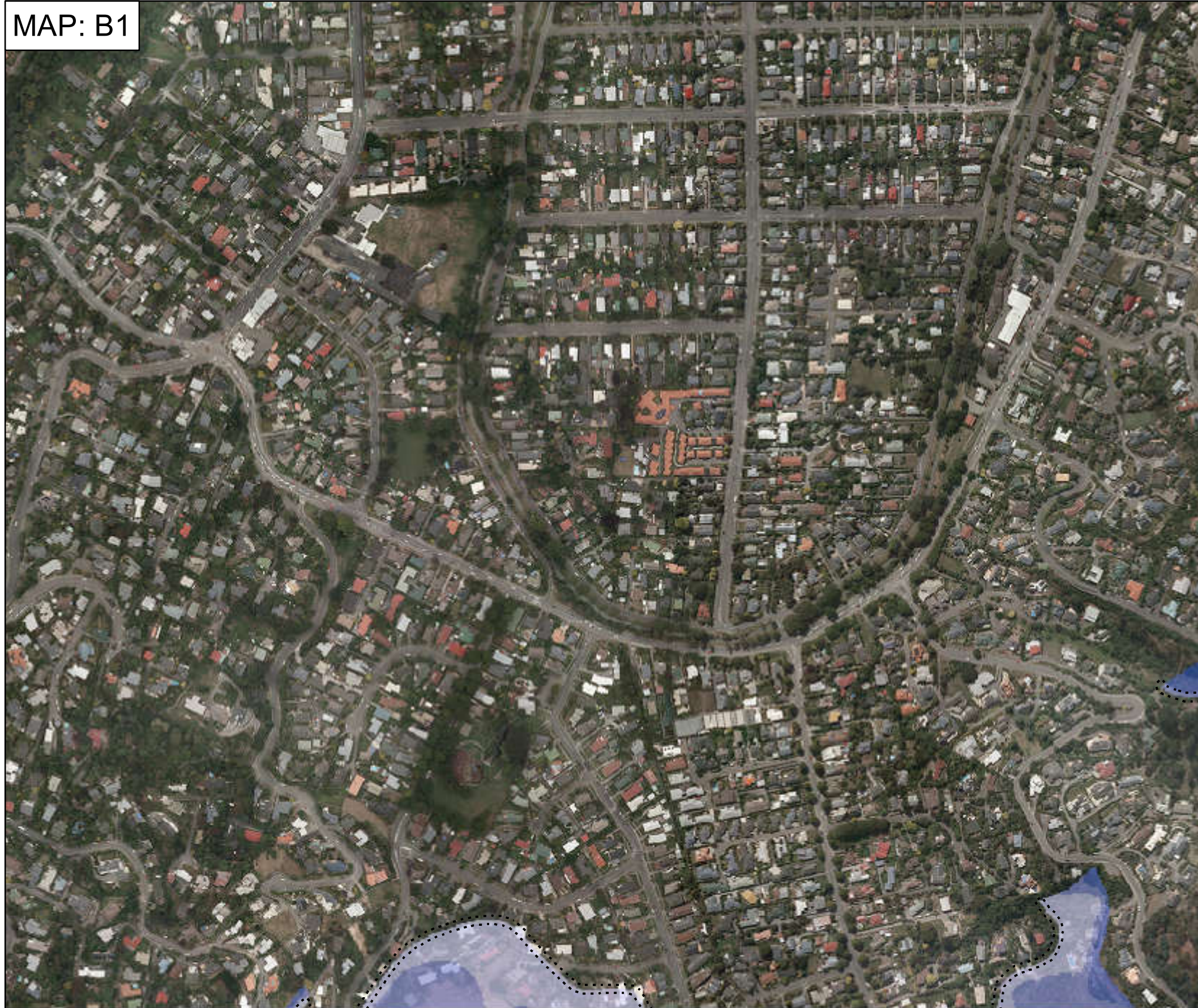


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Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

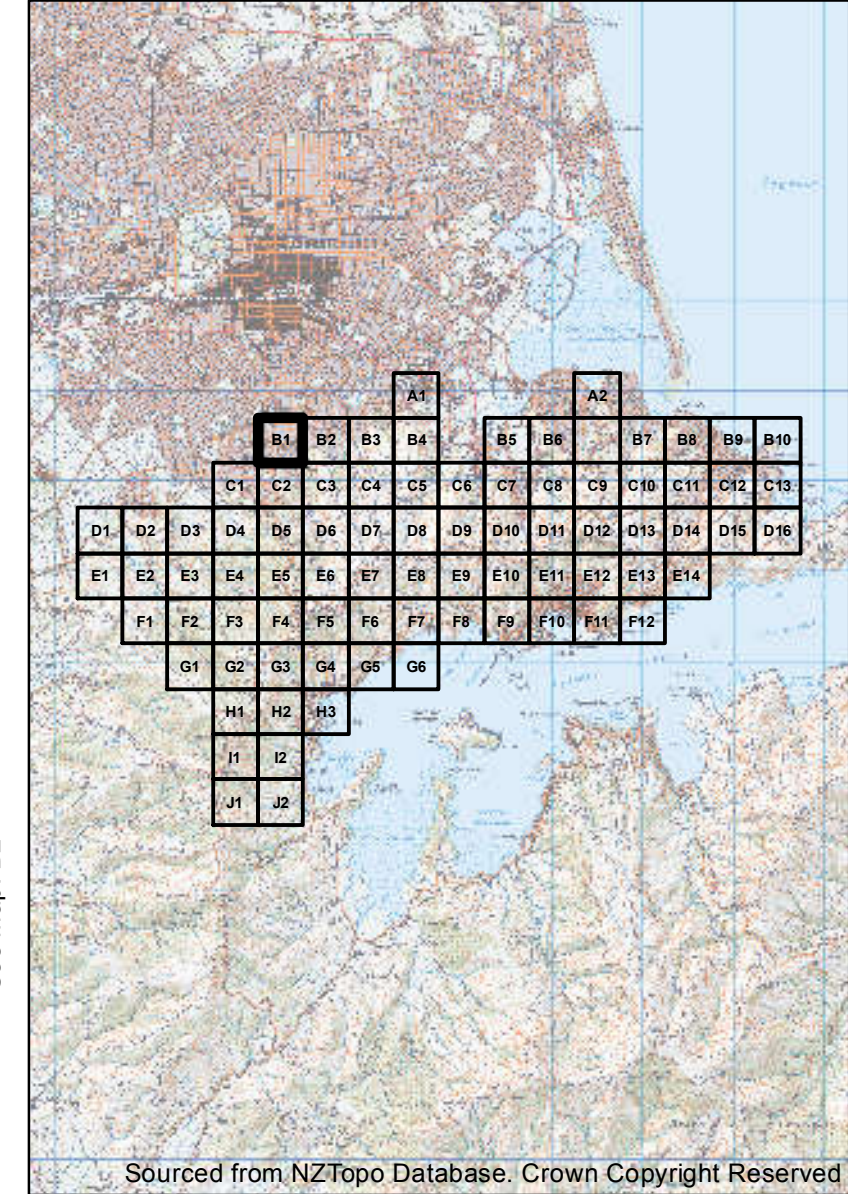
See Map:

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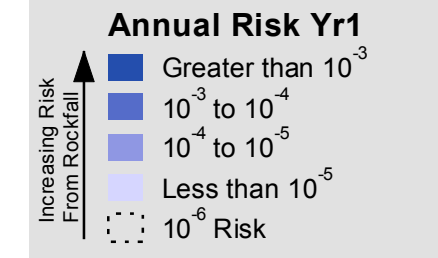
See Map:

See Map: C2



See Map: B2

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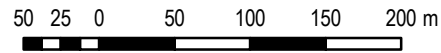


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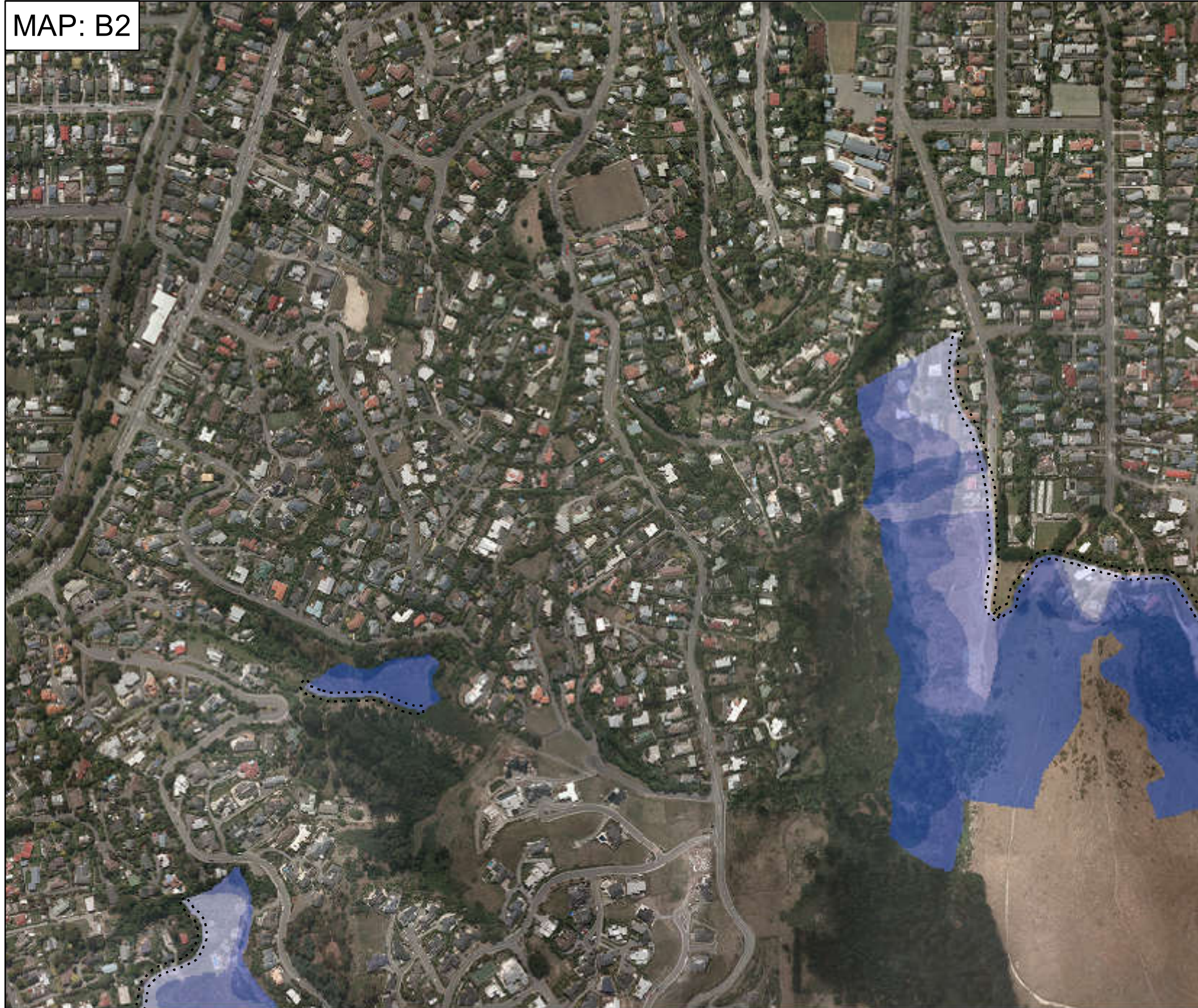


# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

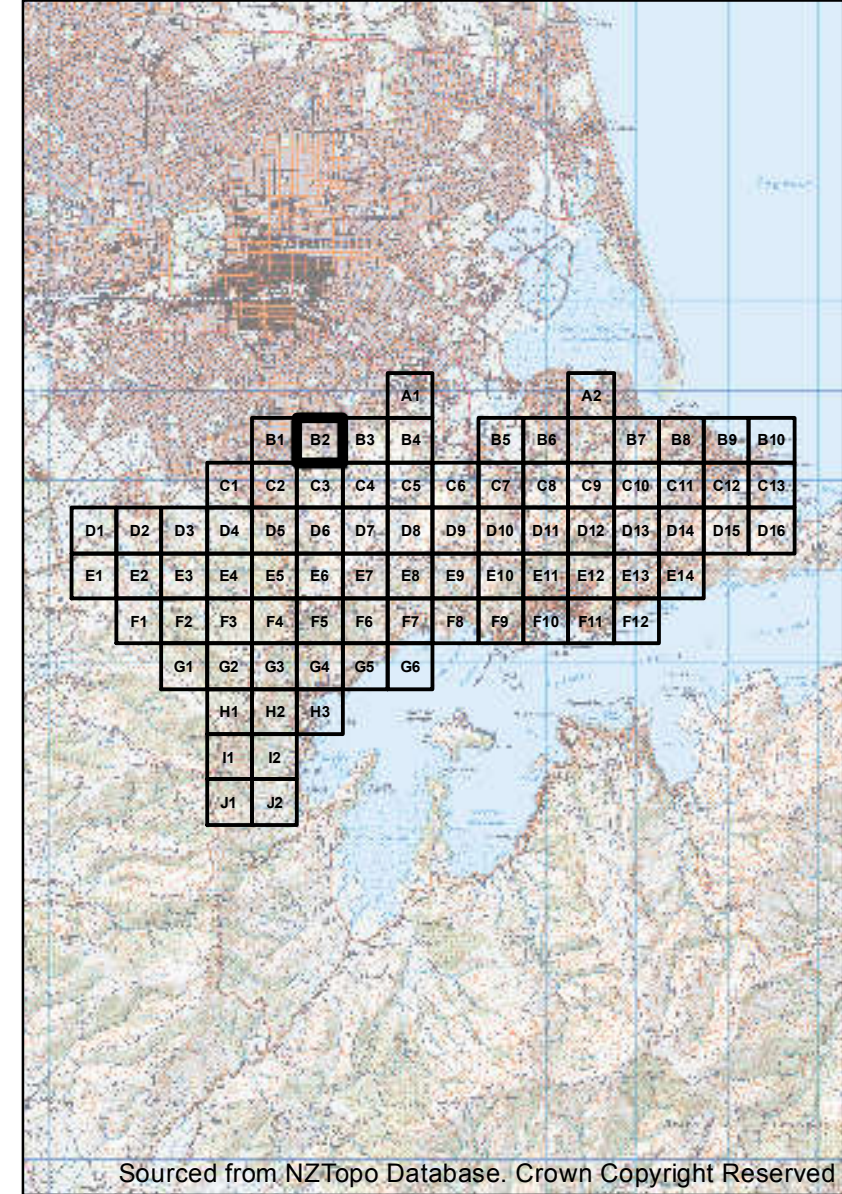
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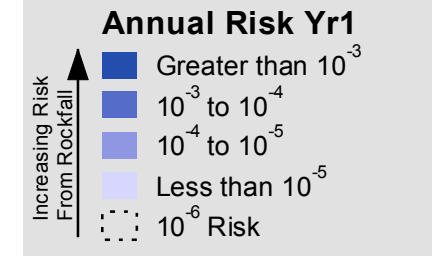
See Map: B1

See Map: C3



See Map: B3

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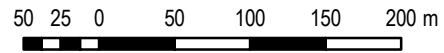


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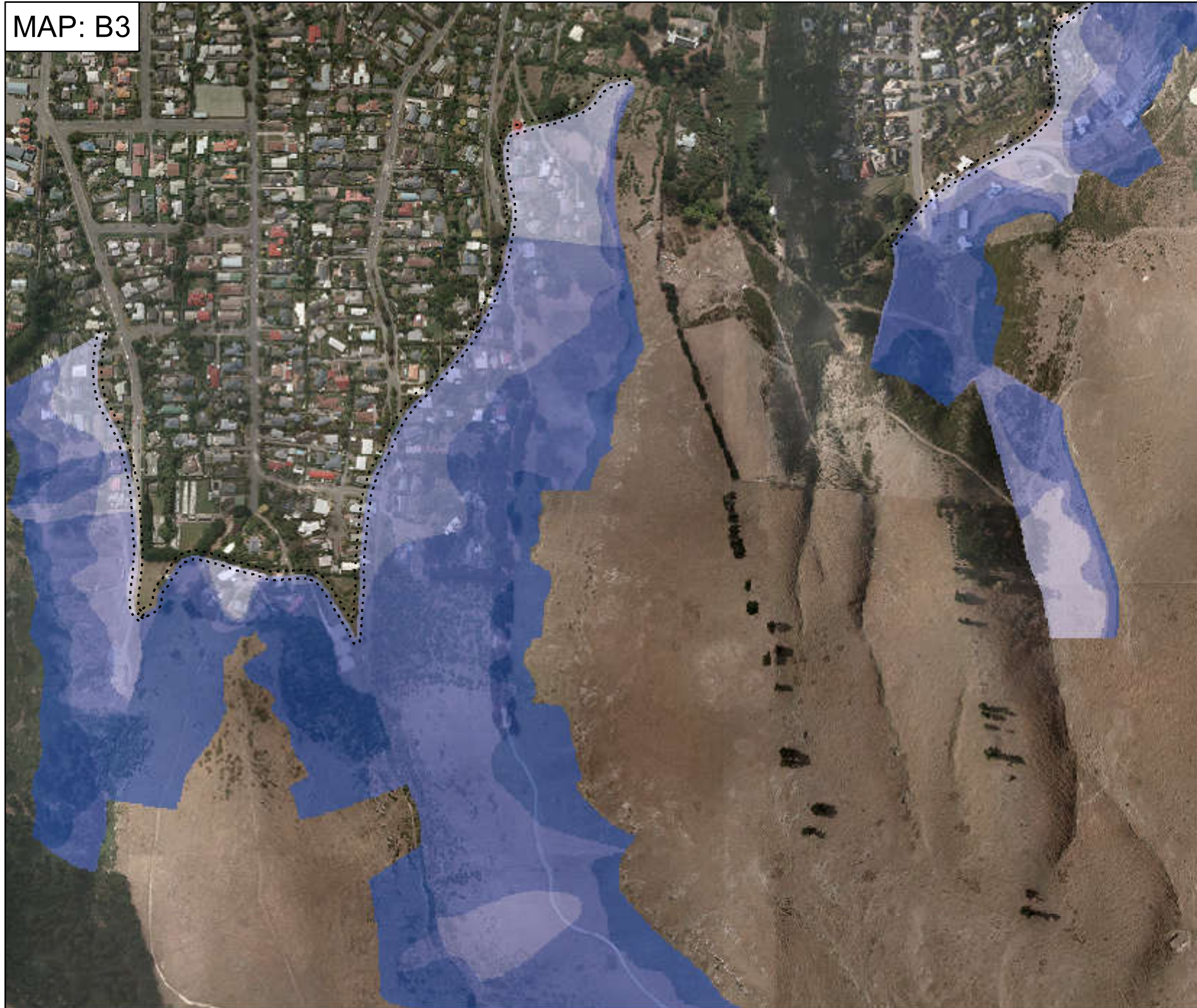


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Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

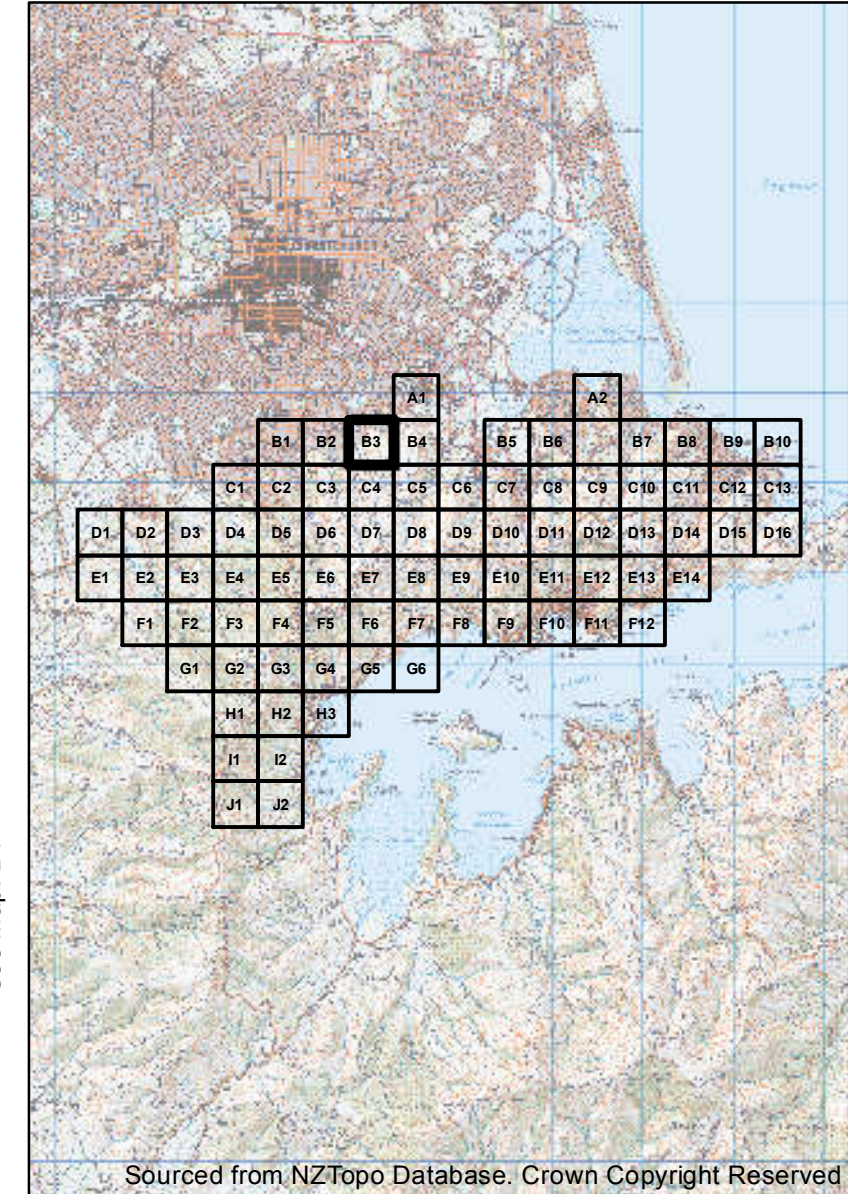
See Map:

MAP: B3



See Map: B2

See Map: C4



See Map: B4

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

**Notes:**

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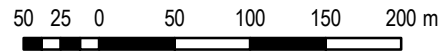


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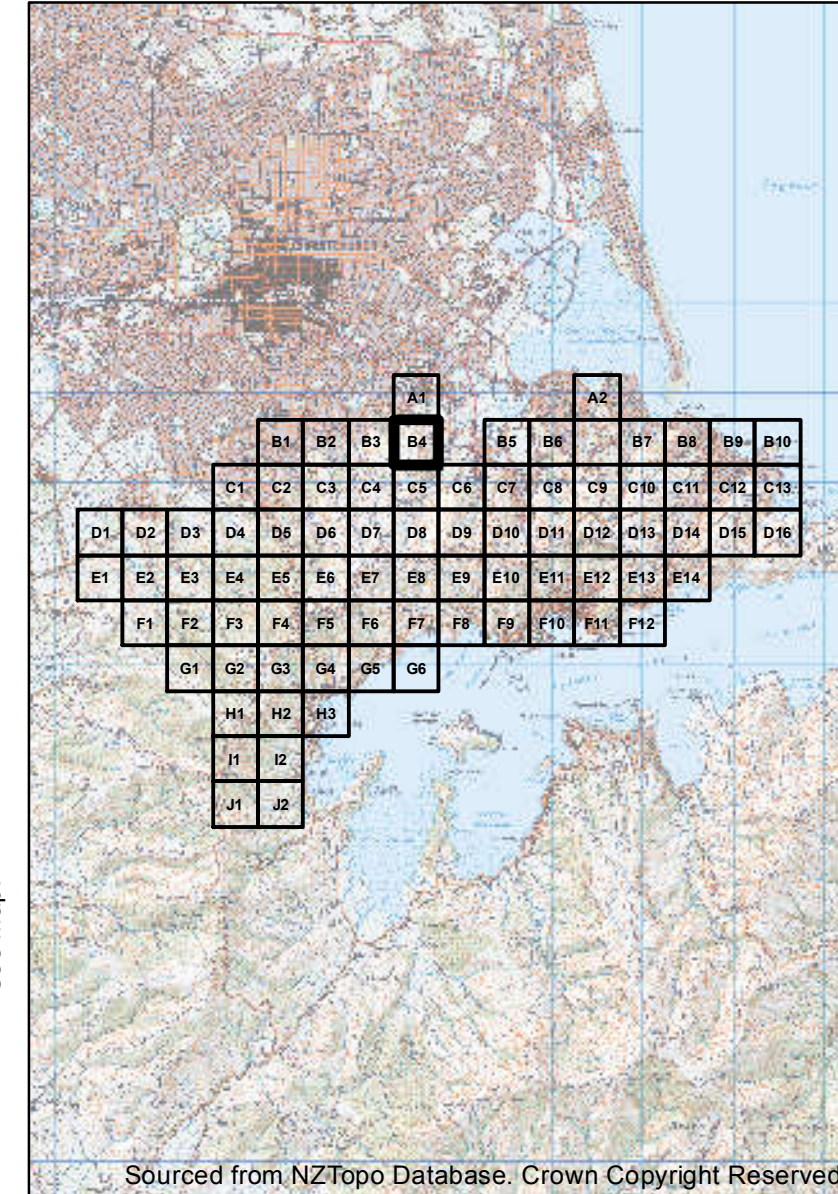
See Map: A1

MAP: B4



See Map: B3

See Map: C5



See Map:

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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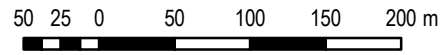


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# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

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Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

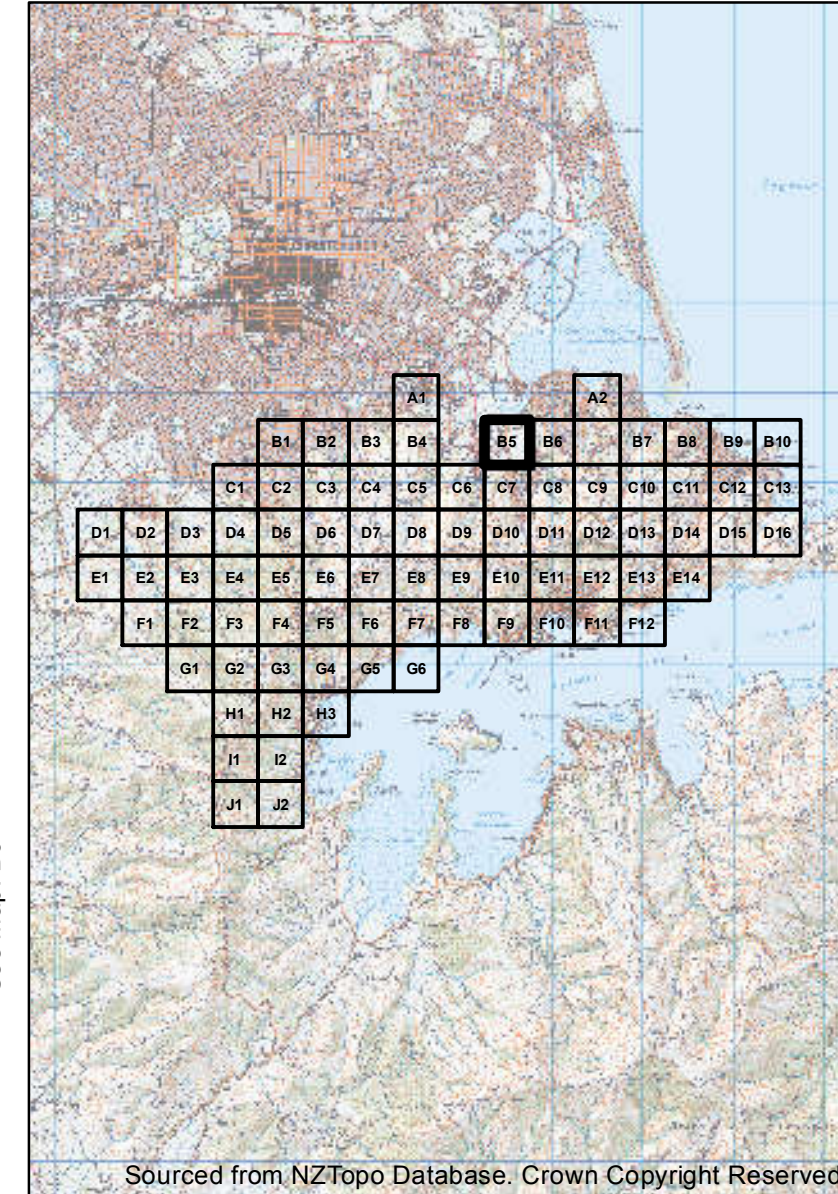
See Map:

MAP: B5



See Map:

See Map: C7



See Map: B6

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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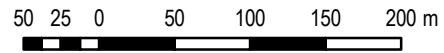
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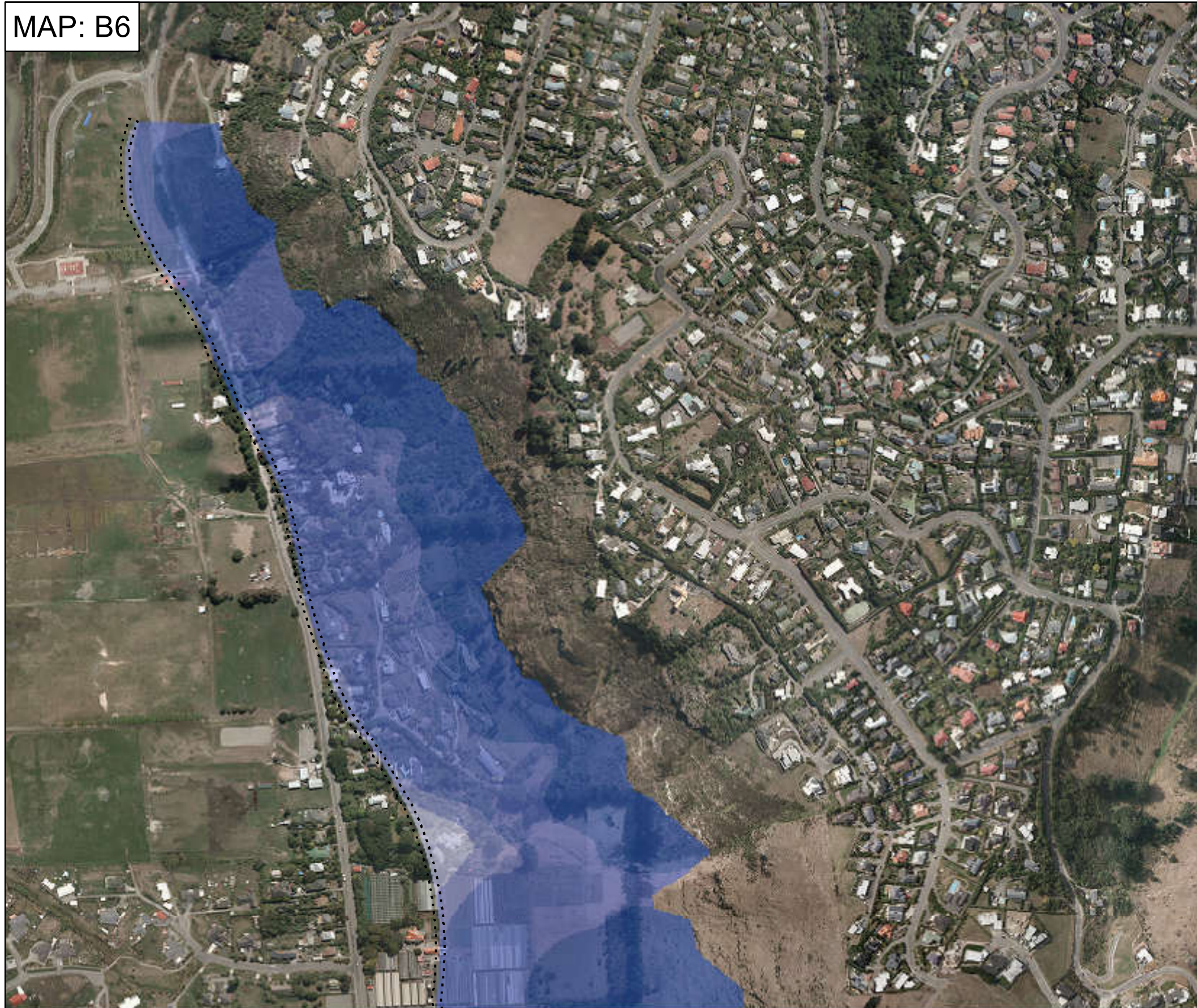


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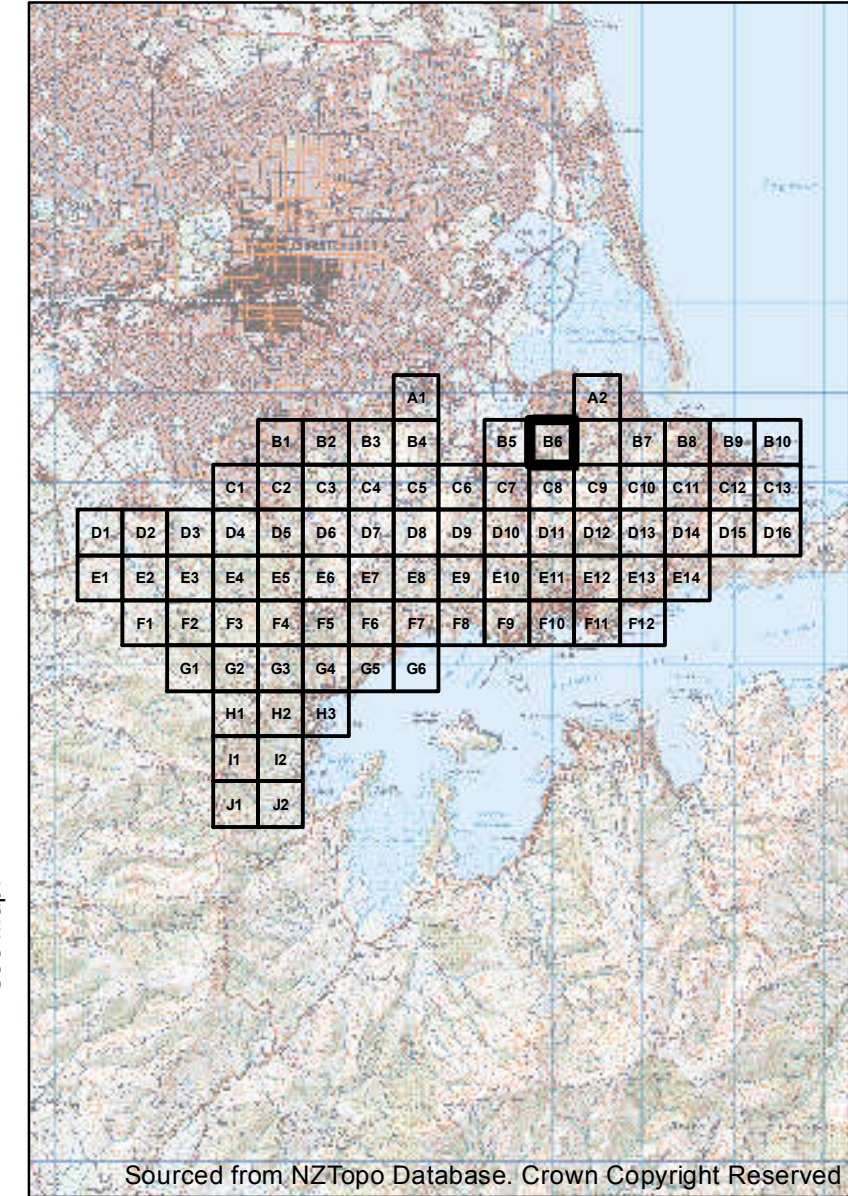
See Map:

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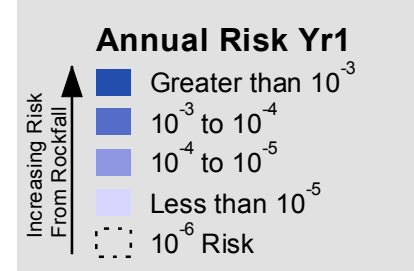
See Map: B5

See Map: C8



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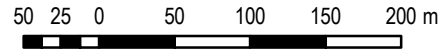


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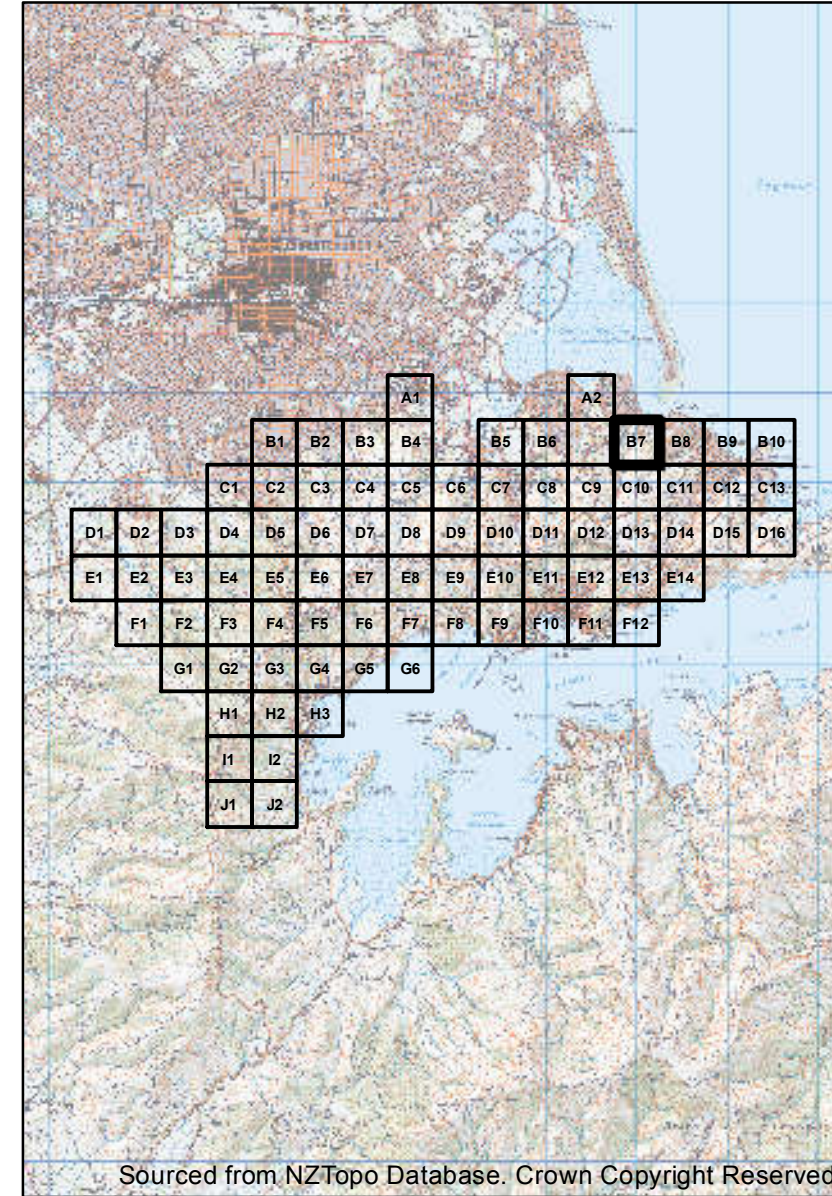
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Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

See Map:

MAP: B7



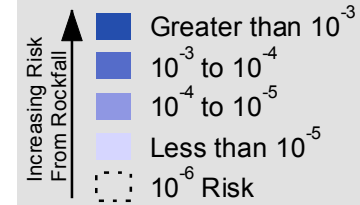
See Map:



See Map: B8

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### Annual Risk Yr1



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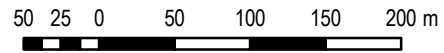
See Map: C10

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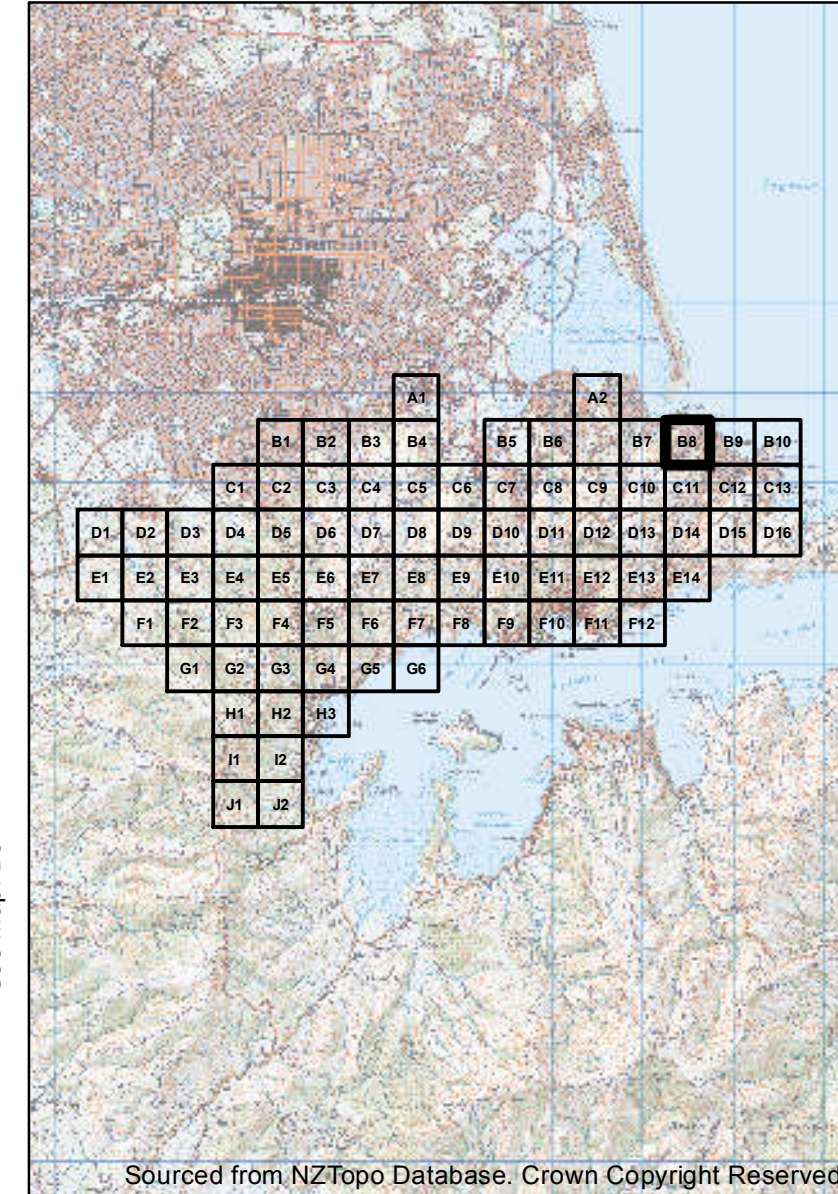
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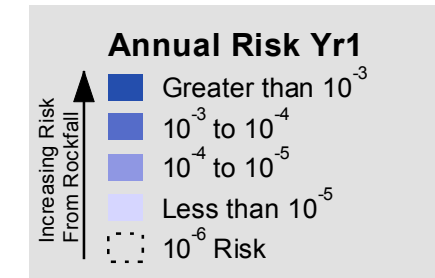
See Map: B7

See Map: C11



See Map: B9

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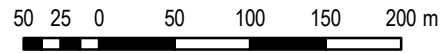
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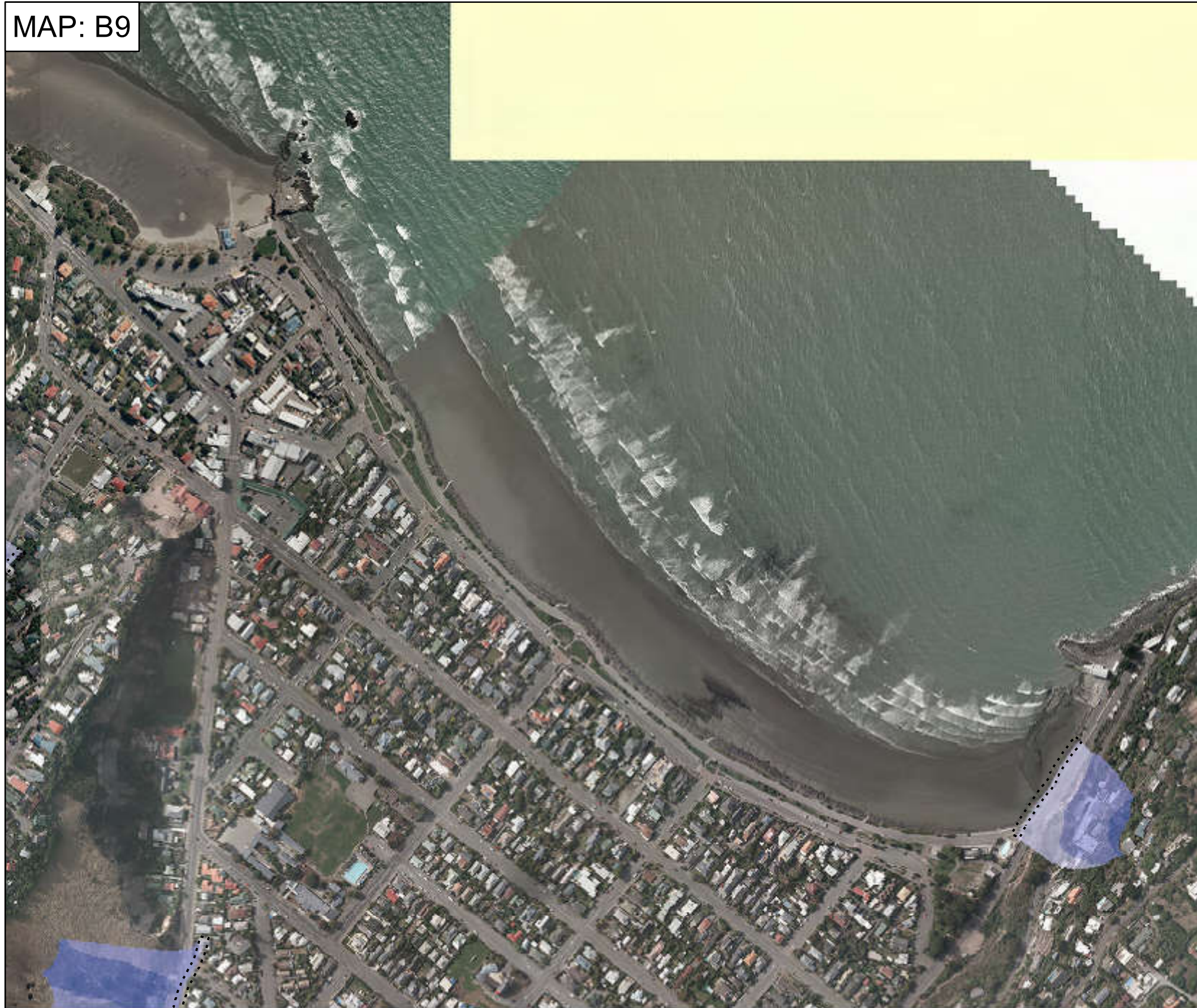


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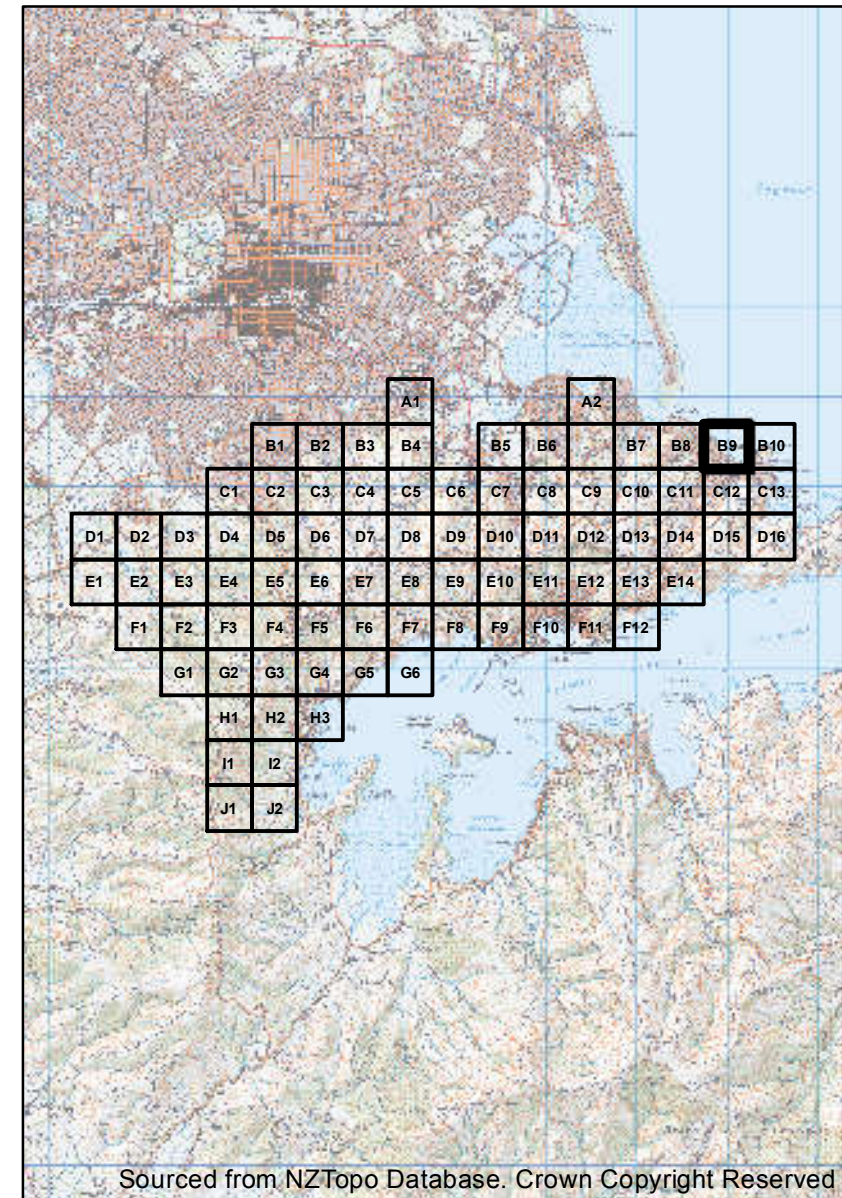
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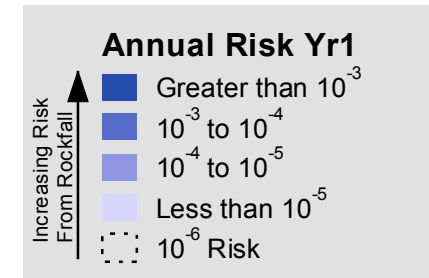
See Map: B8

See Map: C12



See Map: B10

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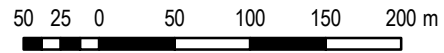


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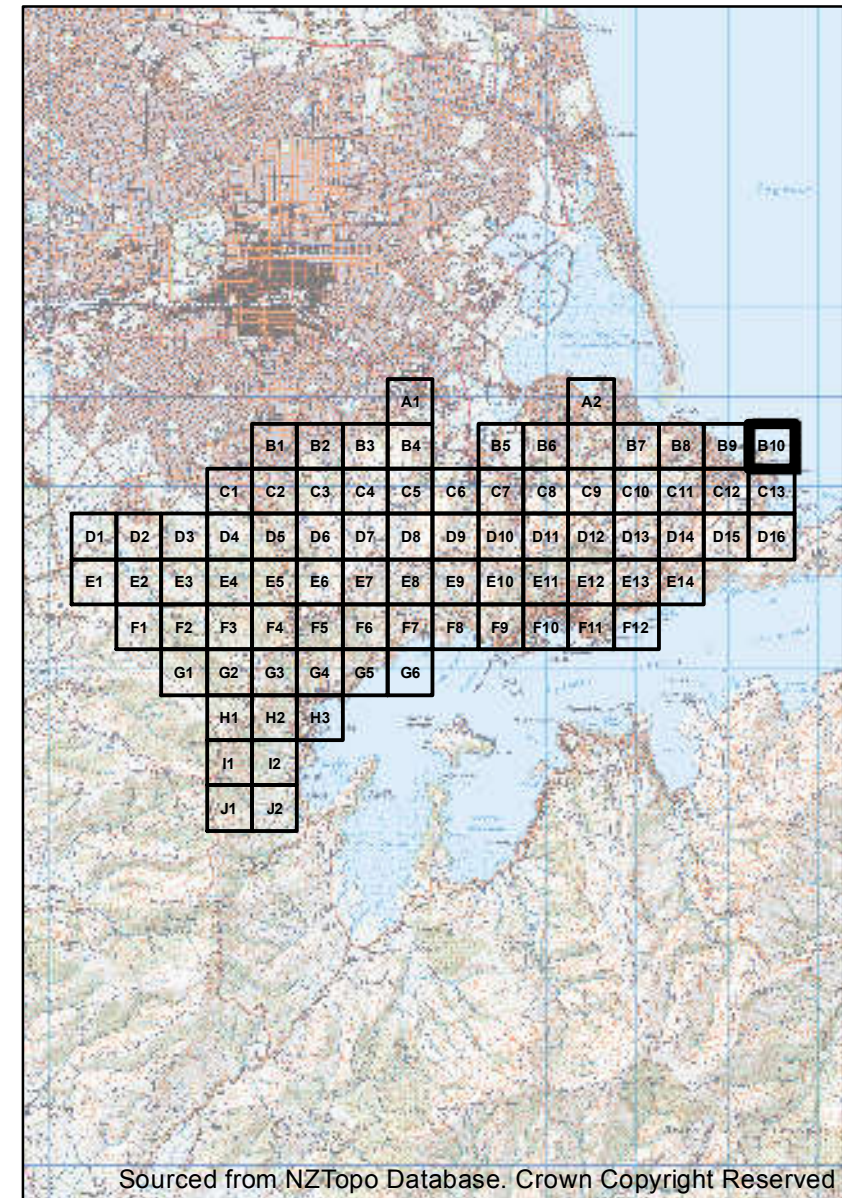
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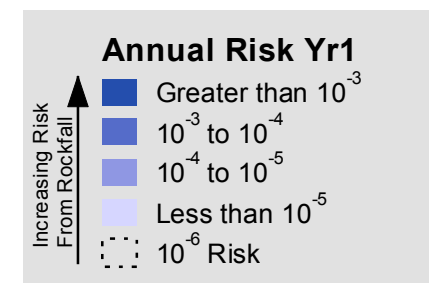
See Map: B9

See Map: C13



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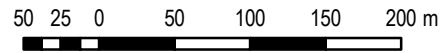


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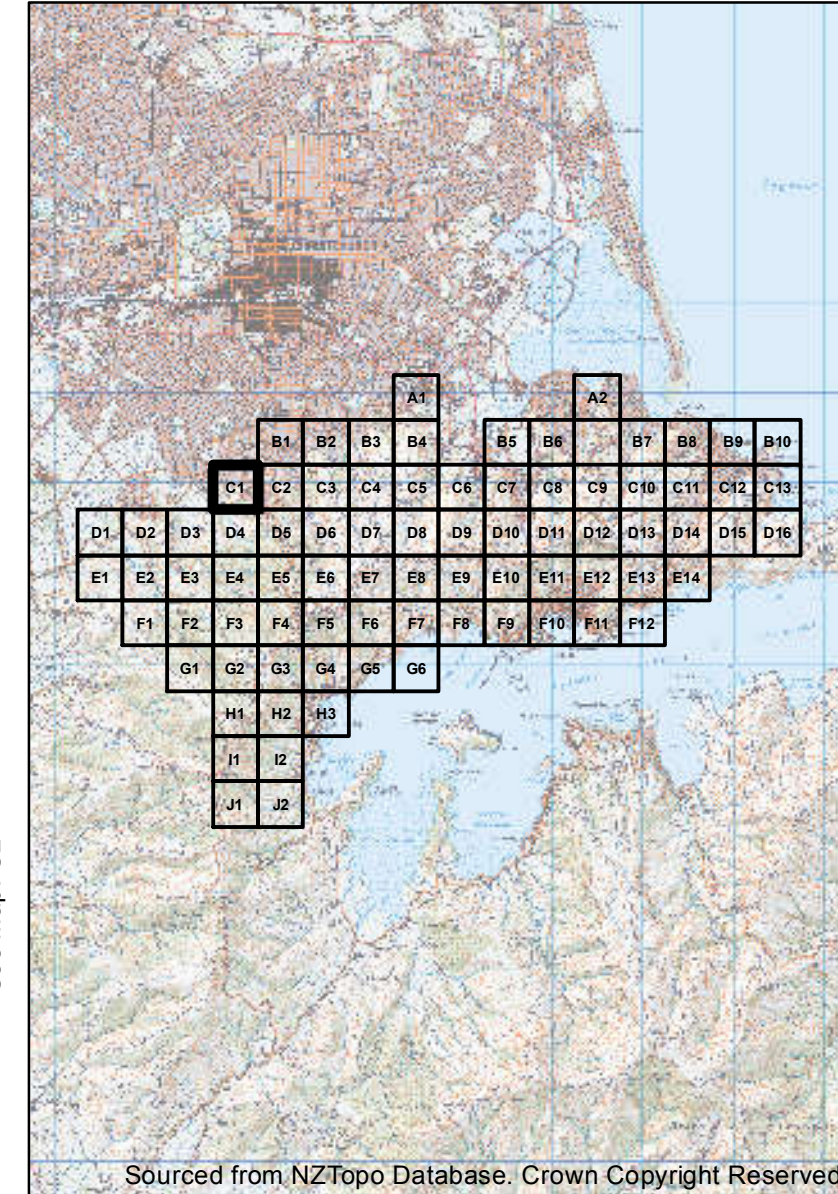
See Map:

MAP: C1



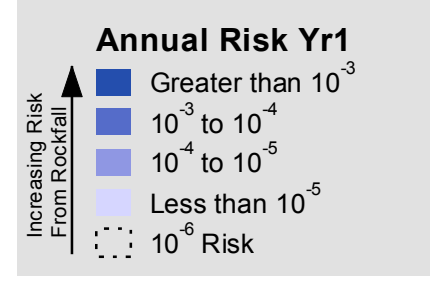
See Map:

See Map: D4



See Map: C2

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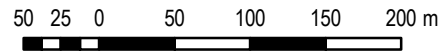


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Maps Produced By: **aurecon**



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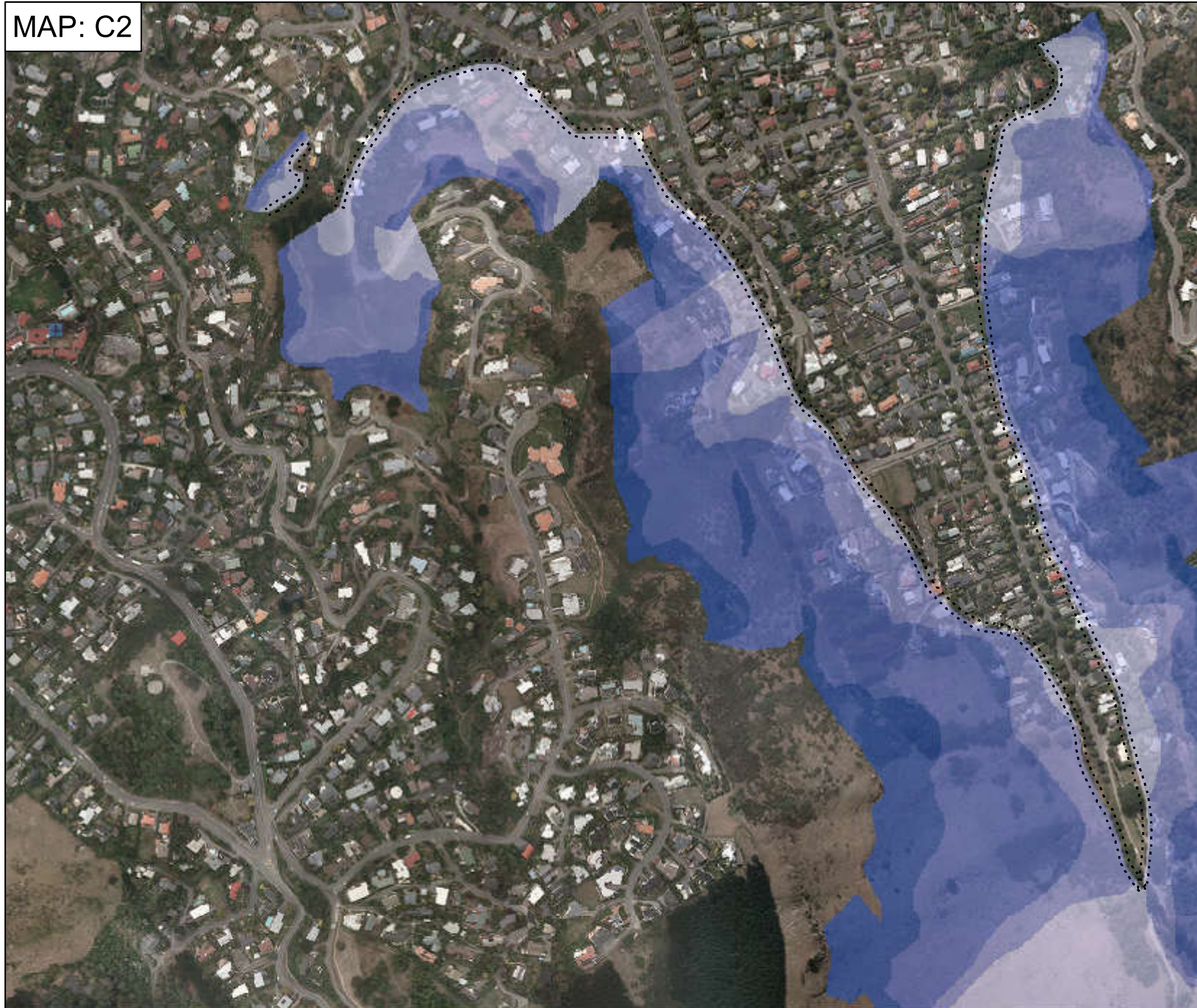


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Map Produced: 17/07/2013

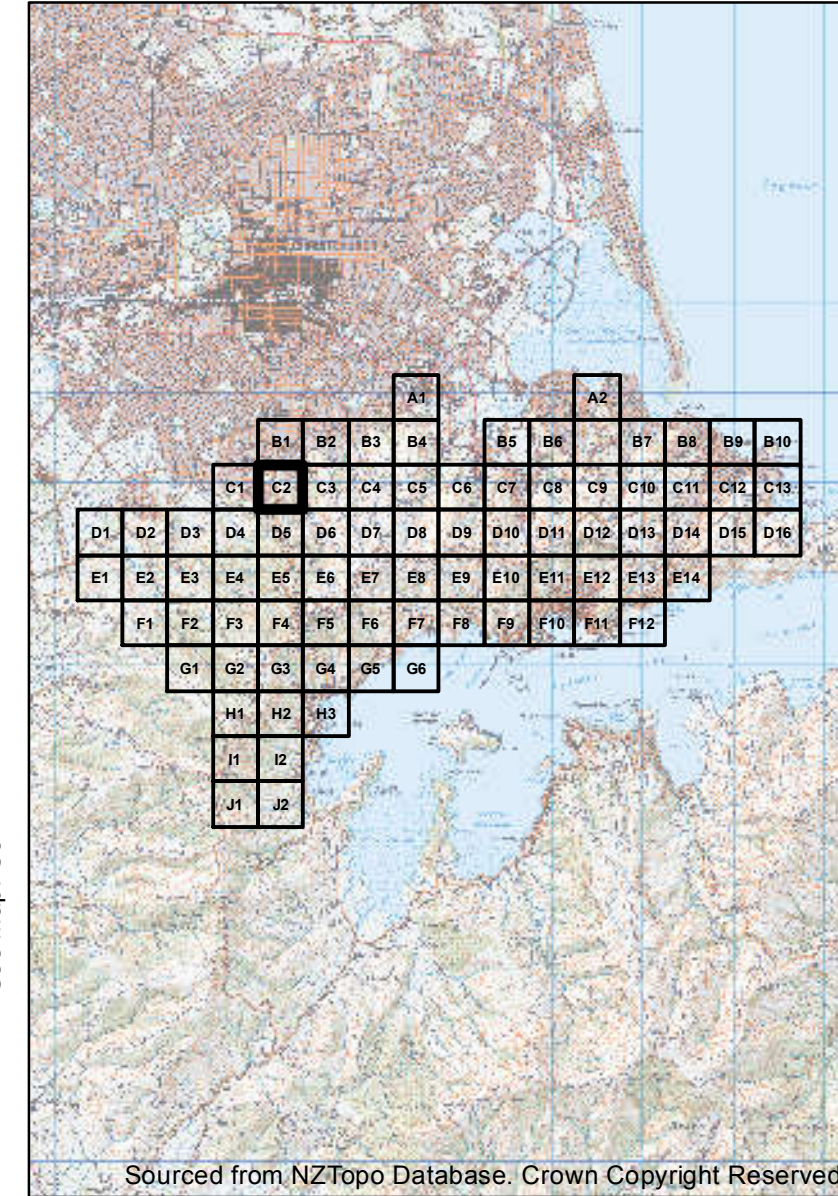
See Map: B1

MAP: C2



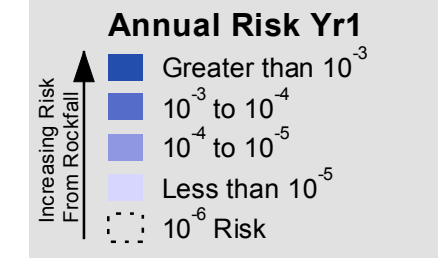
See Map: C1

See Map: D5



See Map: C3

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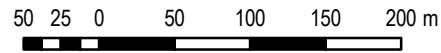


Maps Produced For: **Christchurch City Council**

Maps Produced By: **aurecon**



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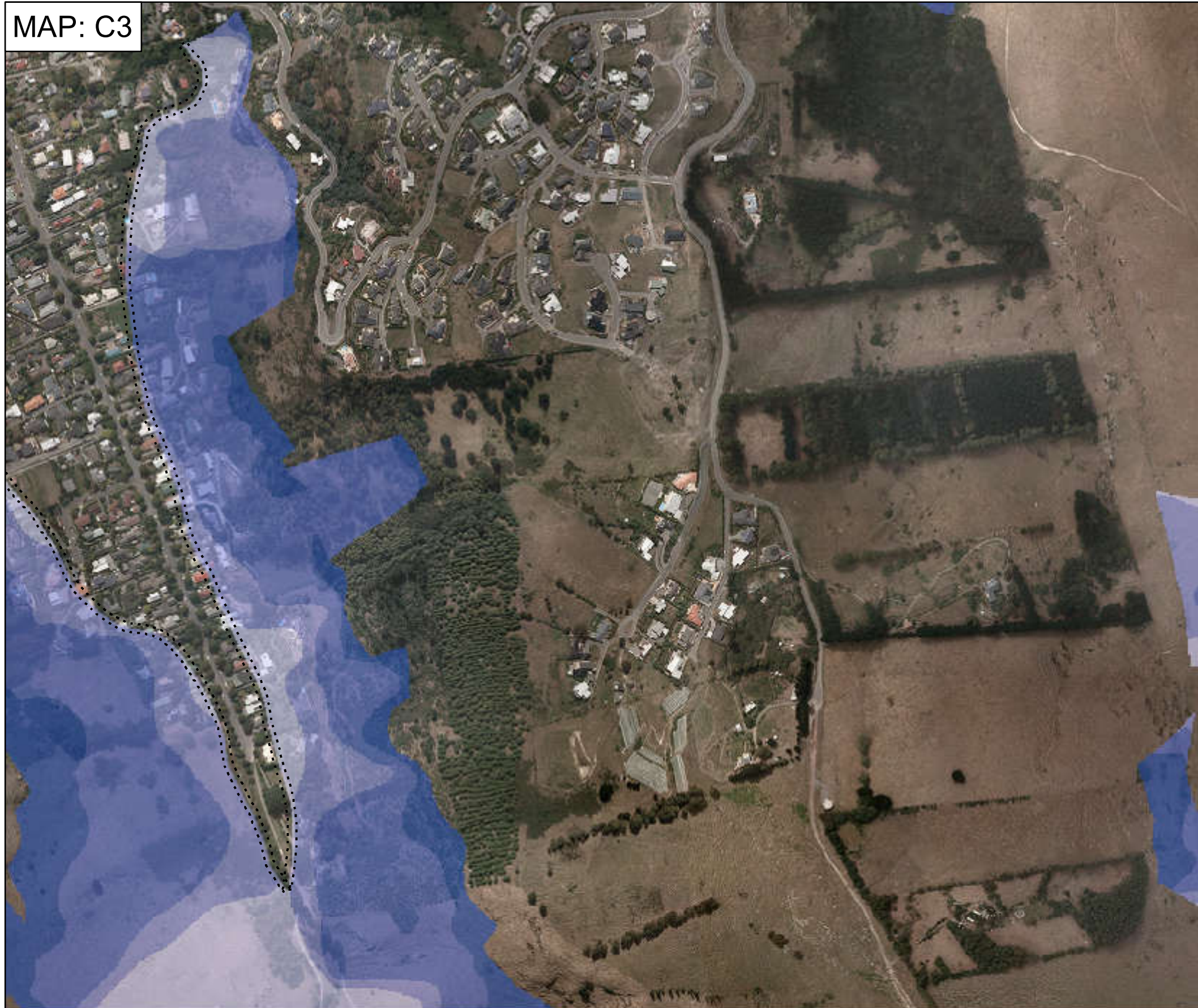


# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

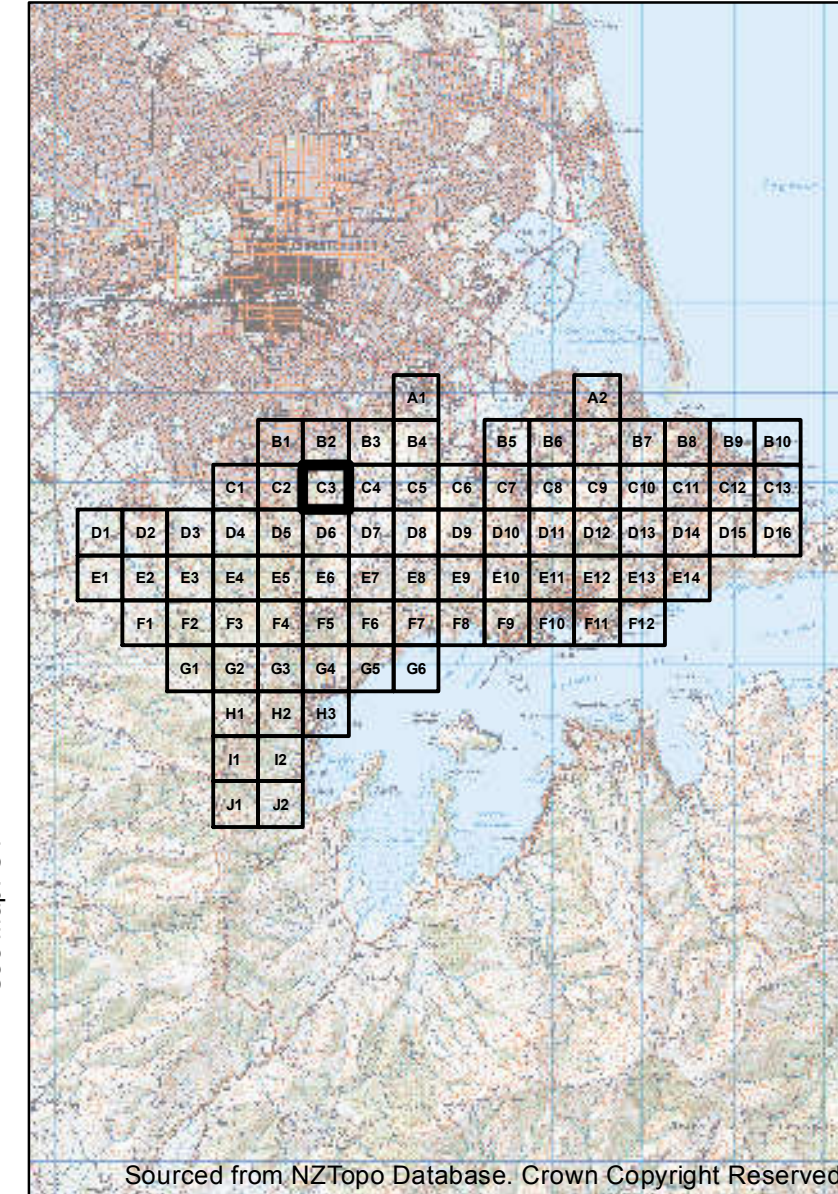
See Map: B2

MAP: C3



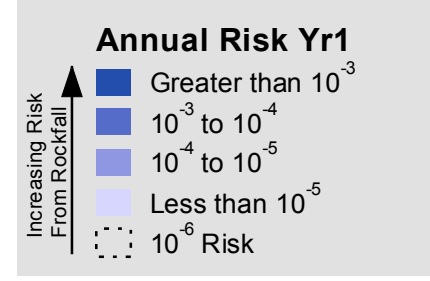
See Map: C2

See Map: D6



See Map: C4

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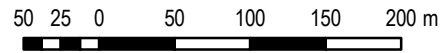
Maps Produced For: **Christchurch City Council**

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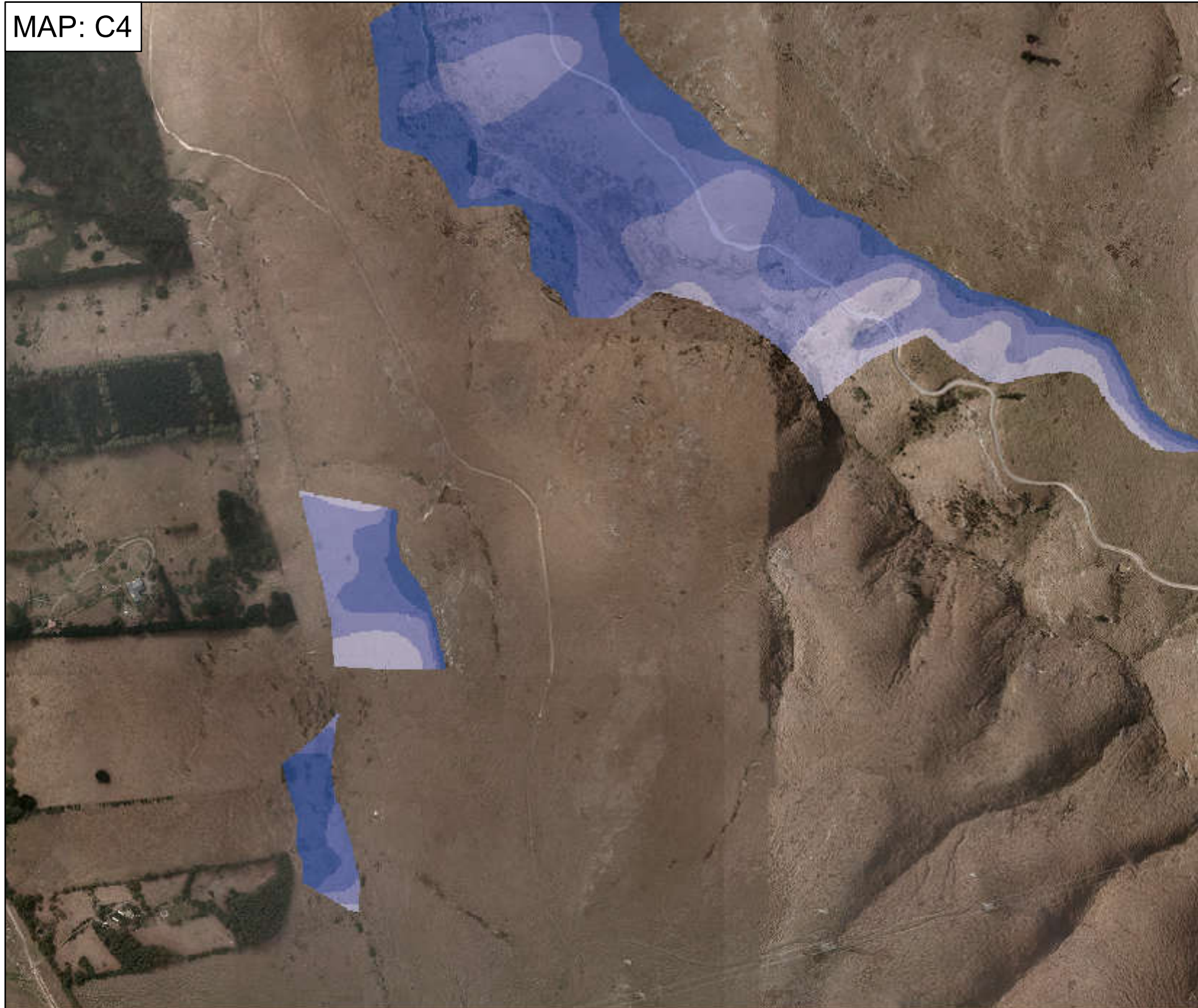


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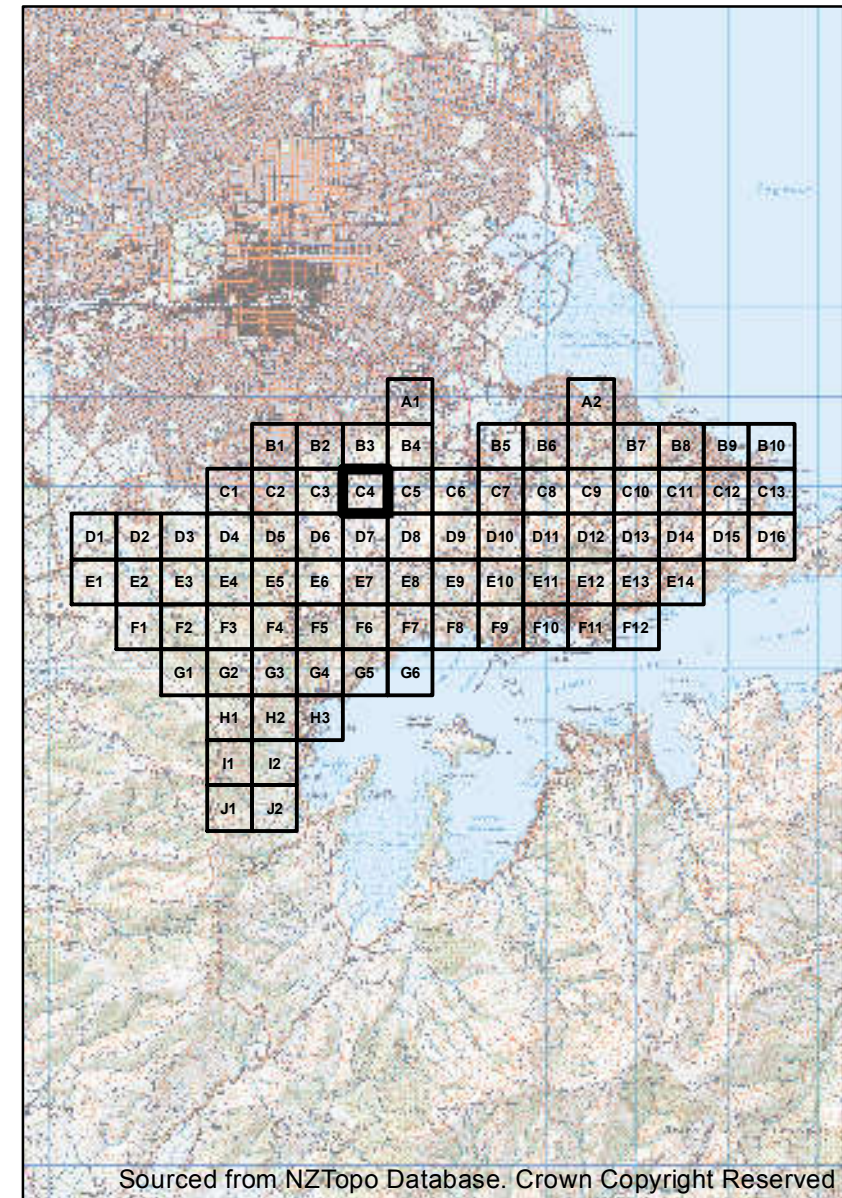
See Map: B3

MAP: C4



See Map: C3

See Map: D7



See Map: C5

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**Annual Risk Yr1**

Increasing Risk From Rockfall ↑

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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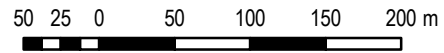


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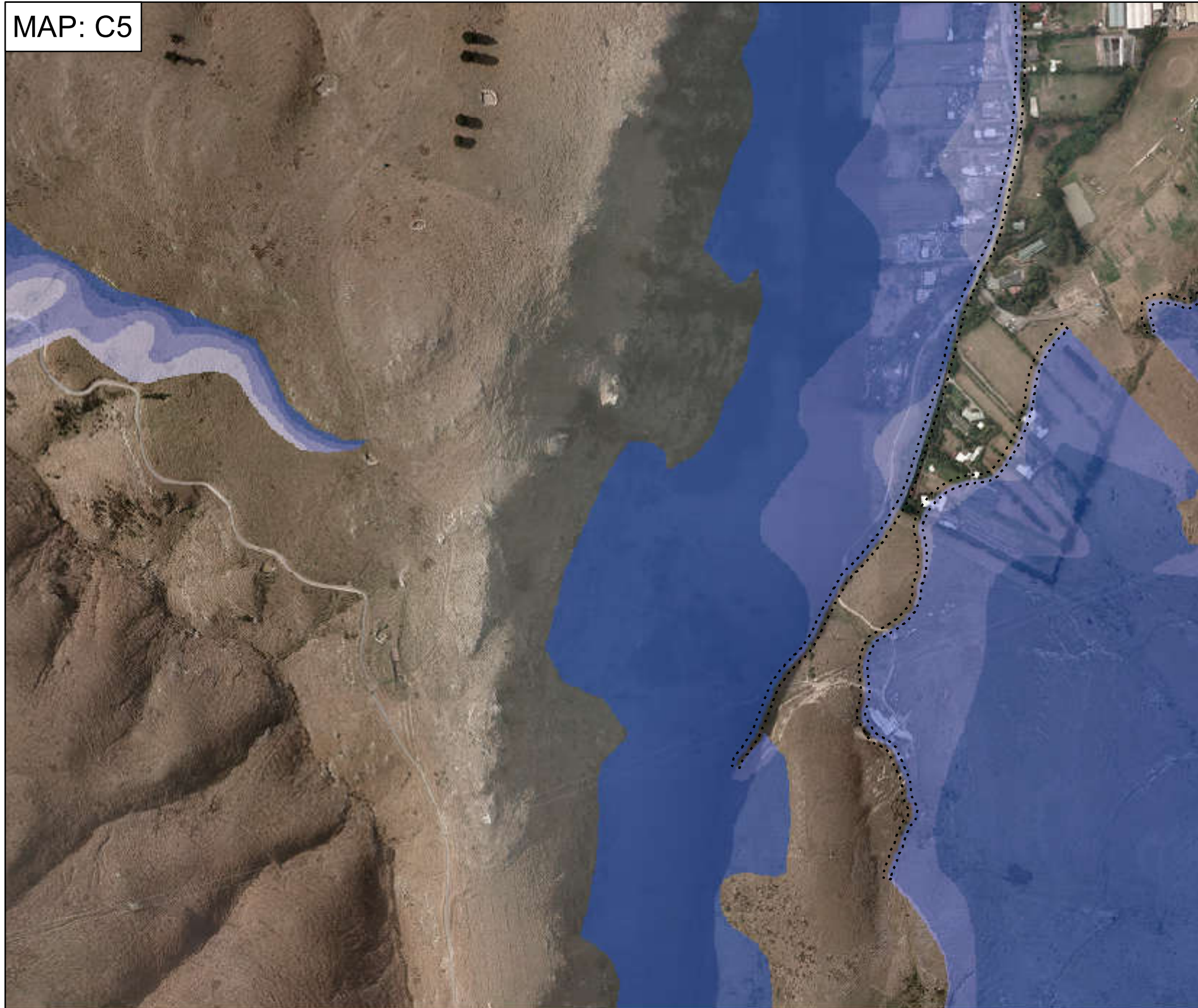


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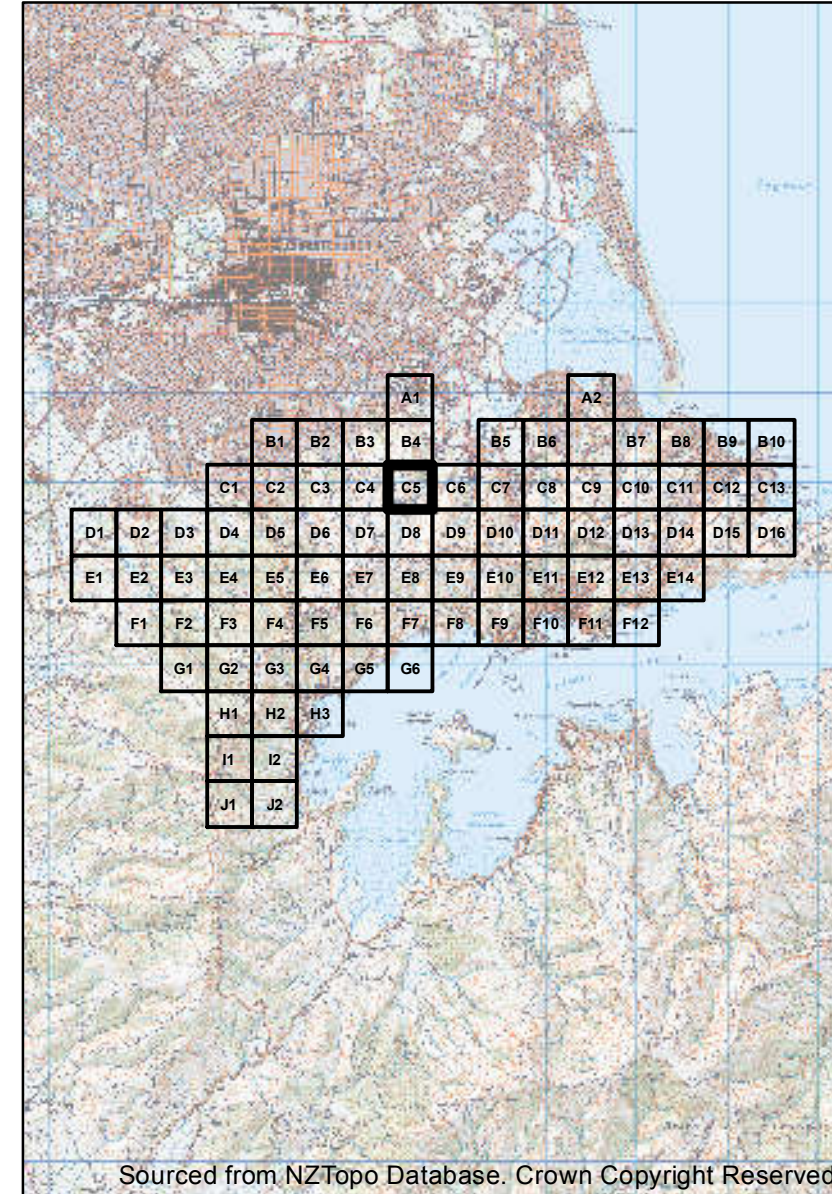
See Map: B4

MAP: C5



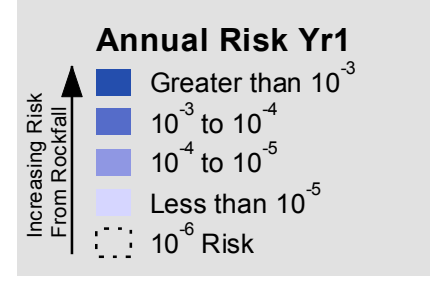
See Map: C4

See Map: D8



See Map: C6

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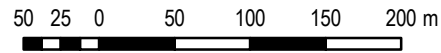


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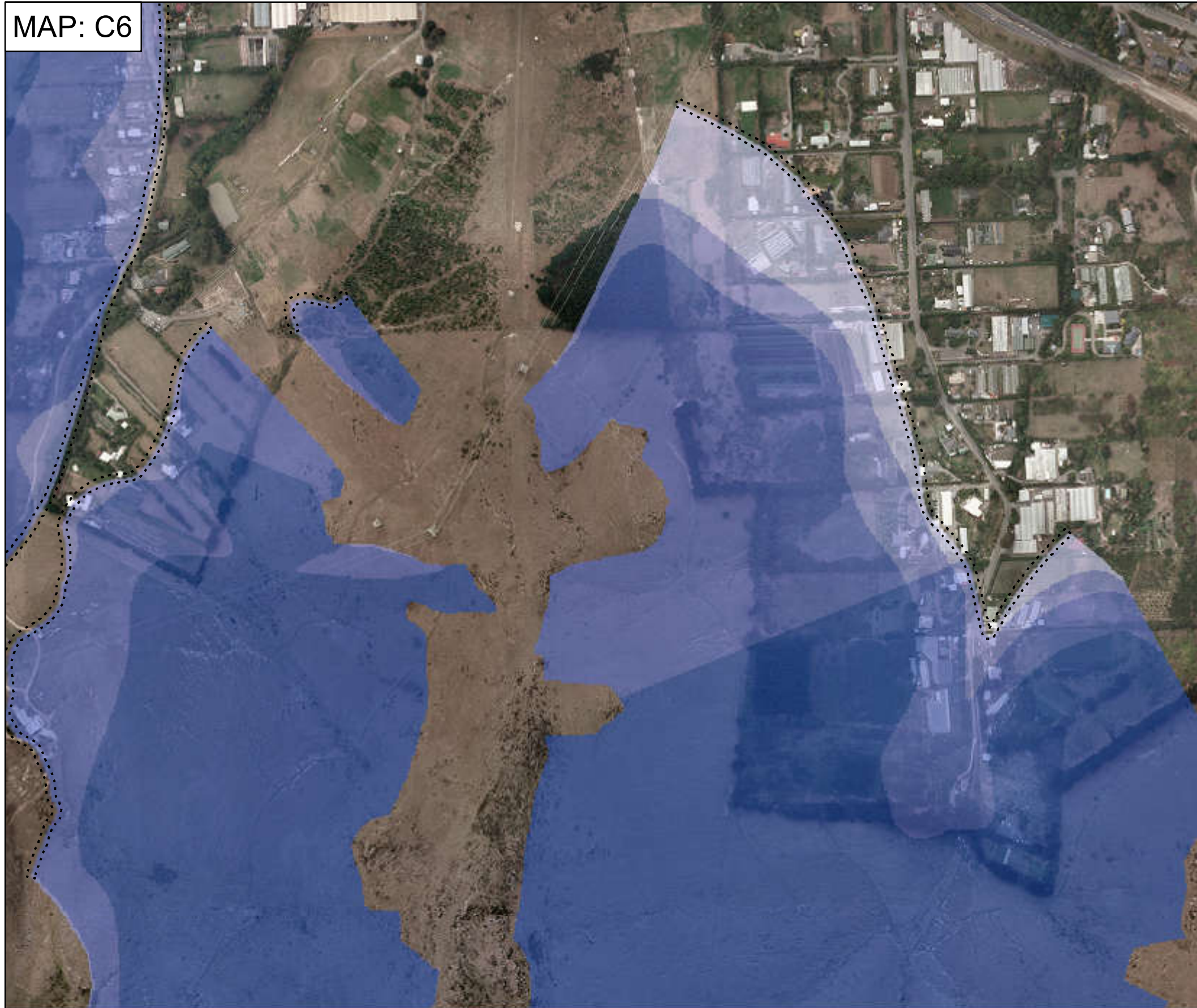


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Map Produced: 17/07/2013

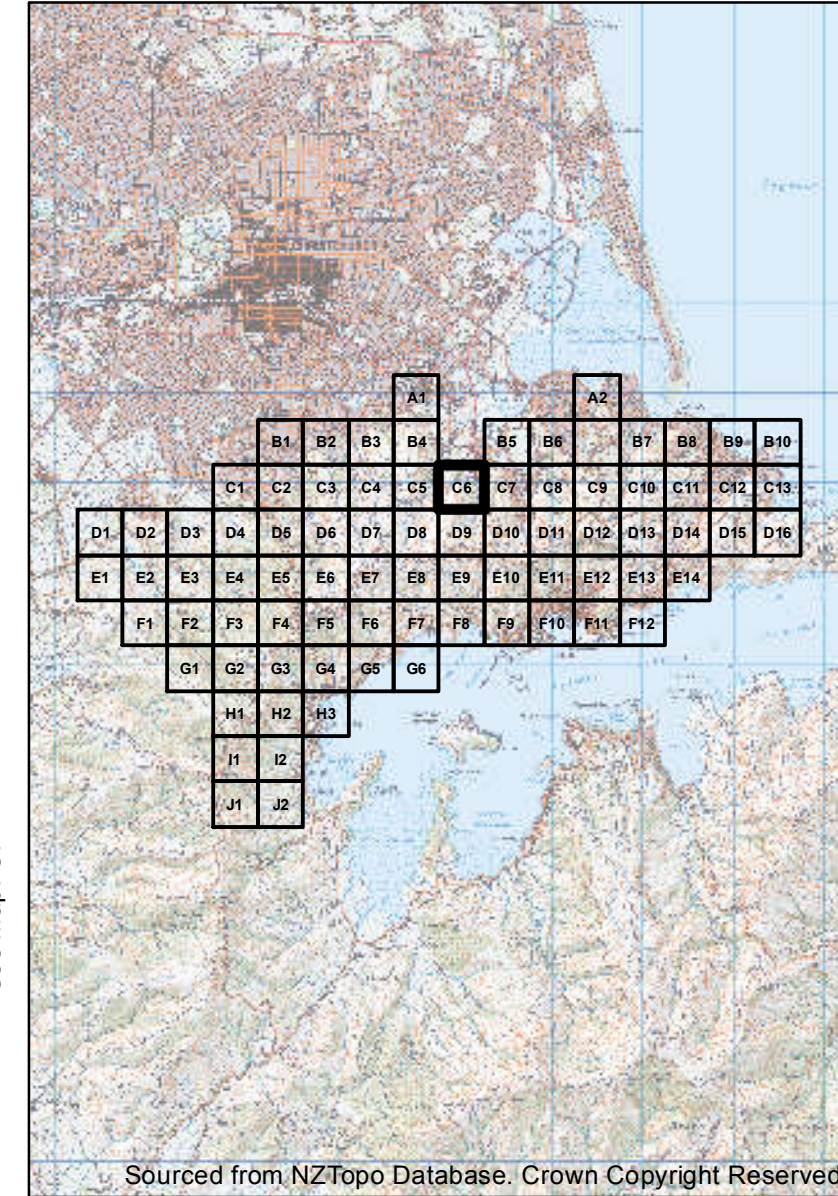
See Map:

MAP: C6

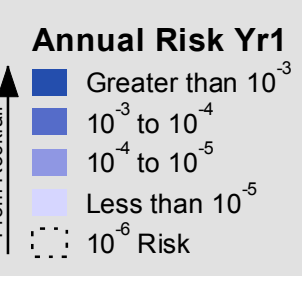


See Map: C5

See Map: D9



See Map: C7



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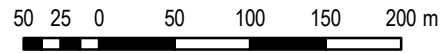


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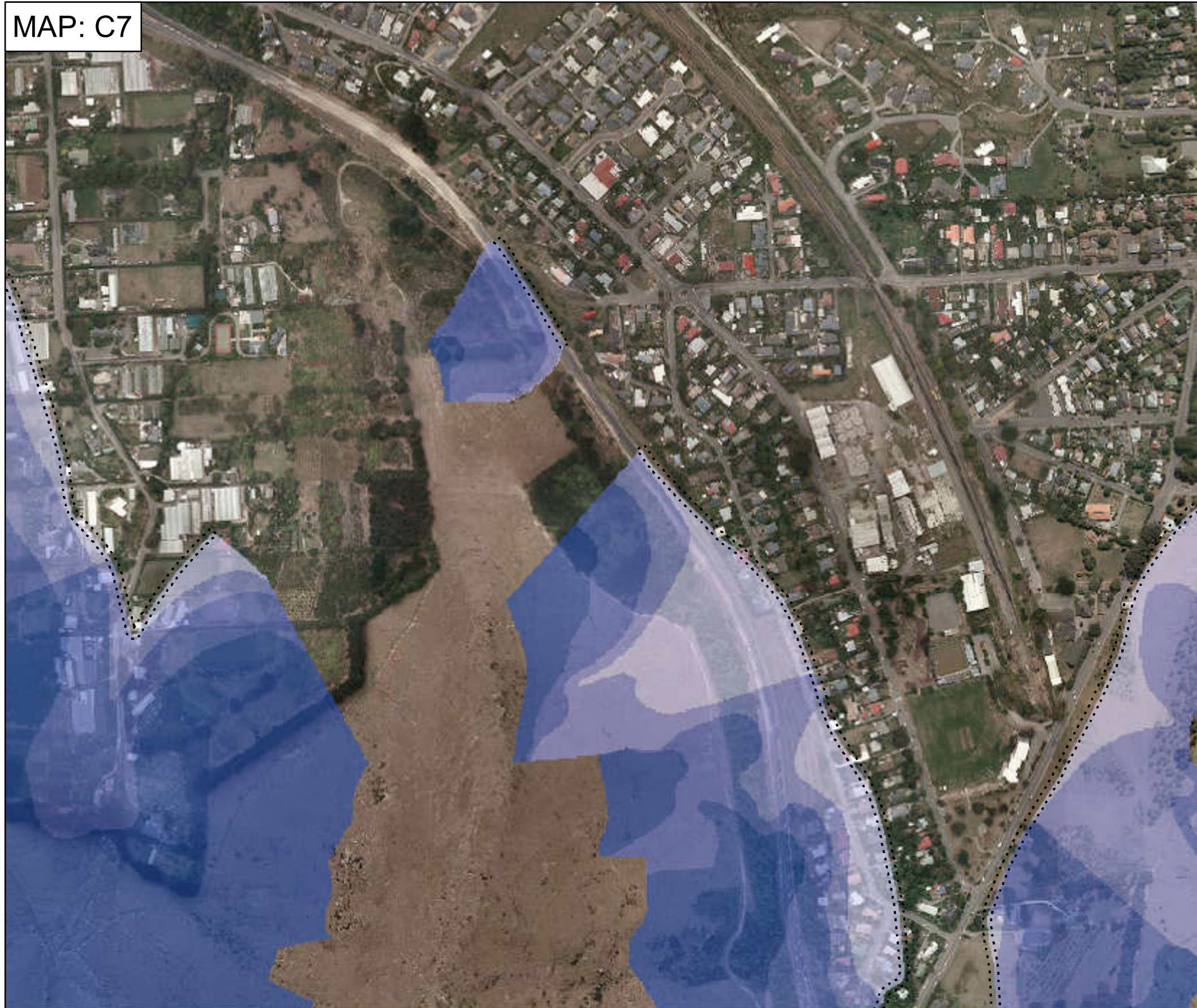


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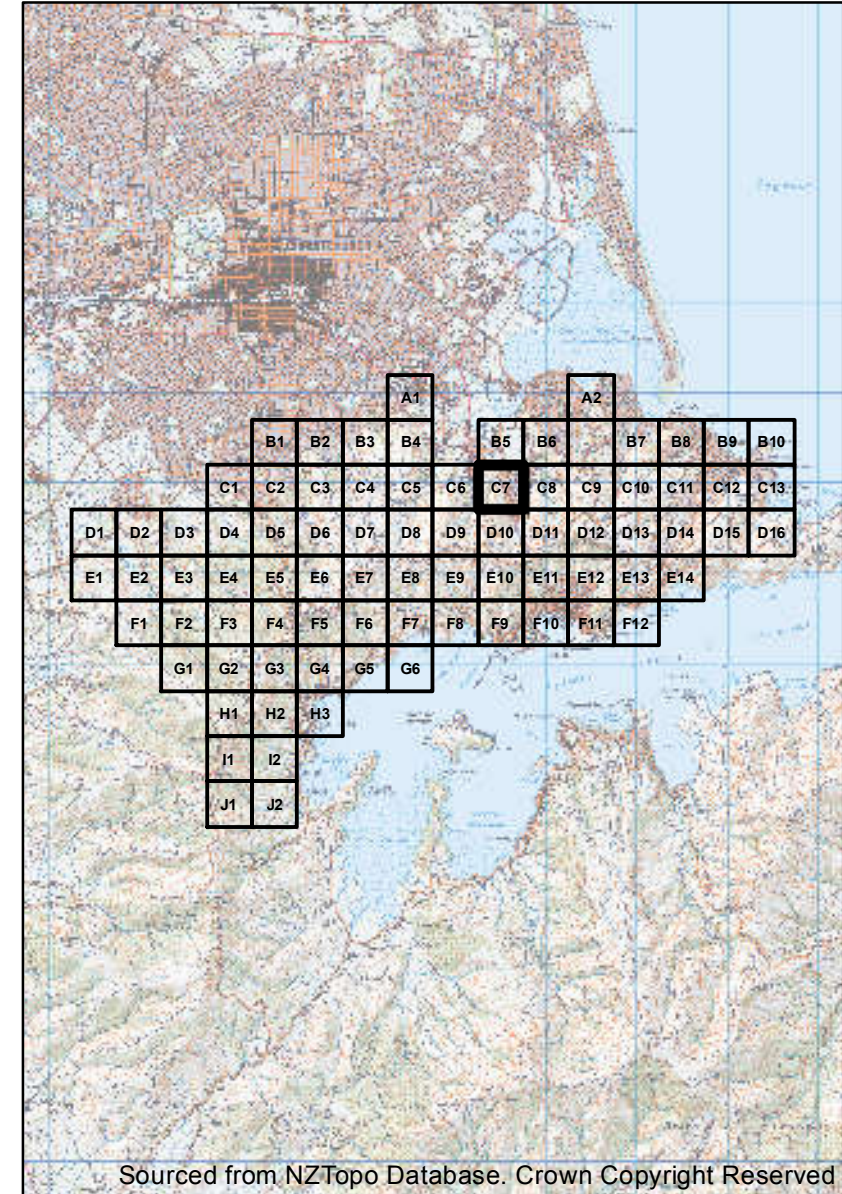
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MAP: C7



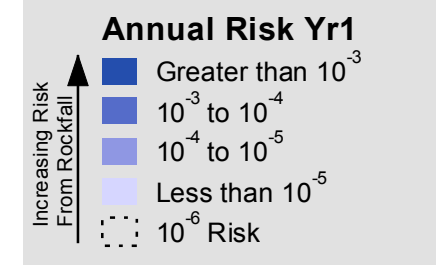
See Map: C6

See Map: D10



See Map: C8

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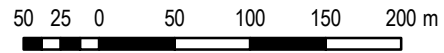
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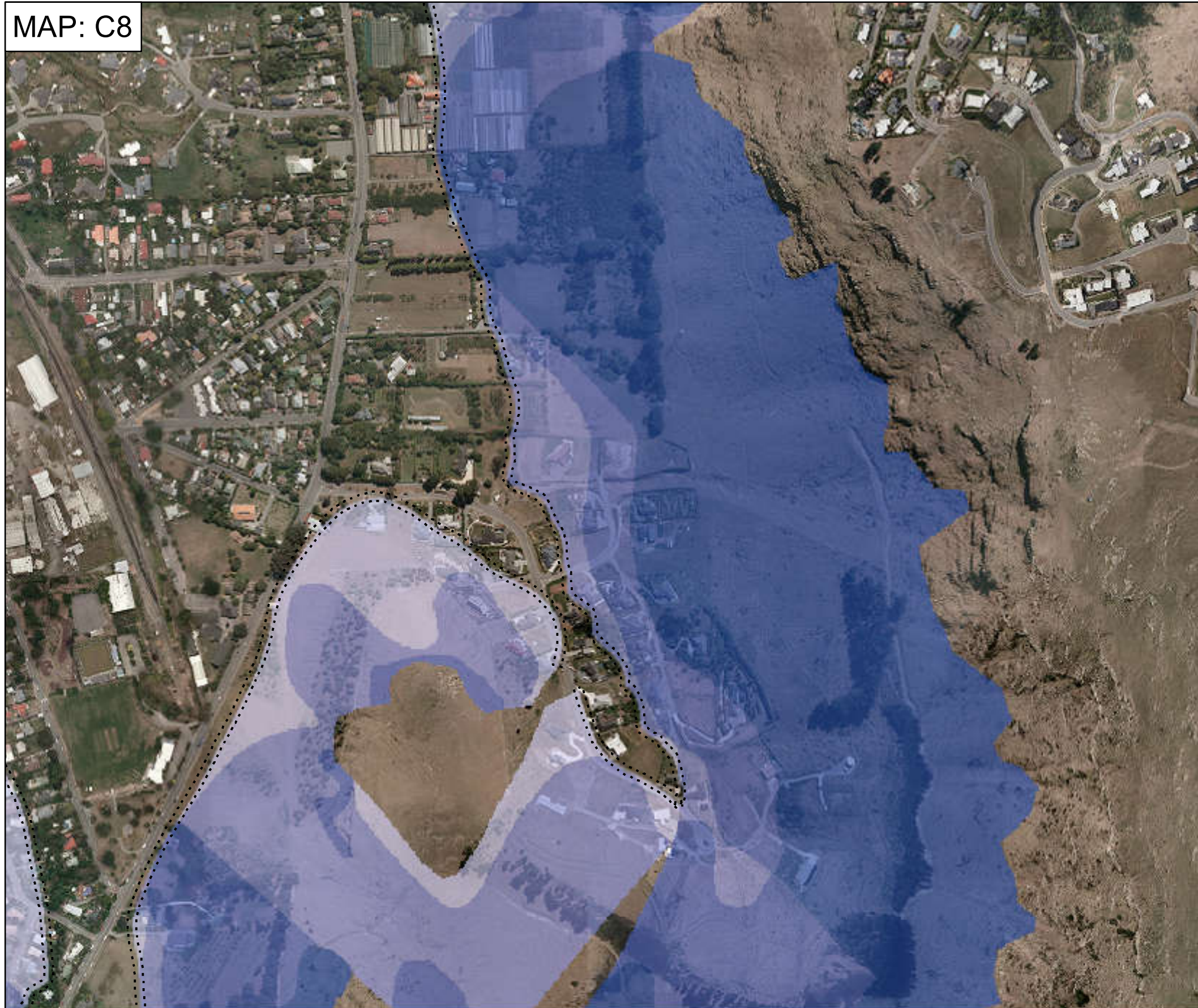


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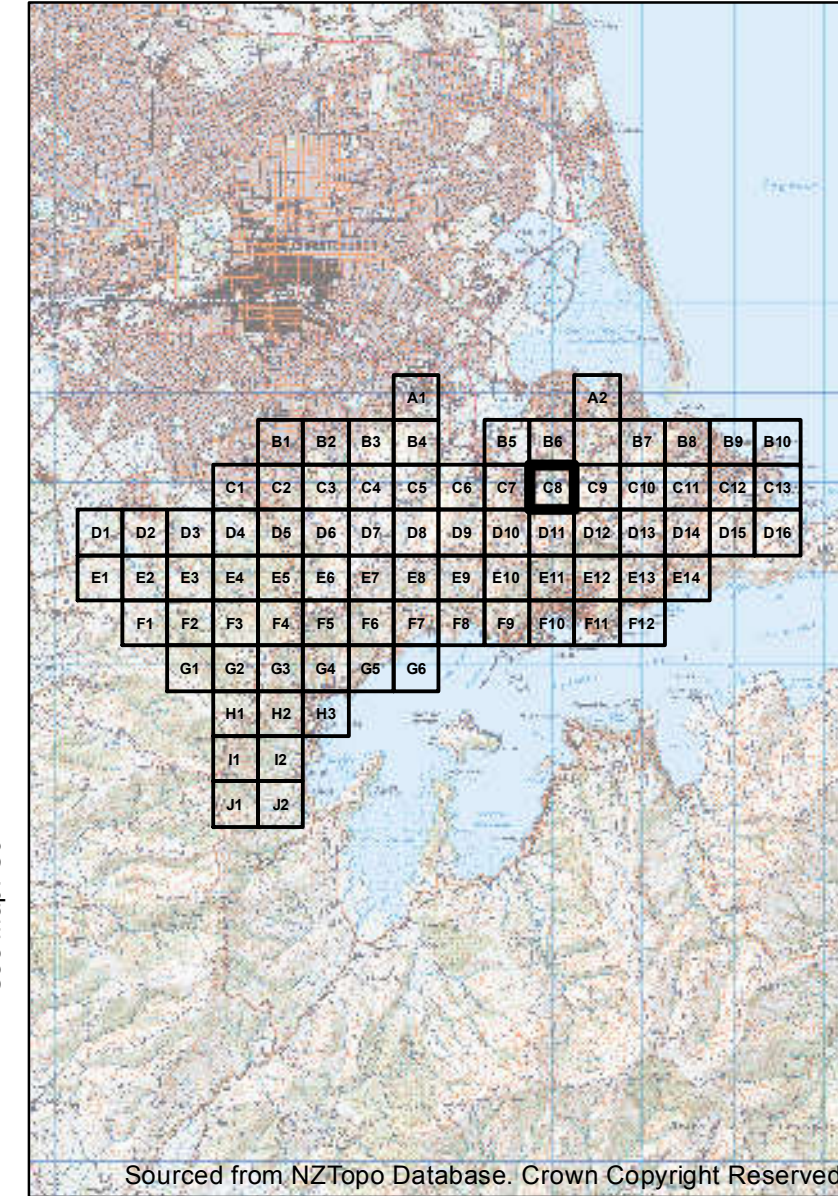
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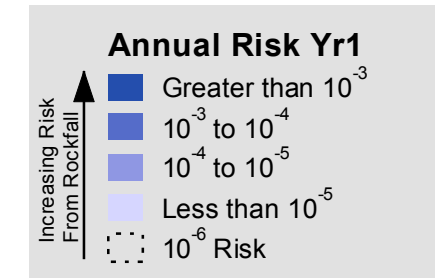
See Map: C7

See Map: D11



See Map: C9

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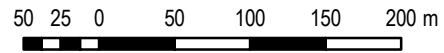


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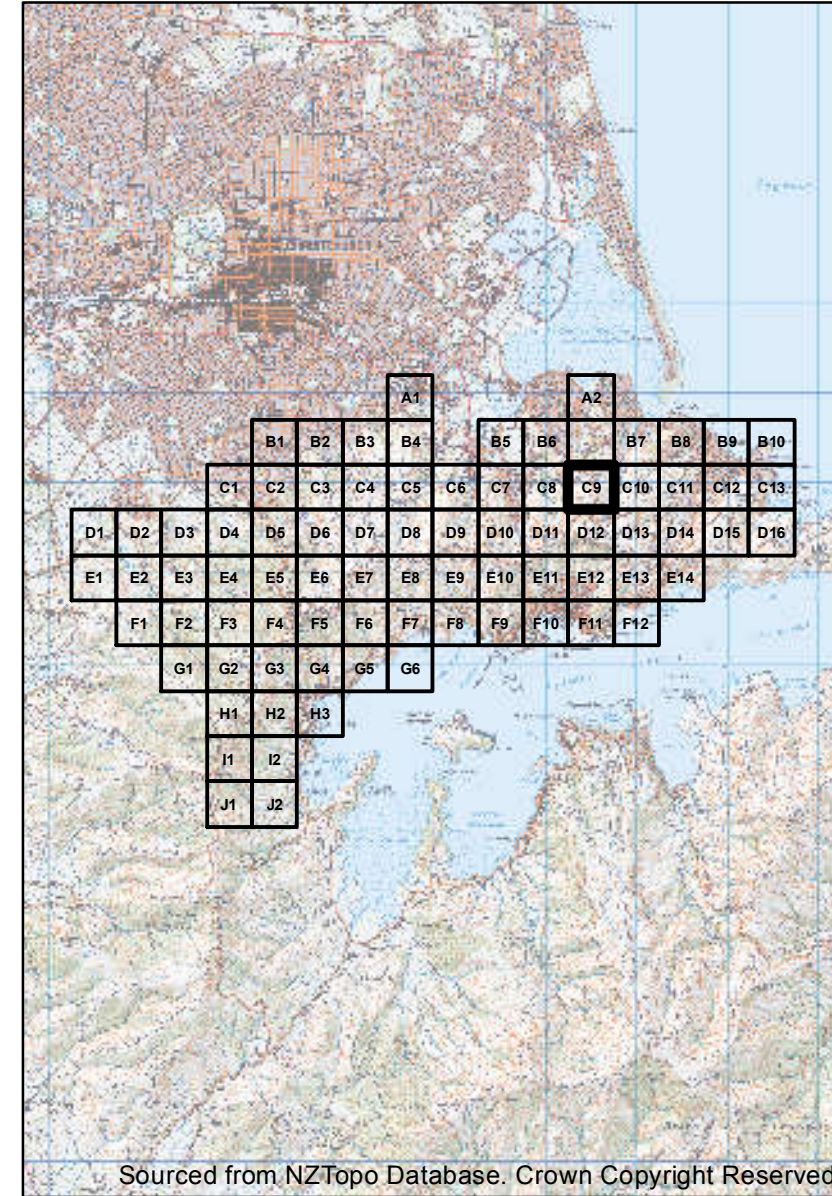
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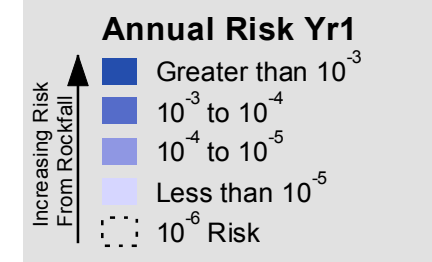
See Map: C8

See Map: D12



See Map: C10

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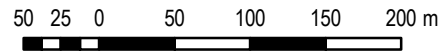


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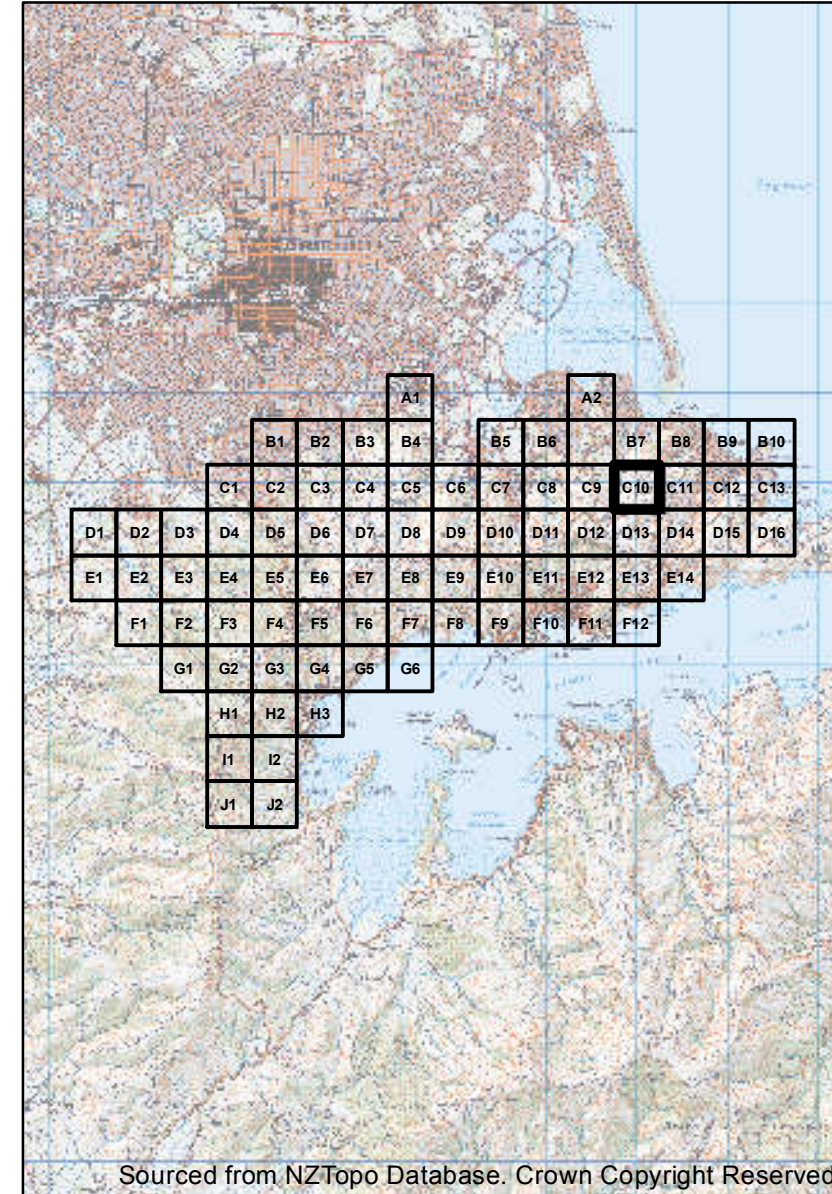
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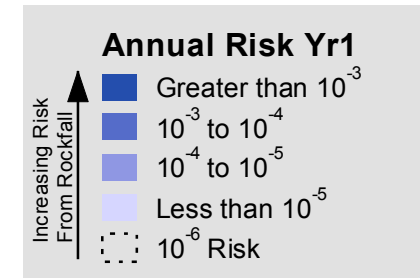
See Map: C9

See Map: D13



See Map: C11

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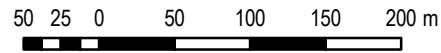


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Datum: Geodetic Datum of New Zealand 2000  
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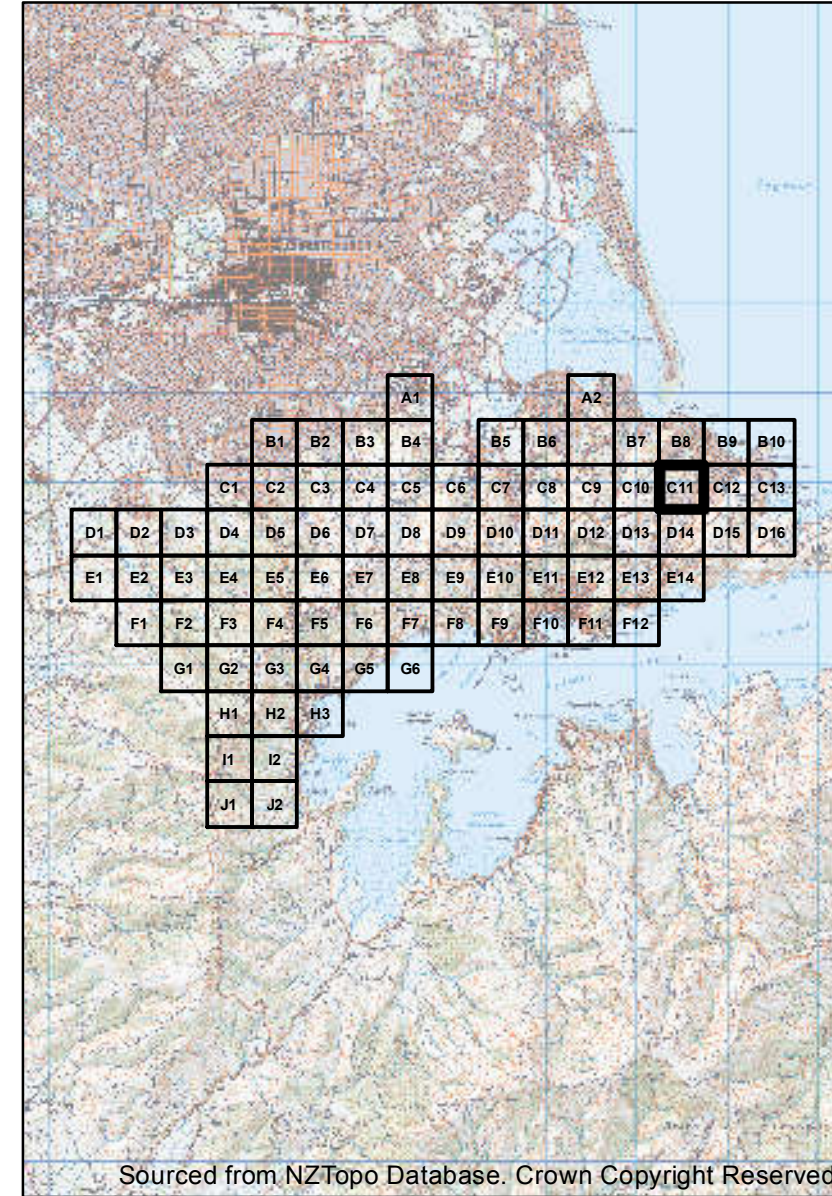
See Map: B8

MAP: C11



See Map: C10

See Map: D14



See Map: C12

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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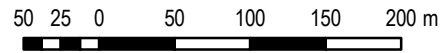
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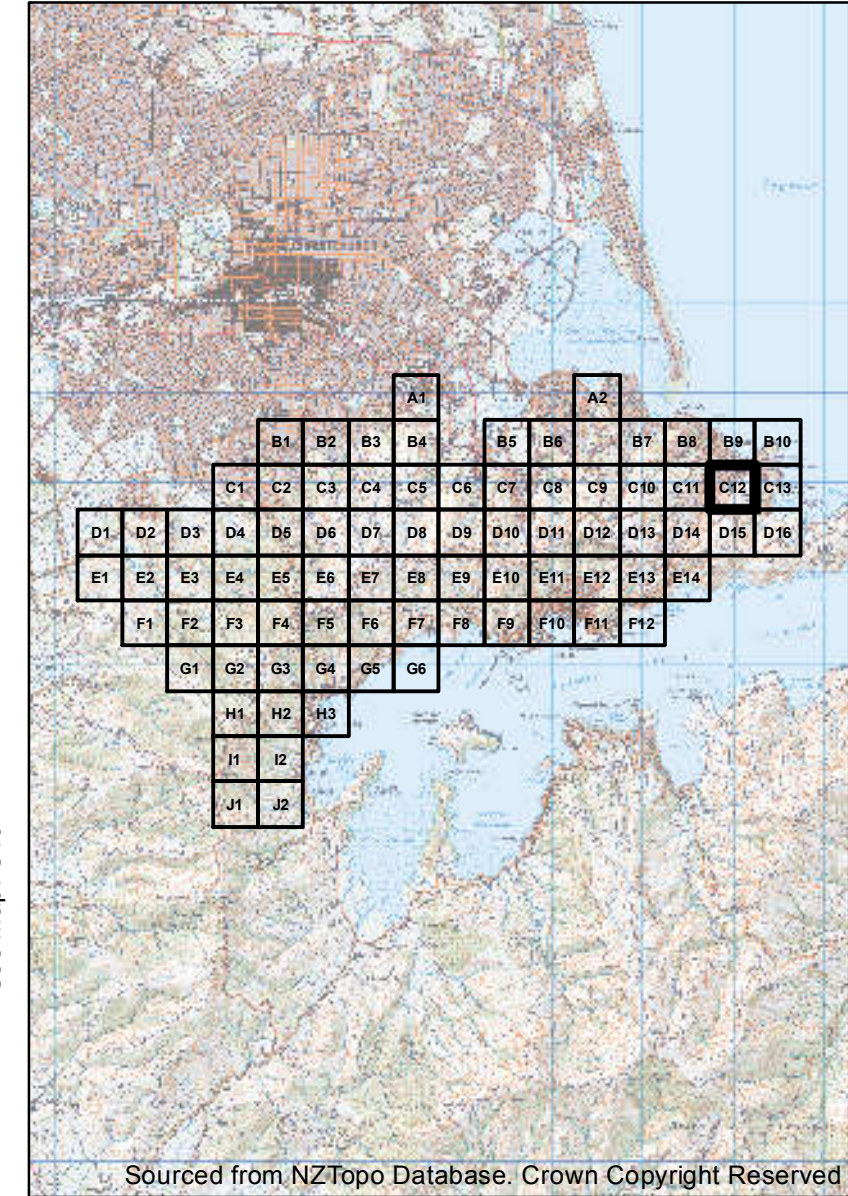
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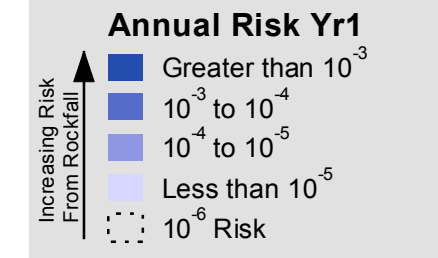
See Map: C11

See Map: D15



See Map: C13

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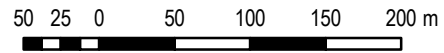


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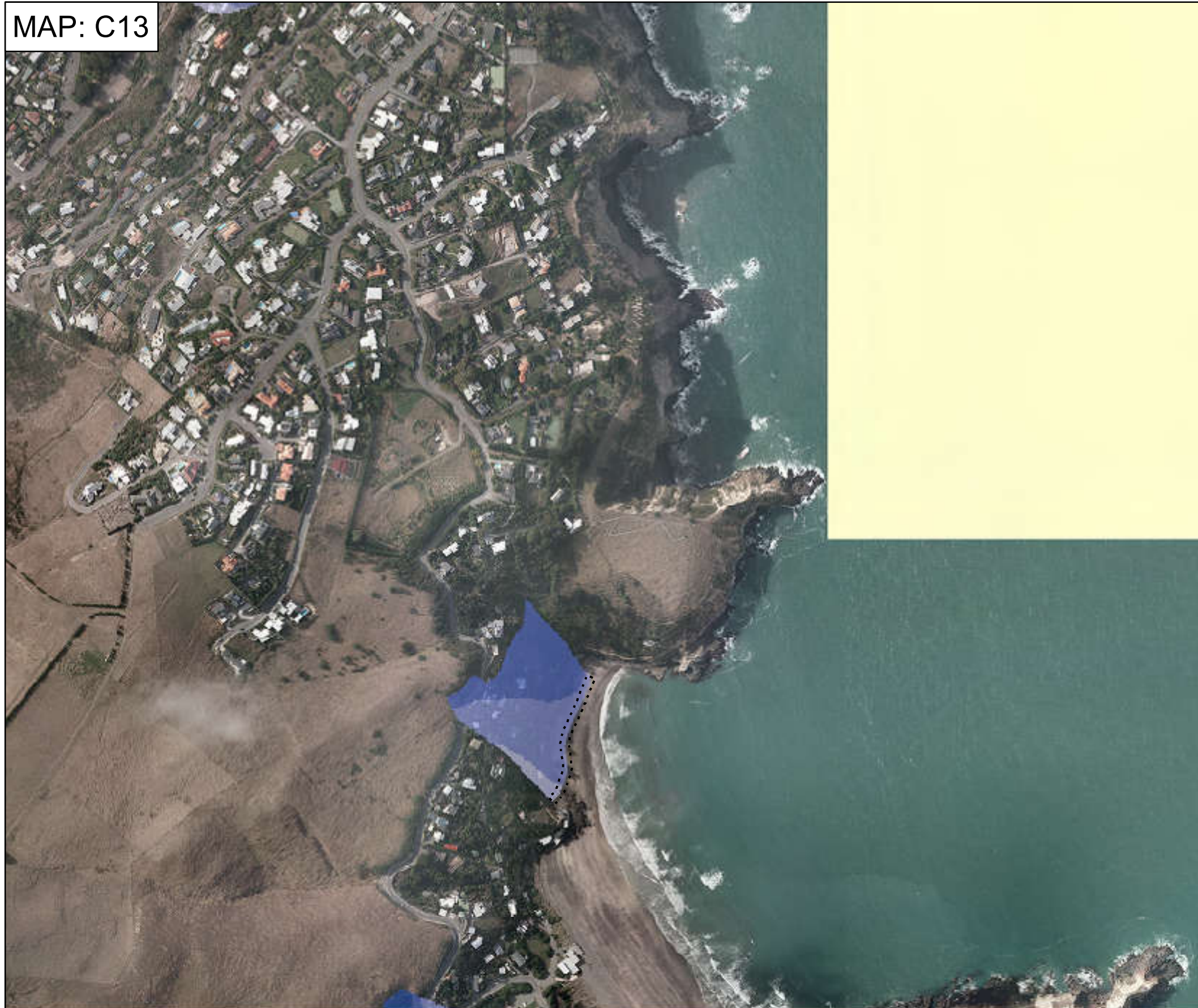


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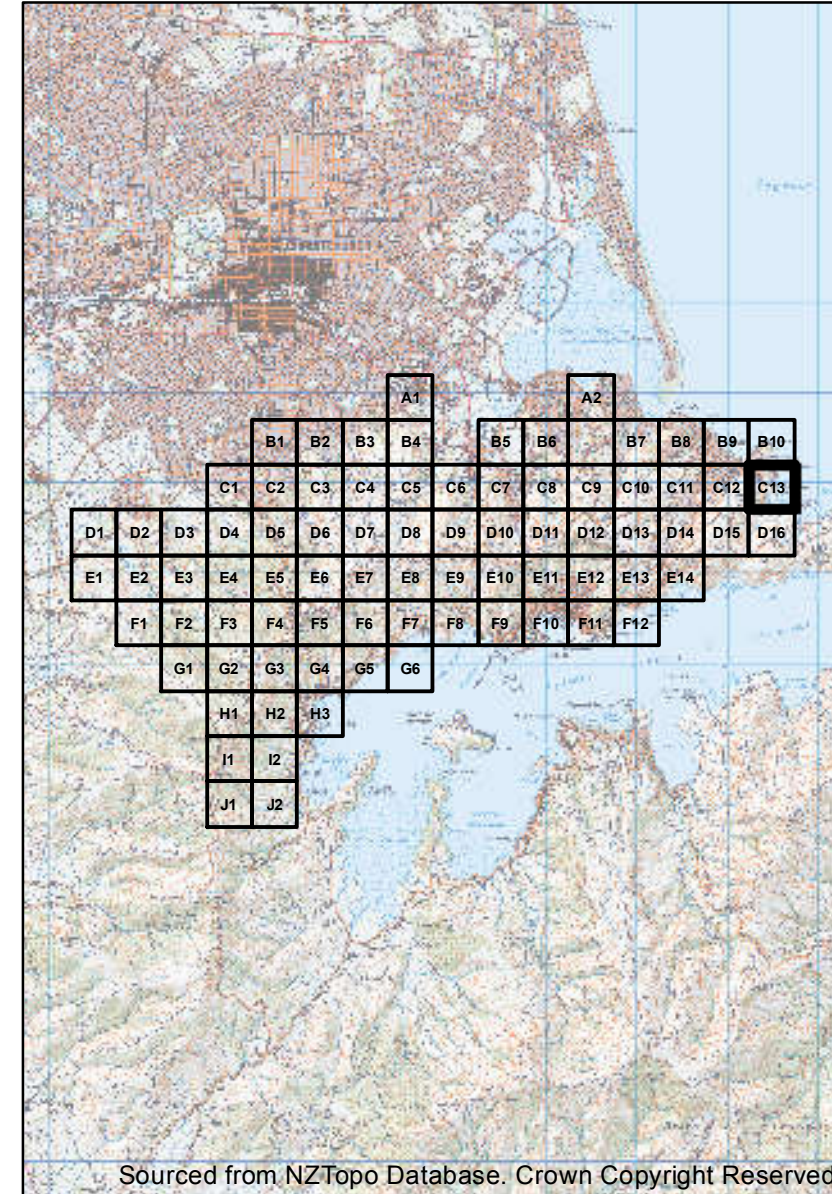
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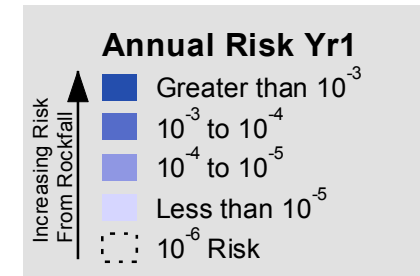
See Map: C12

See Map: D16



See Map:

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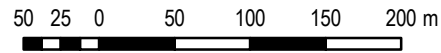


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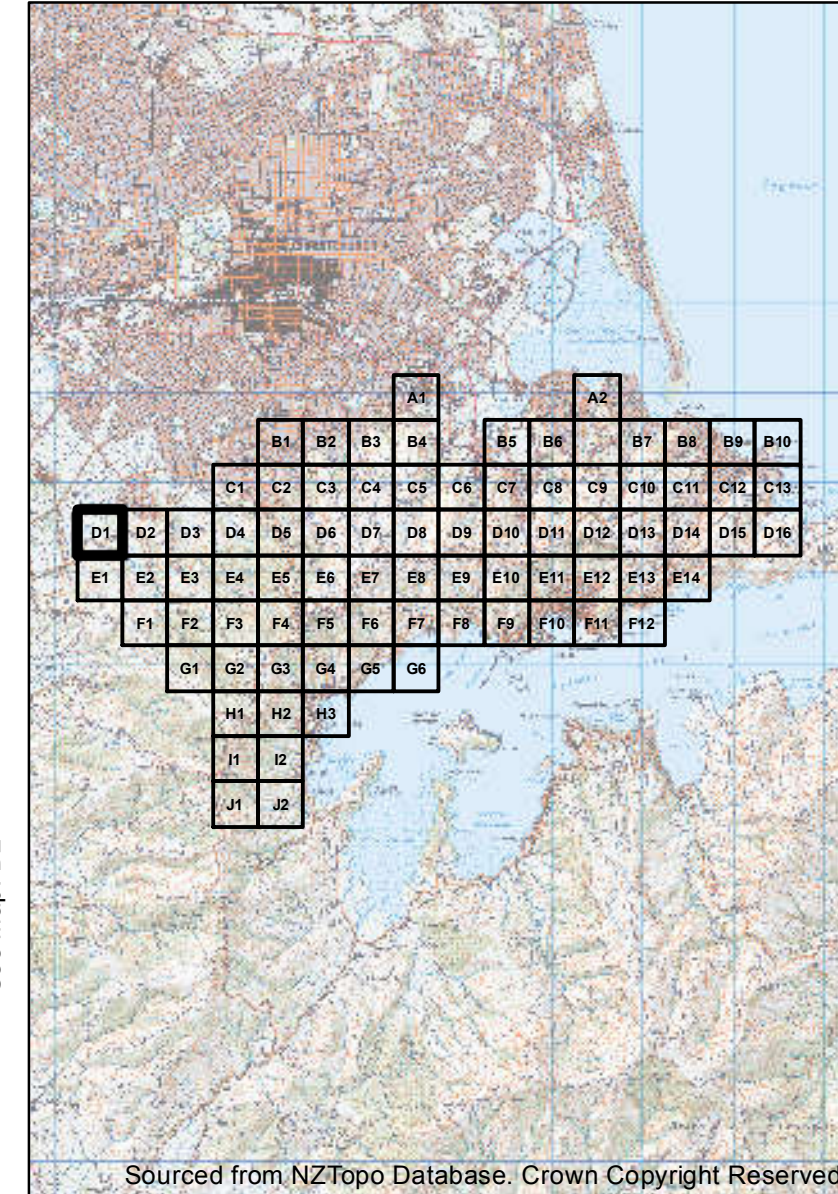
See Map:

MAP: D1



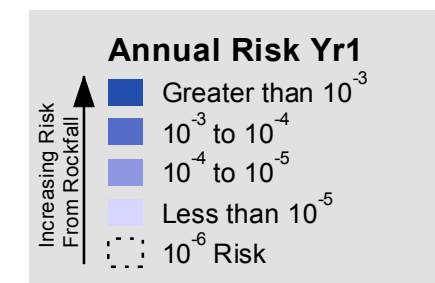
See Map:

See Map: E1



See Map: D2

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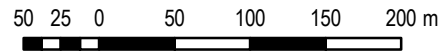


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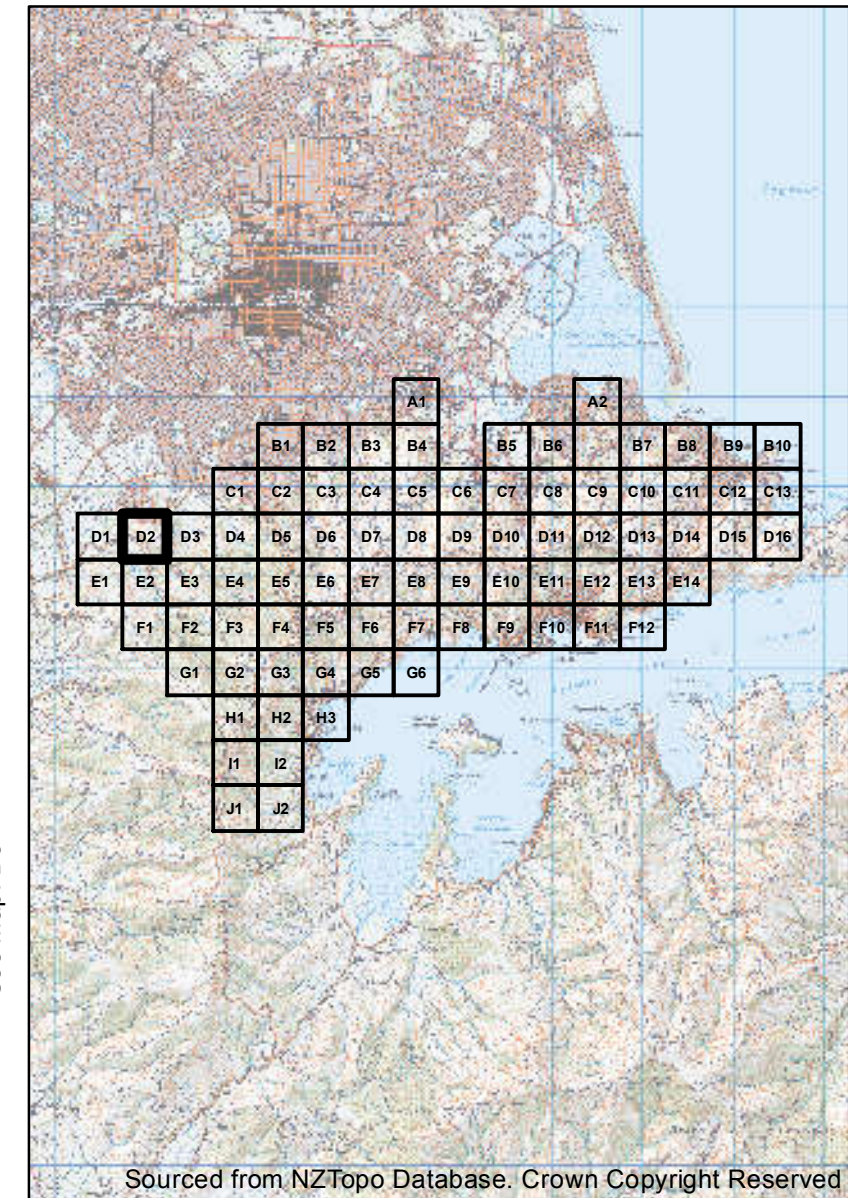
See Map:

MAP: D2



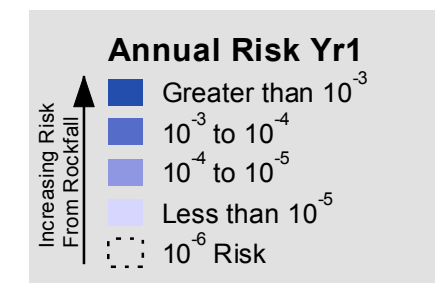
See Map: D1

See Map: E2



See Map: D3

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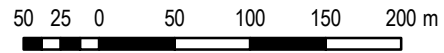


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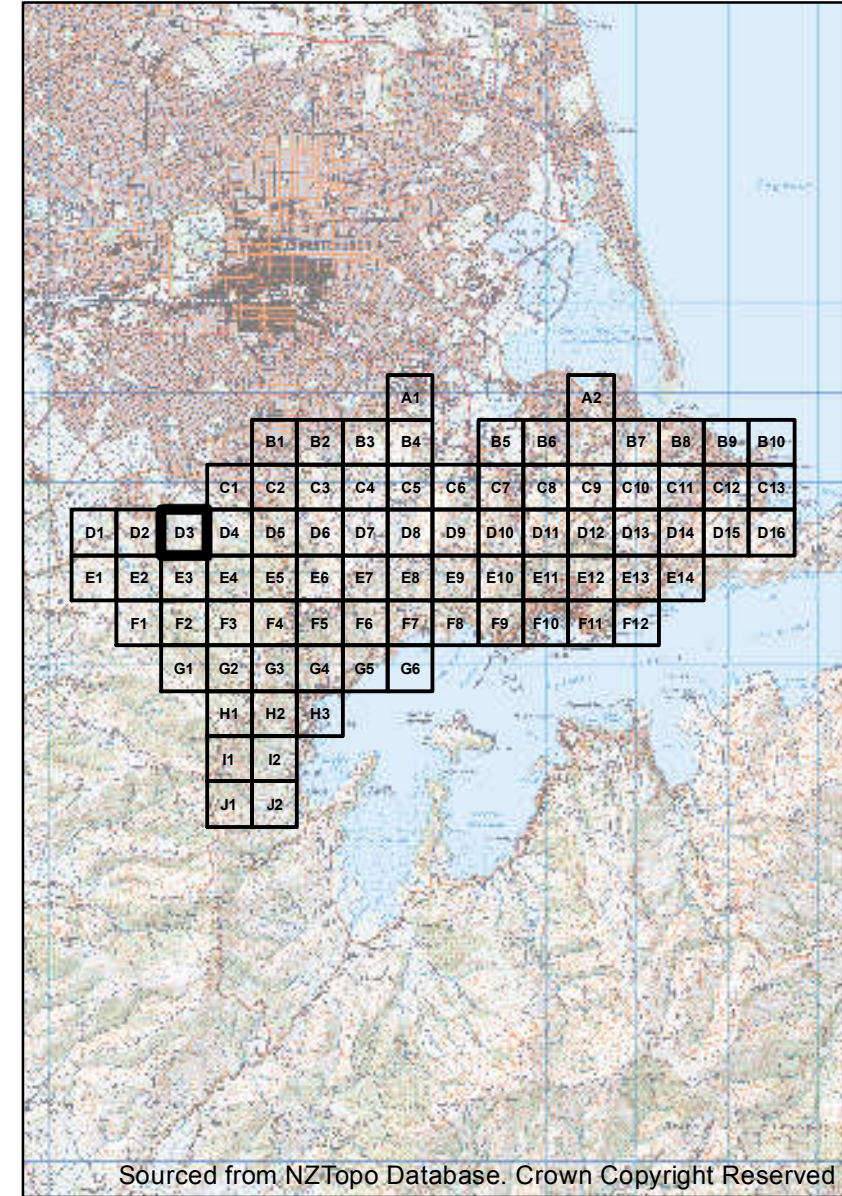
See Map:

MAP: D3



See Map: D2

See Map: E3



See Map: D4

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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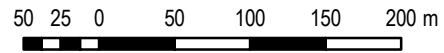


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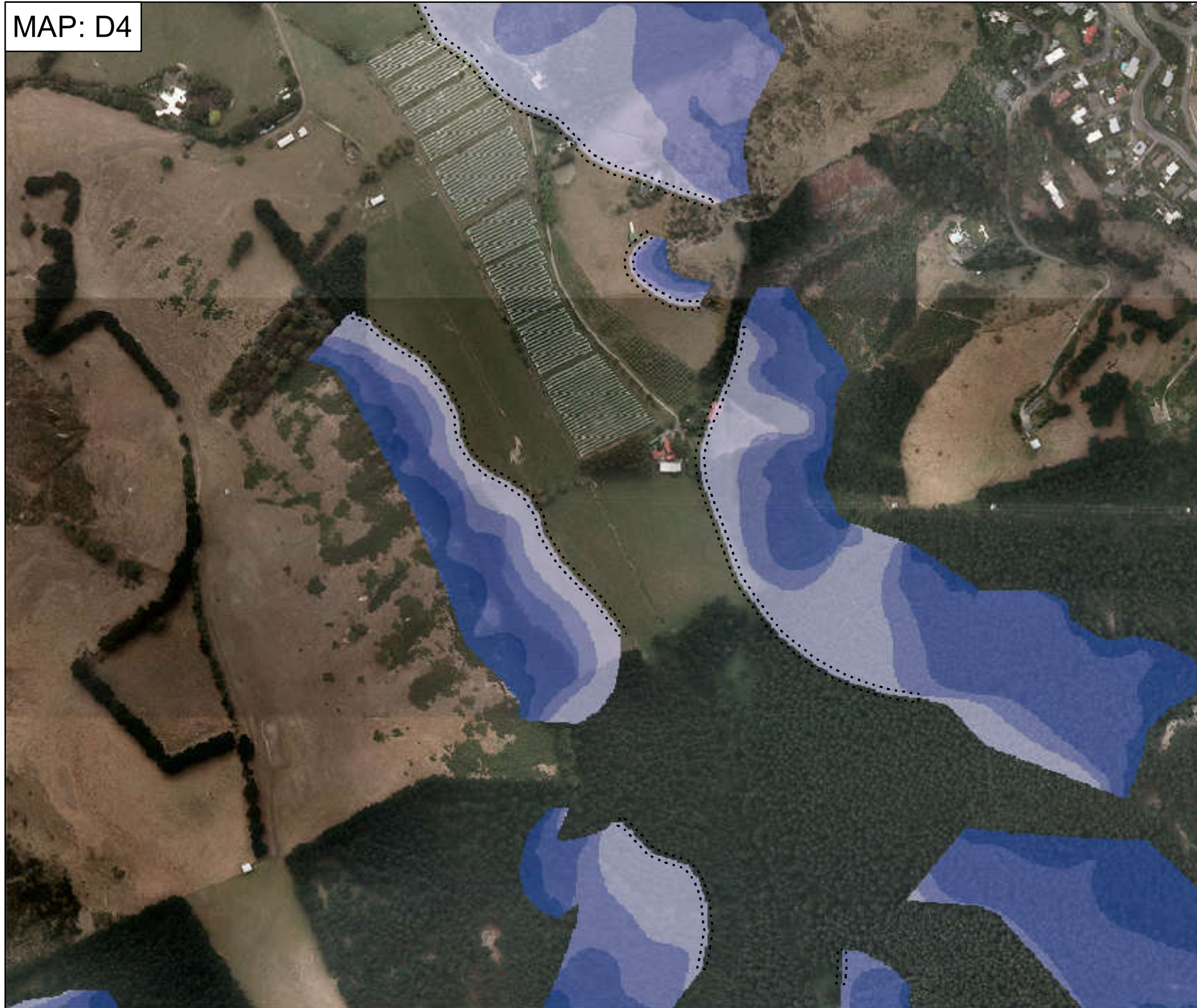


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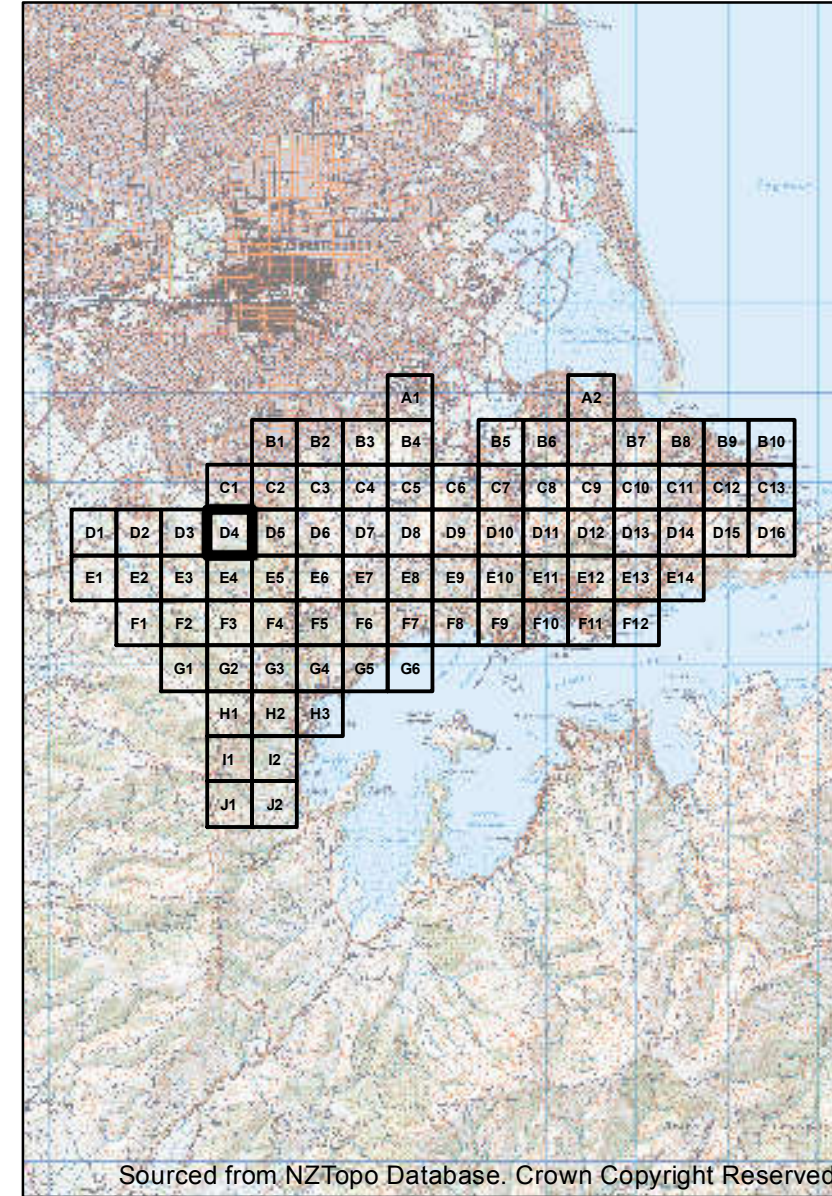
See Map: C1

MAP: D4



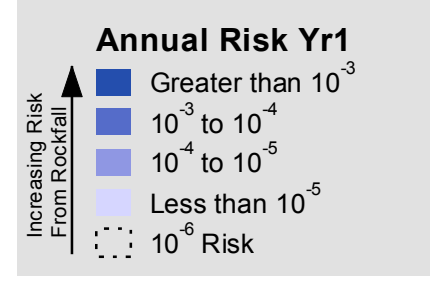
See Map: D3

See Map: E4



See Map: D5

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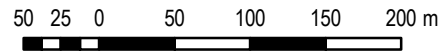
Maps Produced By: **aurecon**

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# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

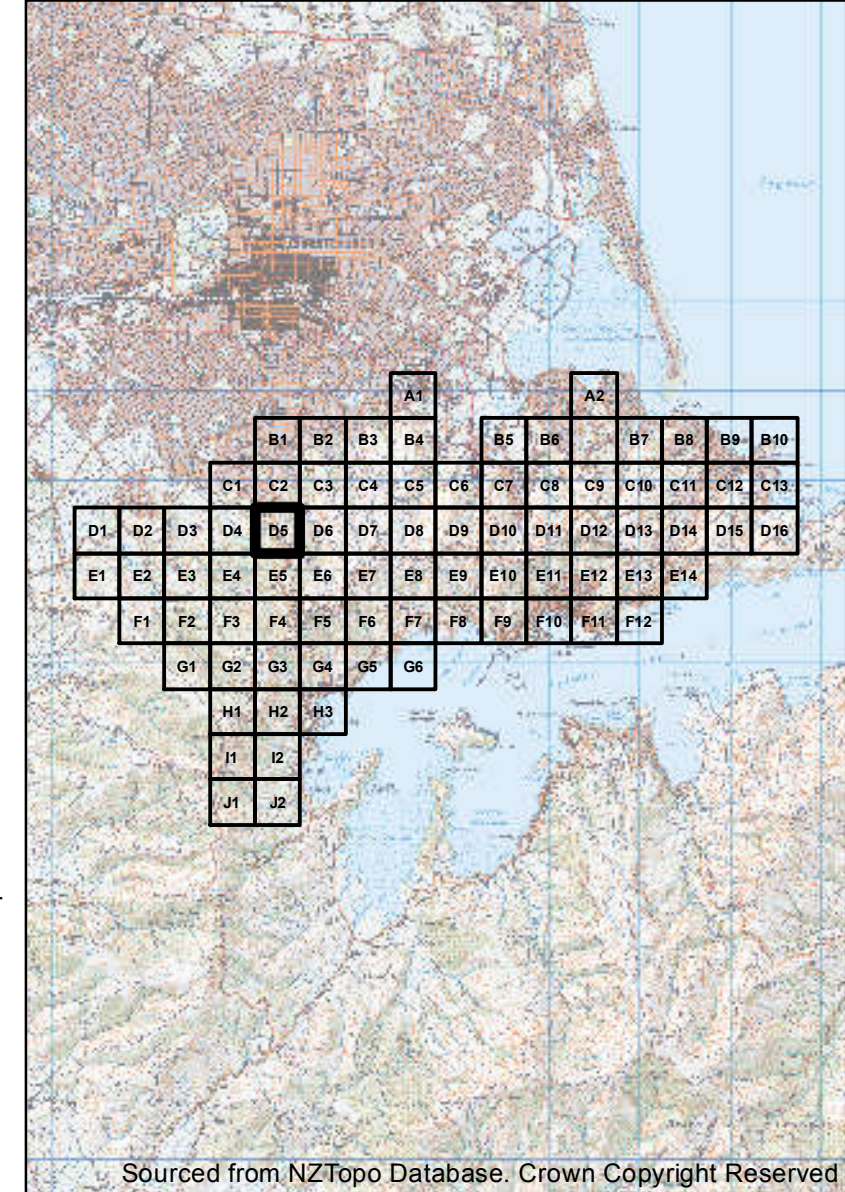
See Map: C2

MAP: D5



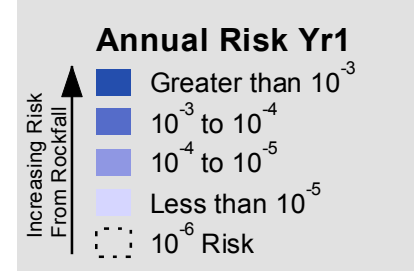
See Map: D4

See Map: E5



See Map: D6

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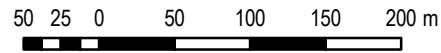


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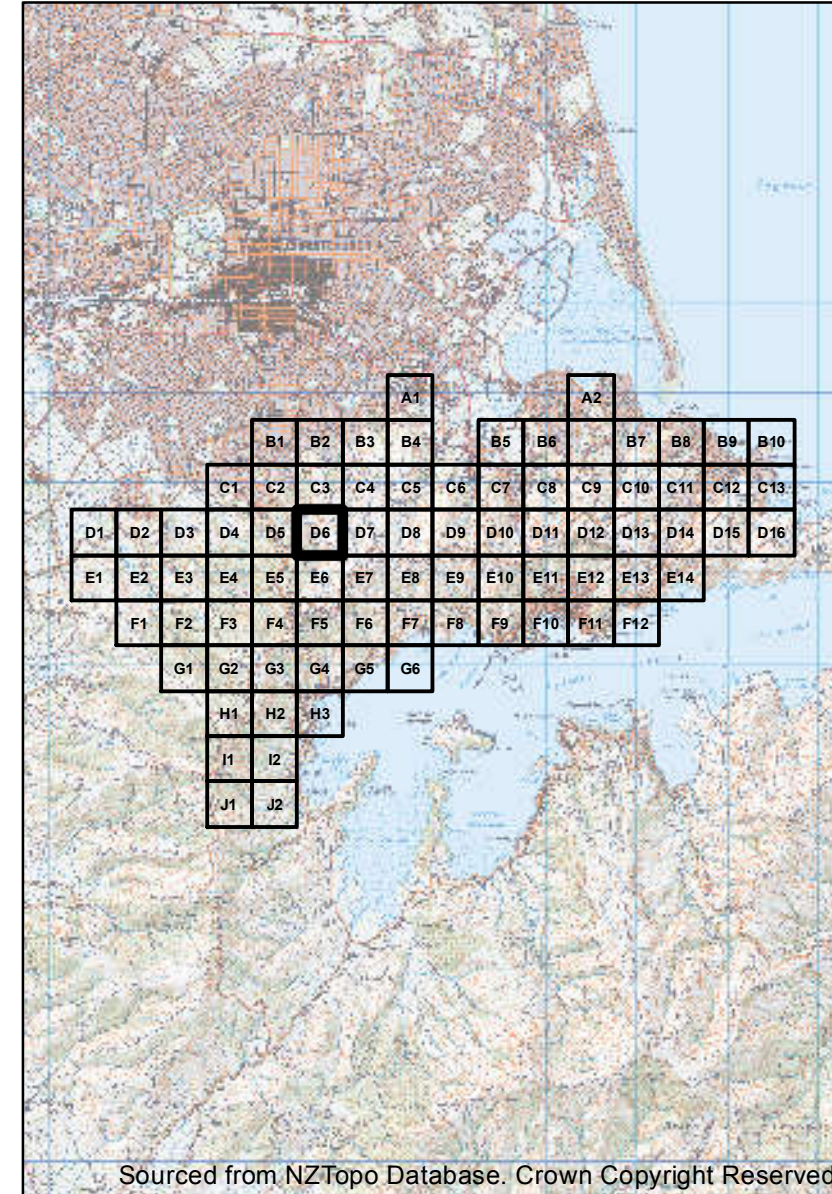
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MAP: D6



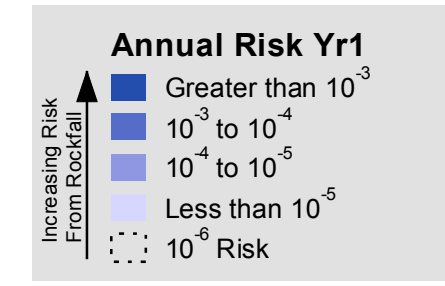
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See Map: E6



See Map: D7

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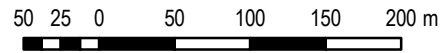
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Datum: Geodetic Datum of New Zealand 2000  
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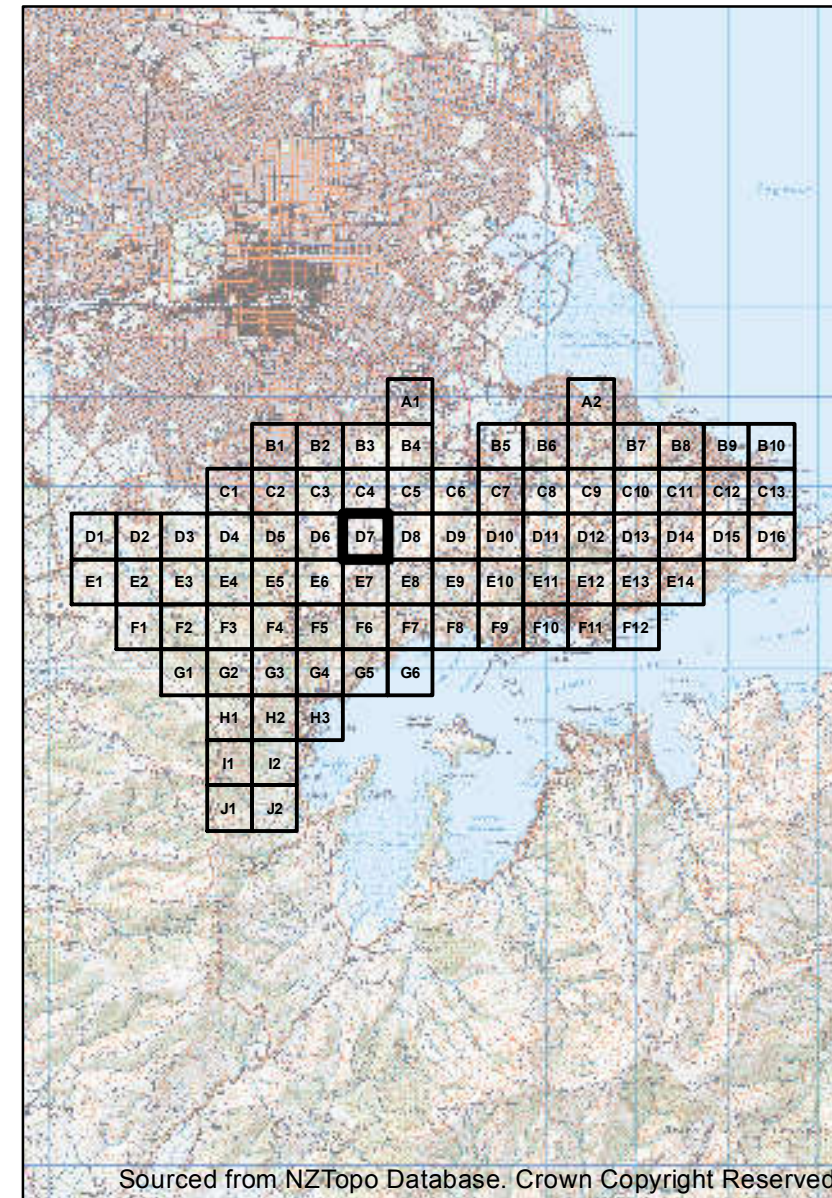
See Map: C4

MAP: D7



See Map: D6

See Map: E7



See Map: D8

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**Annual Risk Yr1**

Increasing Risk From Rockfall ↑

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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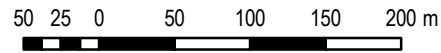


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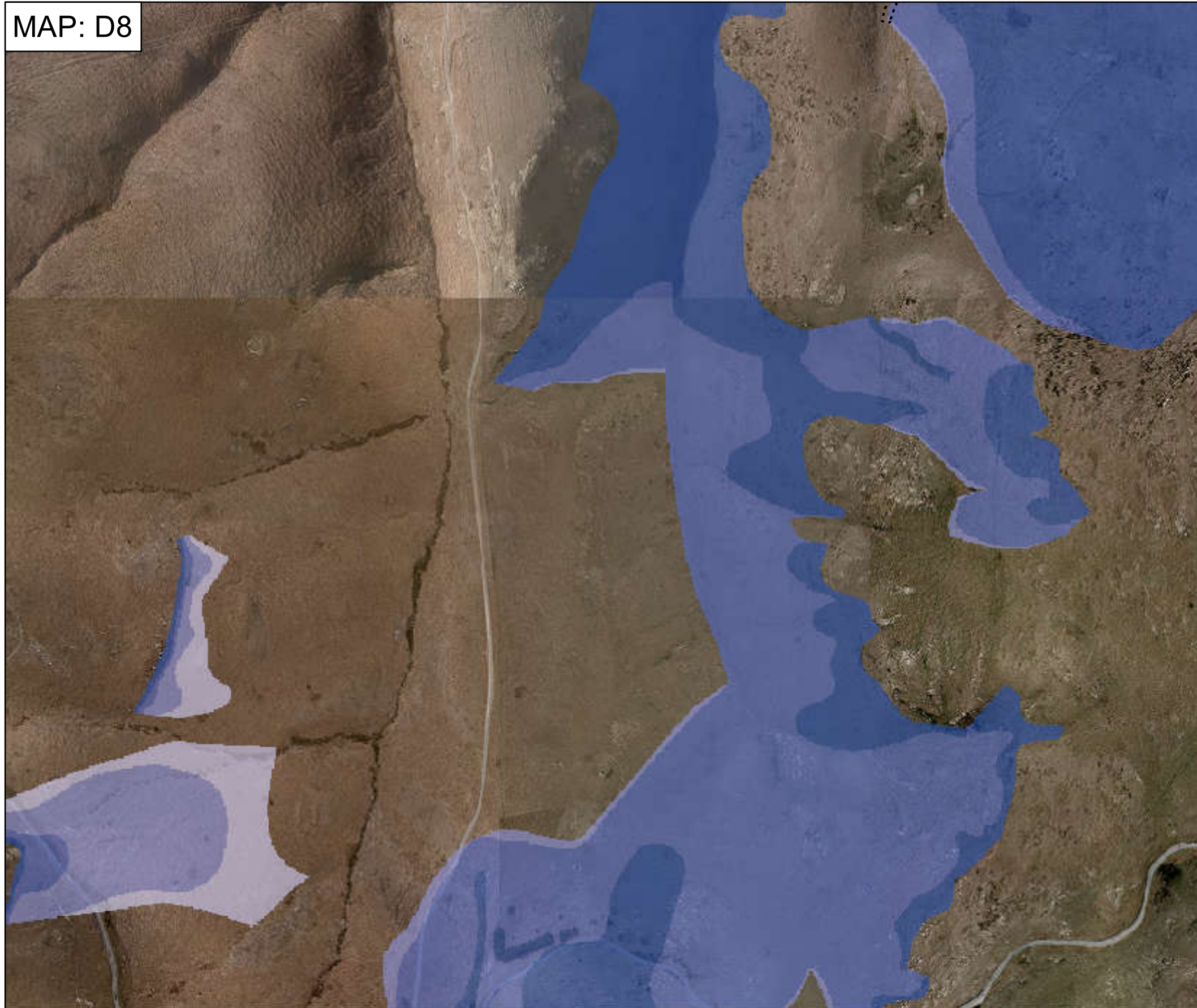


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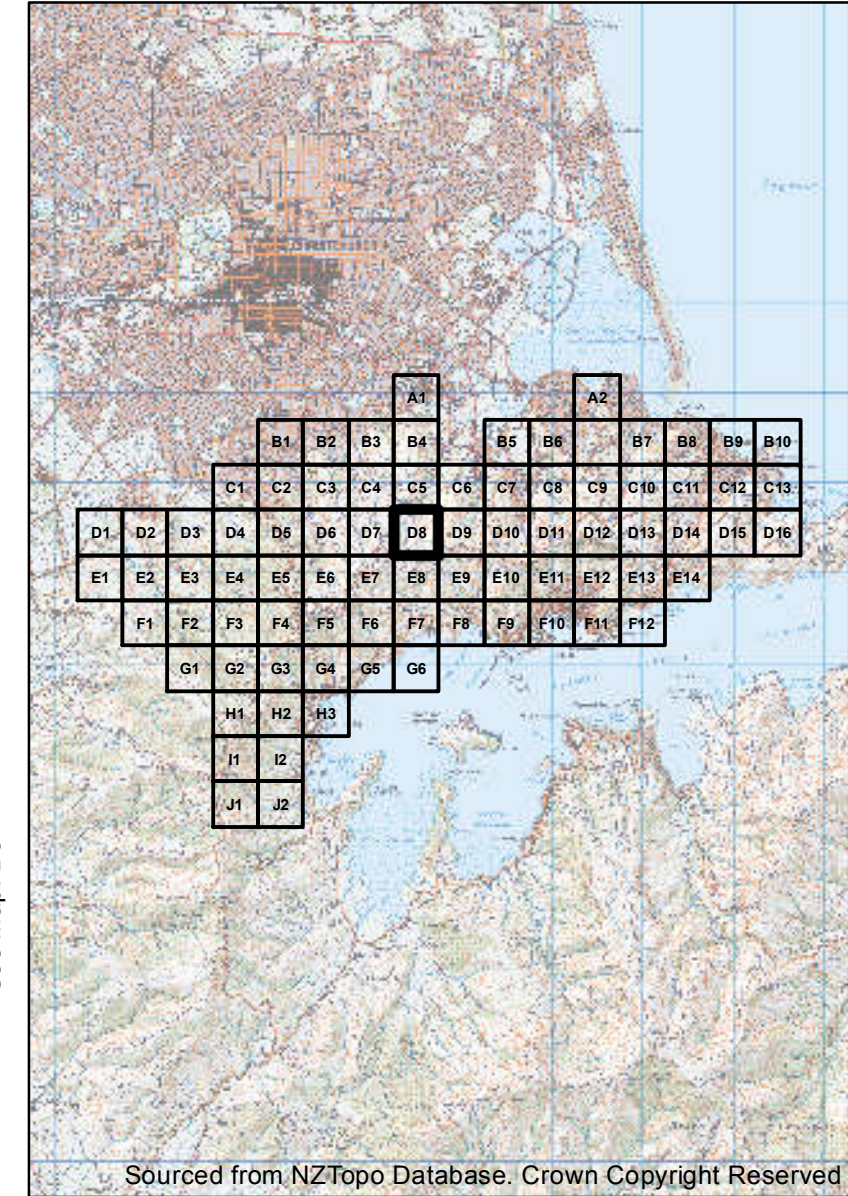
See Map: C5

MAP: D8



See Map: D7

See Map: E8



See Map: D9

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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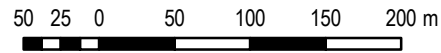


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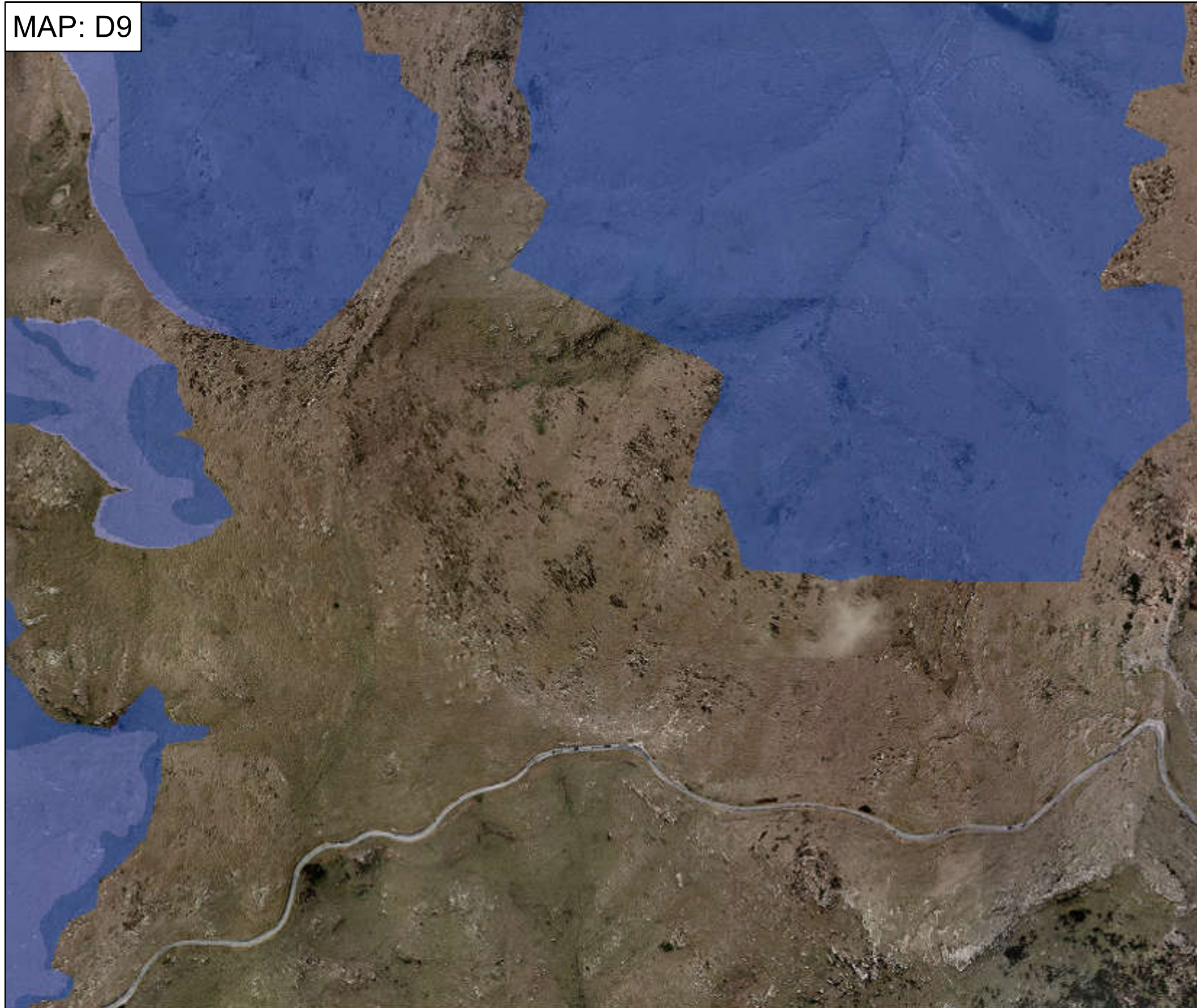


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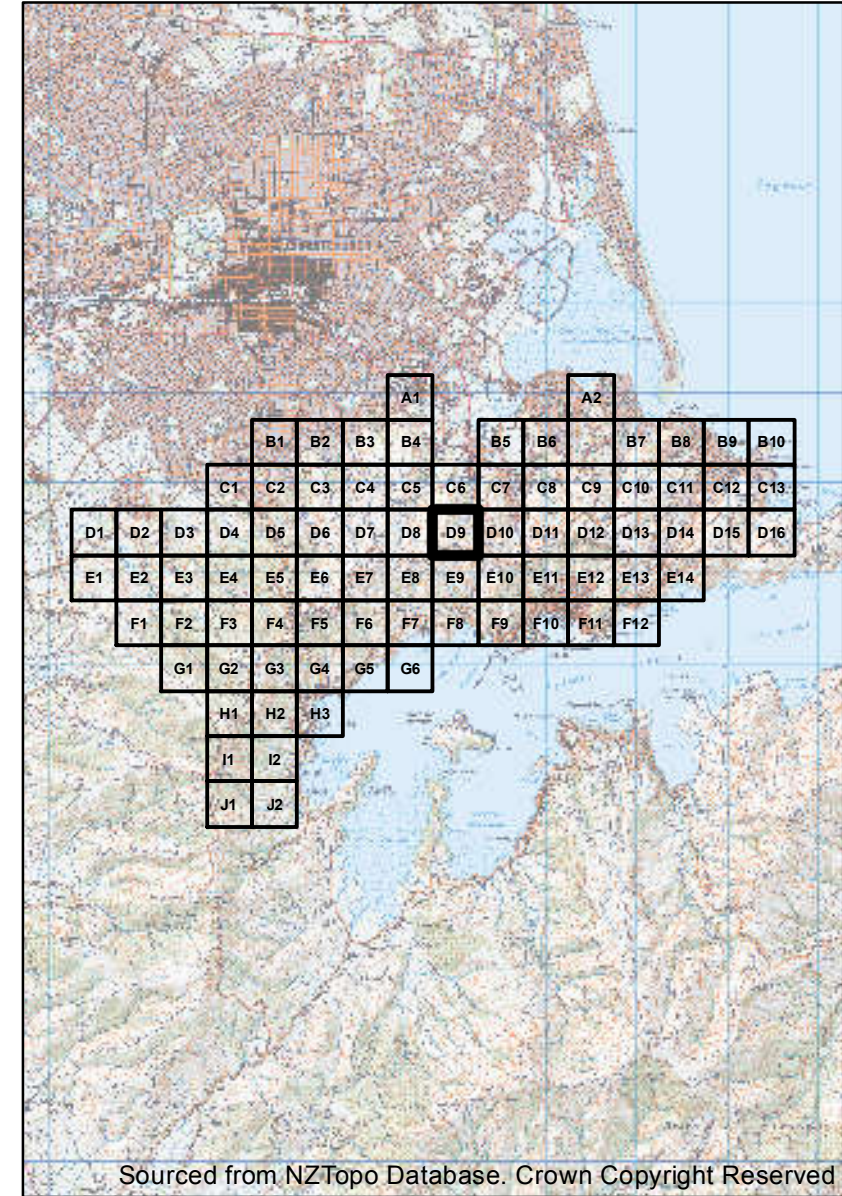
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MAP: D9



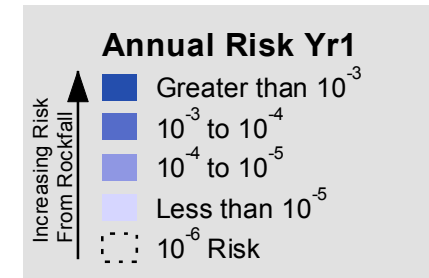
See Map: D8

See Map: E9



See Map: D10

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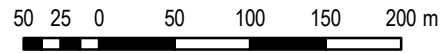


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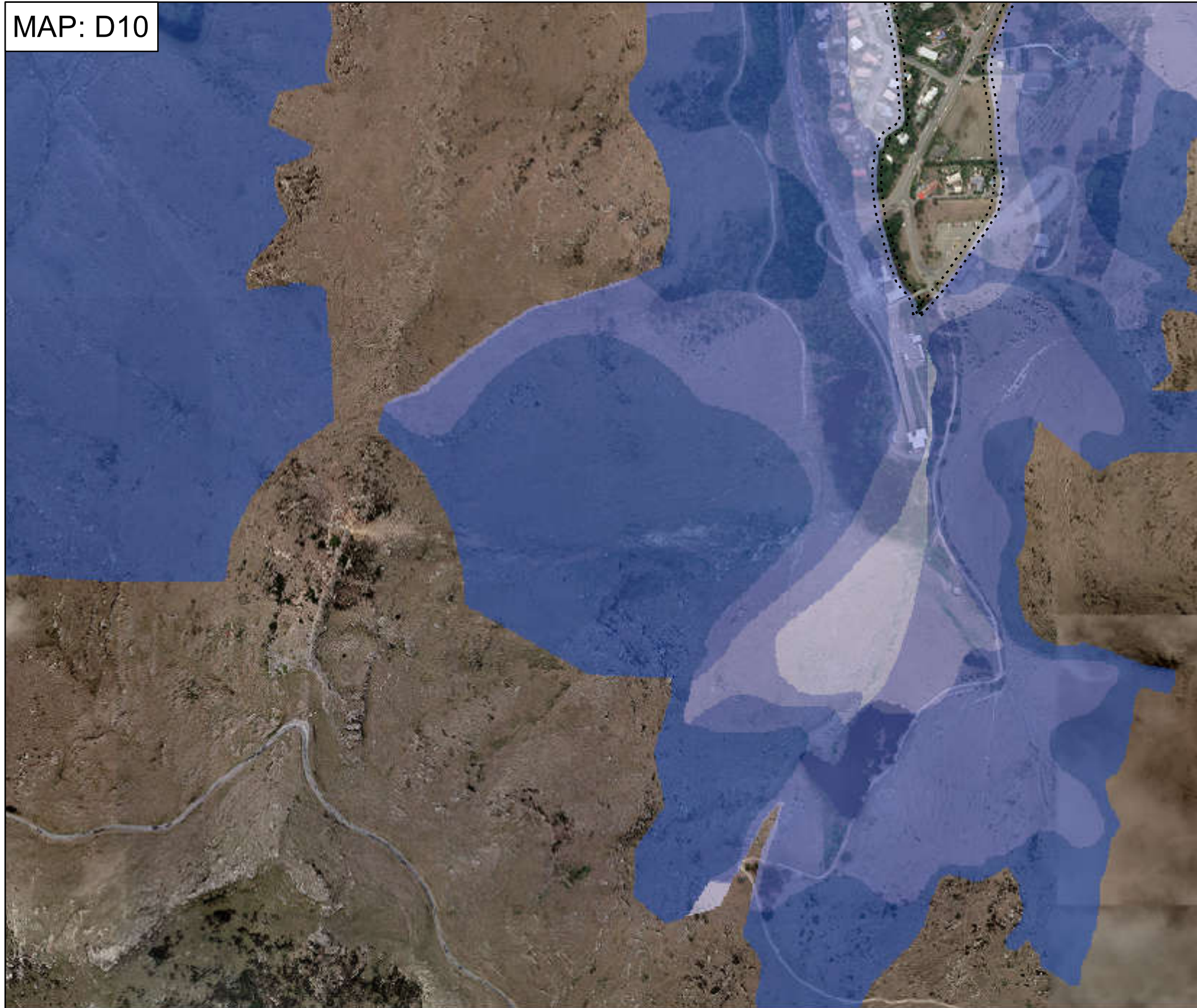


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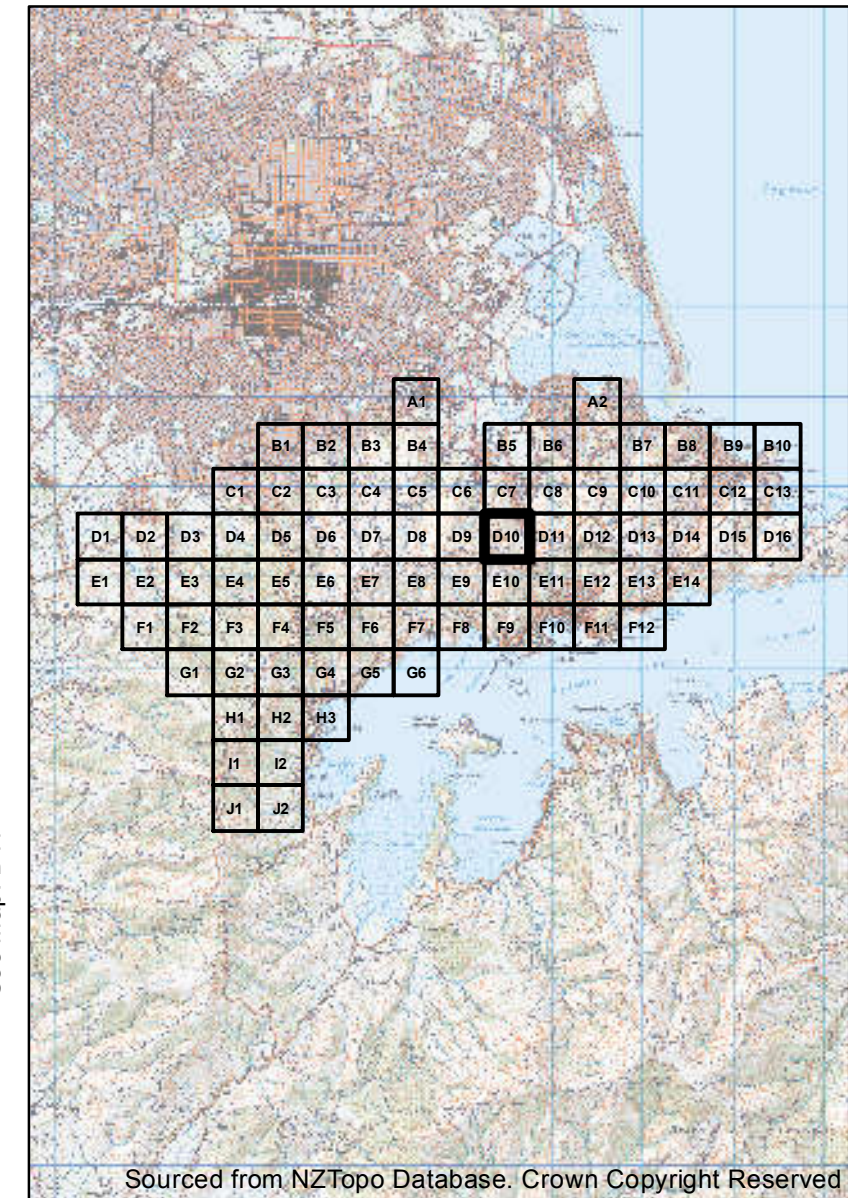
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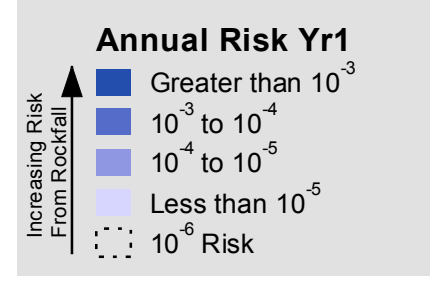
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See Map: E10



See Map: D11

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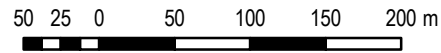


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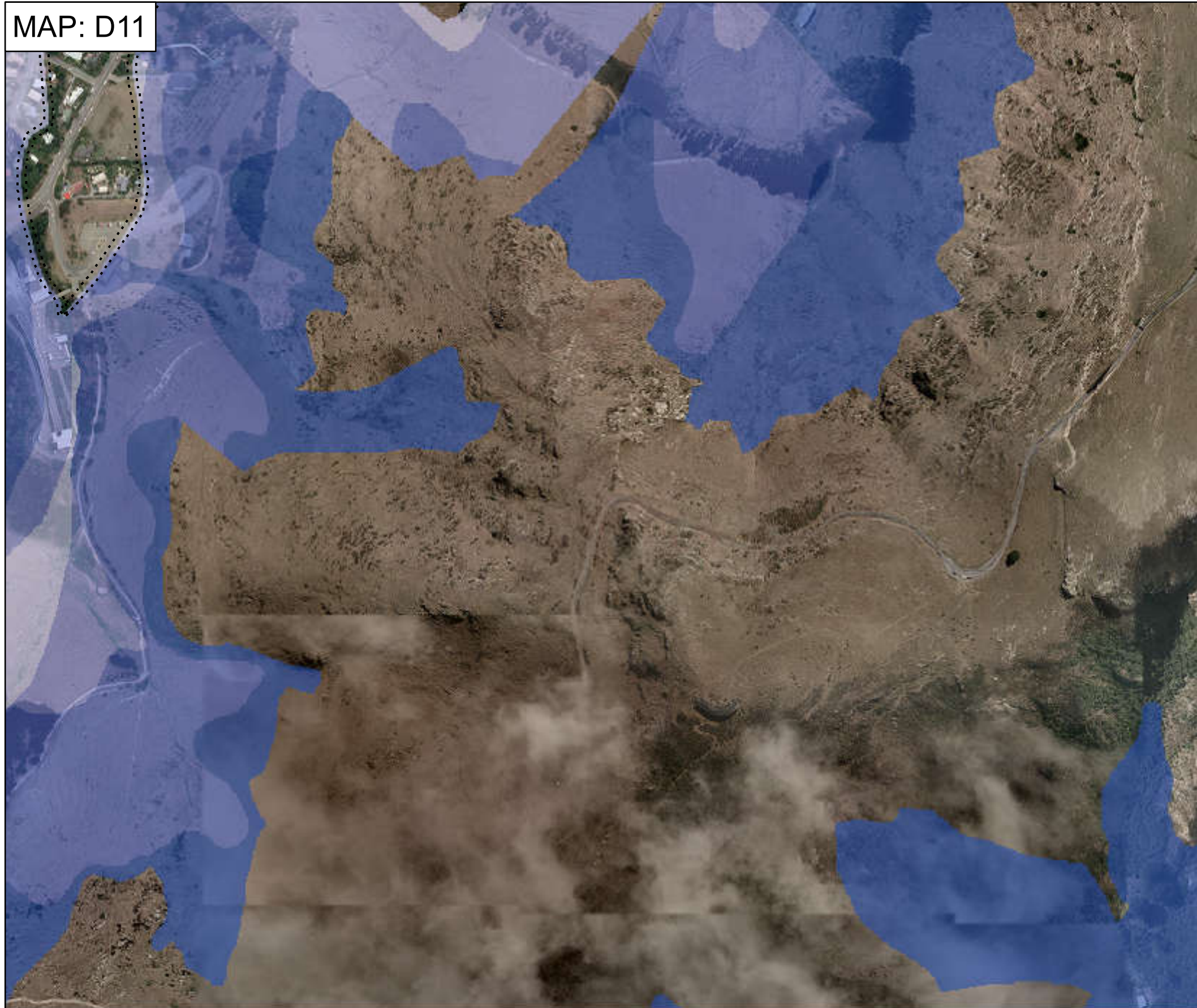


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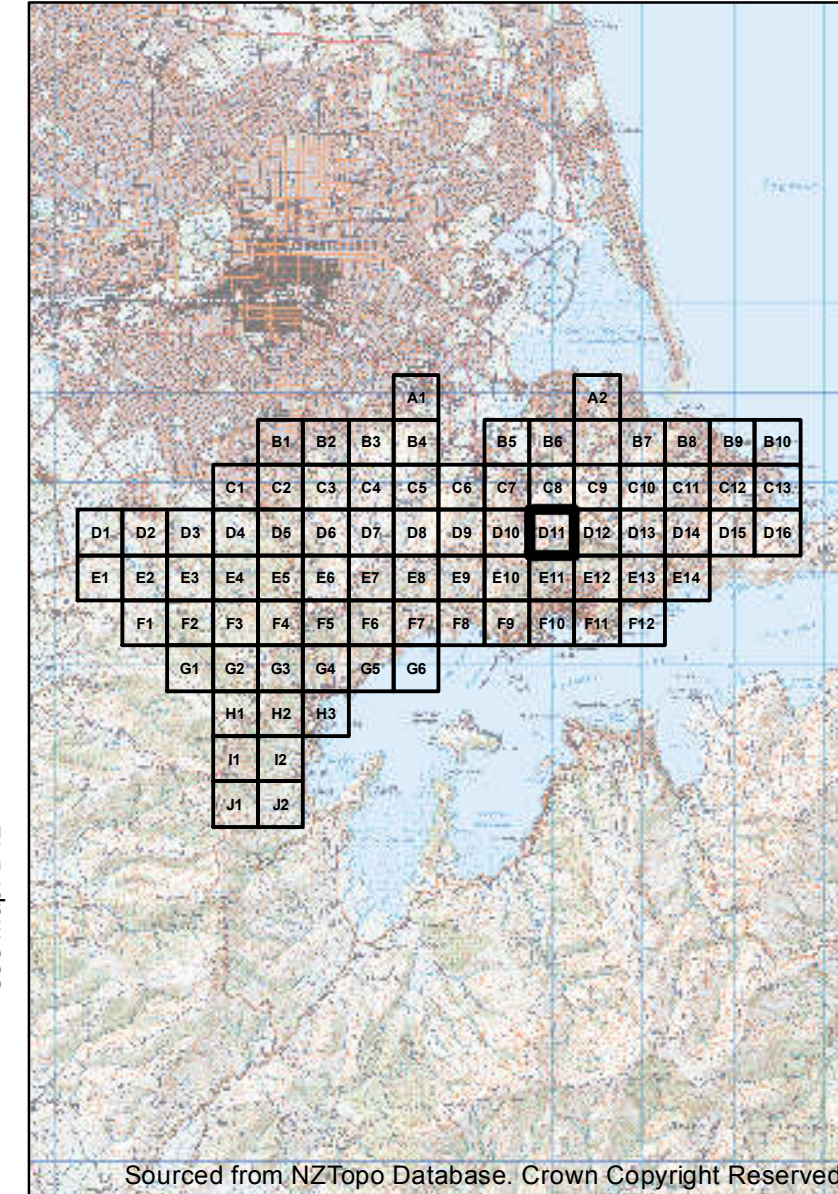
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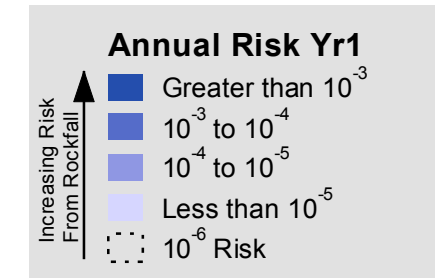
See Map: D10

See Map: E11



See Map: D12

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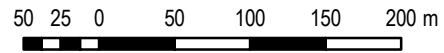


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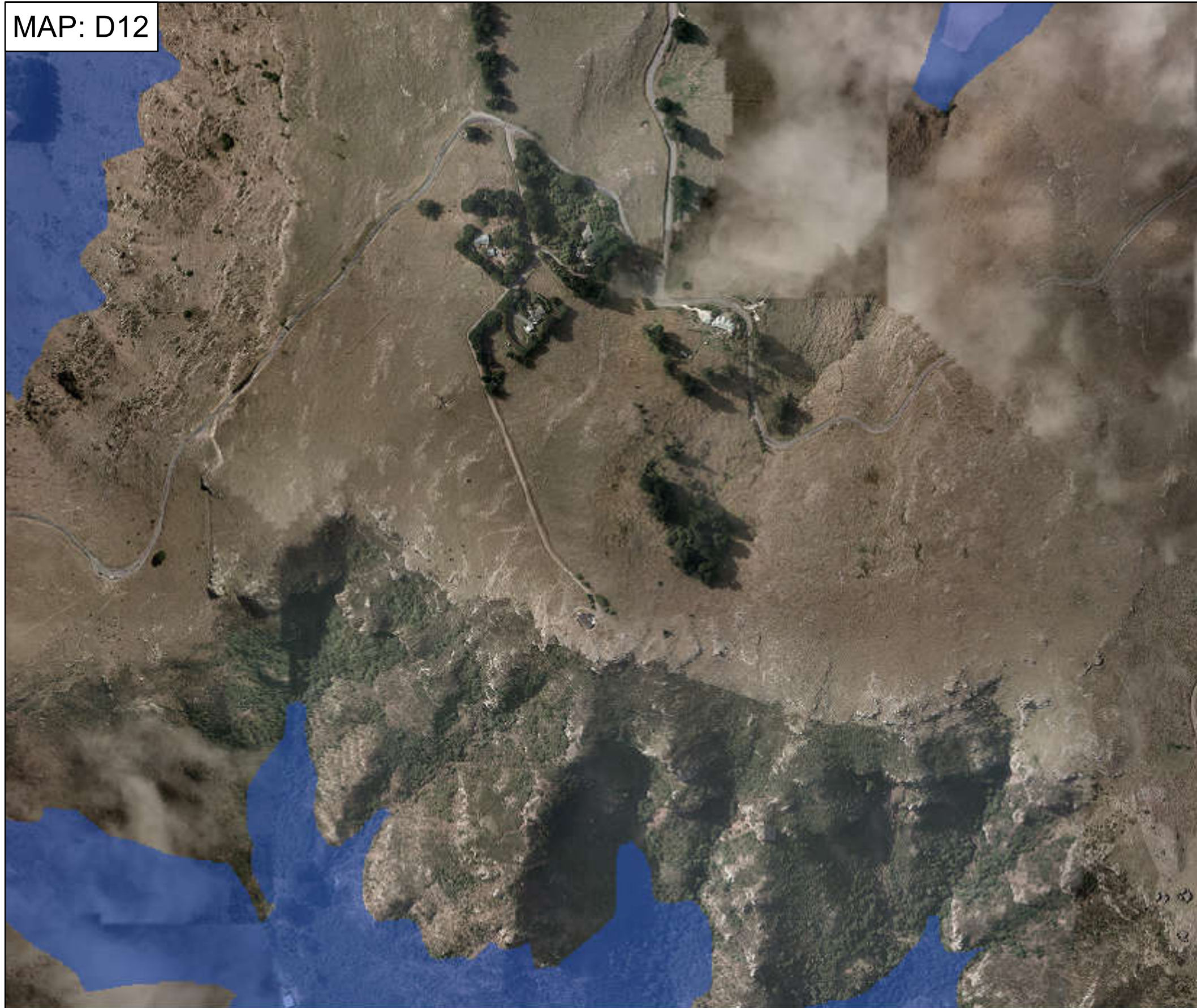


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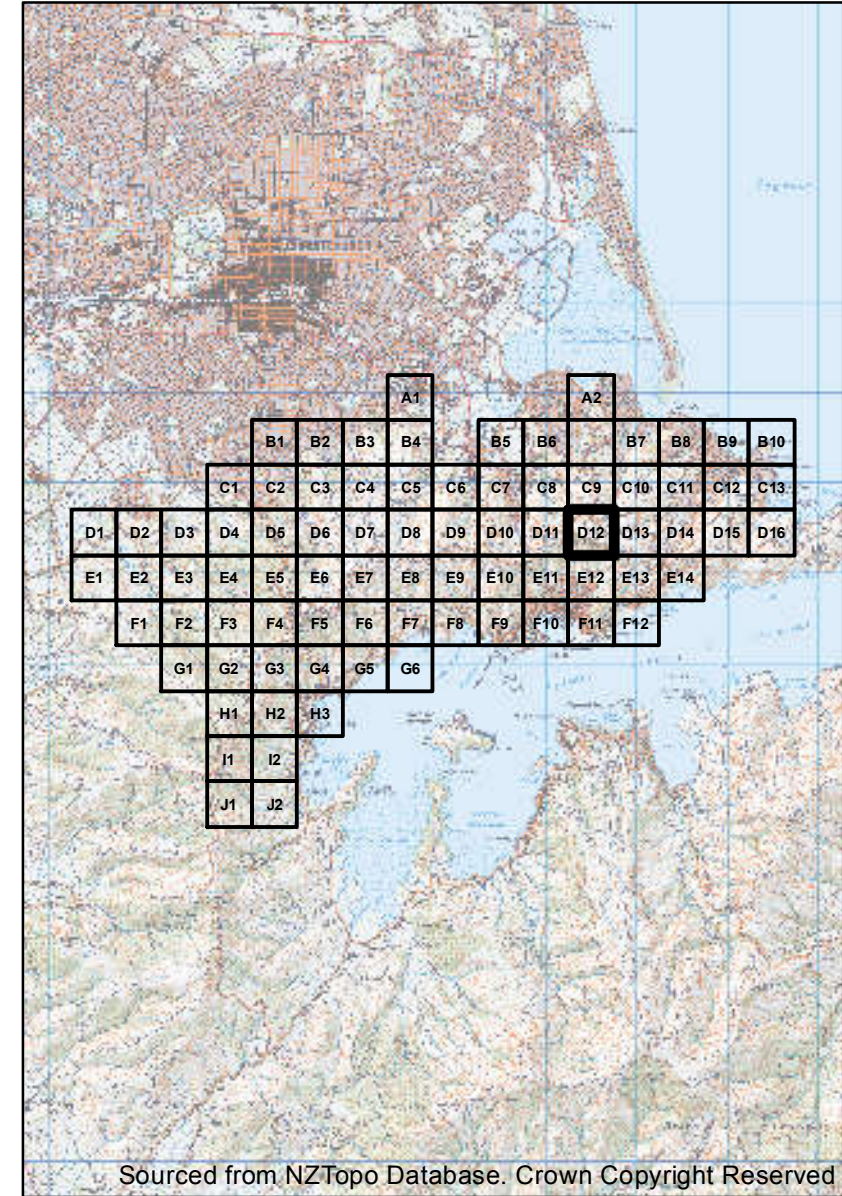
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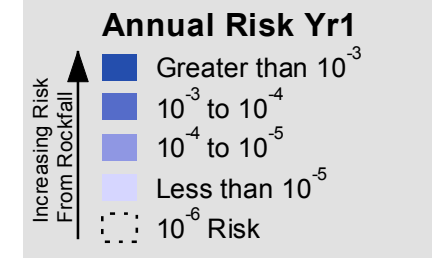
See Map: D11

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See Map: D13

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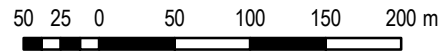


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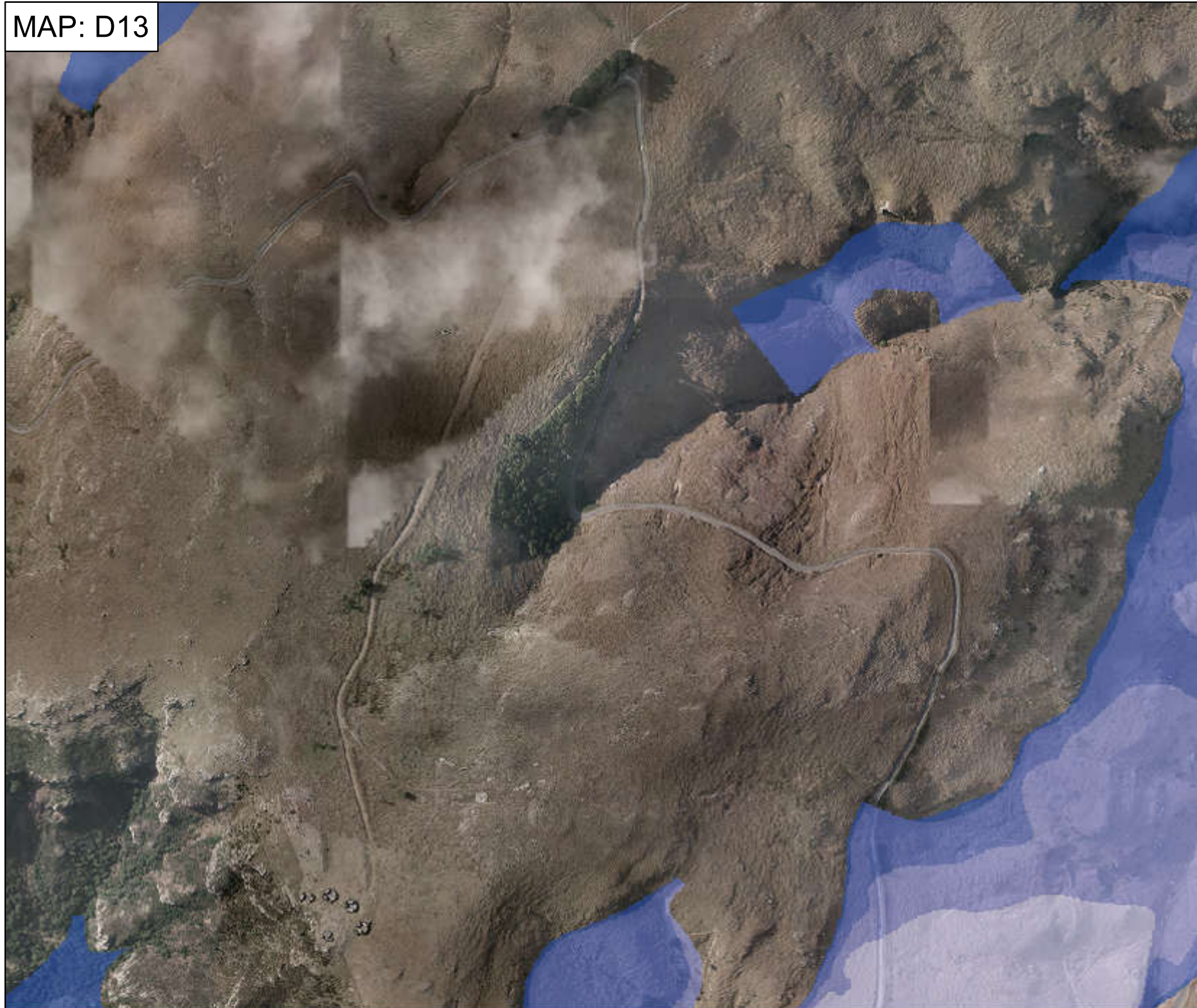


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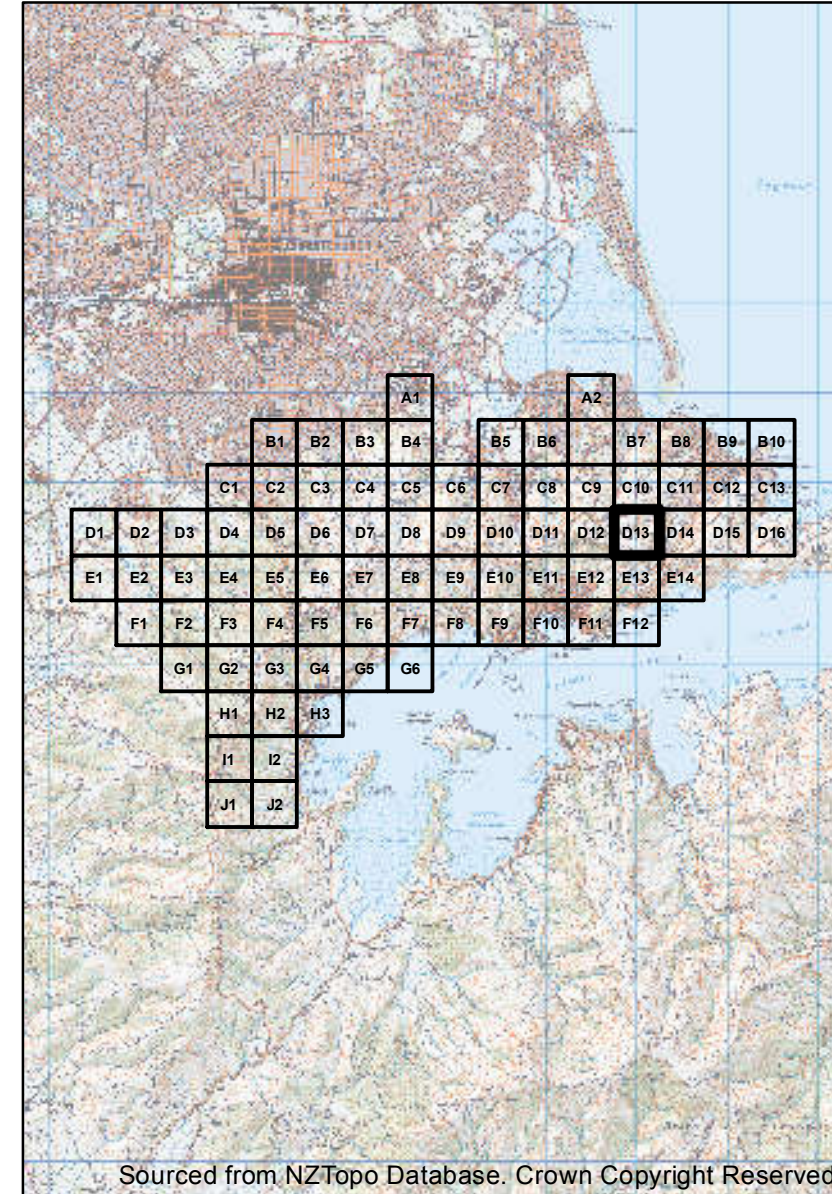
See Map: C10

MAP: D13



See Map: D12

See Map: E13



See Map: D14

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**Annual Risk Yr1**

Increasing Risk From Rockfall ↑

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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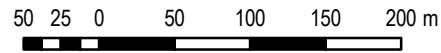


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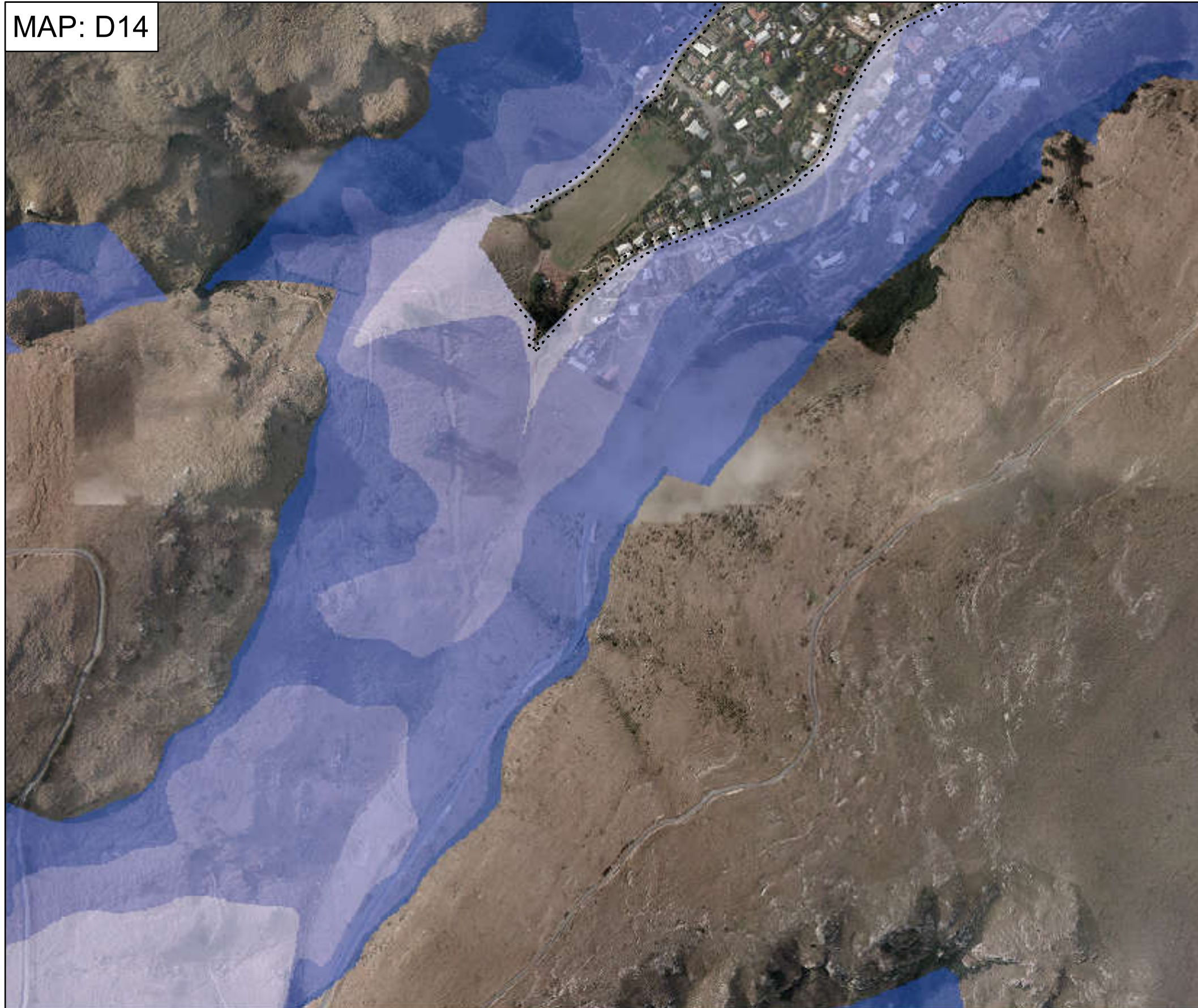


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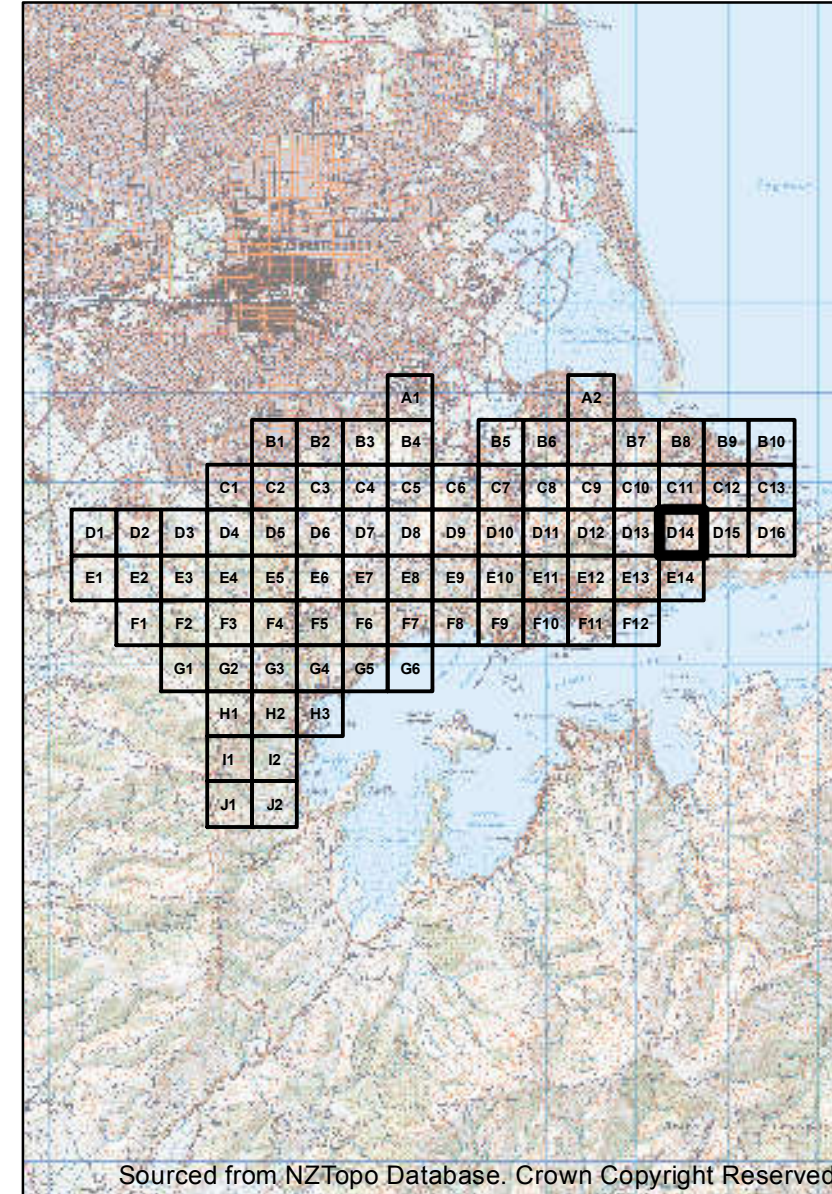
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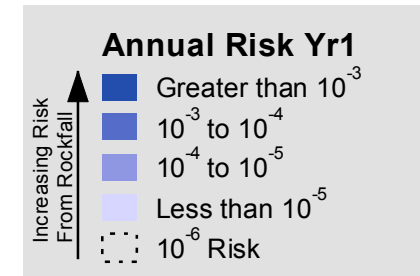
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See Map: E14



See Map: D15

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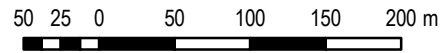
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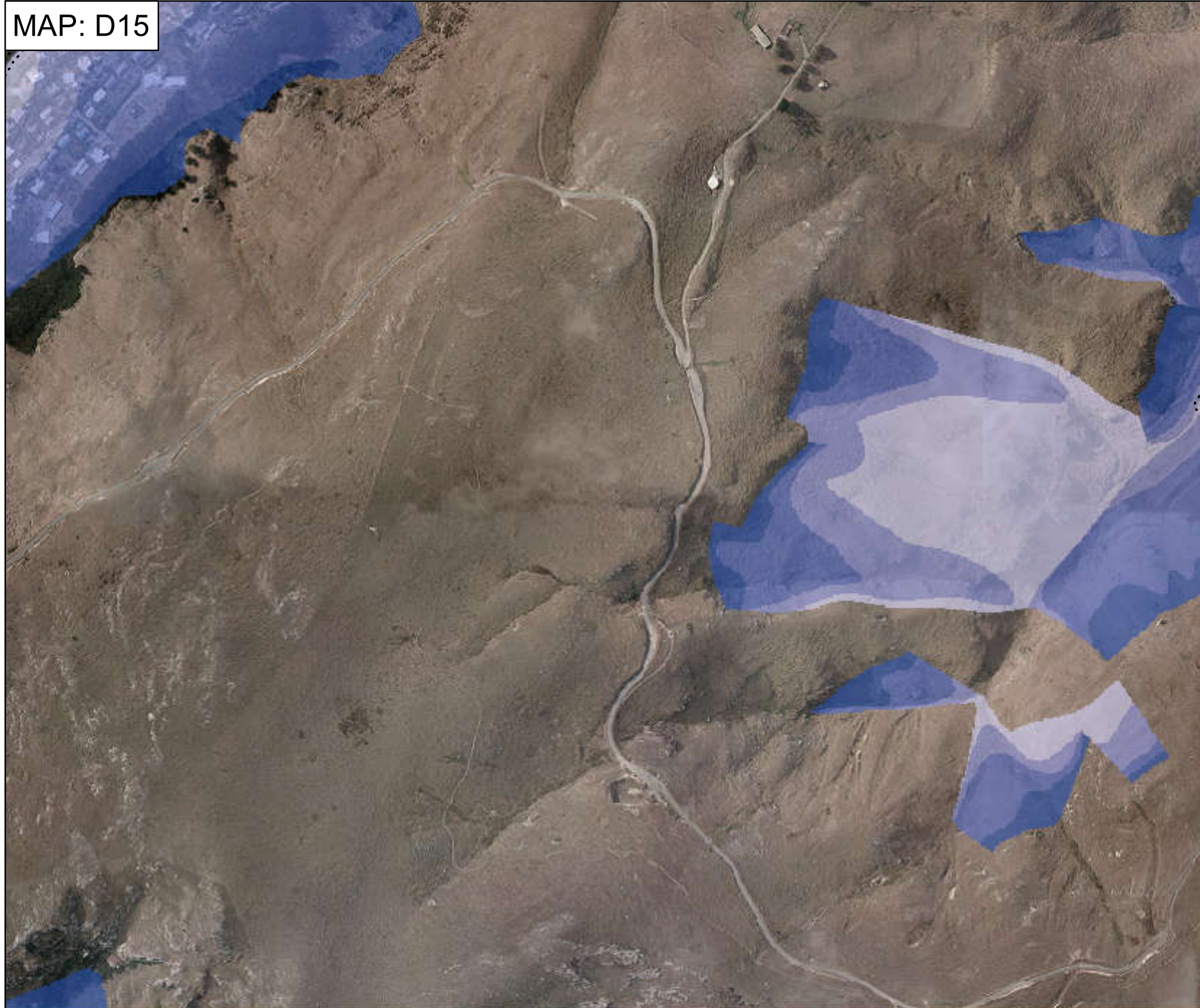
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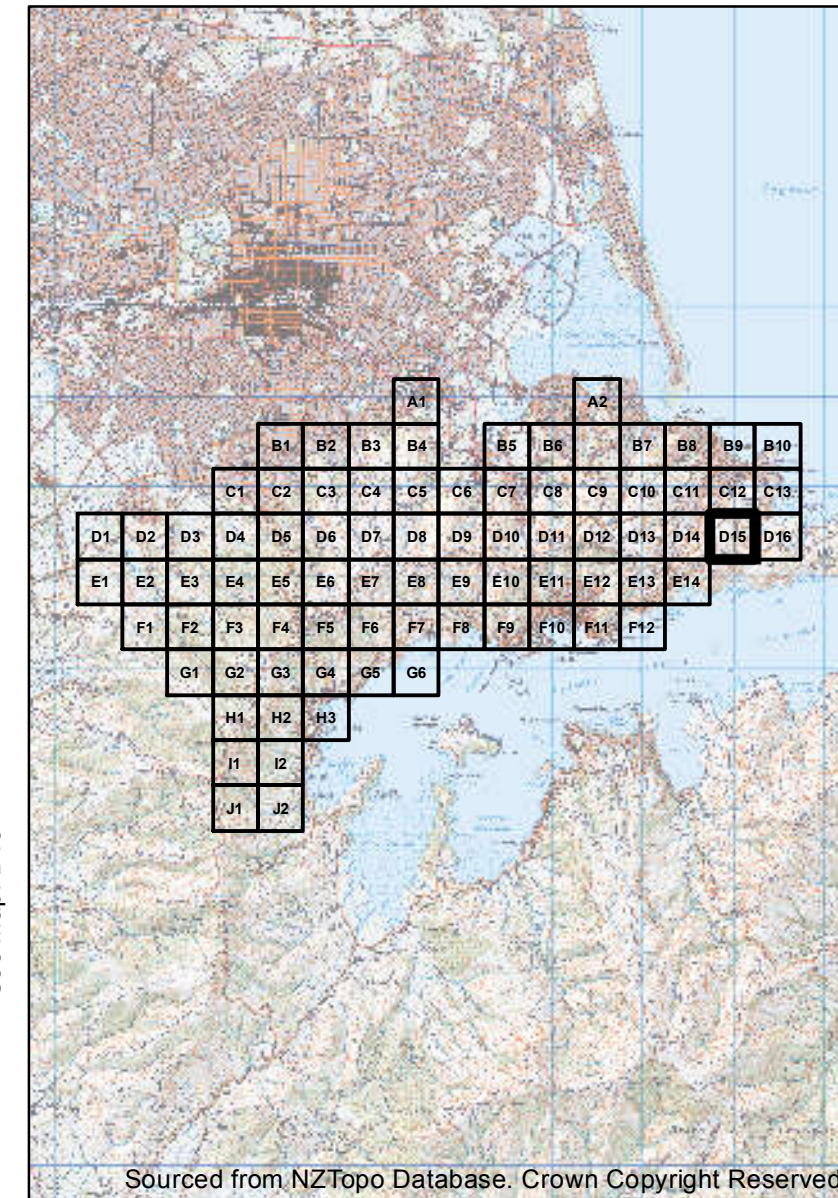
See Map: C12



MAP: D15

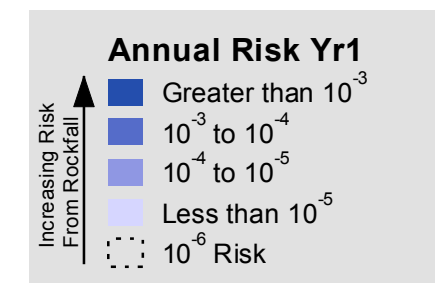
See Map: D14

See Map:



See Map: D16

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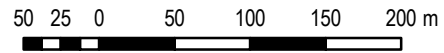


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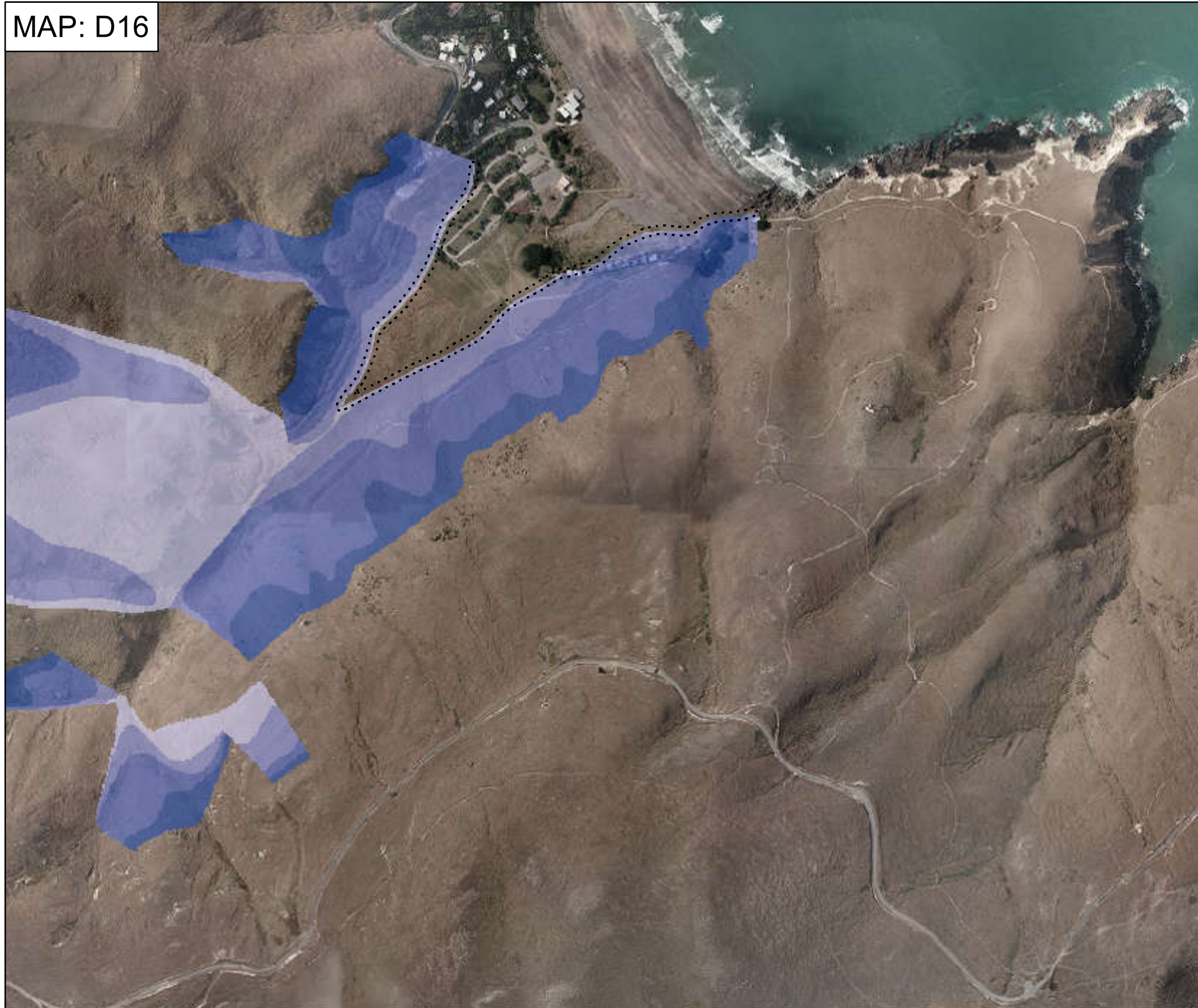


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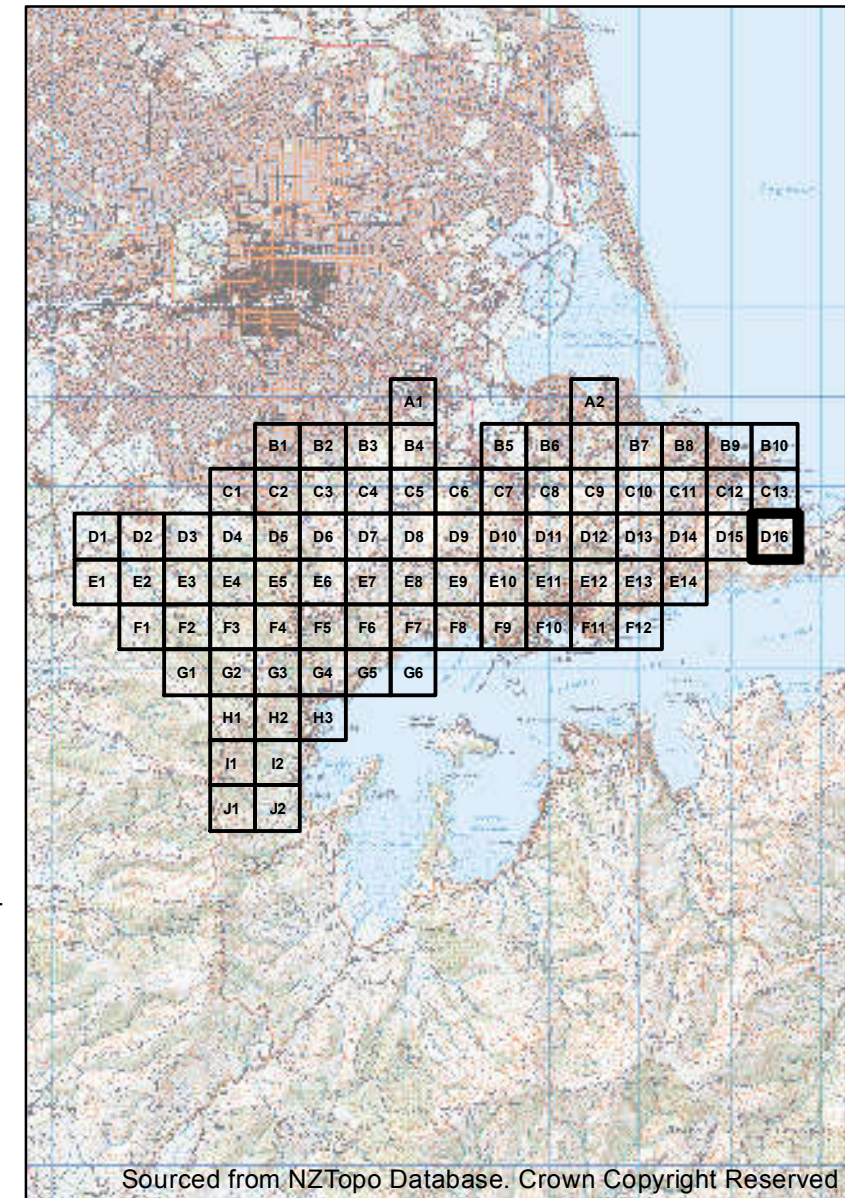
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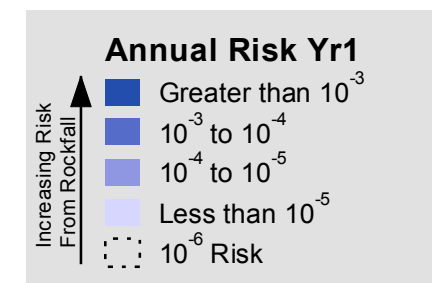
See Map: D15

See Map:



See Map:

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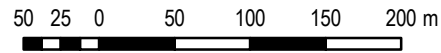
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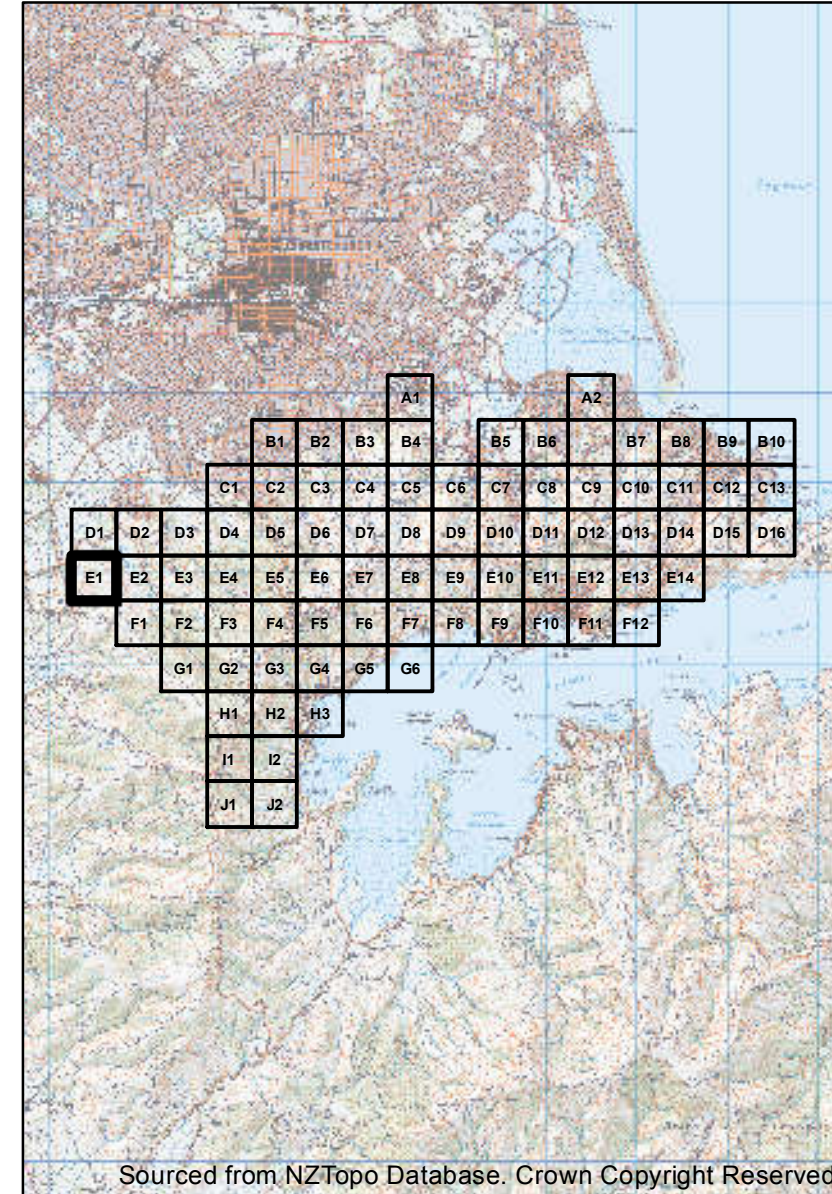
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Datum: Geodetic Datum of New Zealand 2000  
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See Map: D1

MAP: E1

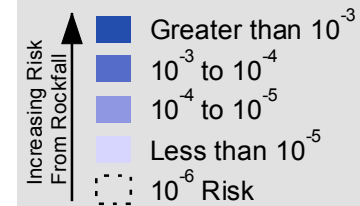


See Map:



See Map: E2

### Annual Risk Yr1



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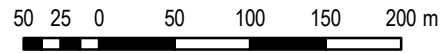
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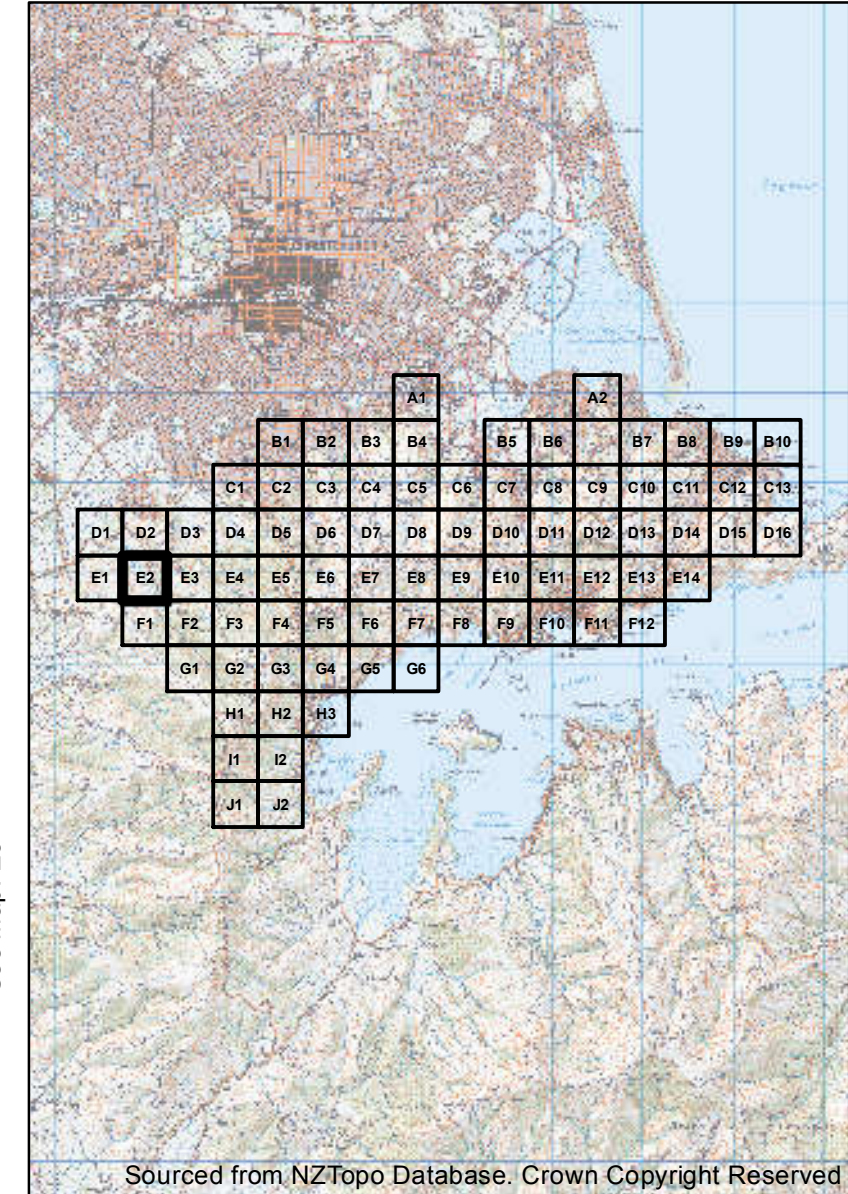
See Map: D2

MAP: E2



See Map: E1

See Map: F1



See Map: E3

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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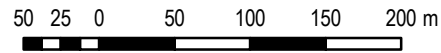


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# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

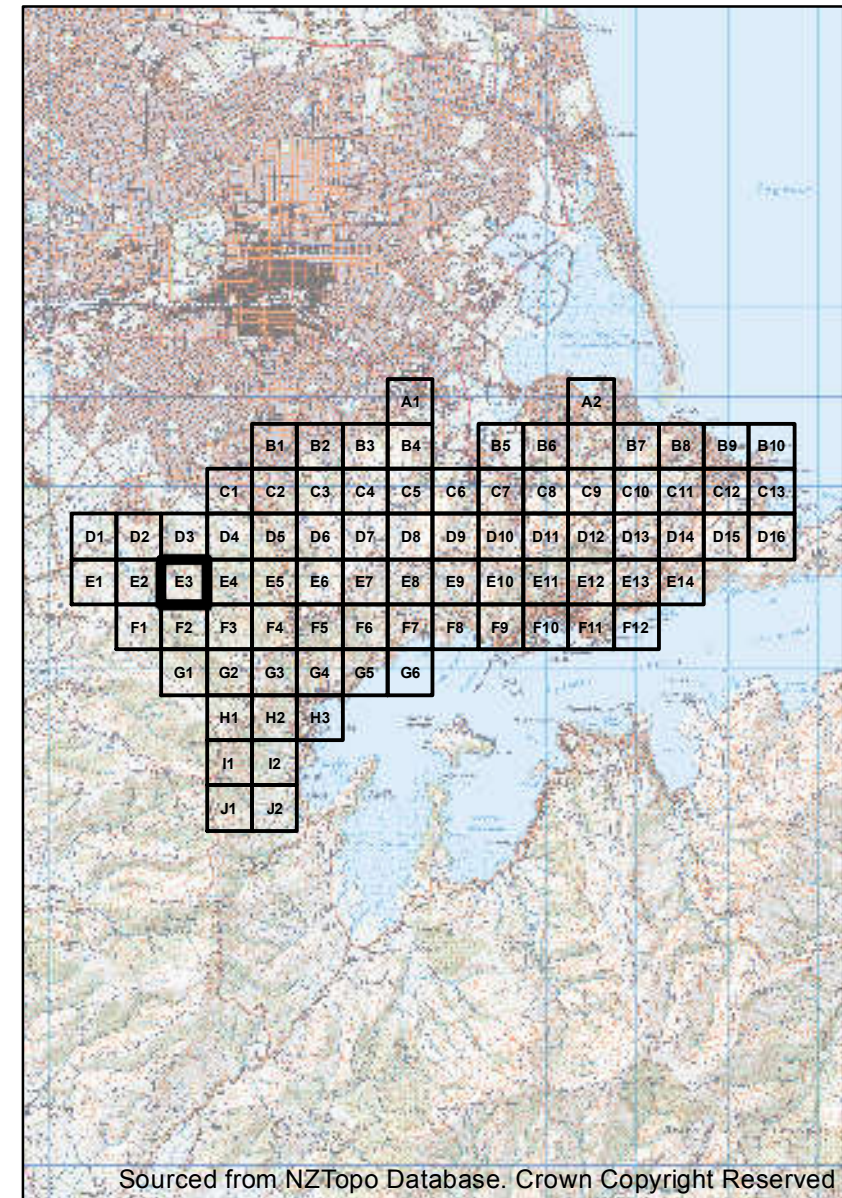
See Map: D3

MAP: E3



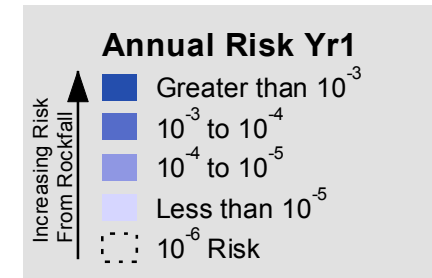
See Map: E2

See Map: F2



See Map: E4

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**Notes:**

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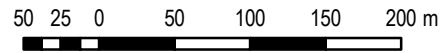


Maps Produced For: **Christchurch City Council**

Maps Produced By: **aurecon**



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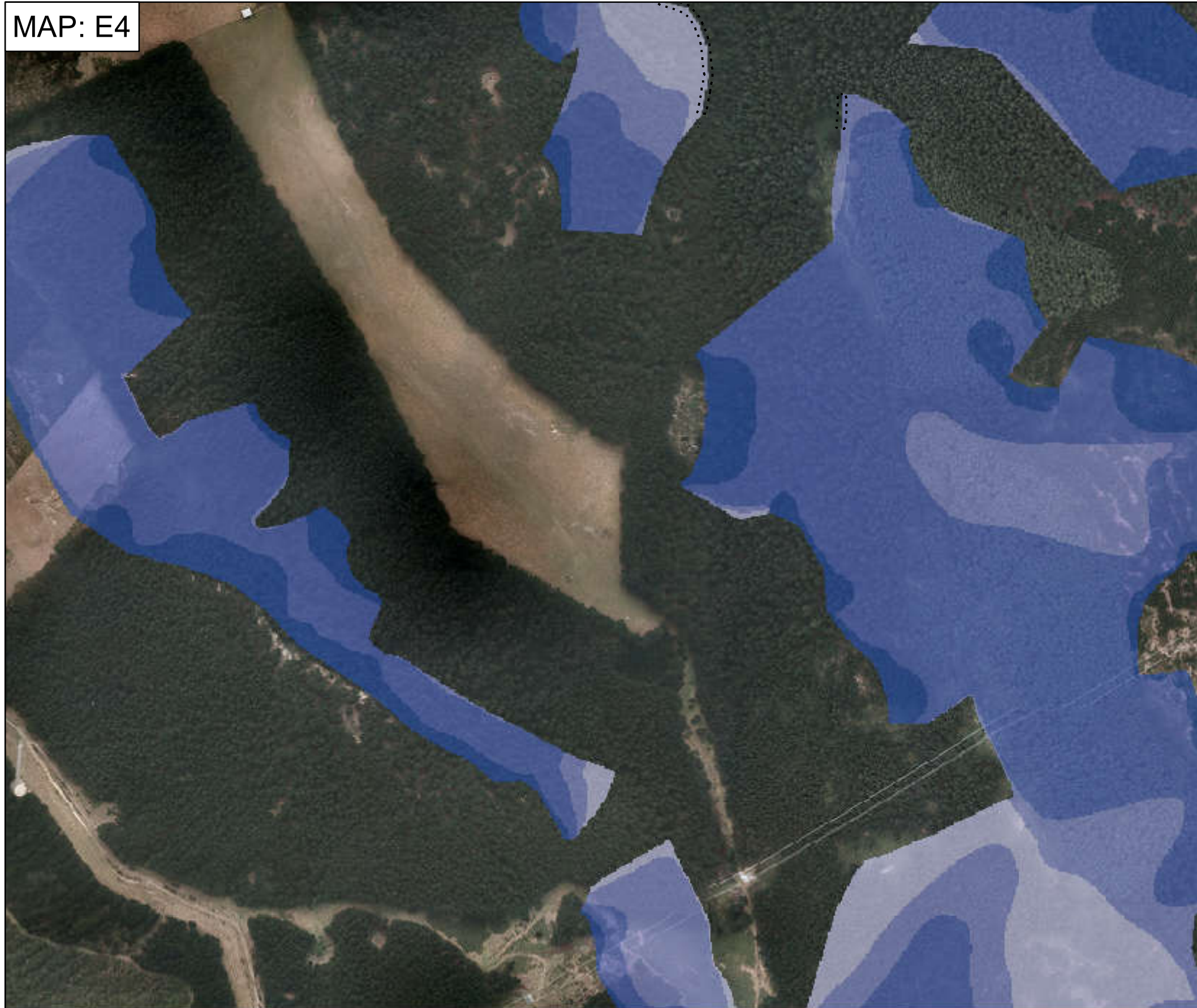


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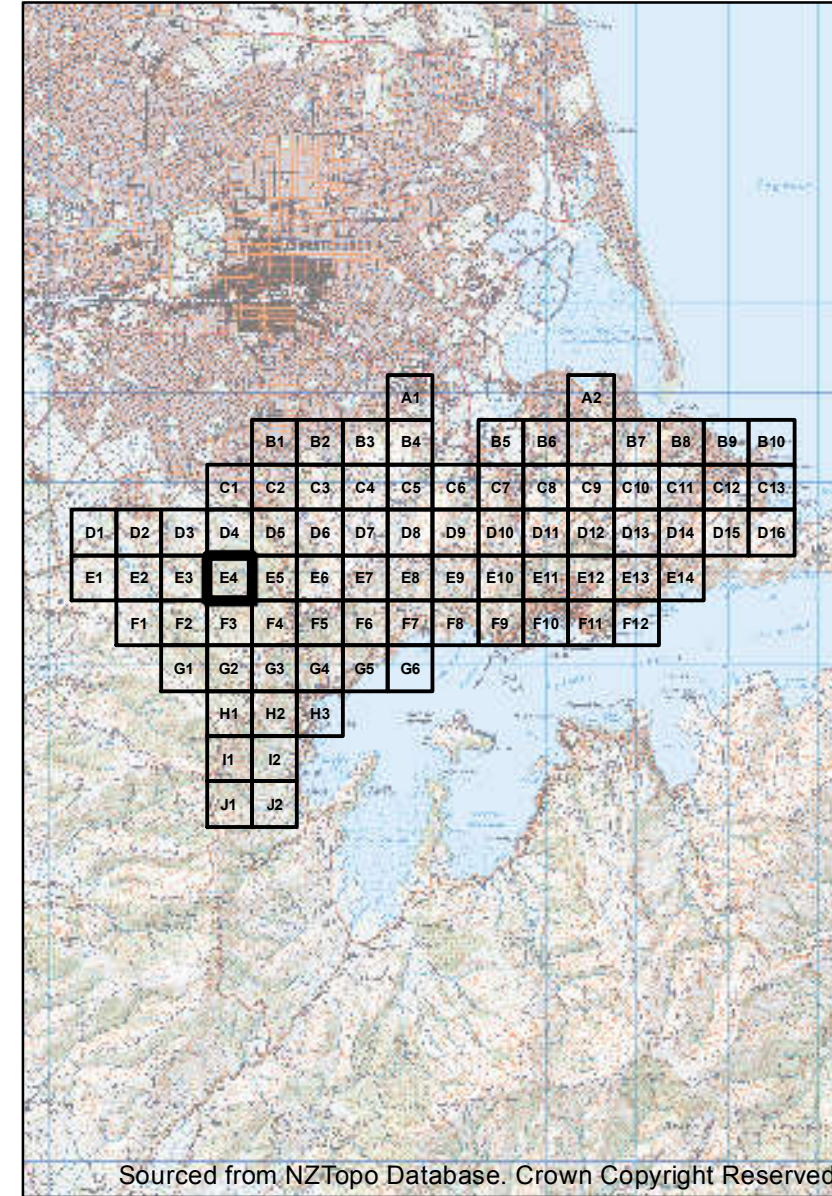
See Map: D4

MAP: E4



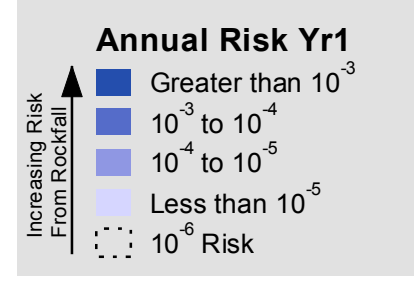
See Map: E3

See Map: F3



See Map: E5

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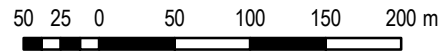


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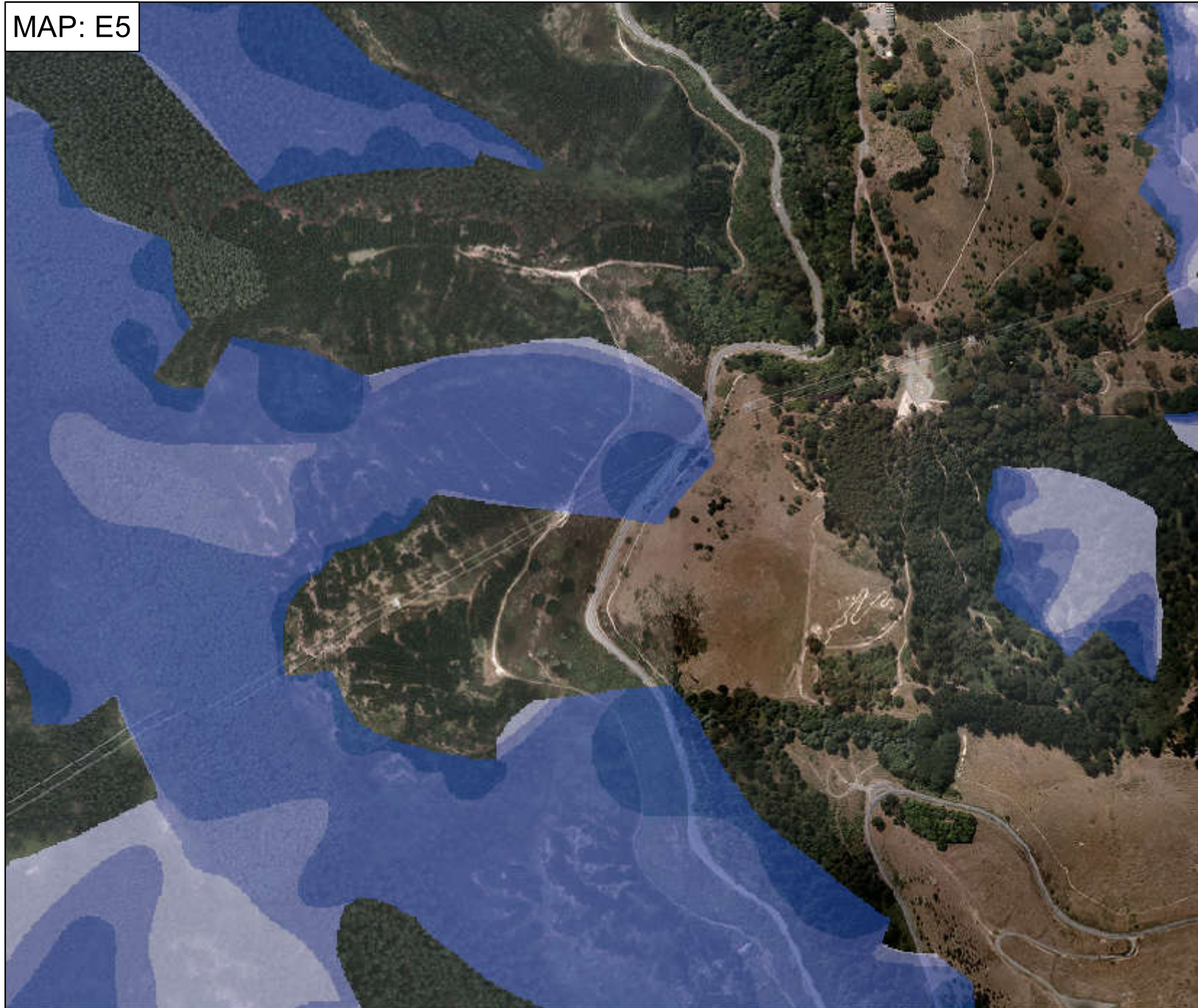


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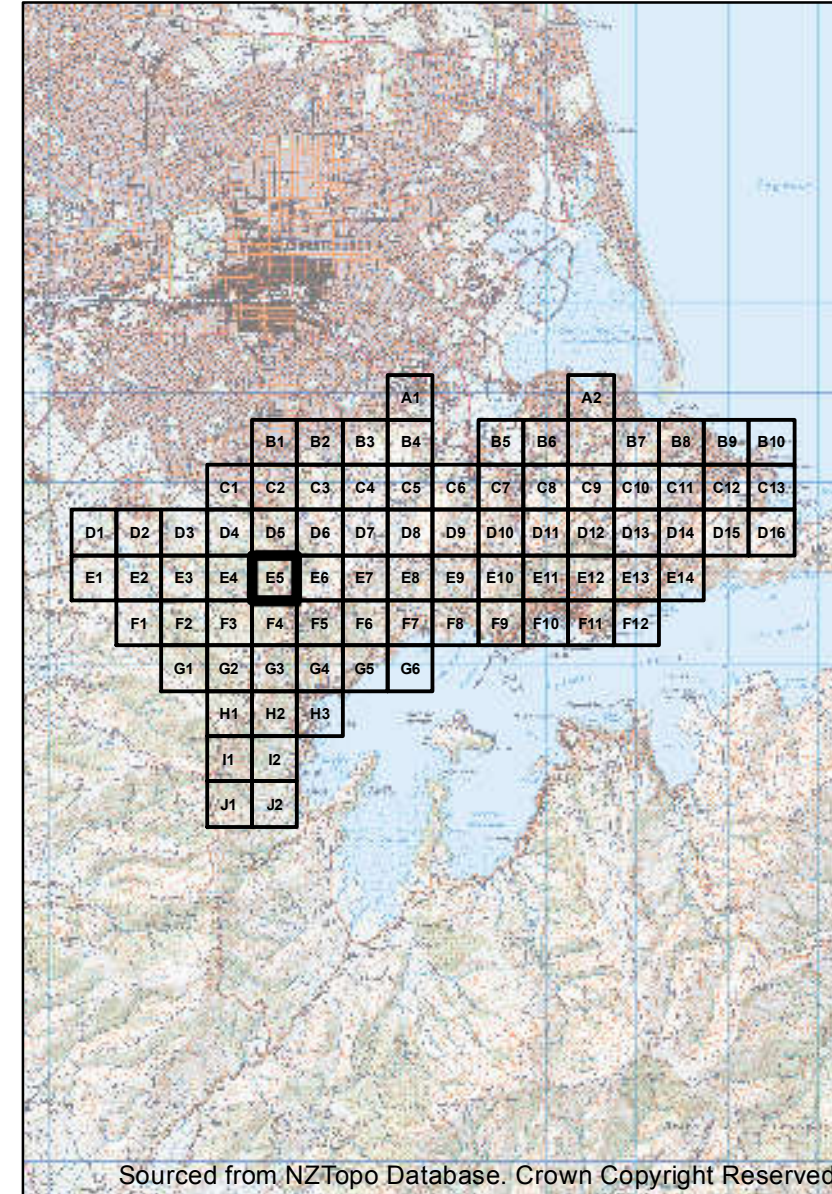
See Map: D5

MAP: E5



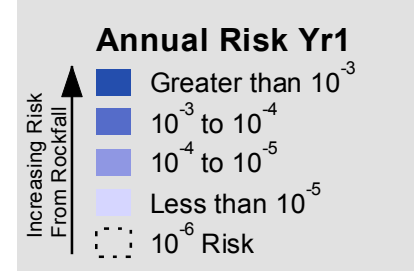
See Map: E4

See Map: F4



See Map: E6

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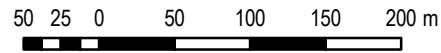


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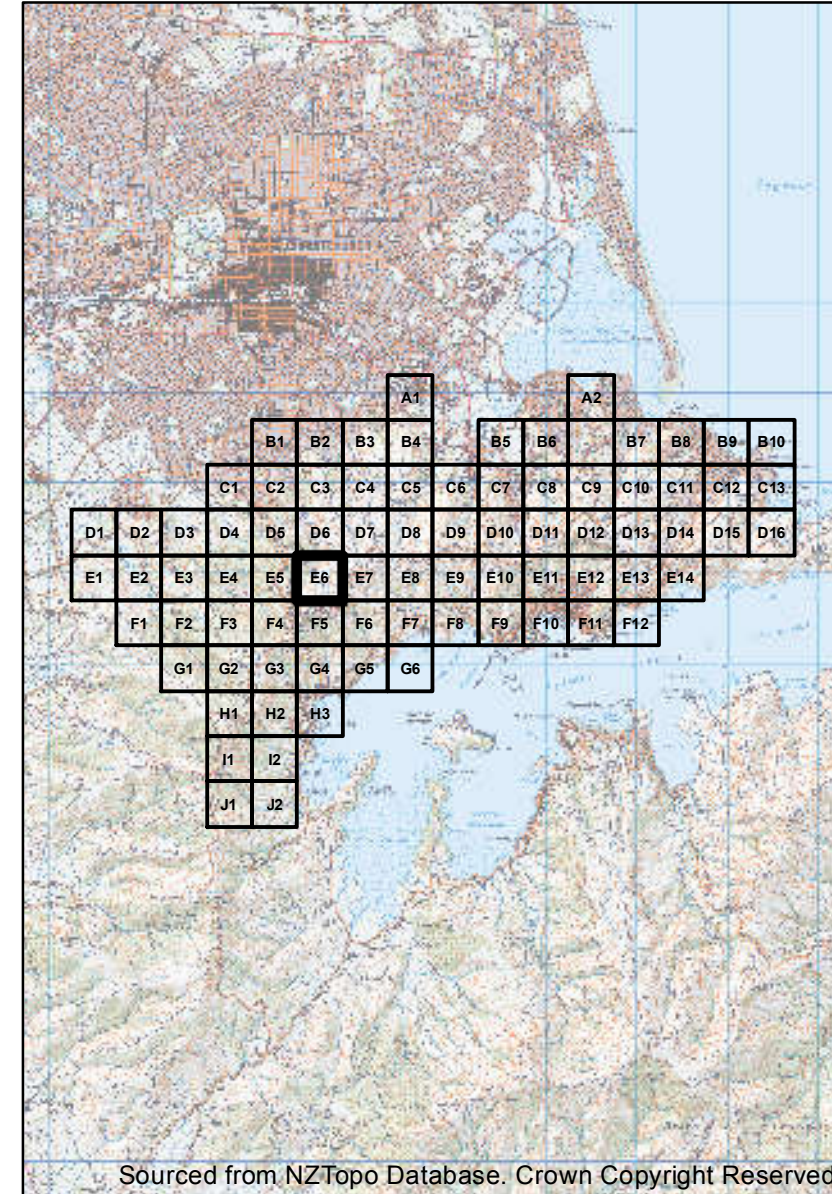
See Map: D6

MAP: E6



See Map: E5

See Map: F5



See Map: E7

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**Annual Risk Yr1**

Increasing Risk From Rockfall ↑

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

**Notes:**

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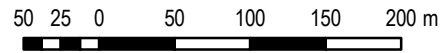
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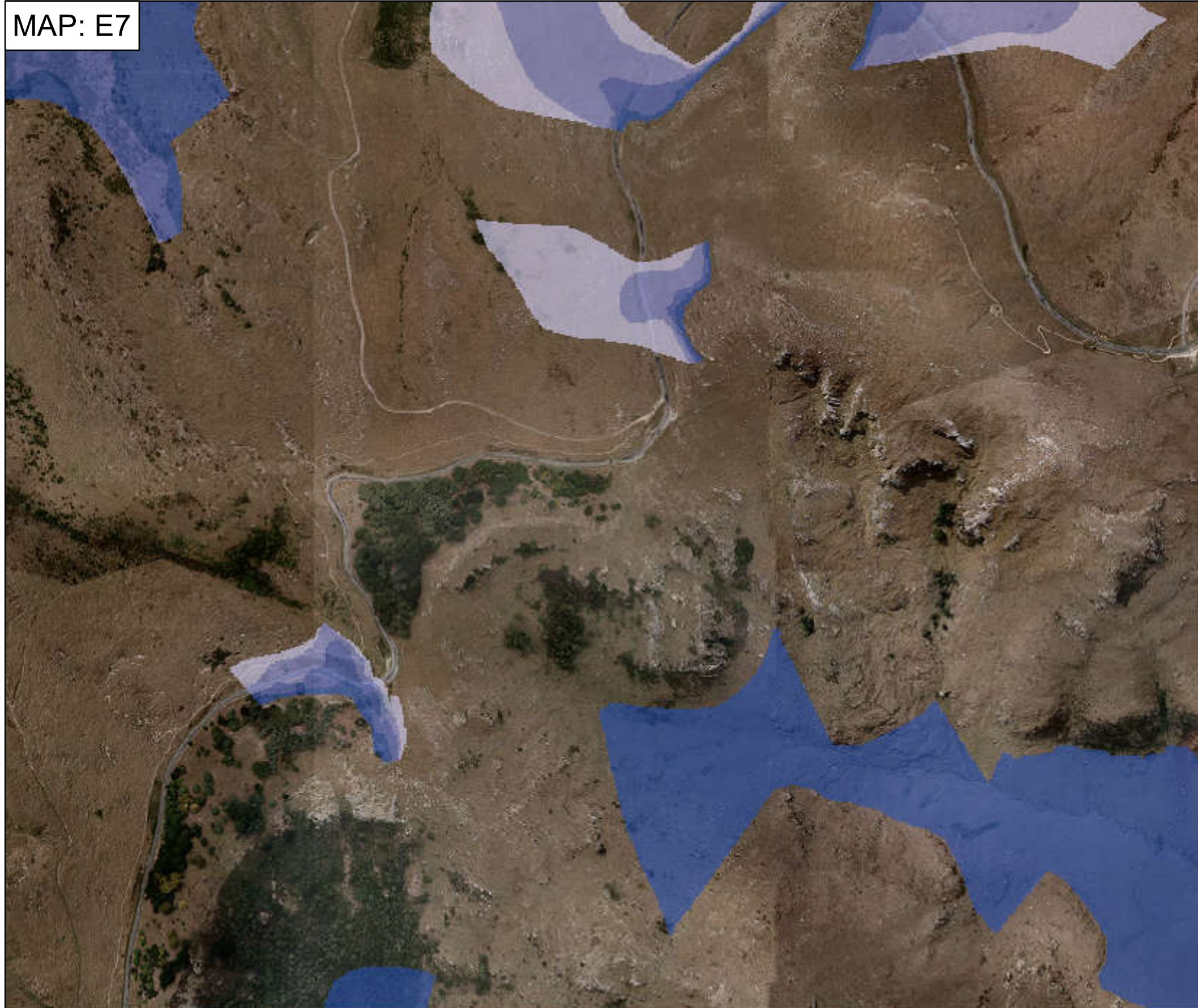


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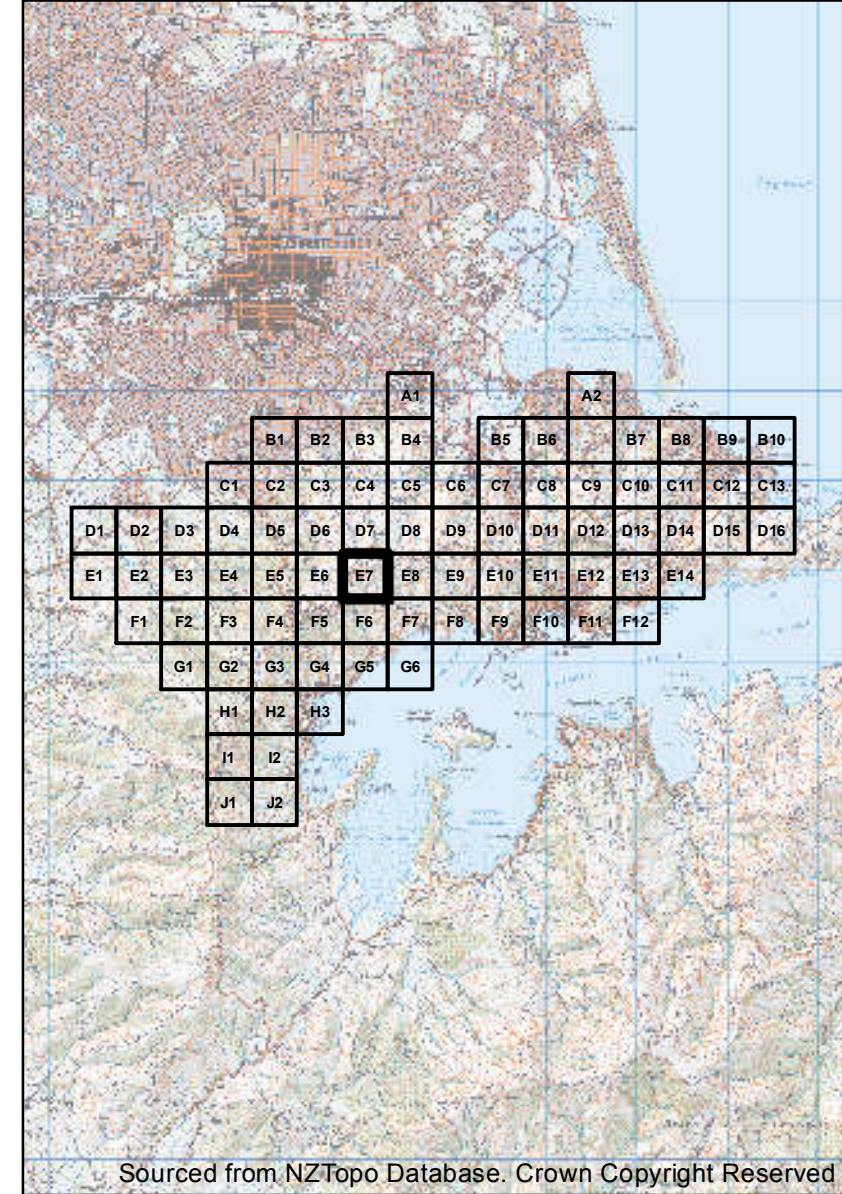
See Map: D7

MAP: E7



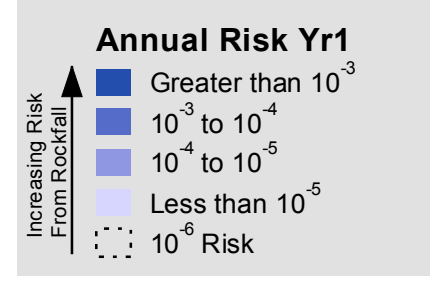
See Map: E6

See Map: F6



See Map: E8

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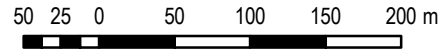


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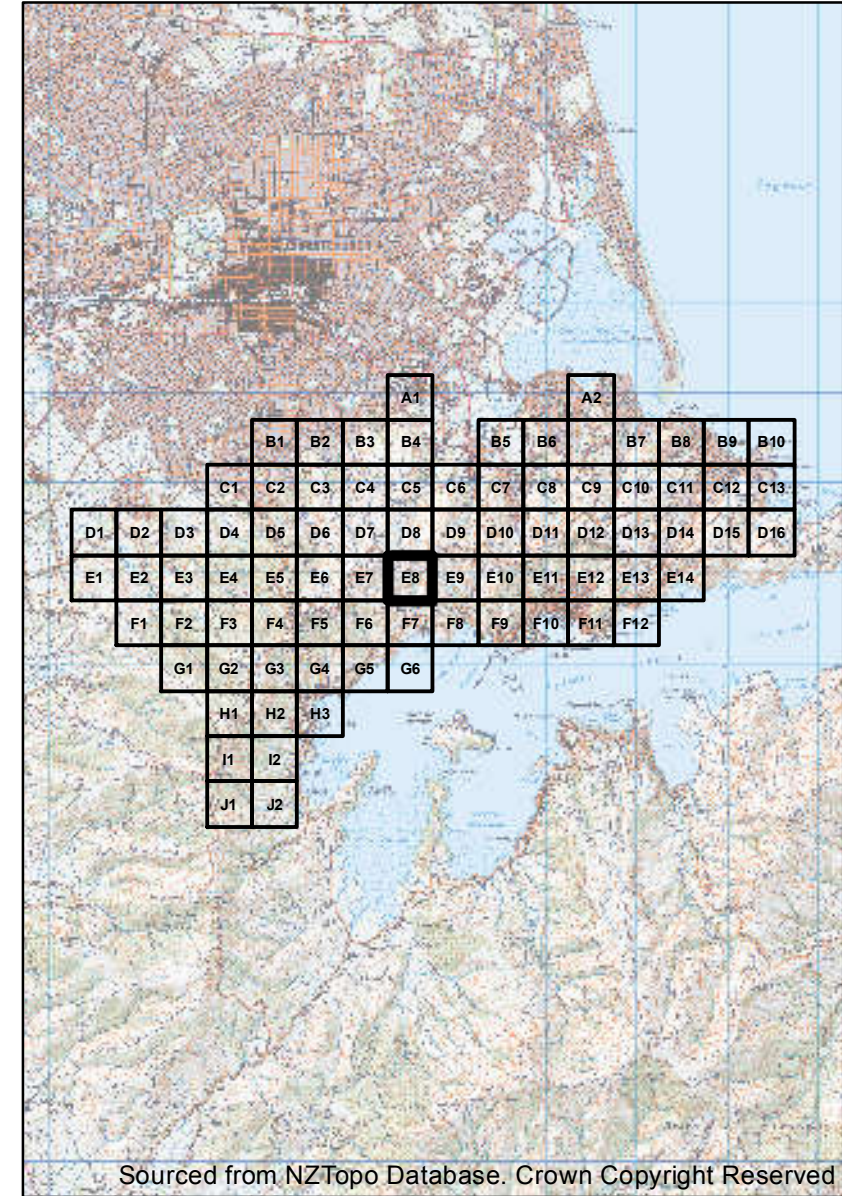
See Map: D8

MAP: E8



See Map: E7

See Map: F7



See Map: E9

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**Annual Risk Yr1**

Increasing Risk From Rockfall ↑

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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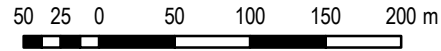


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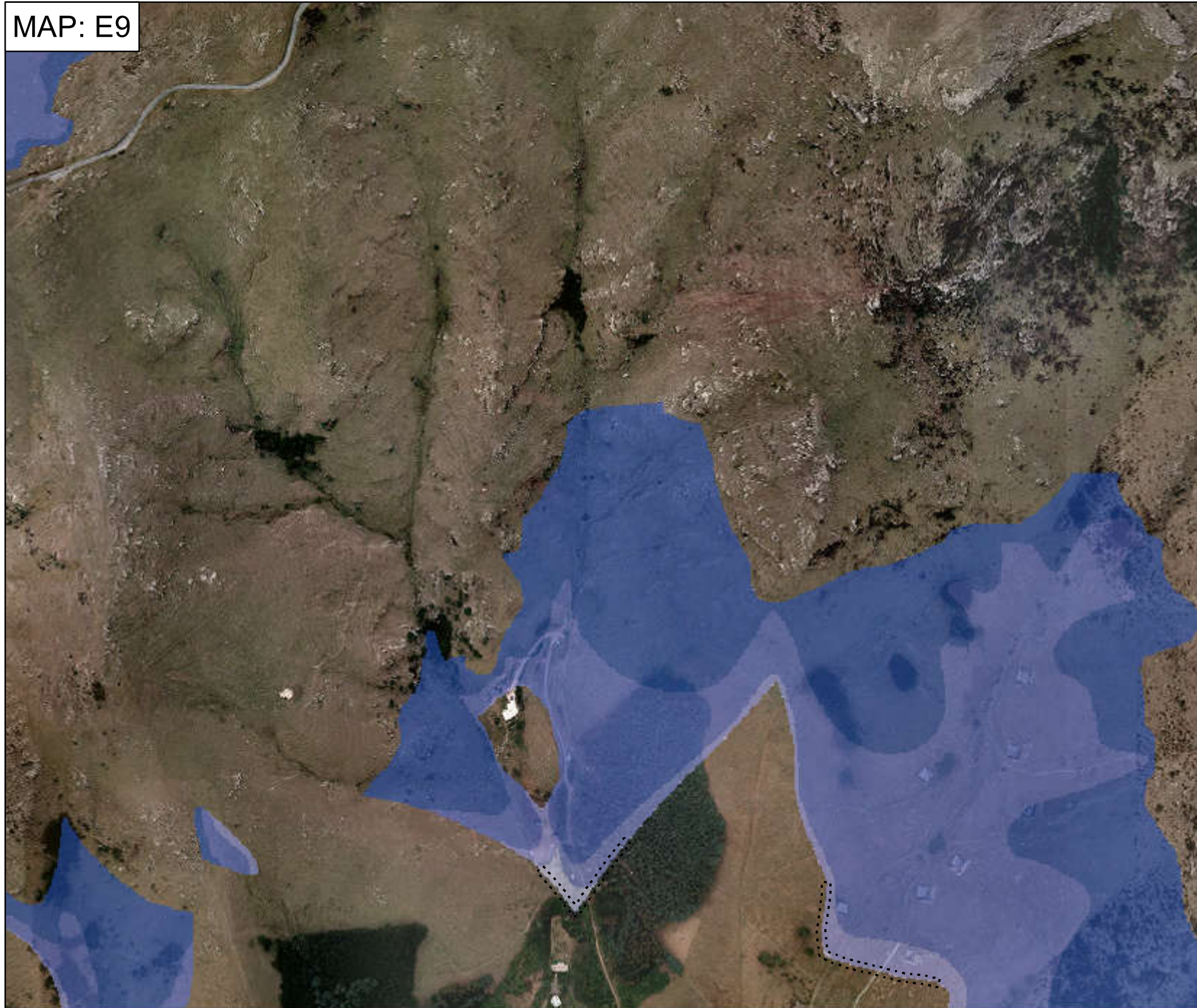


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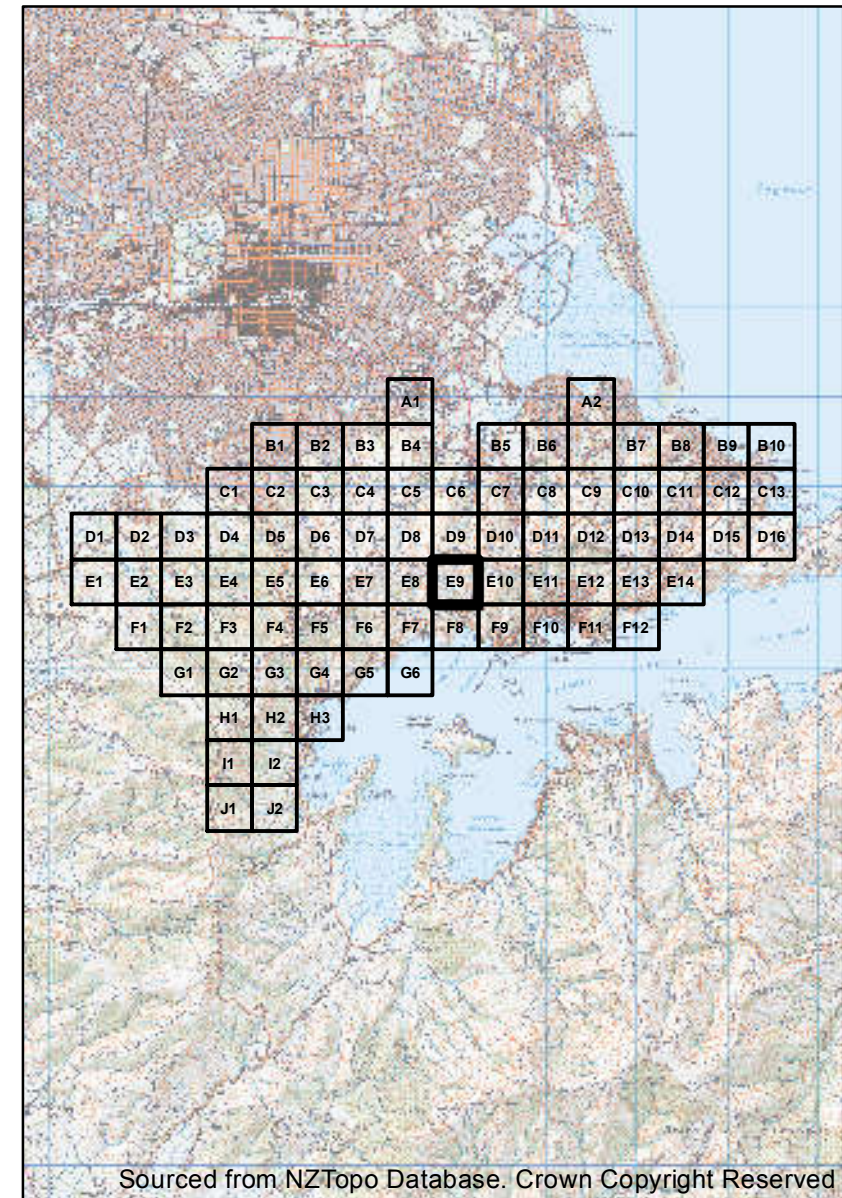
See Map: D9

MAP: E9



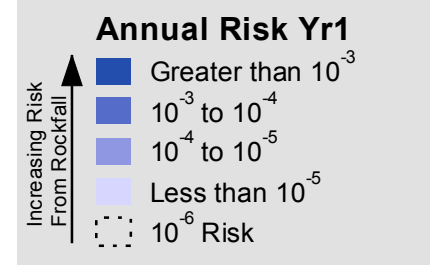
See Map: E8

See Map: F8



See Map: E10

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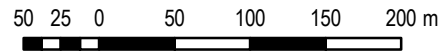


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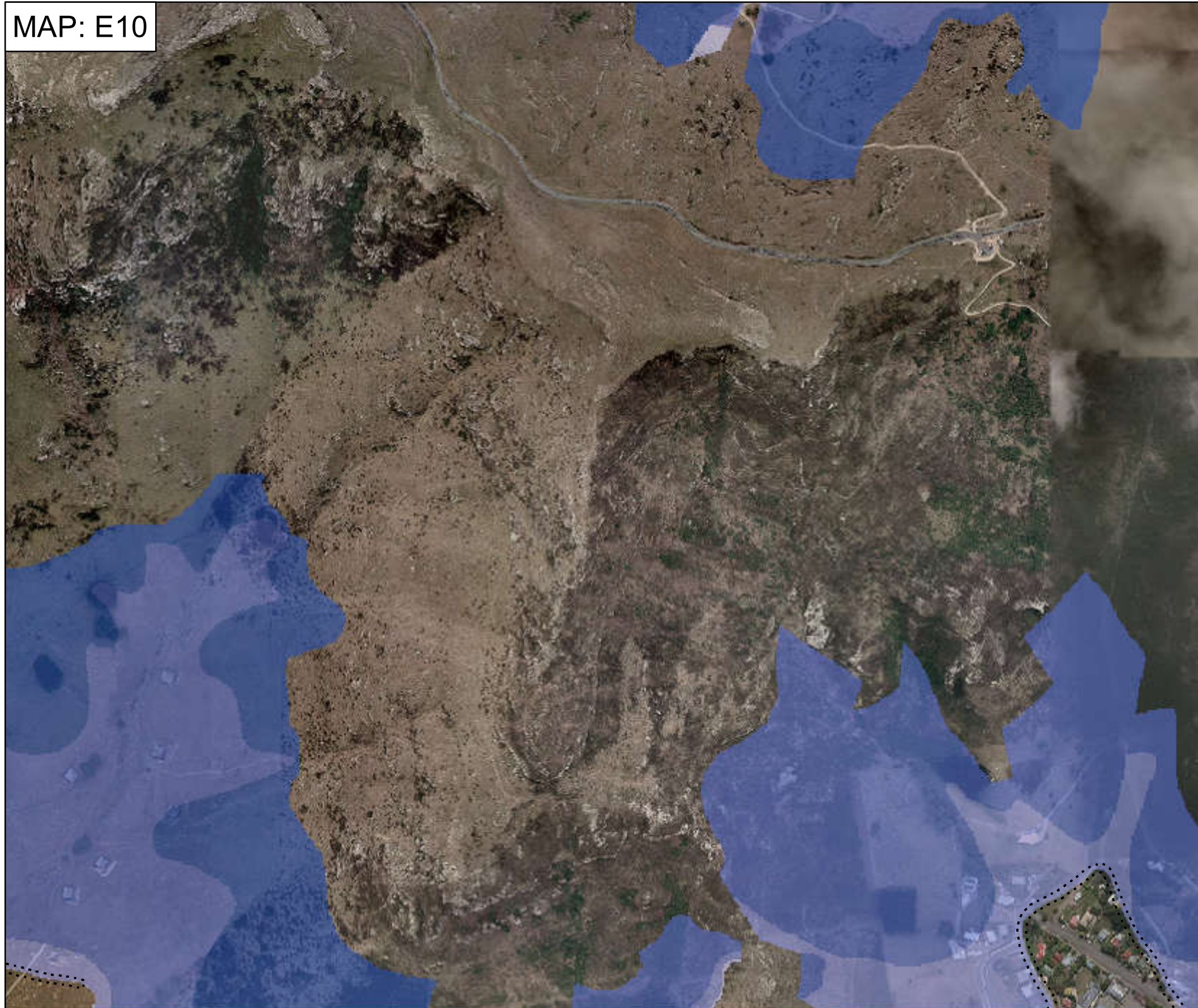


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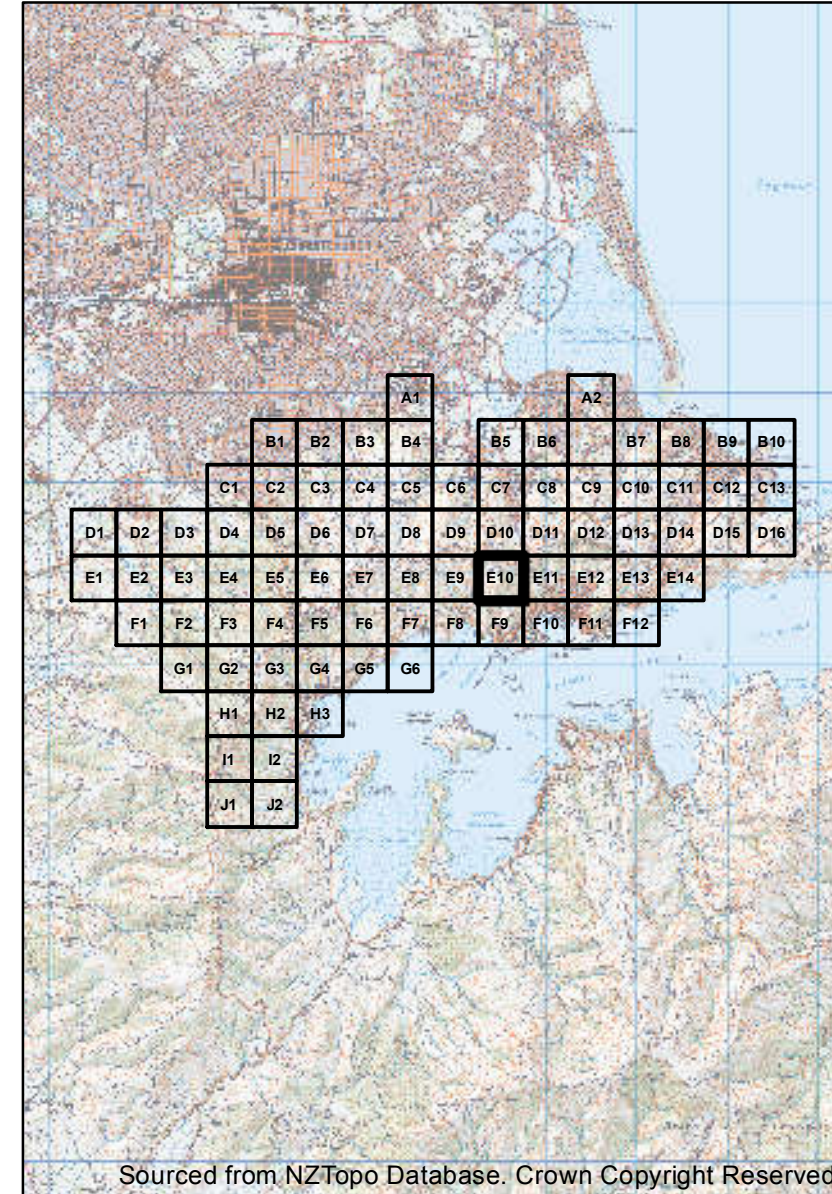
See Map: D10

MAP: E10



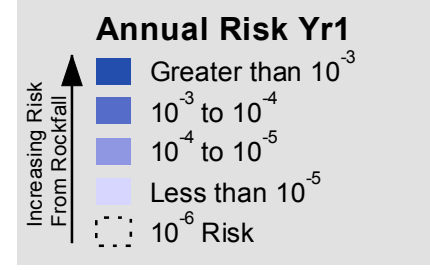
See Map: E9

See Map: F9



See Map: E11

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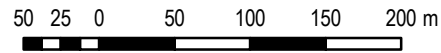


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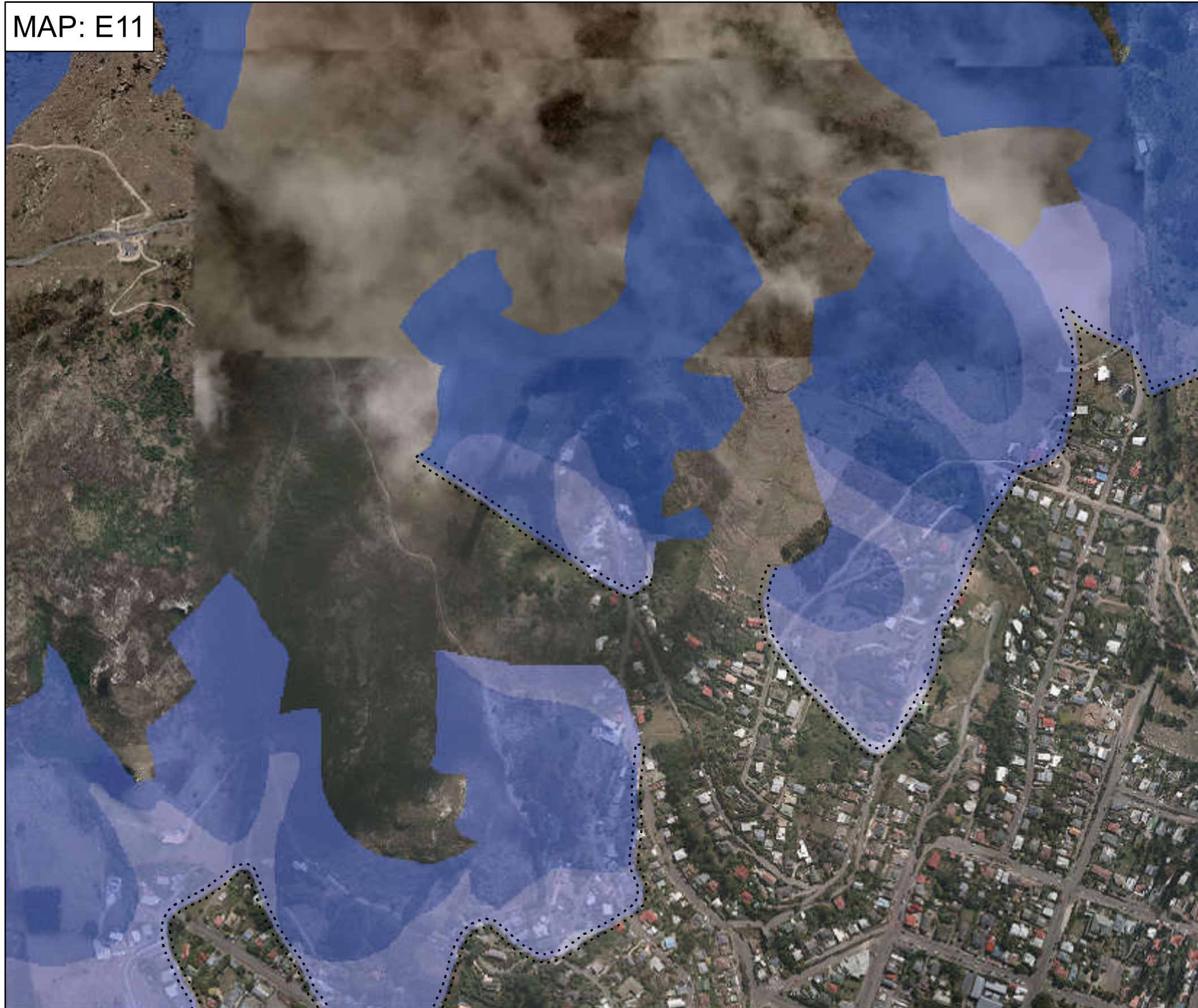


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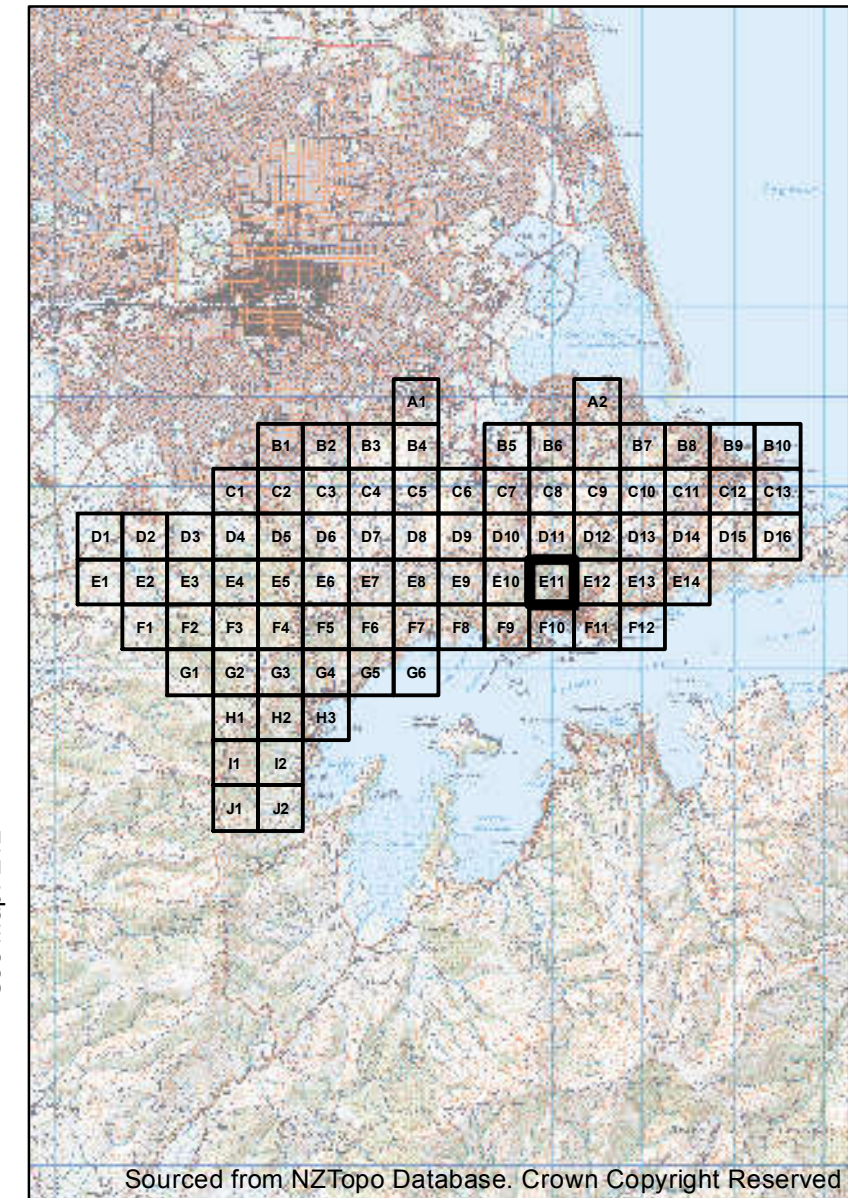
See Map: D11

MAP: E11



See Map: E10

See Map: F10



See Map: E12

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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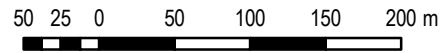


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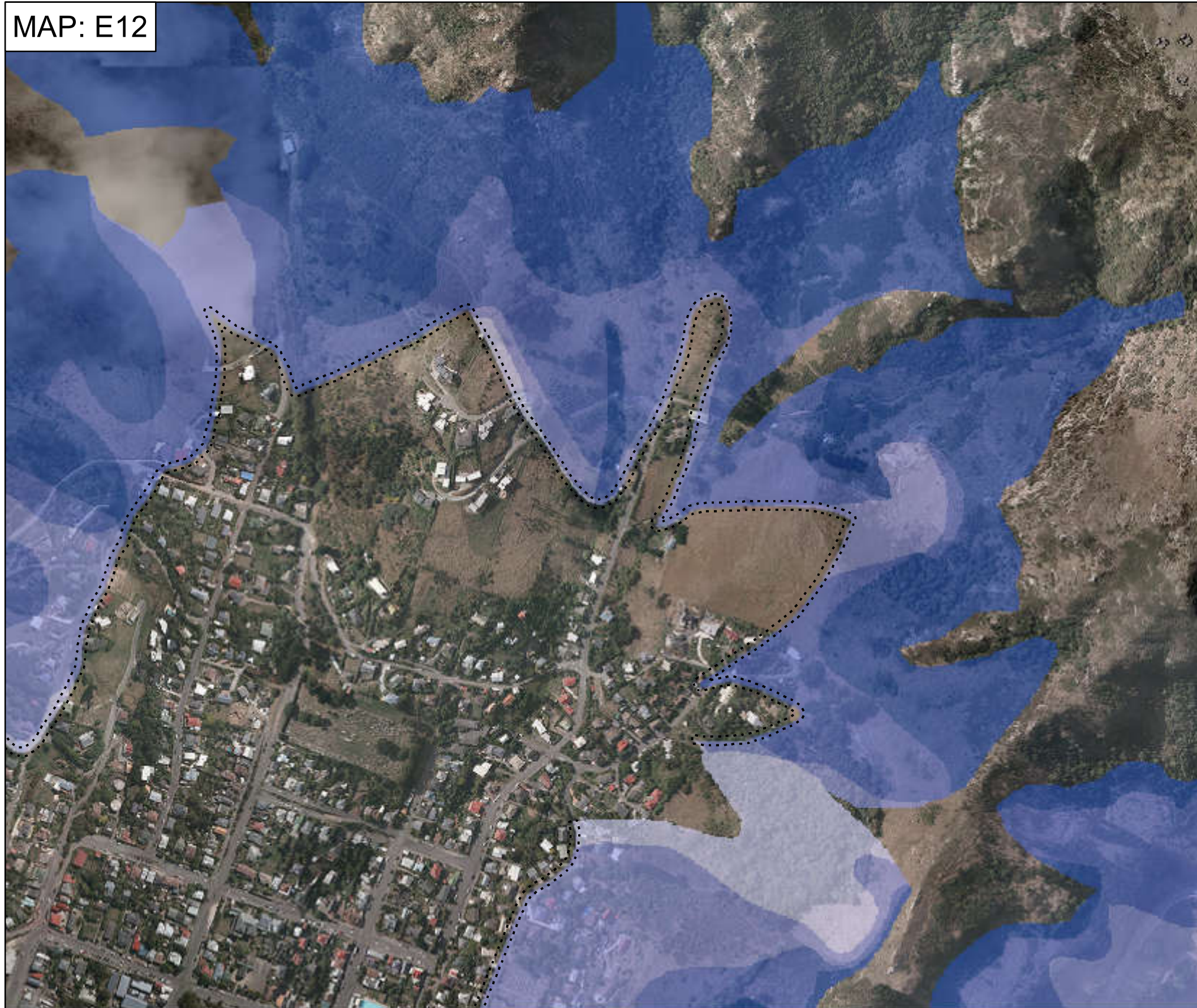


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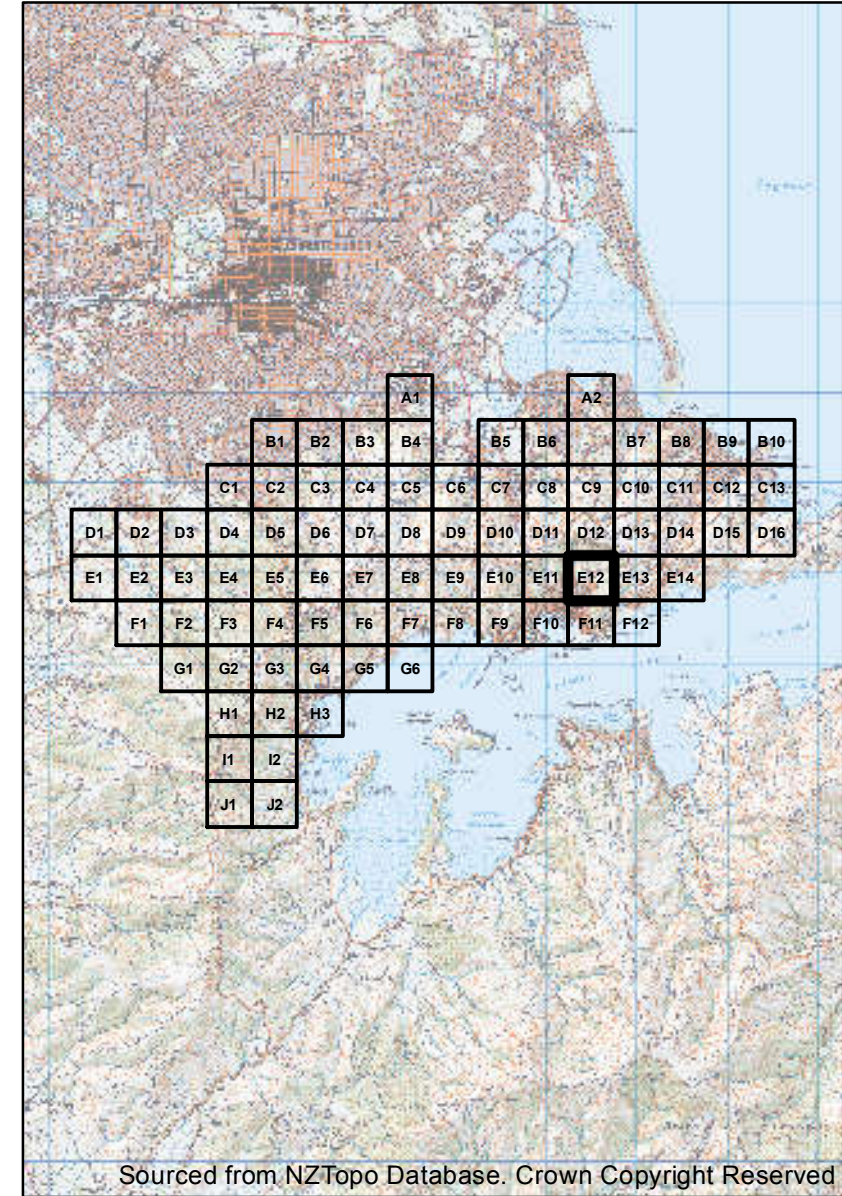
See Map: D12

MAP: E12



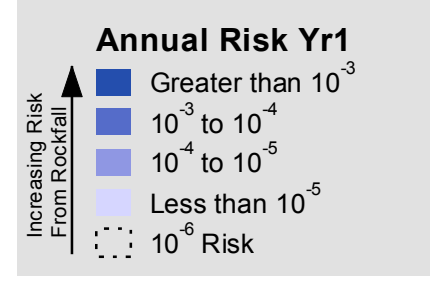
See Map: E11

See Map: F11



See Map: E13

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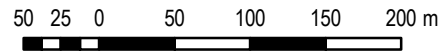


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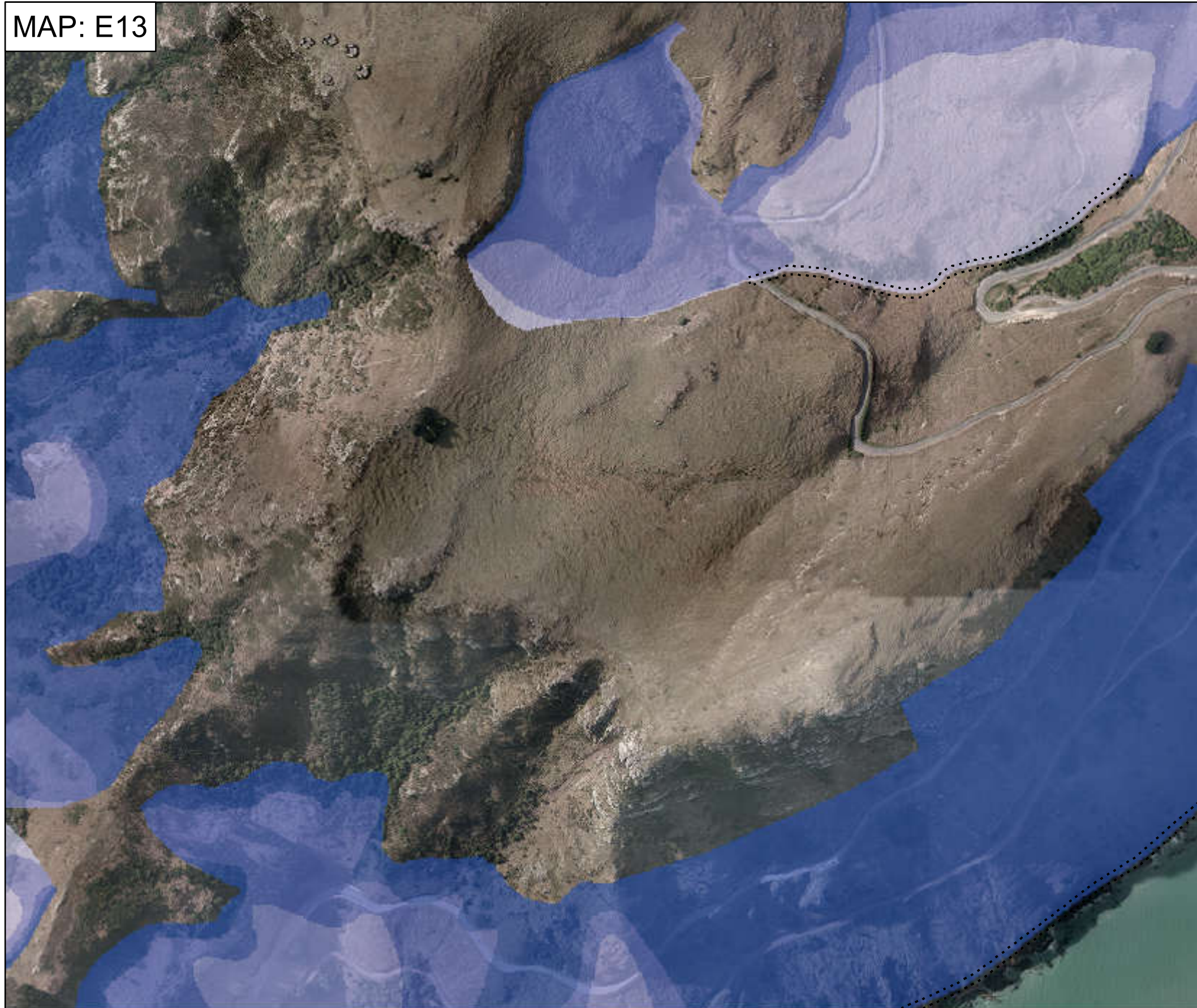


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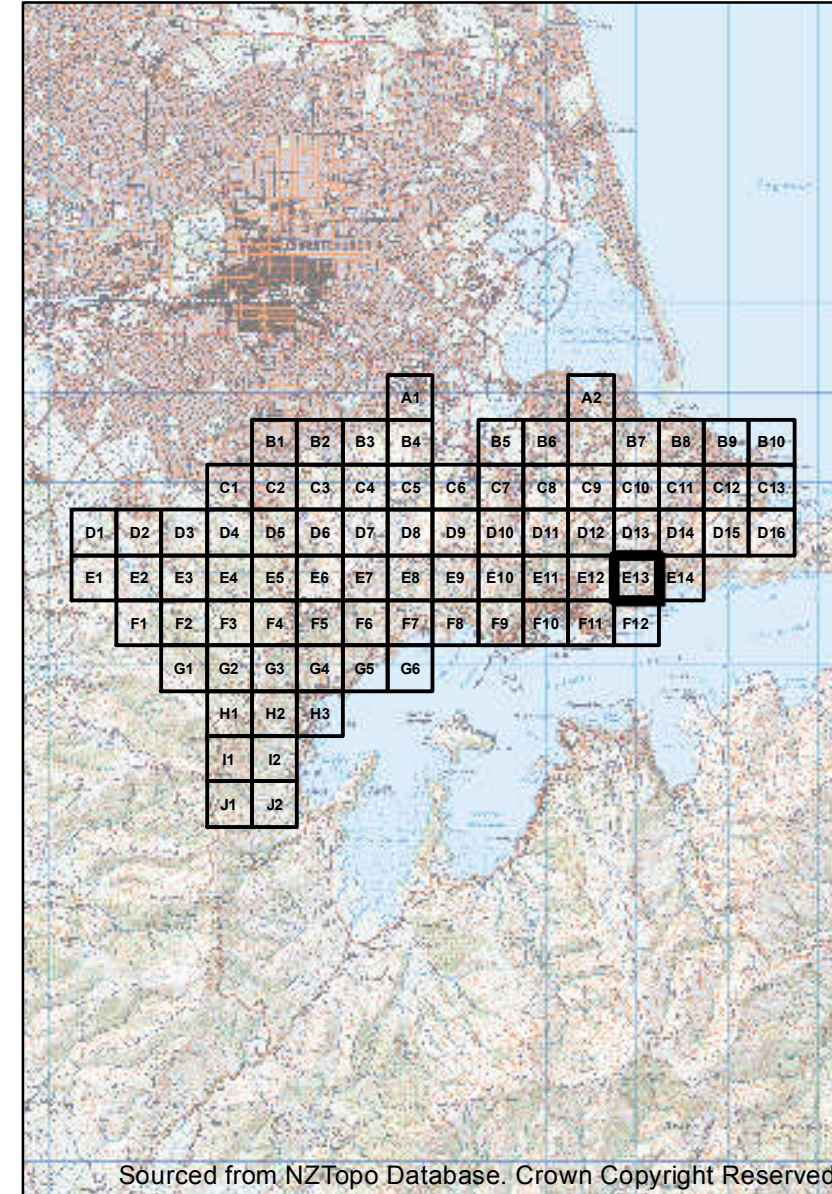
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MAP: E13



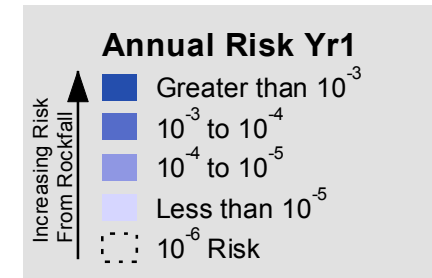
See Map: E12

See Map: F12



See Map: E14

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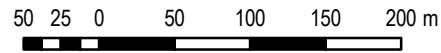


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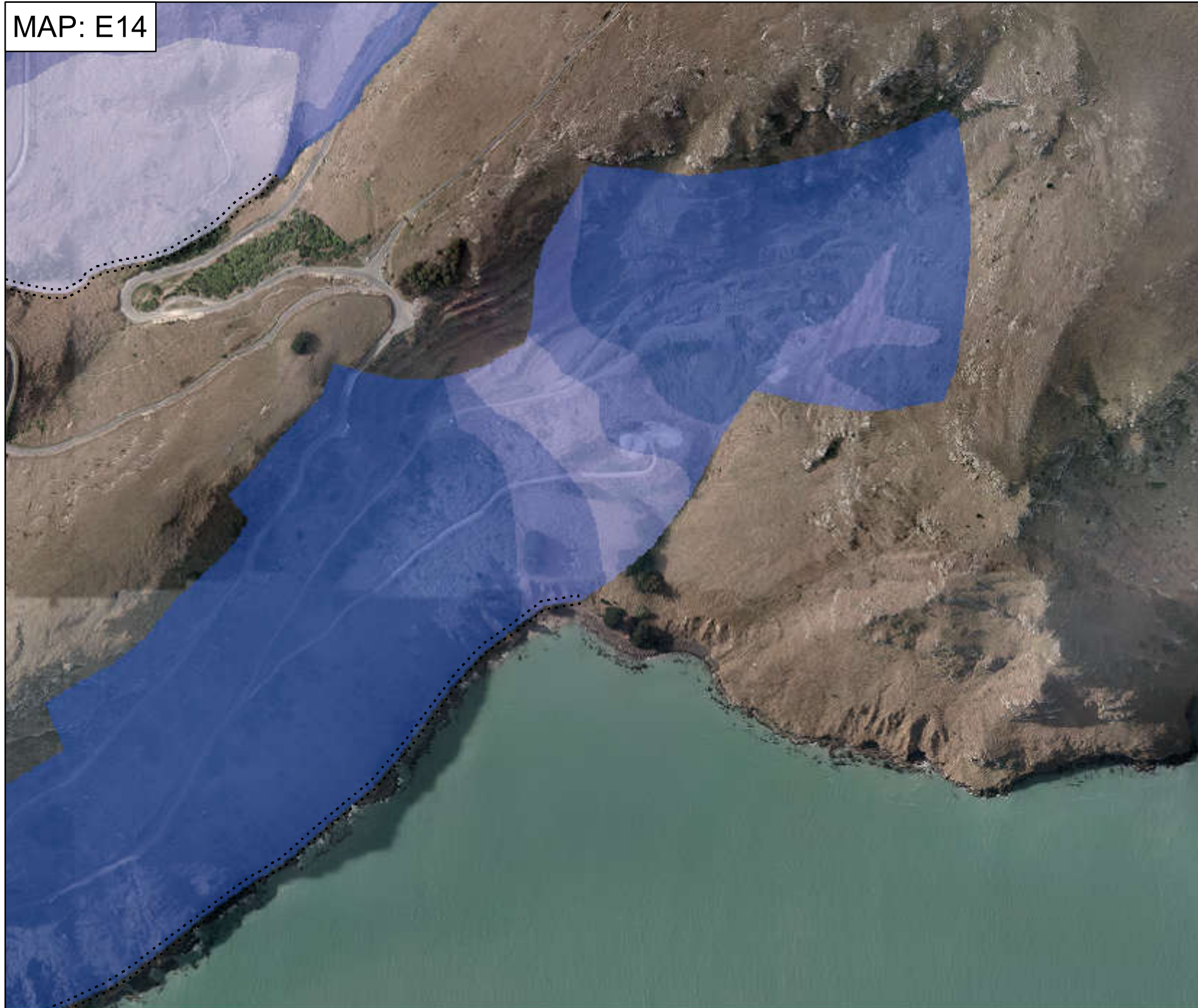


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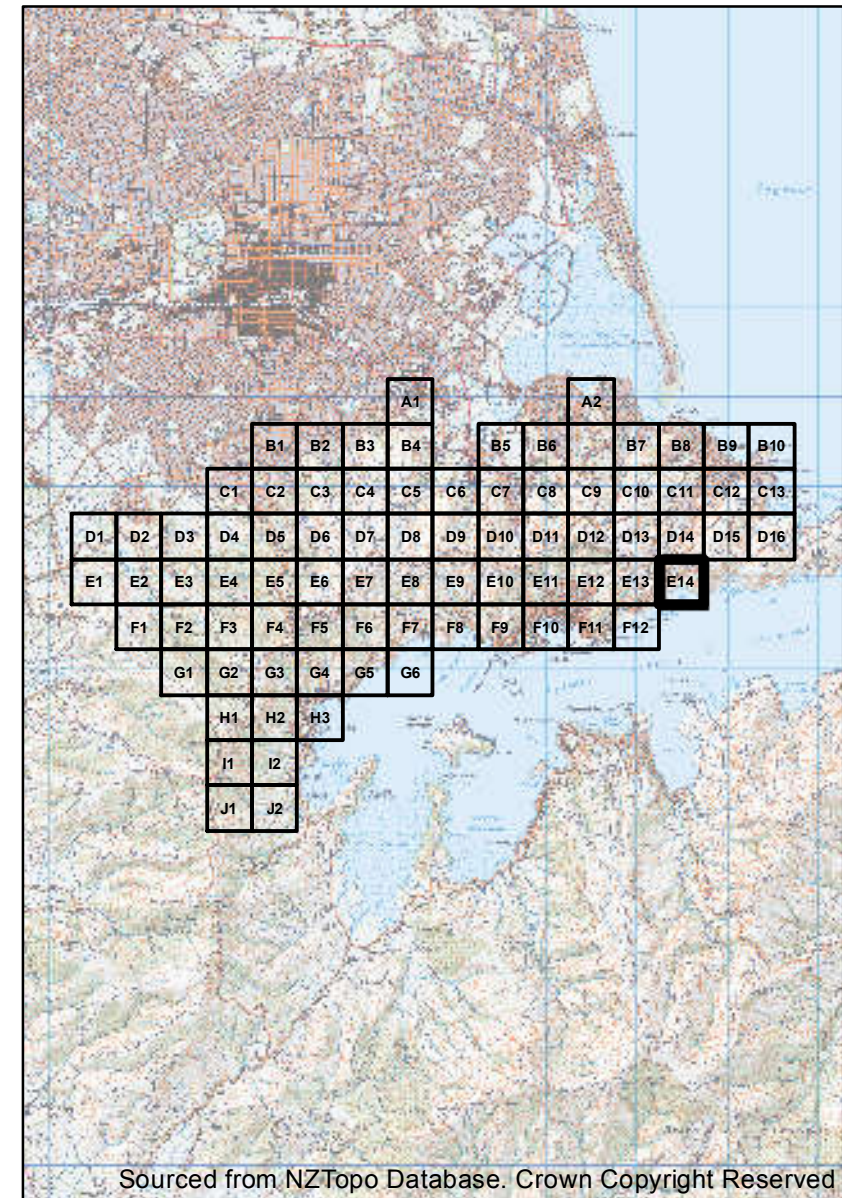
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MAP: E14

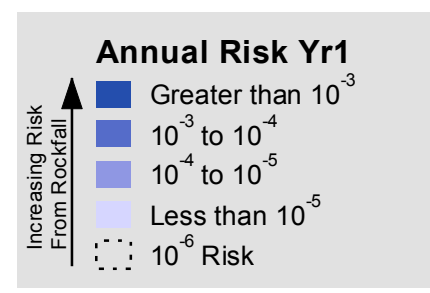


See Map: E13

See Map:



See Map:



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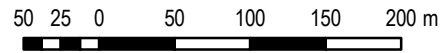
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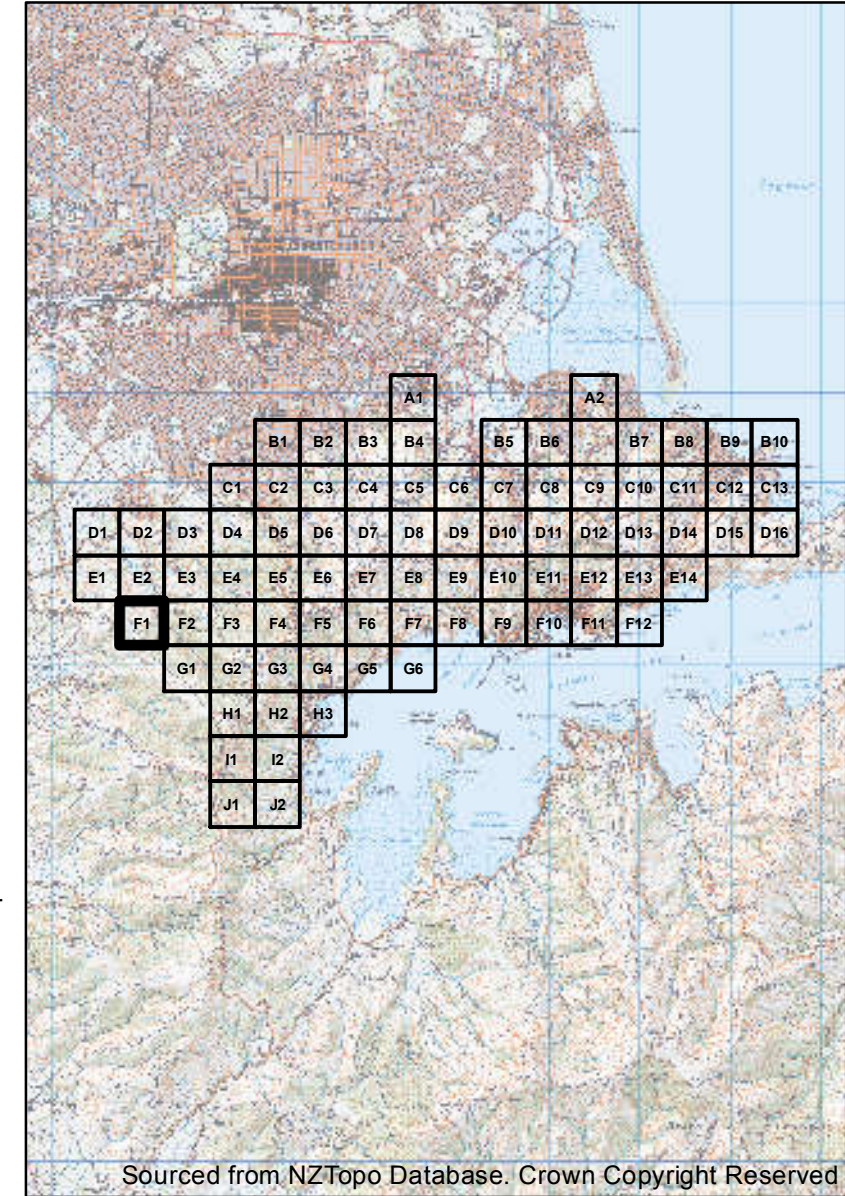
See Map: E2

MAP: F1



See Map:

See Map:



See Map: F2

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**Annual Risk Yr1**

Increasing Risk From Rockfall ↑

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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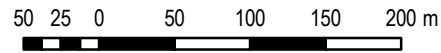


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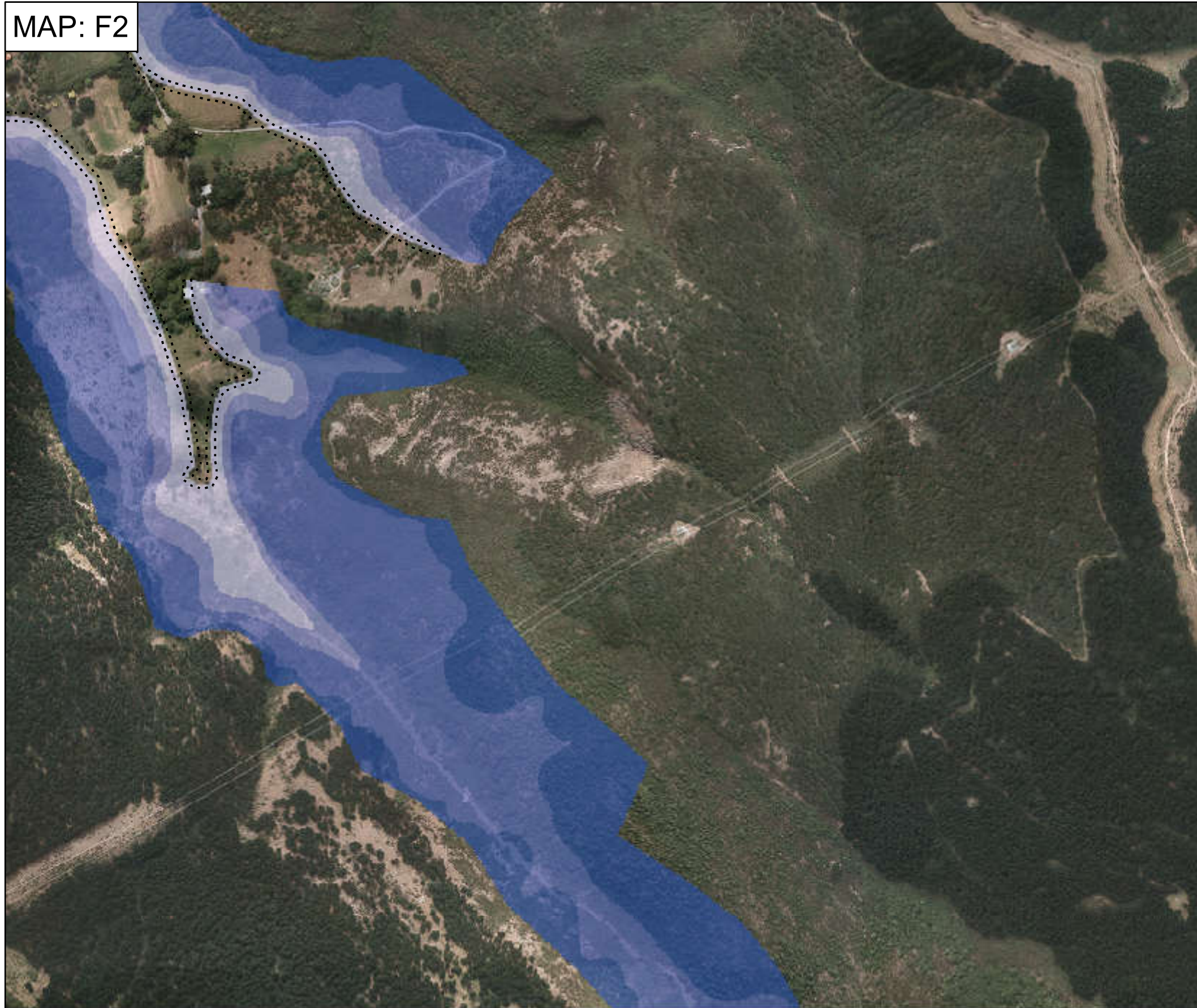


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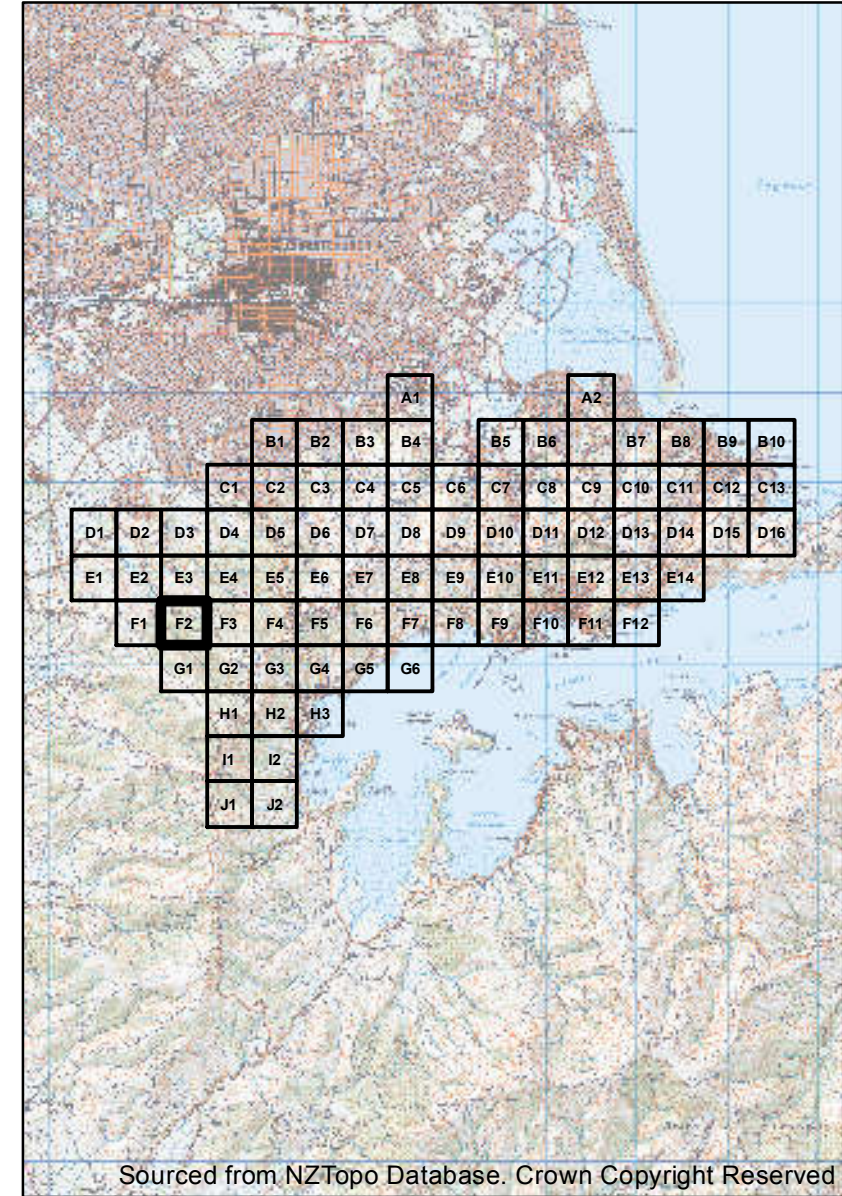
See Map: E3

MAP: F2



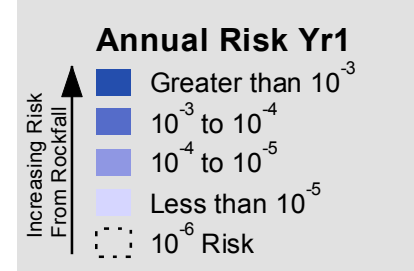
See Map: F1

See Map: G1



See Map: F3

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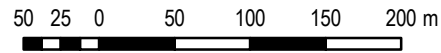


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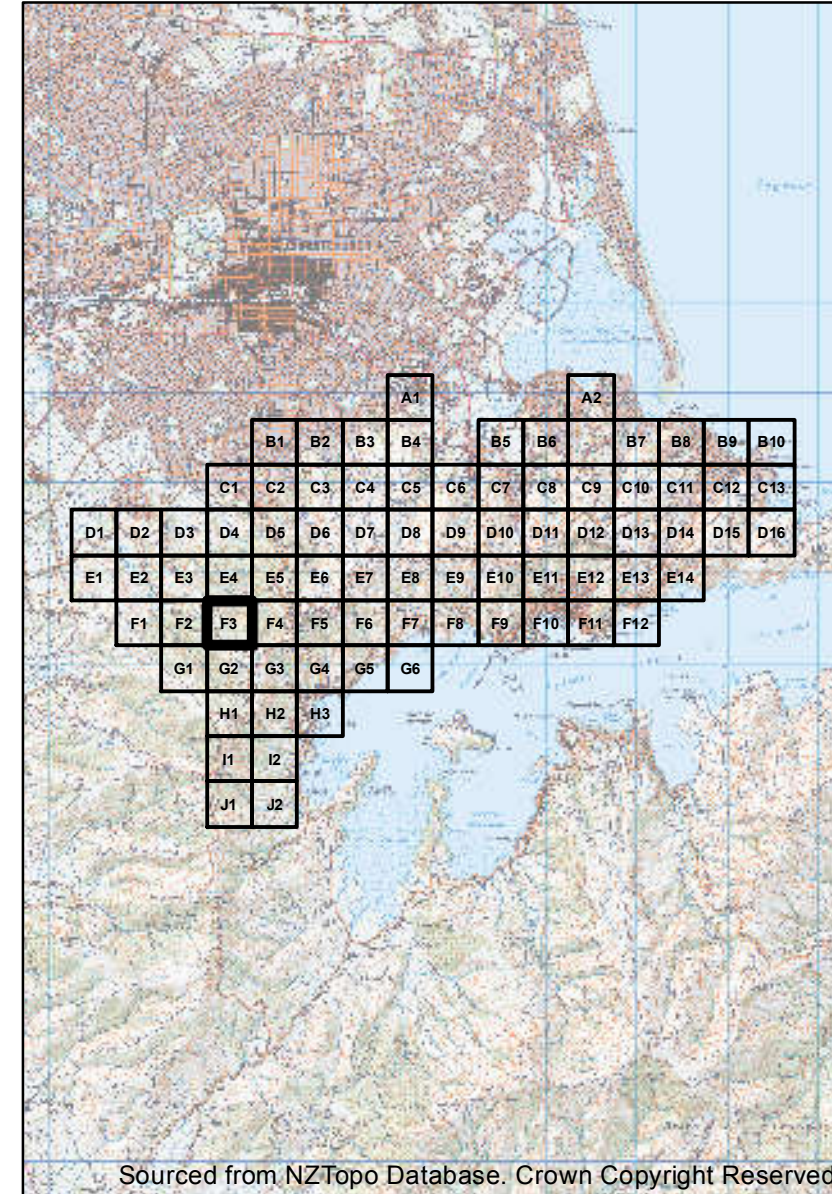
See Map: E4

MAP: F3



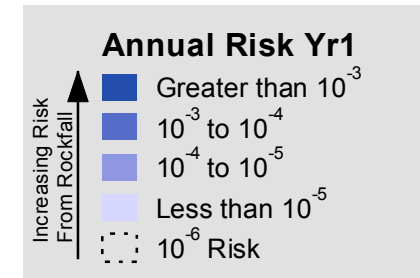
See Map: F2

See Map: G2



See Map: F4

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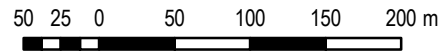


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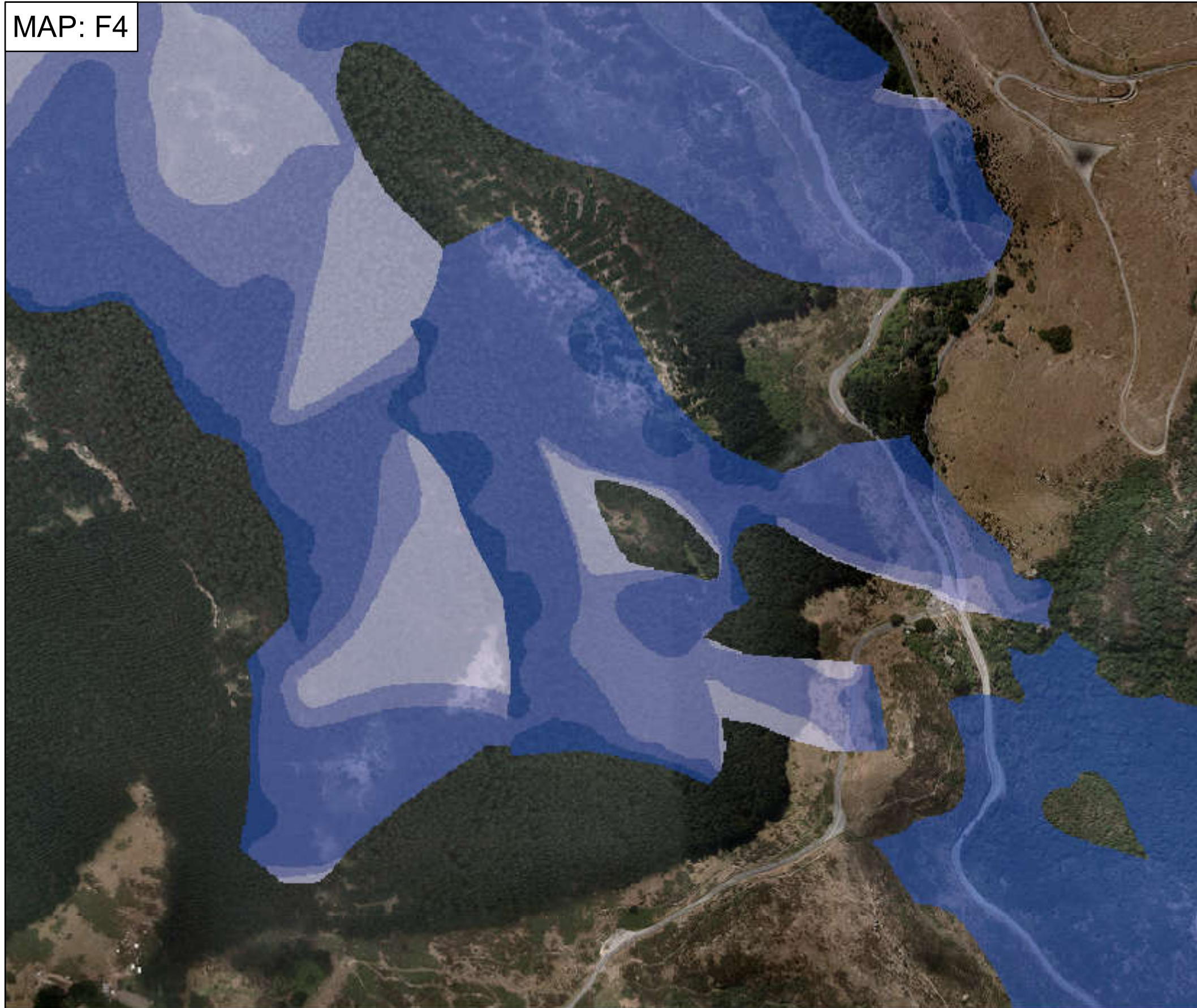


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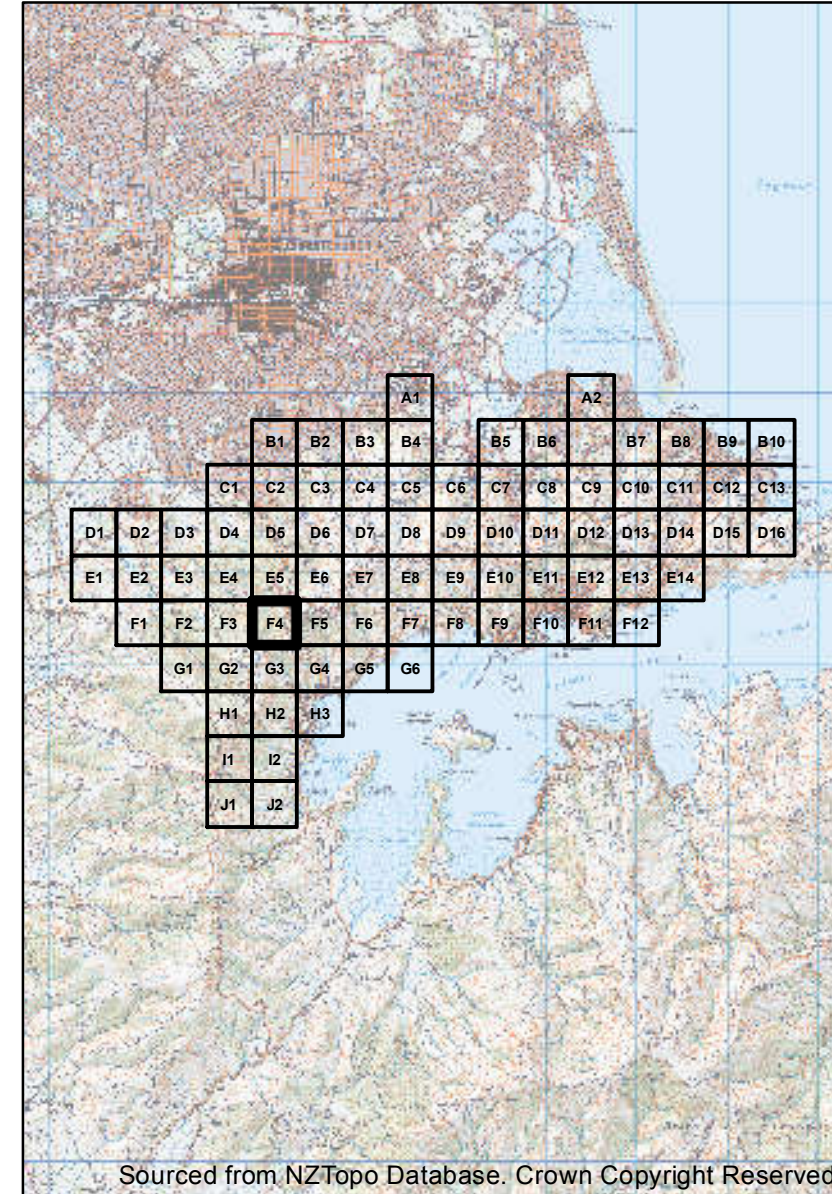
See Map: E5

MAP: F4

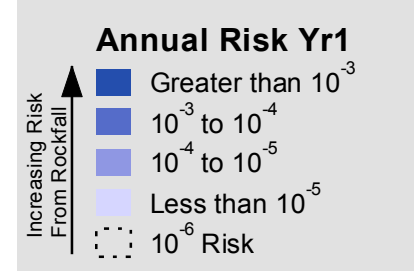


See Map: F3

See Map: G3



See Map: F5



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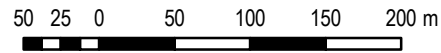


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Maps Produced By: **aurecon**



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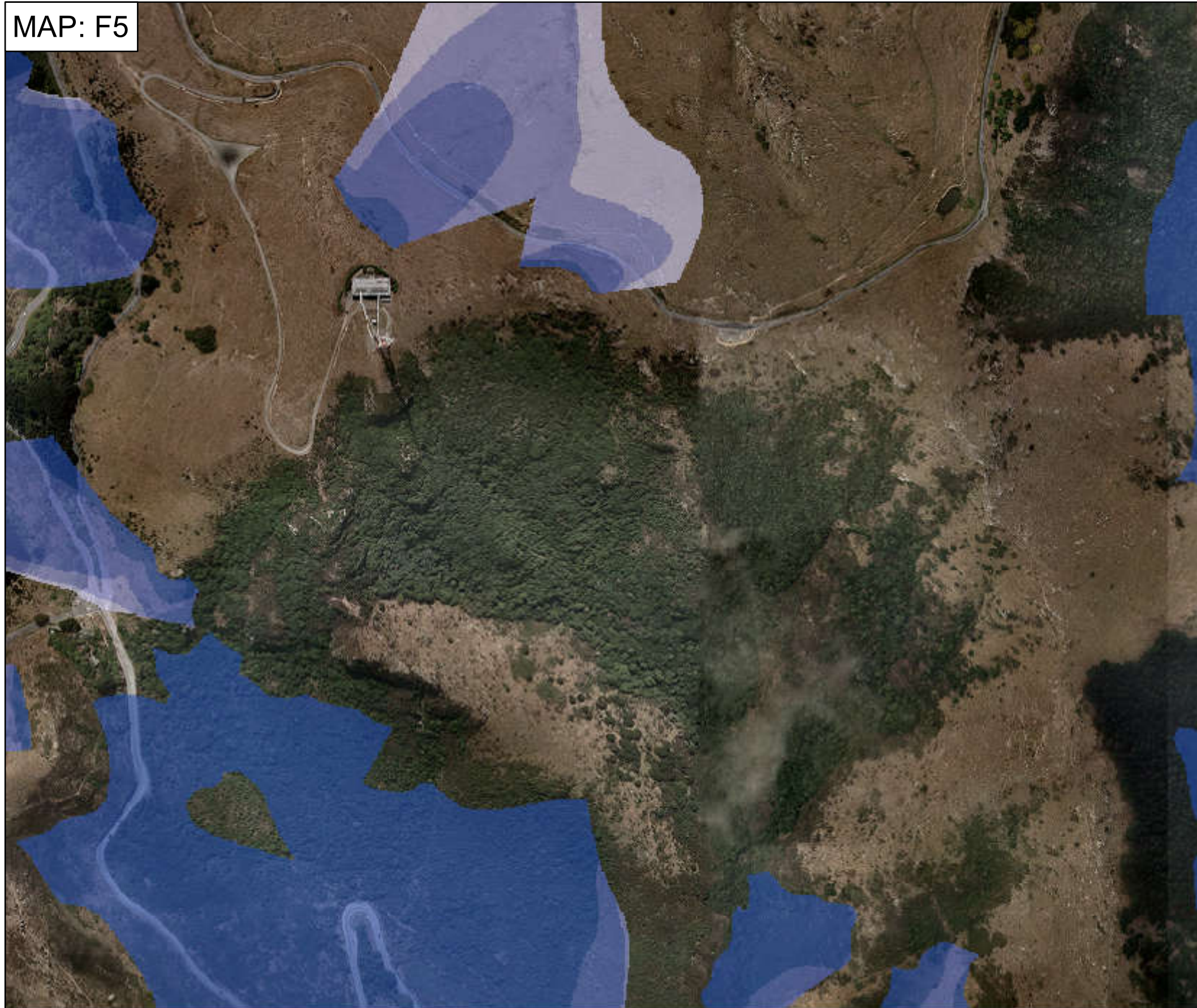


# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

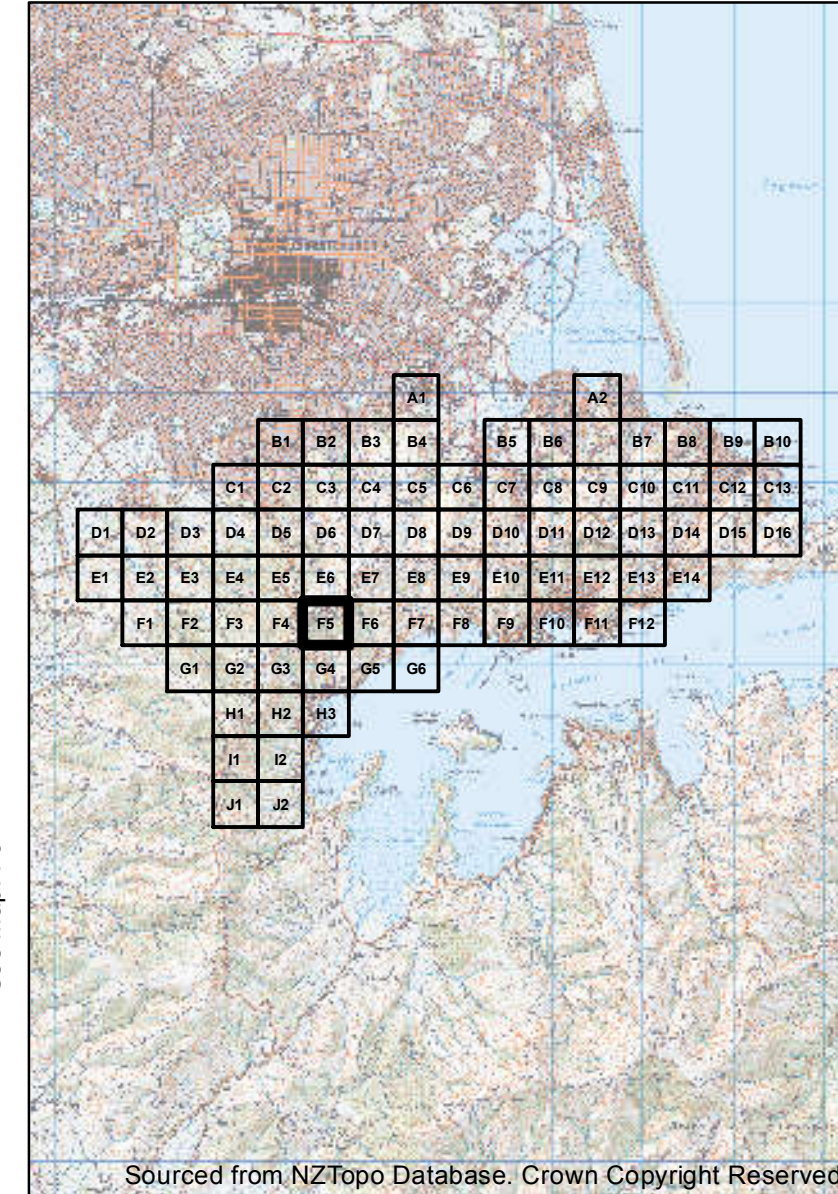
See Map: E6

MAP: F5



See Map: F4

See Map: G4



See Map: F6

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

**Notes:**

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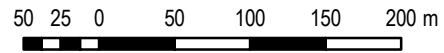


Maps Produced For: **Christchurch City Council**

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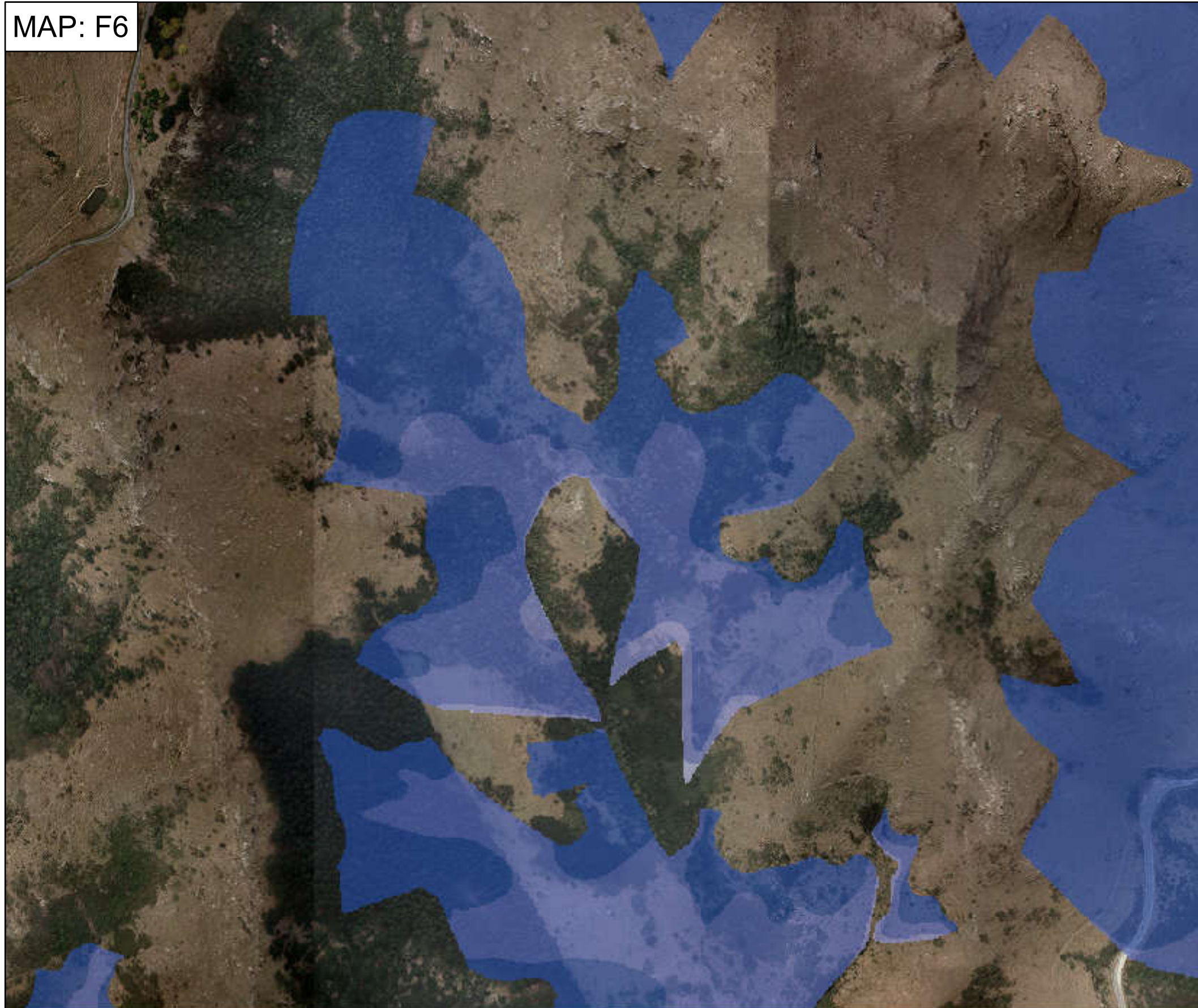


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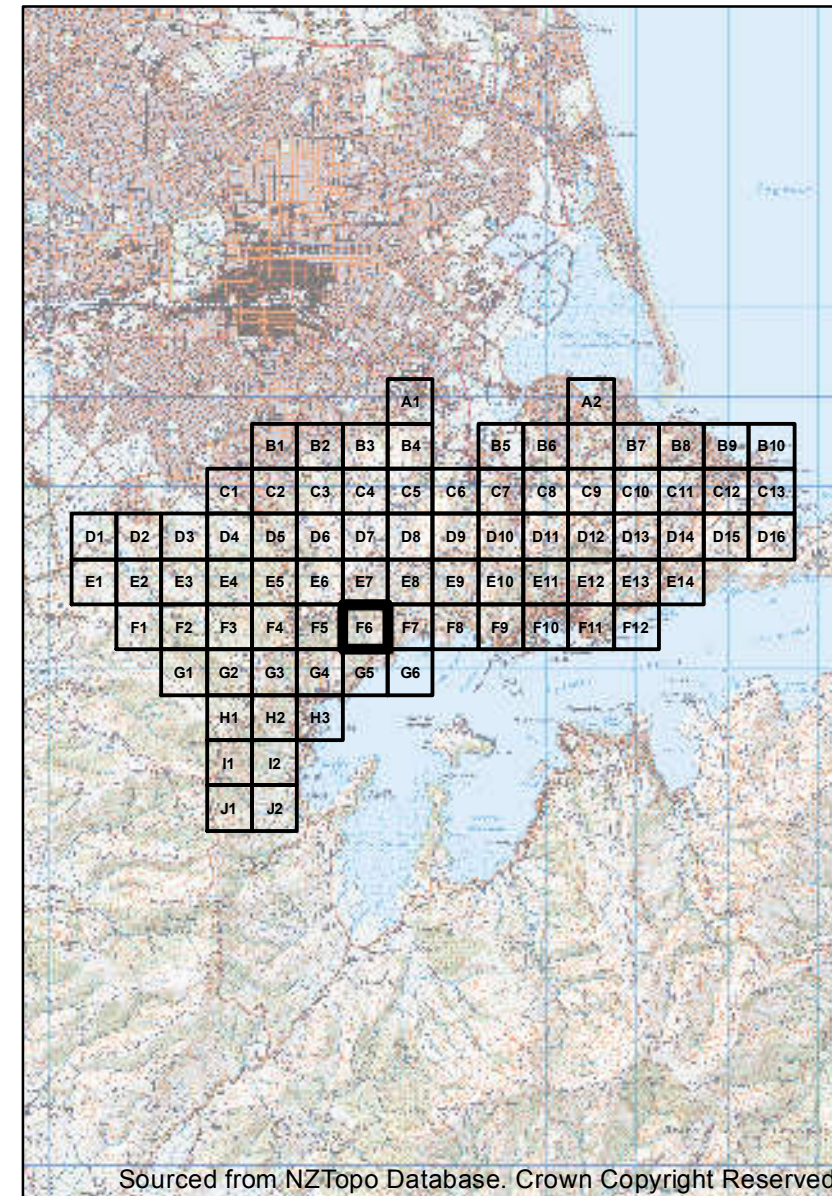
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MAP: F6



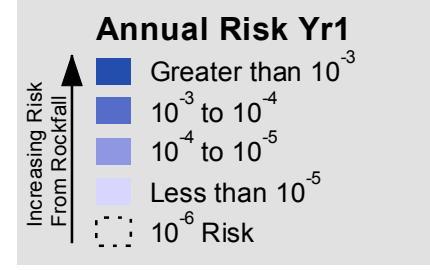
See Map: F5

See Map: G5



See Map: F7

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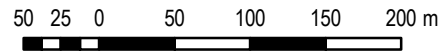


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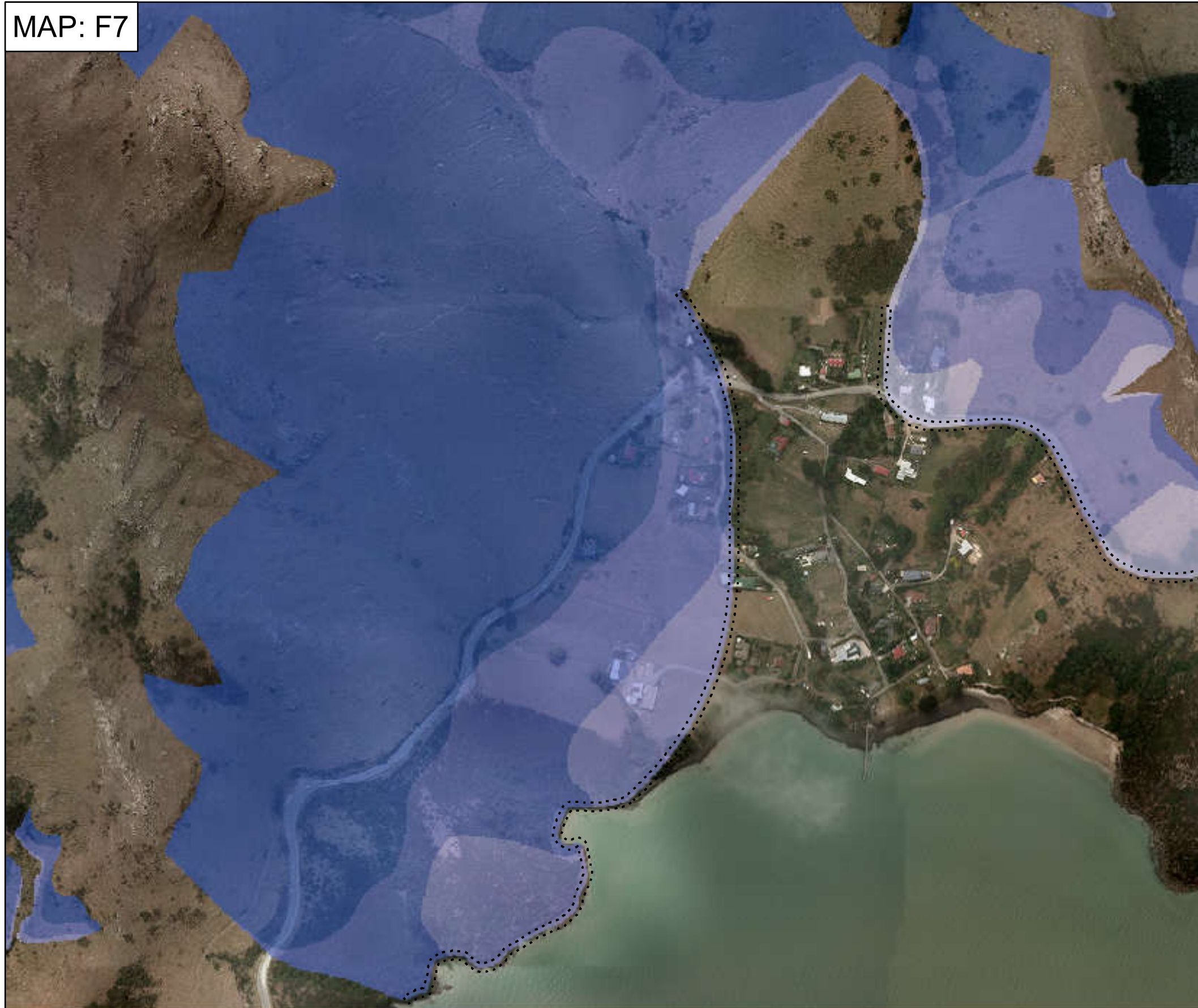


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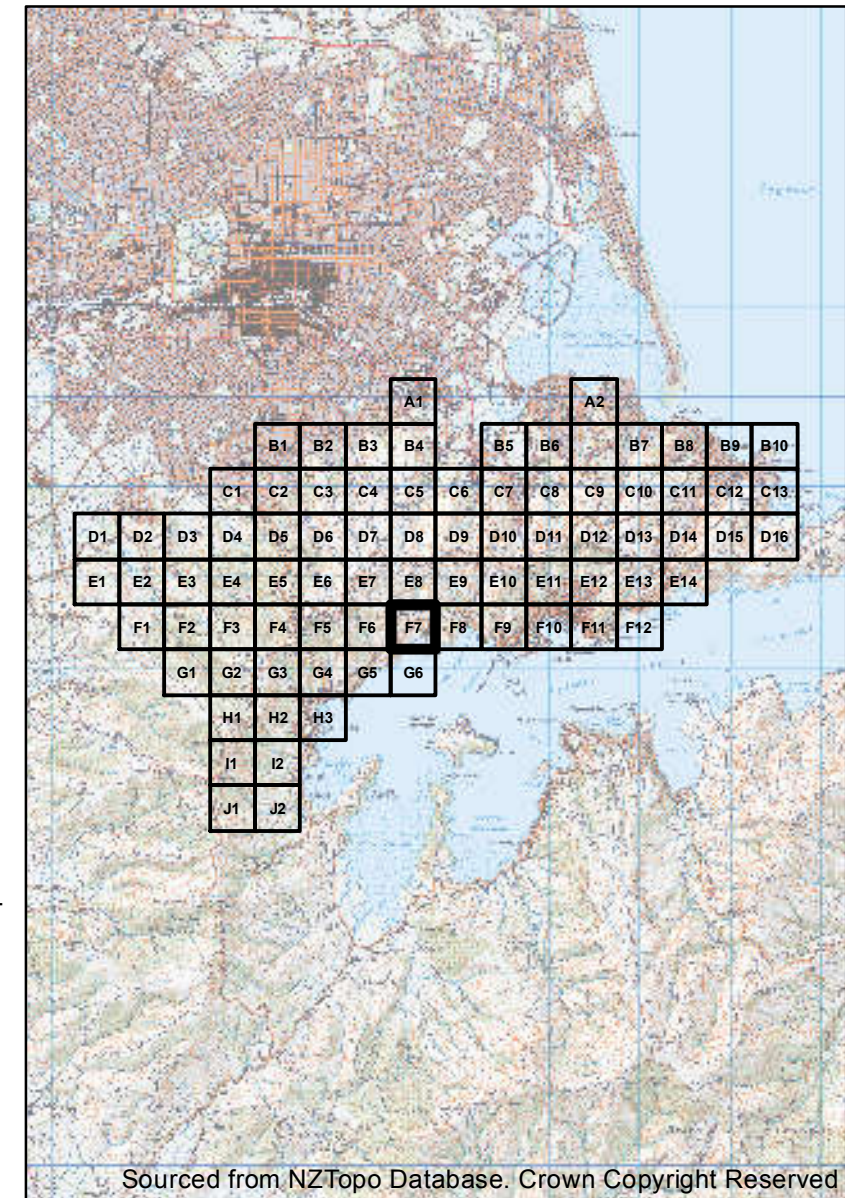
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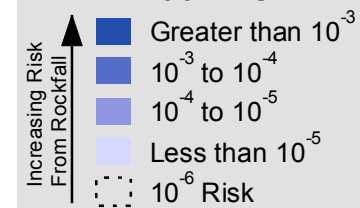
See Map: F6

See Map: G6



See Map: F8

### Annual Risk Yr1



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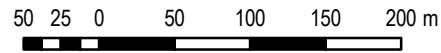


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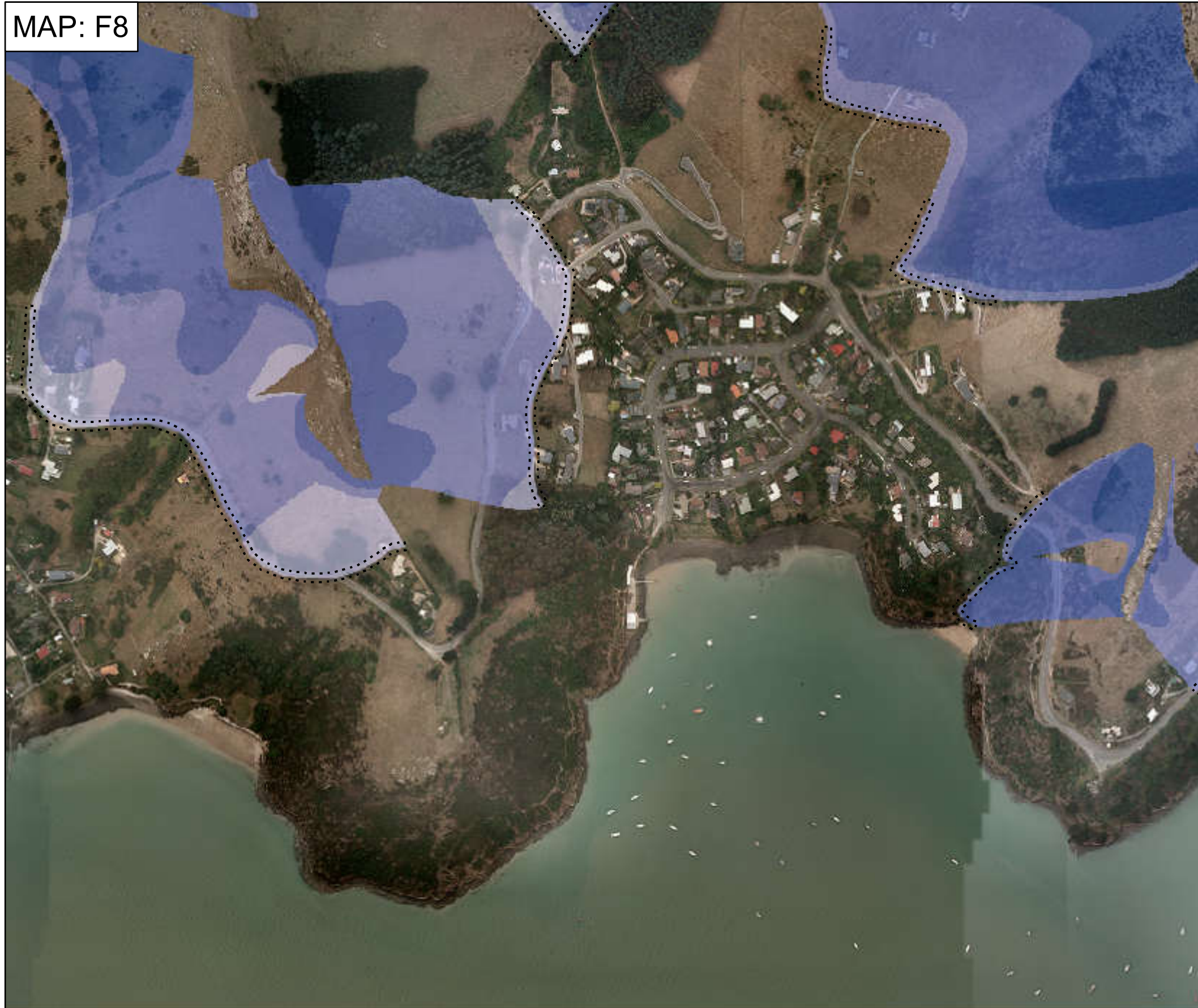


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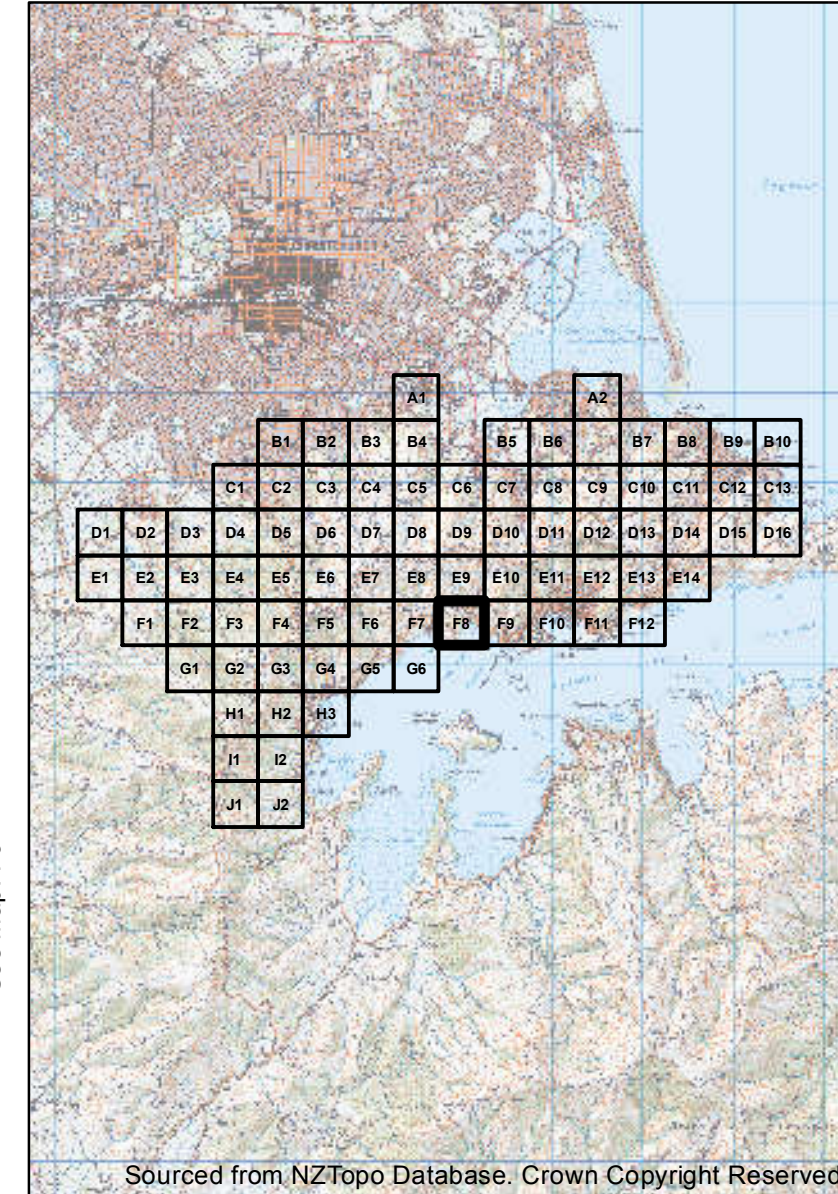
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MAP: F8



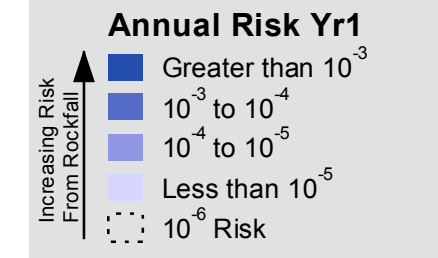
See Map: F7

See Map:



See Map: F9

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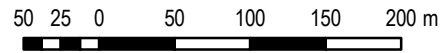
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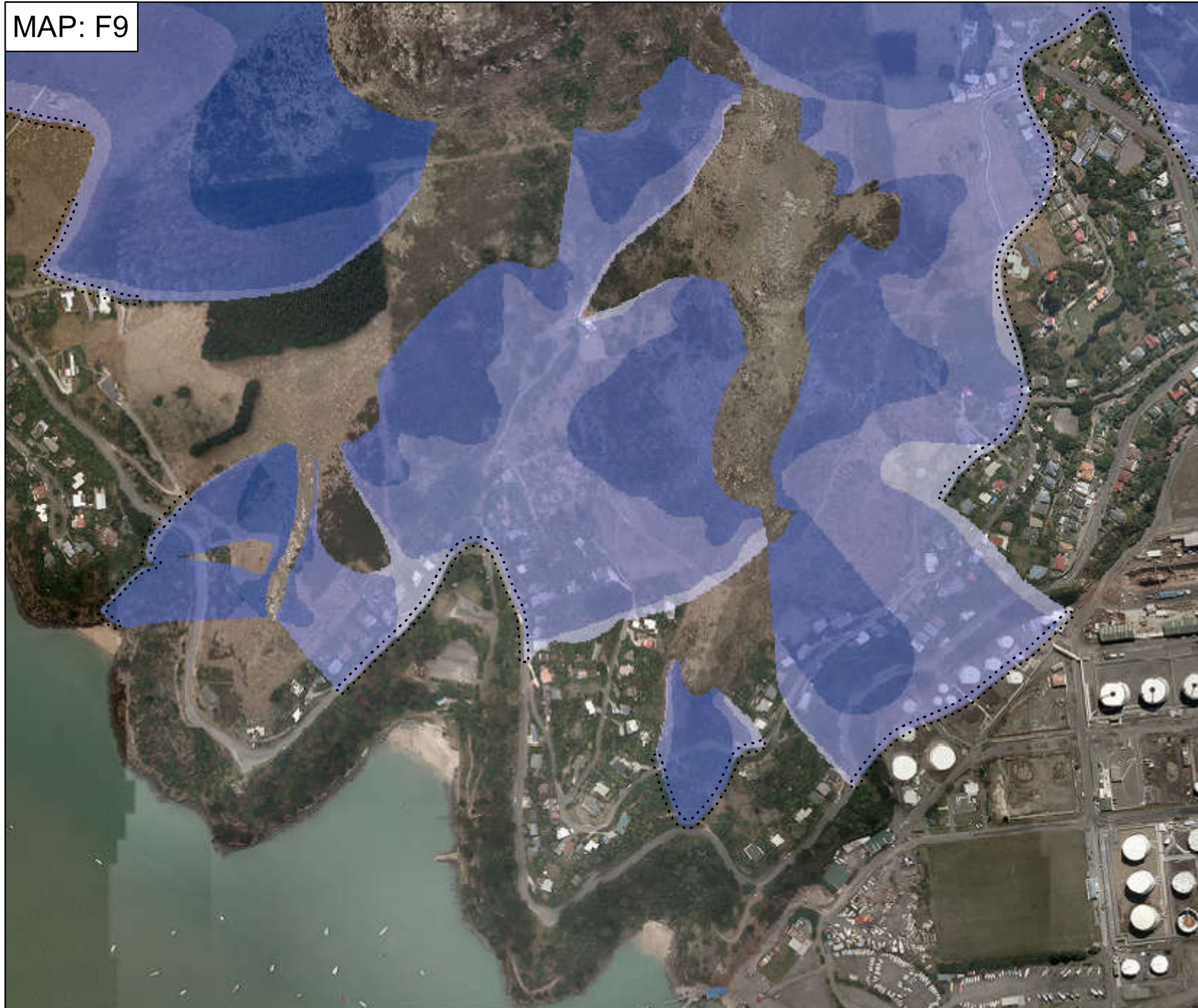


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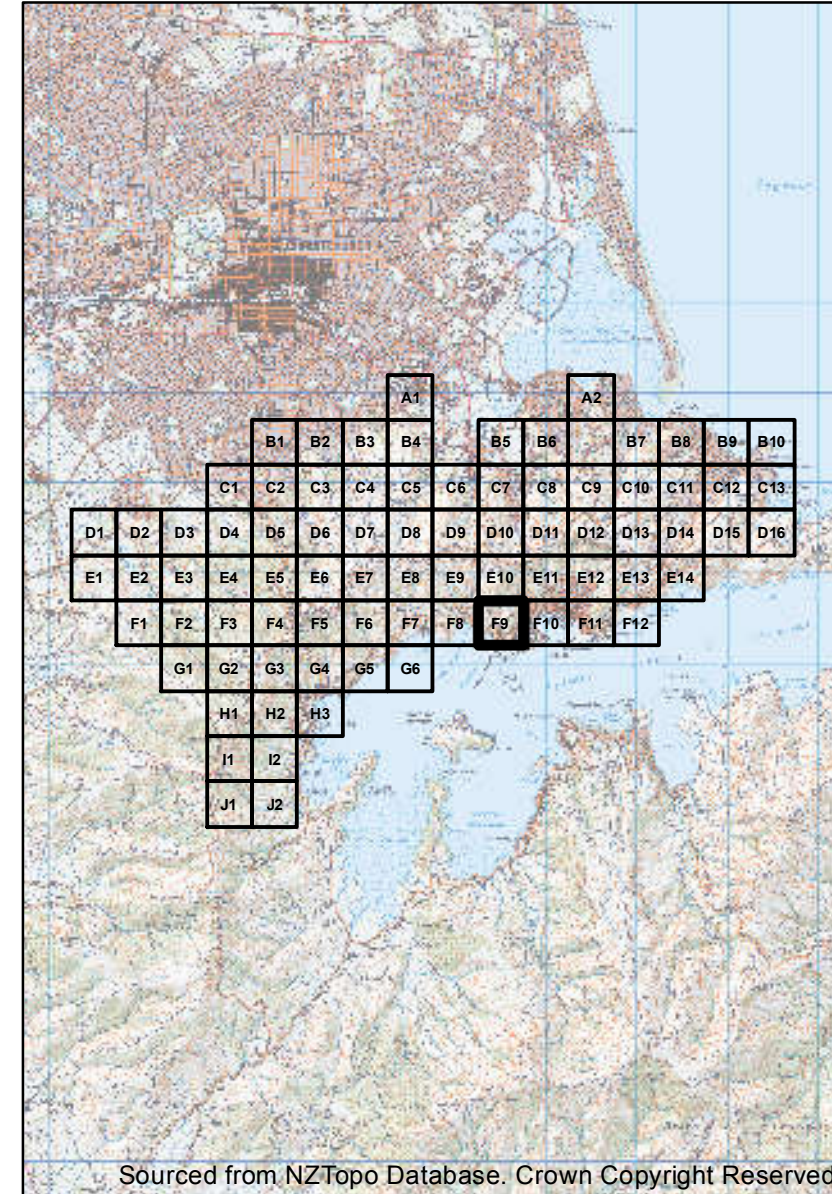
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MAP: F9



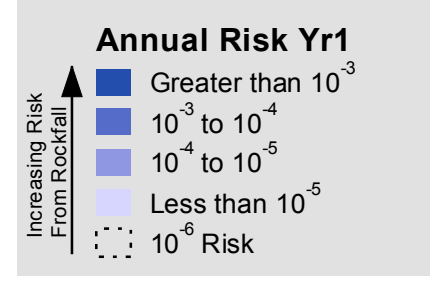
See Map: F8

See Map:



See Map: F10

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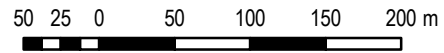
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Datum: Geodetic Datum of New Zealand 2000  
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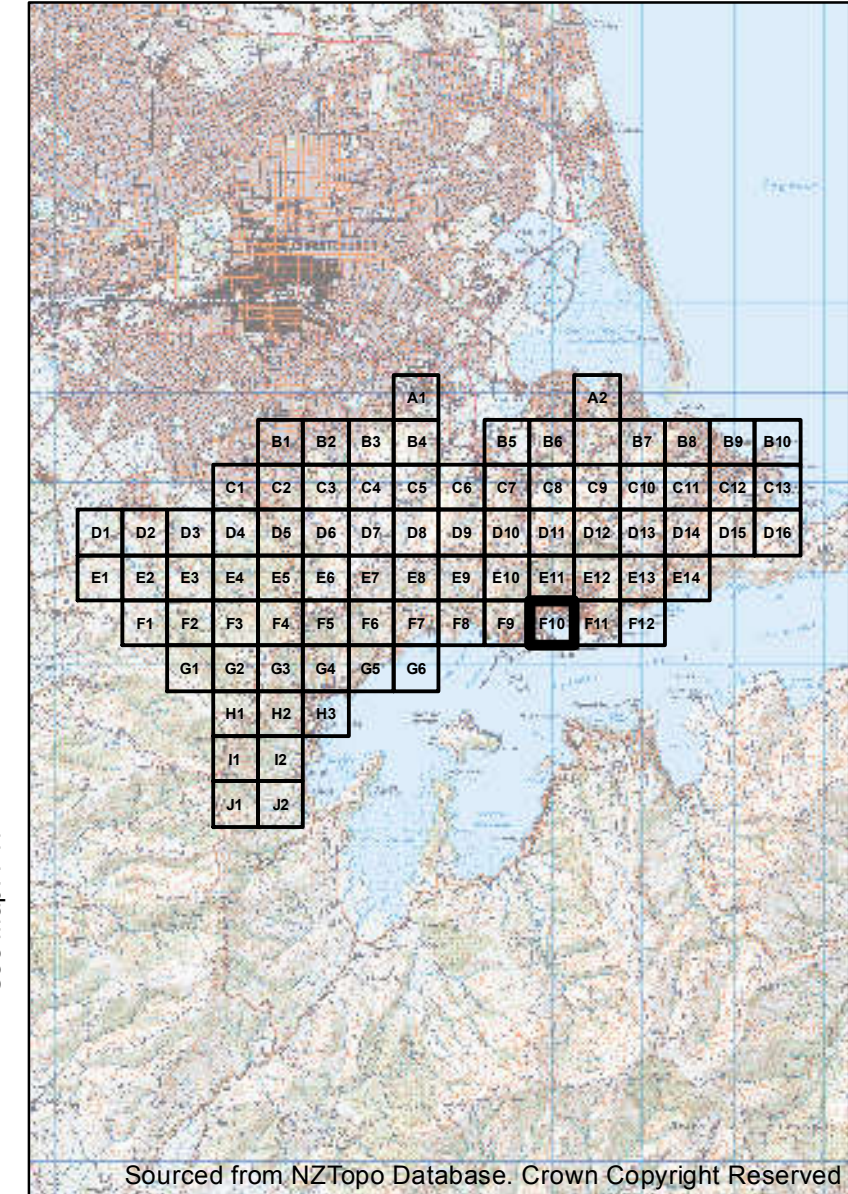
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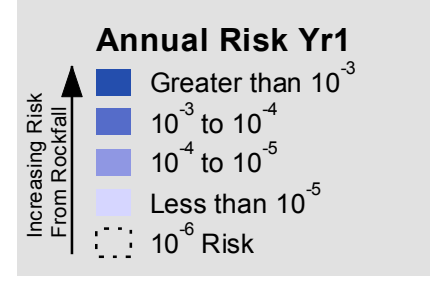
See Map: F9

See Map:



See Map: F11

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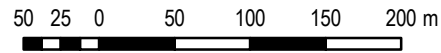
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Datum: Geodetic Datum of New Zealand 2000  
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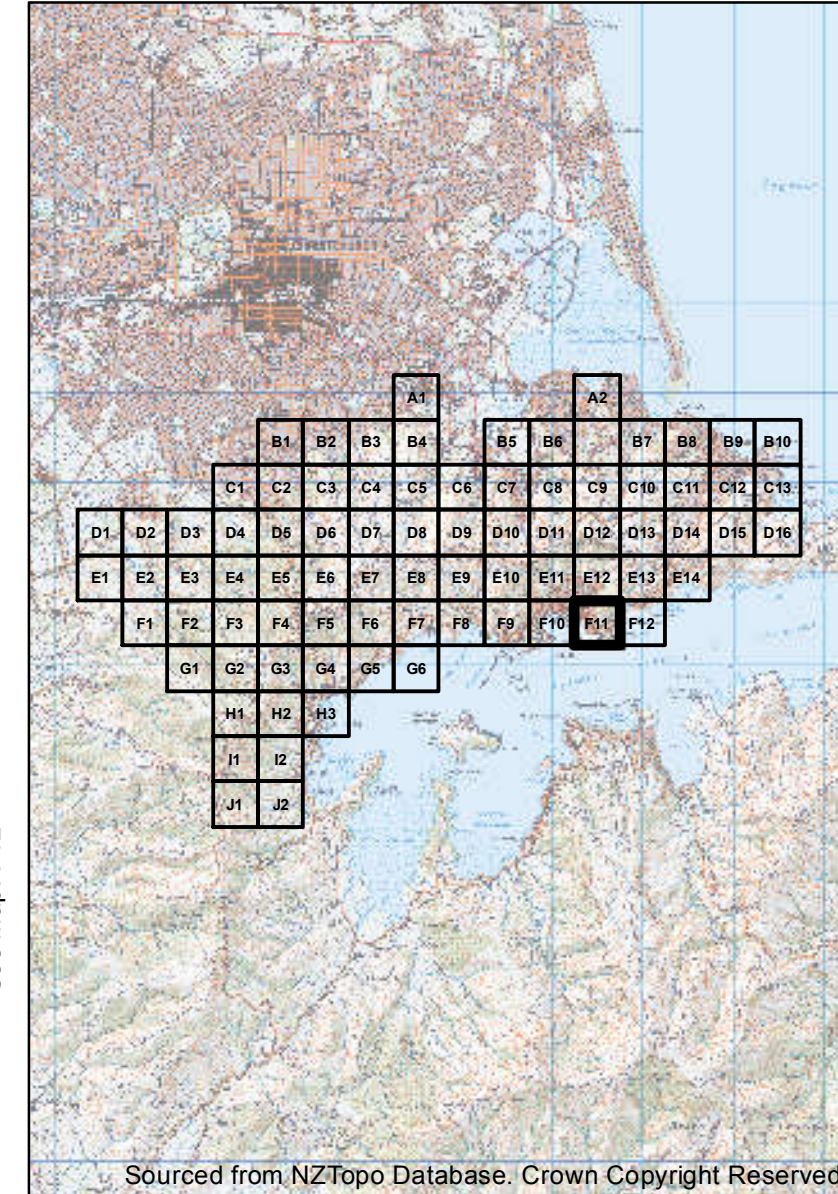
See Map: E12

MAP: F11



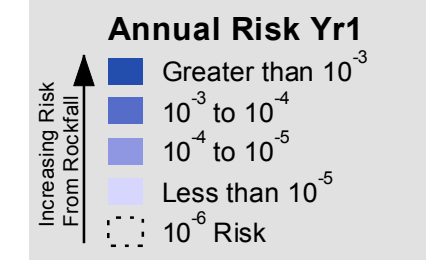
See Map: F10

See Map:



See Map: F12

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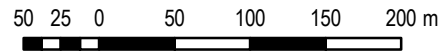
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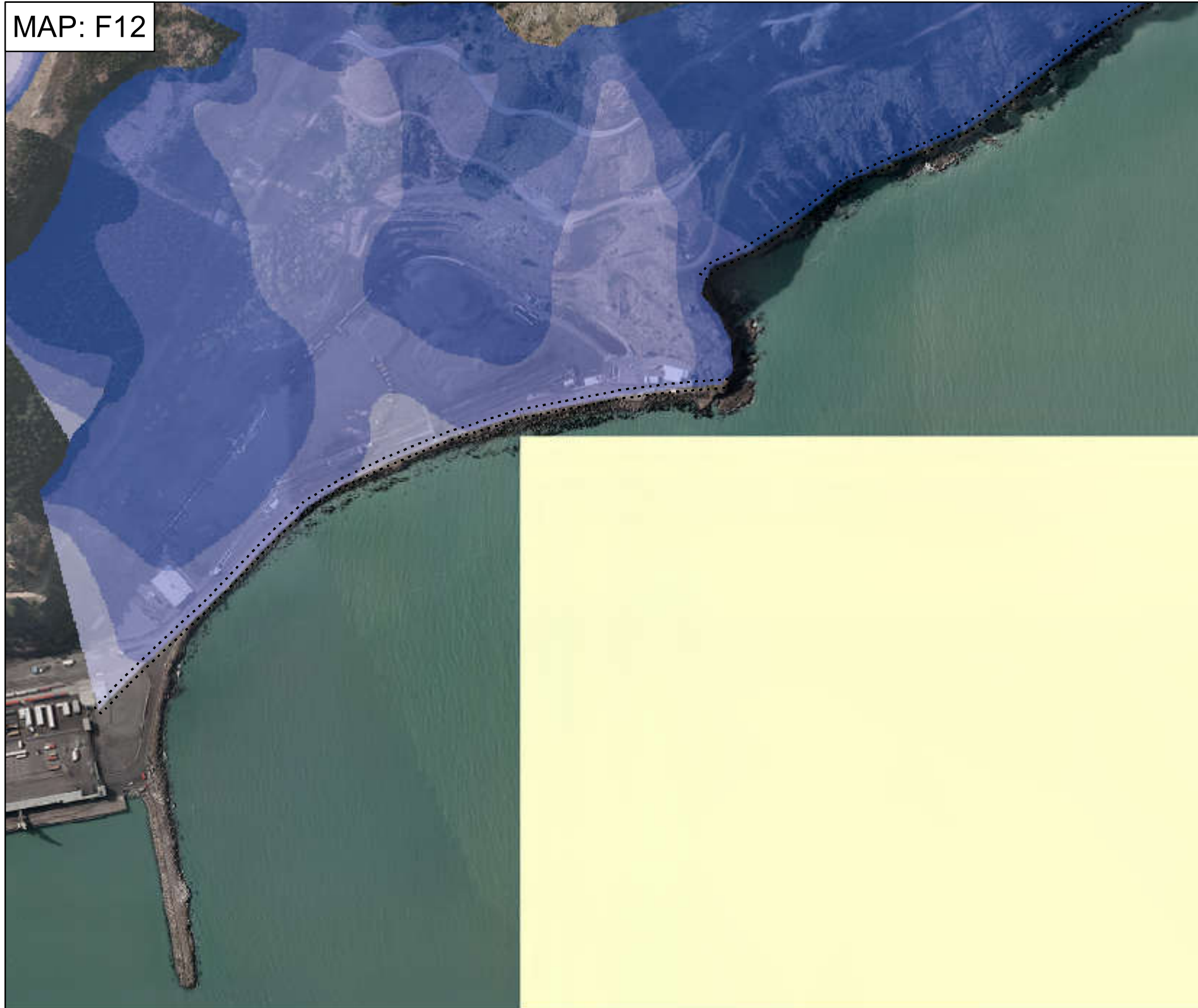


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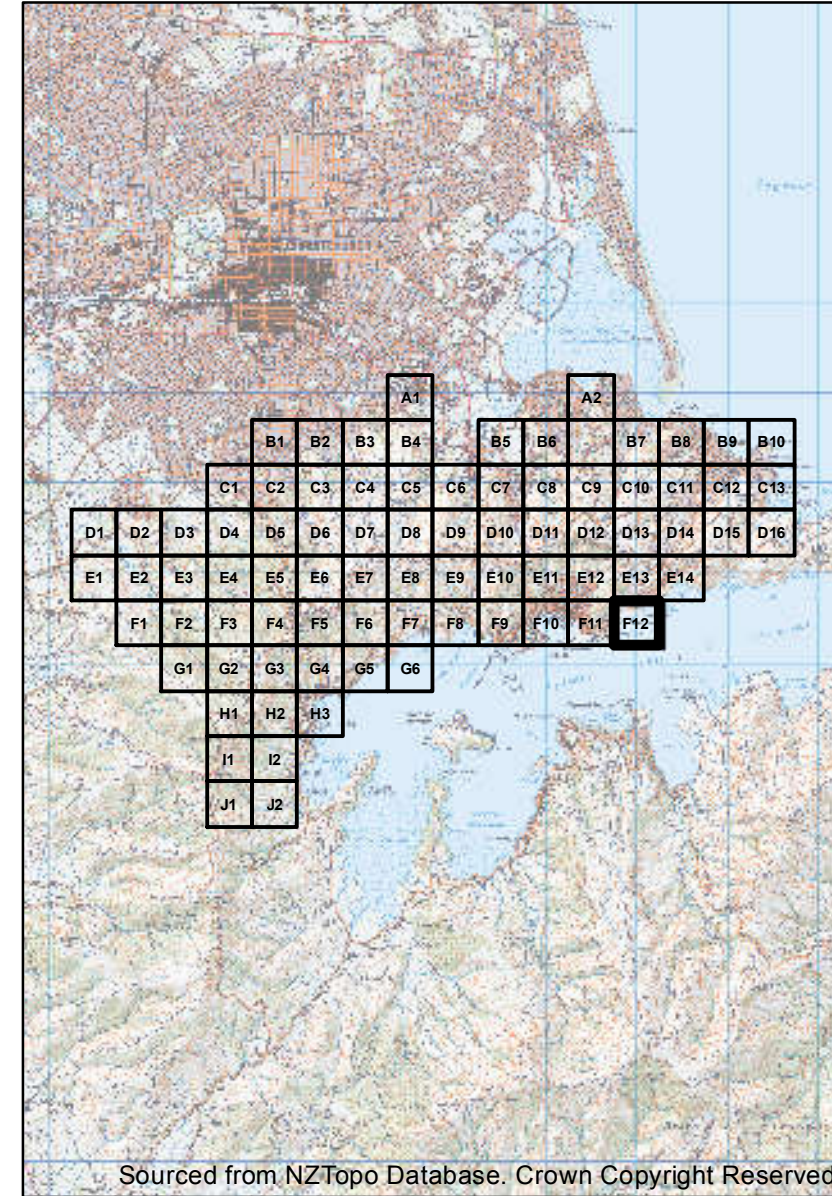
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MAP: F12



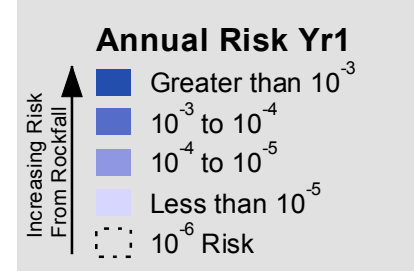
See Map: F11

See Map:



See Map:

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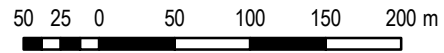


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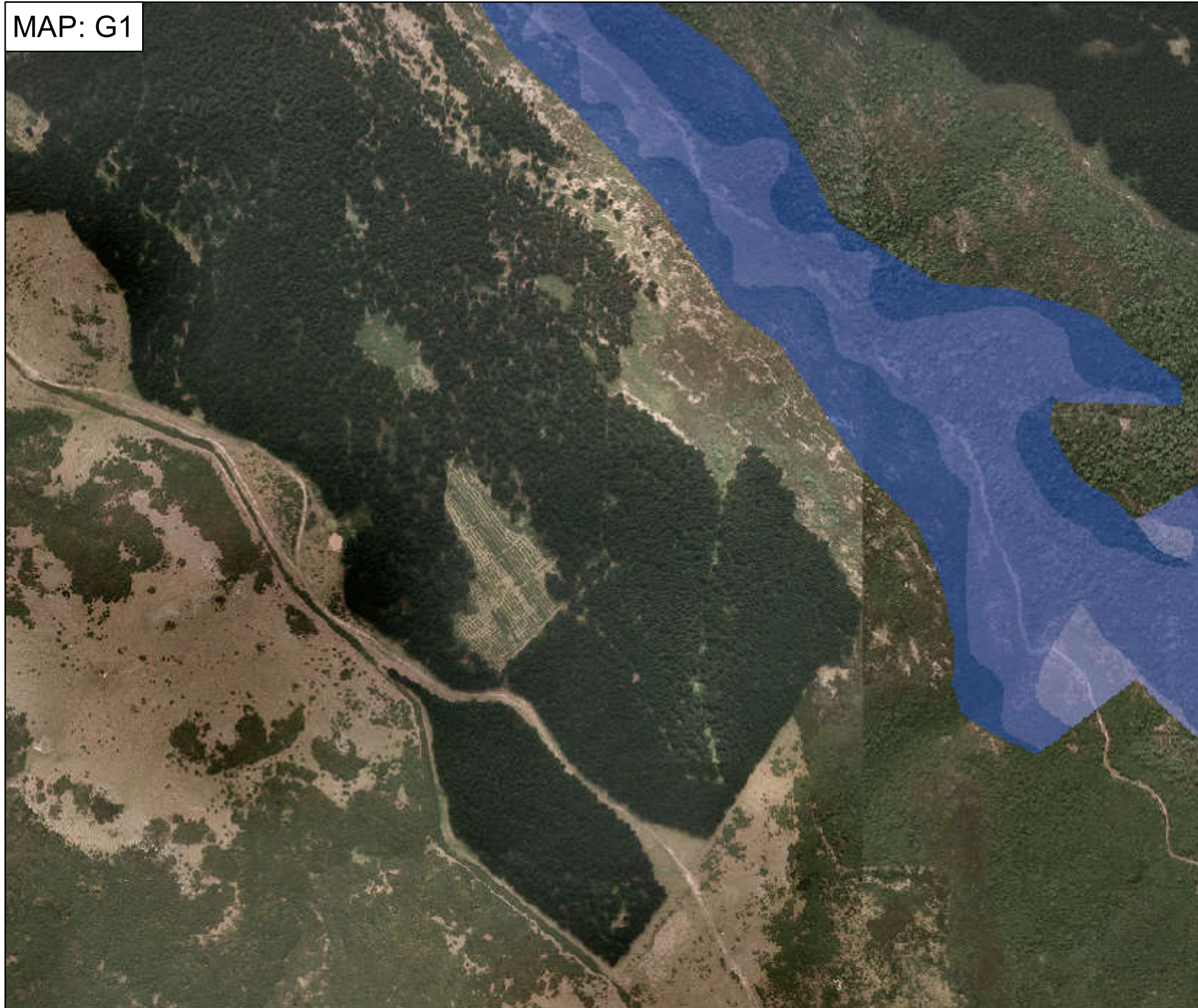


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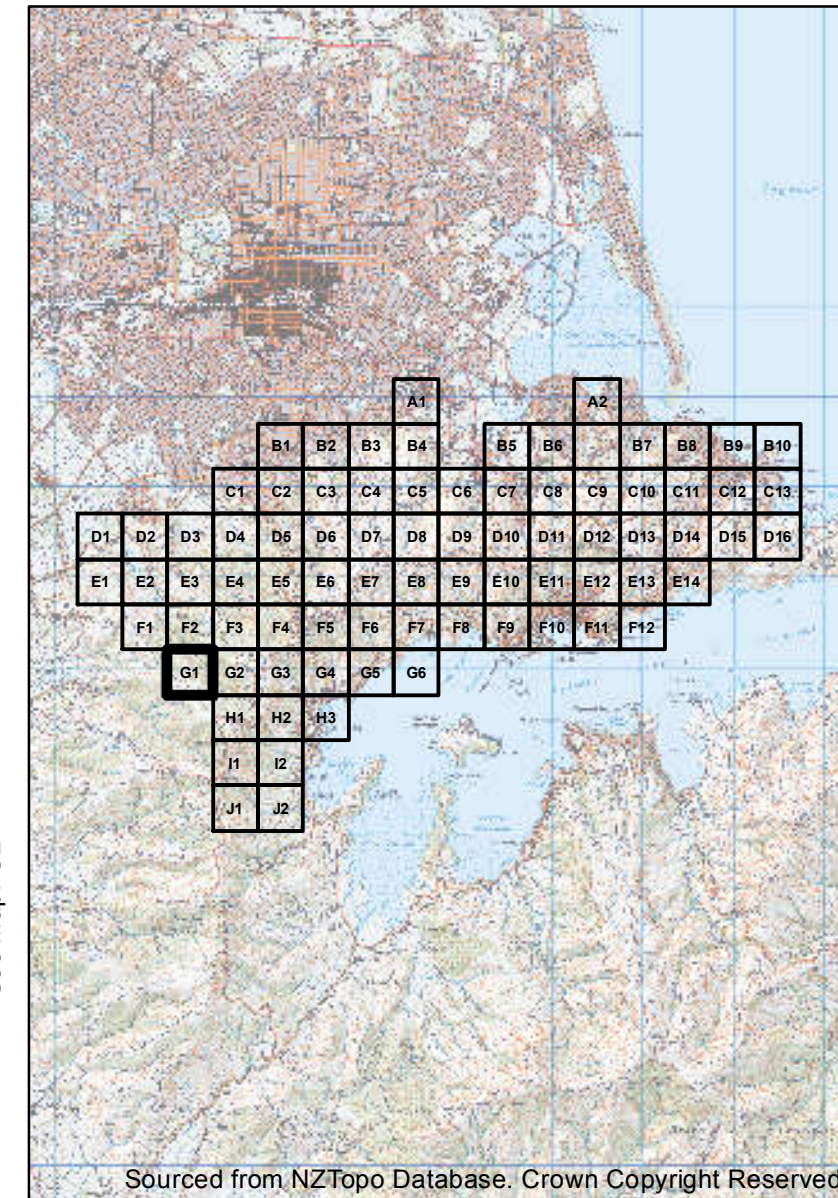
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MAP: G1



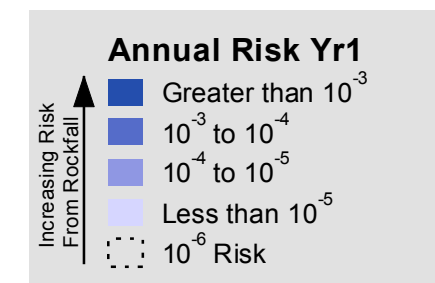
See Map:

See Map:



See Map: G2

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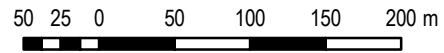


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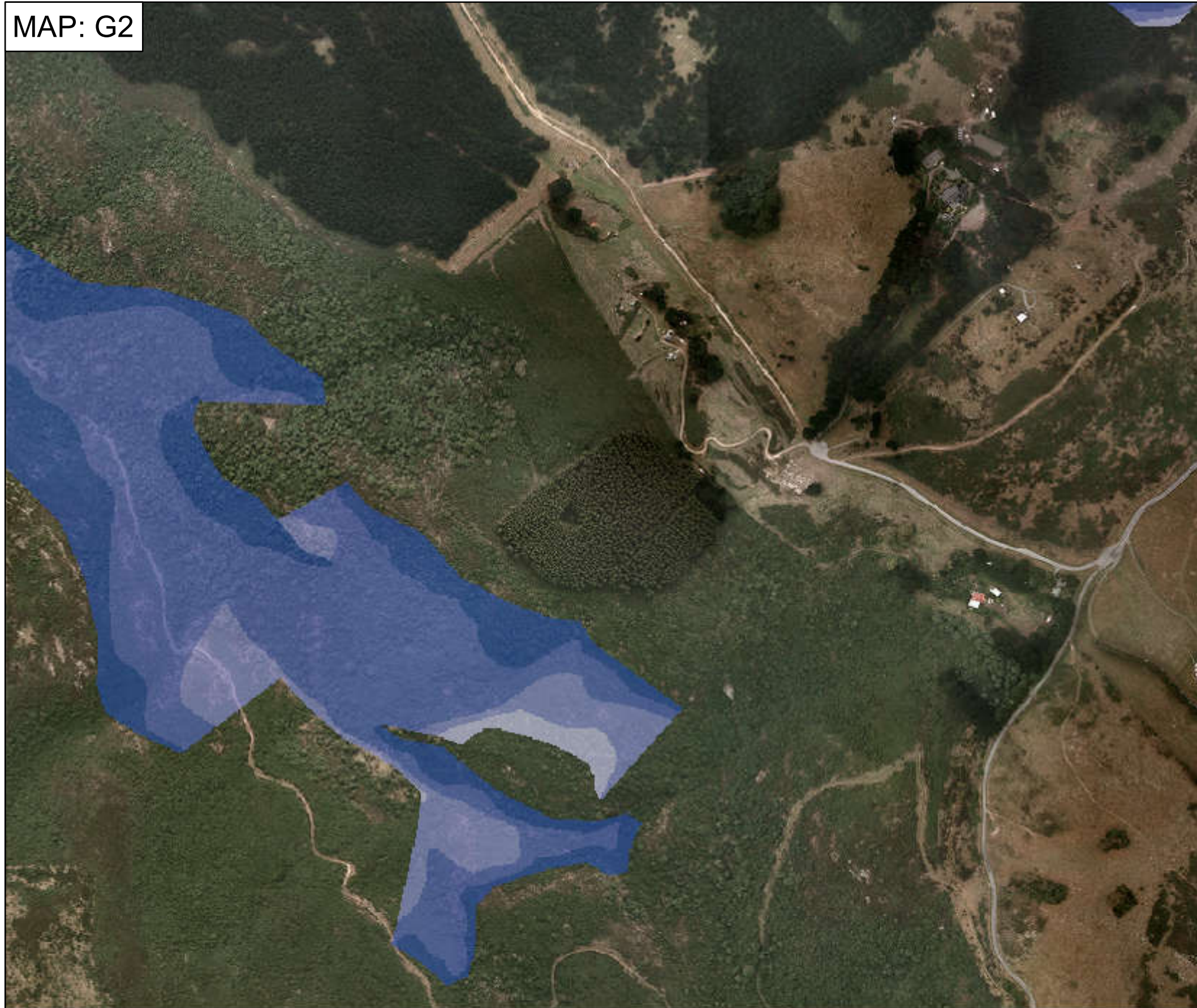


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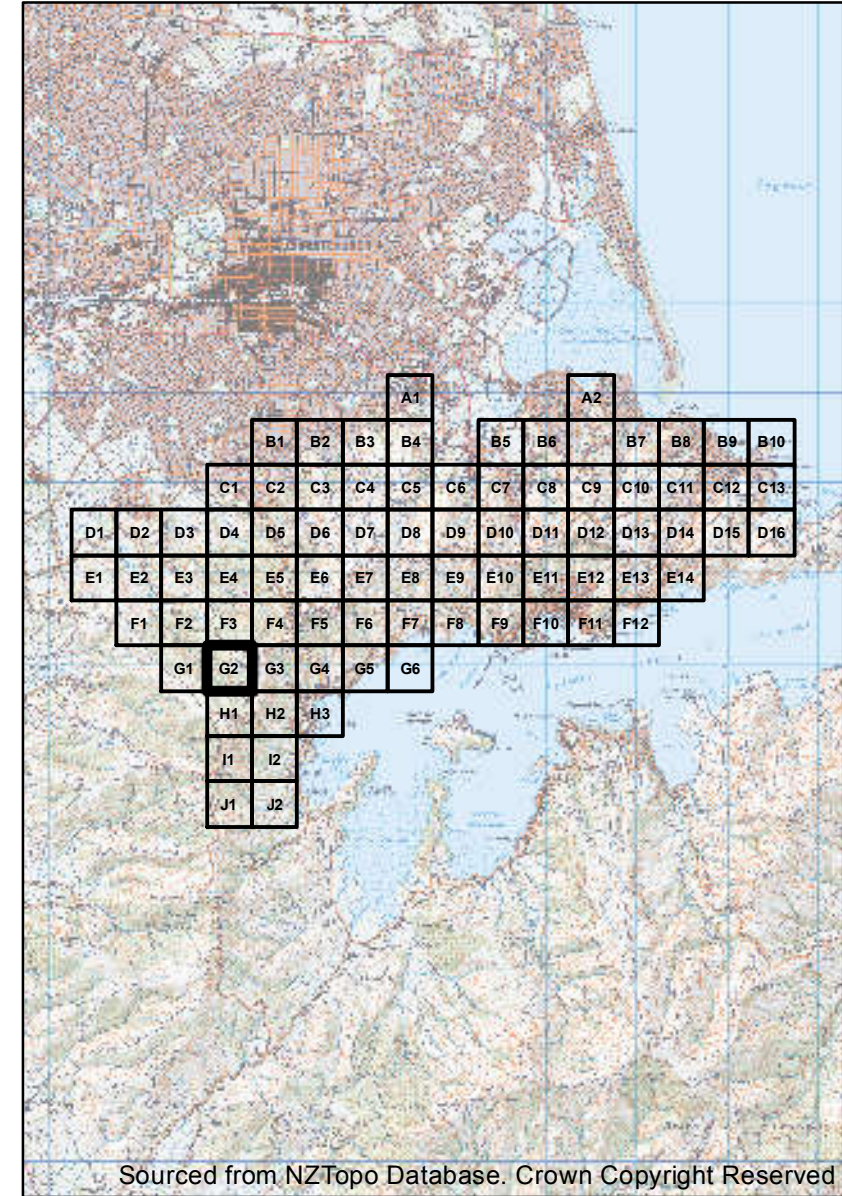
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MAP: G2



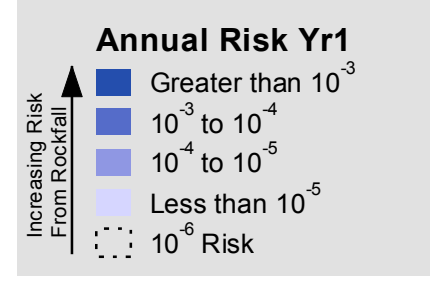
See Map: G1

See Map: H1



See Map: G3

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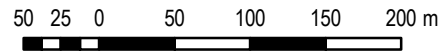
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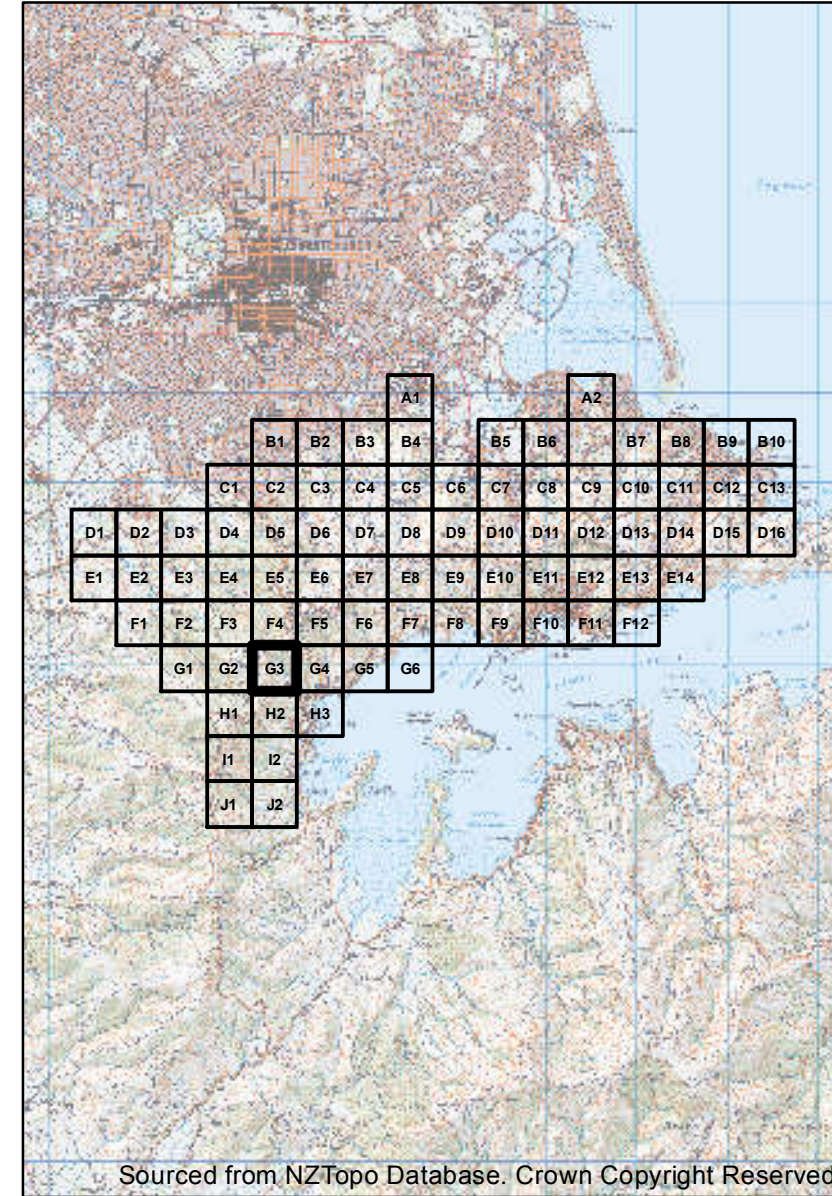
See Map: F4

MAP: G3



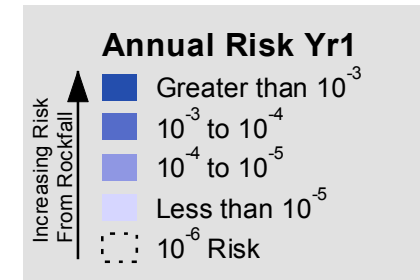
See Map: G2

See Map: H2



See Map: G4

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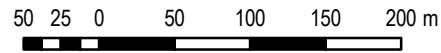


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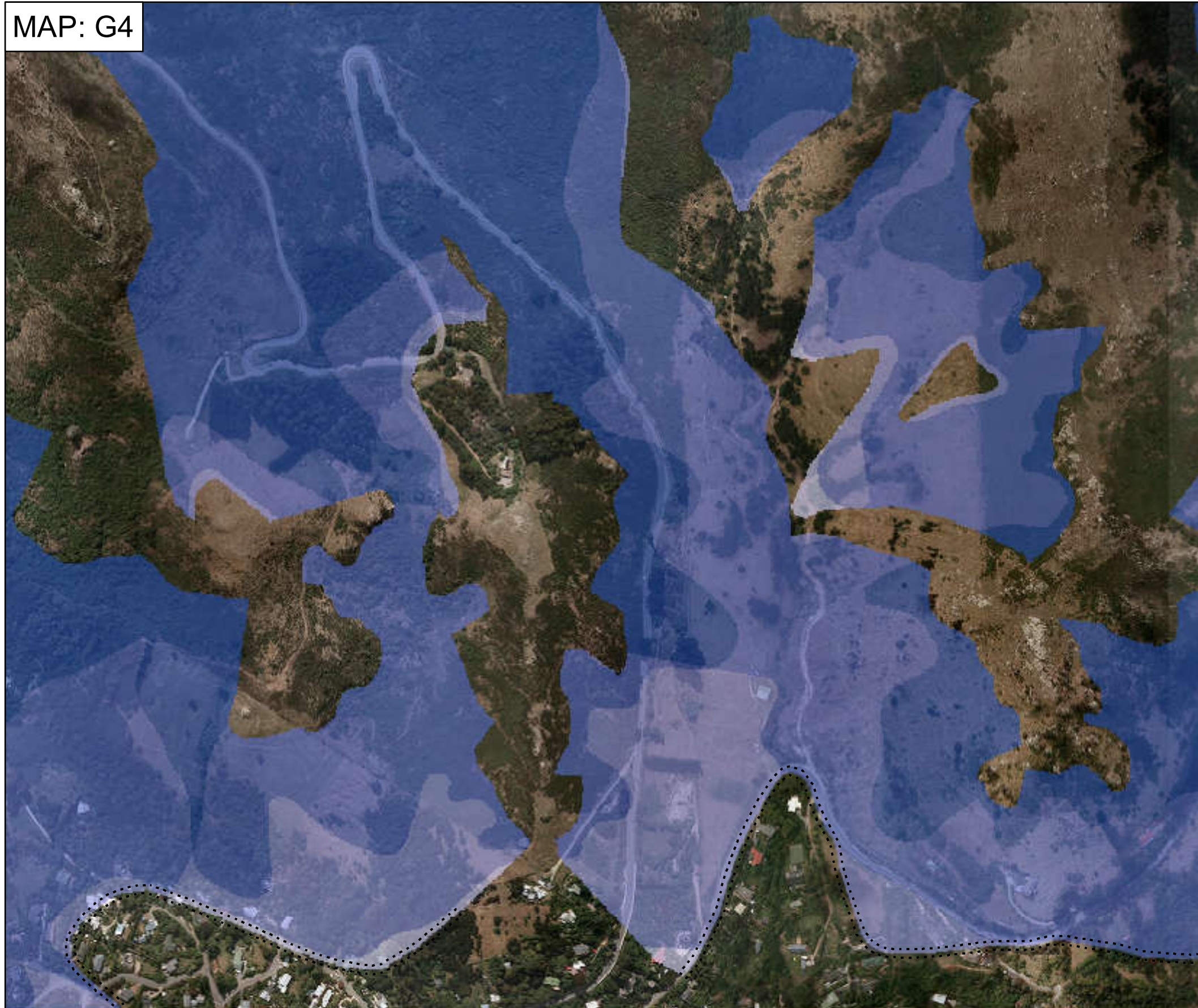


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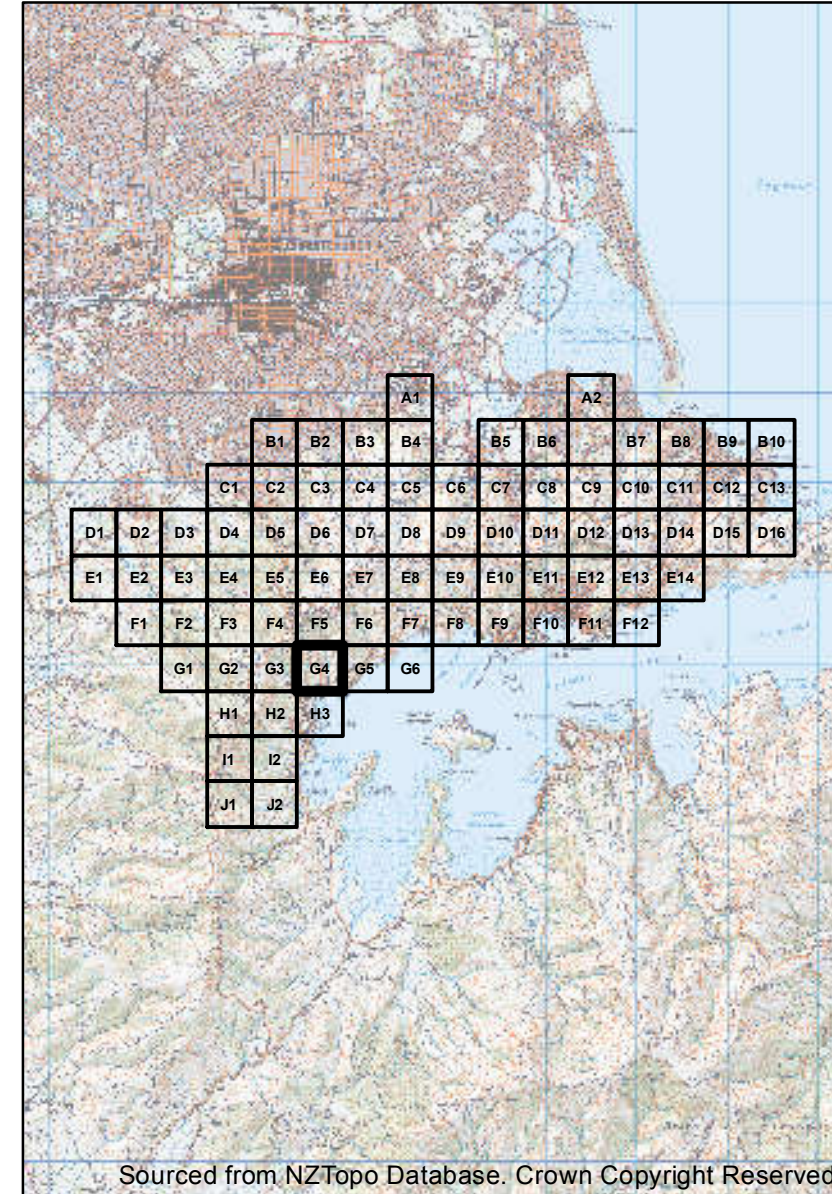
See Map: F5

MAP: G4



See Map: G3

See Map: H3



See Map: G5

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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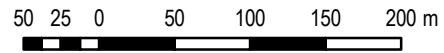
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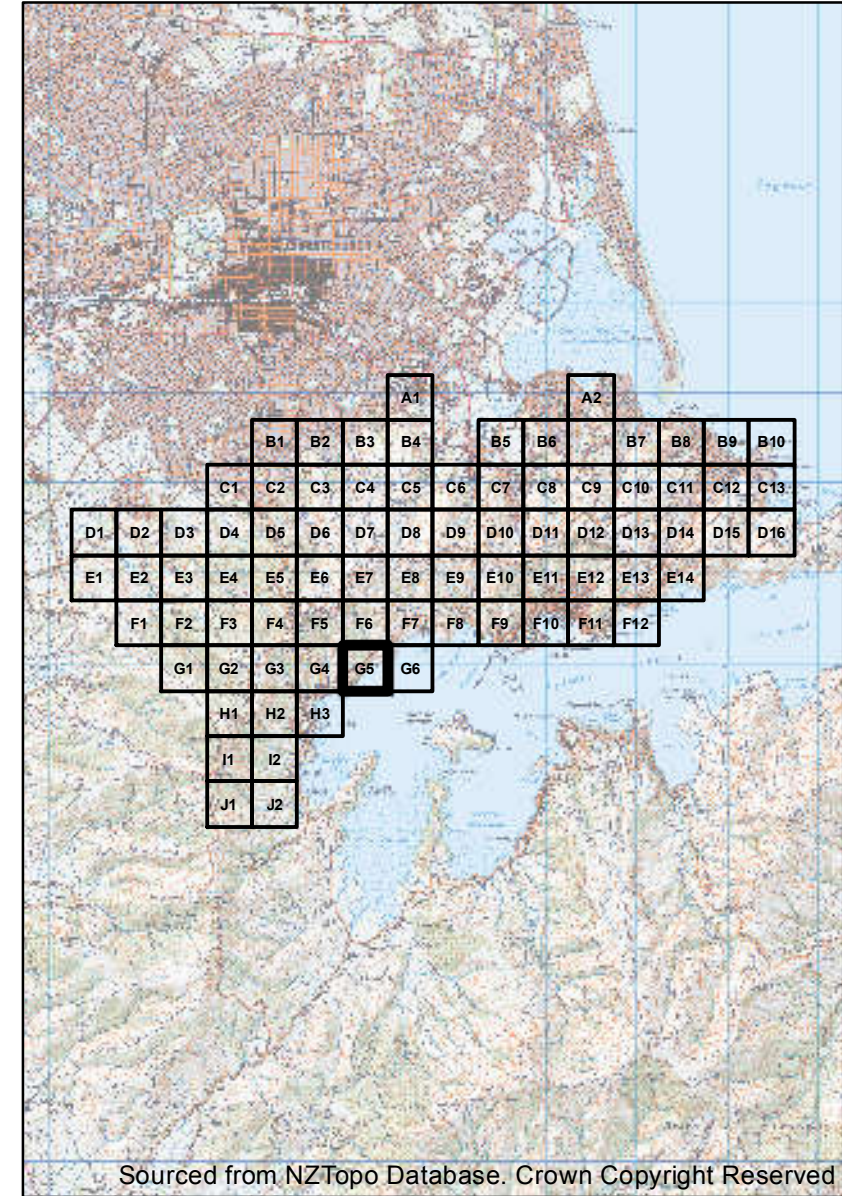
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MAP: G5



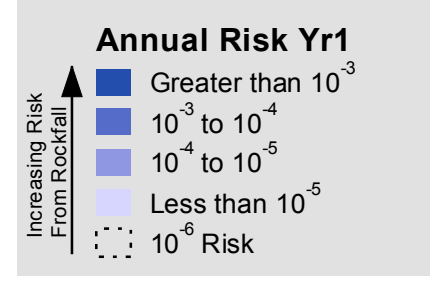
See Map: G4

See Map:



See Map: G6

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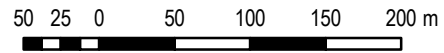
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# Rockfall Risk Map A To Accompany GNS Science Report CR2012-214

Projection: New Zealand Transverse Mercator  
Datum: Geodetic Datum of New Zealand 2000  
Map Produced: 17/07/2013

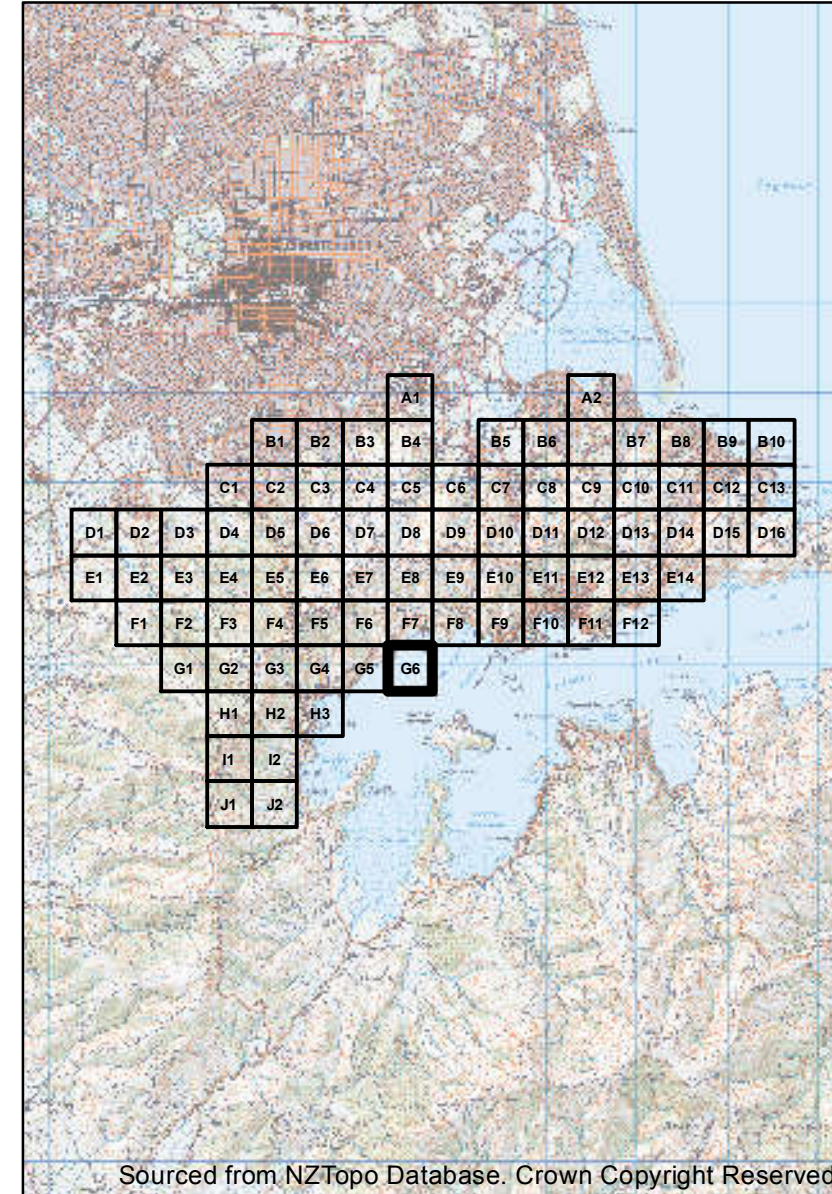
See Map: F7

MAP: G6



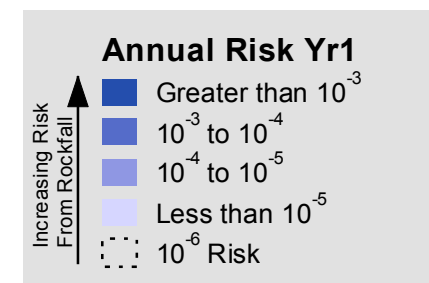
See Map: G5

See Map:



See Map:

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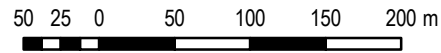


Maps Produced For: **Christchurch City Council**

Maps Produced By: **aurecon**



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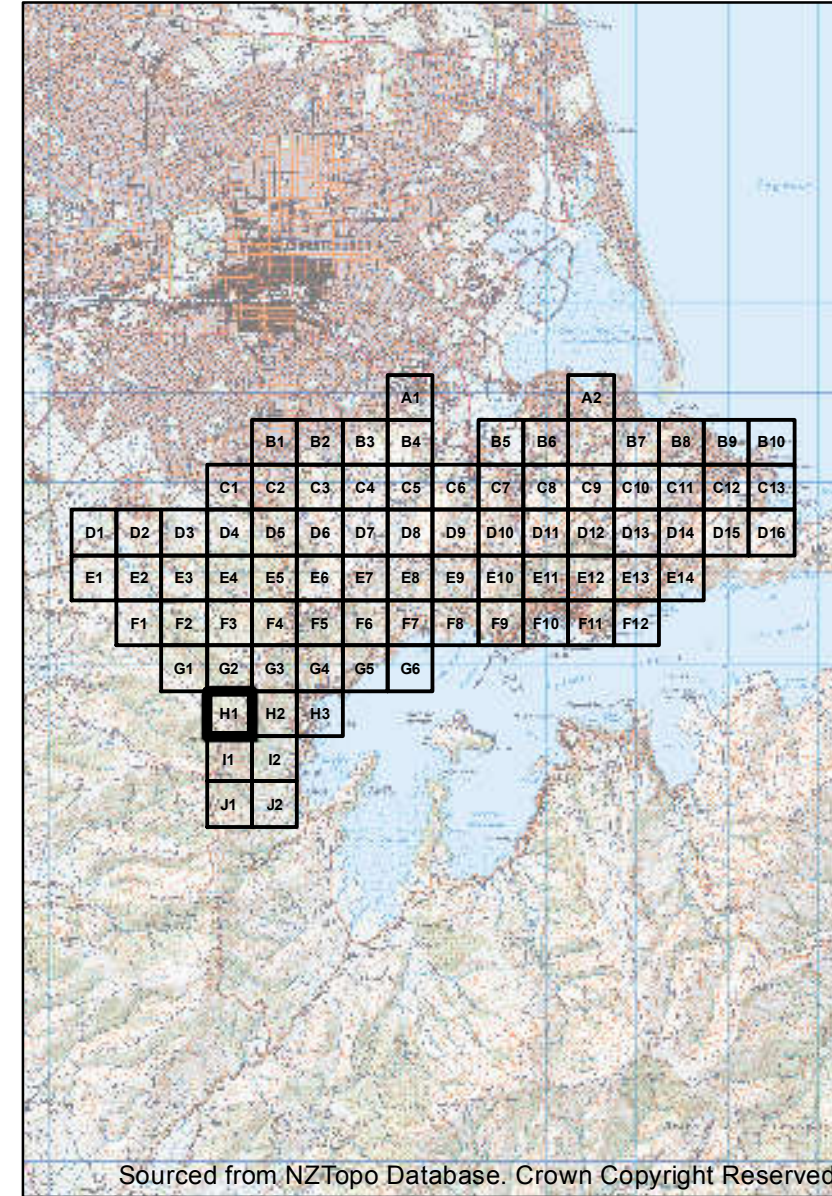
See Map: G2

MAP: H1



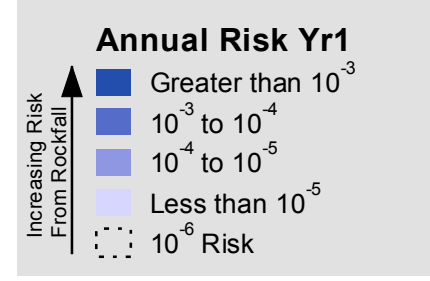
See Map:

See Map: I1



See Map: H2

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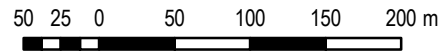
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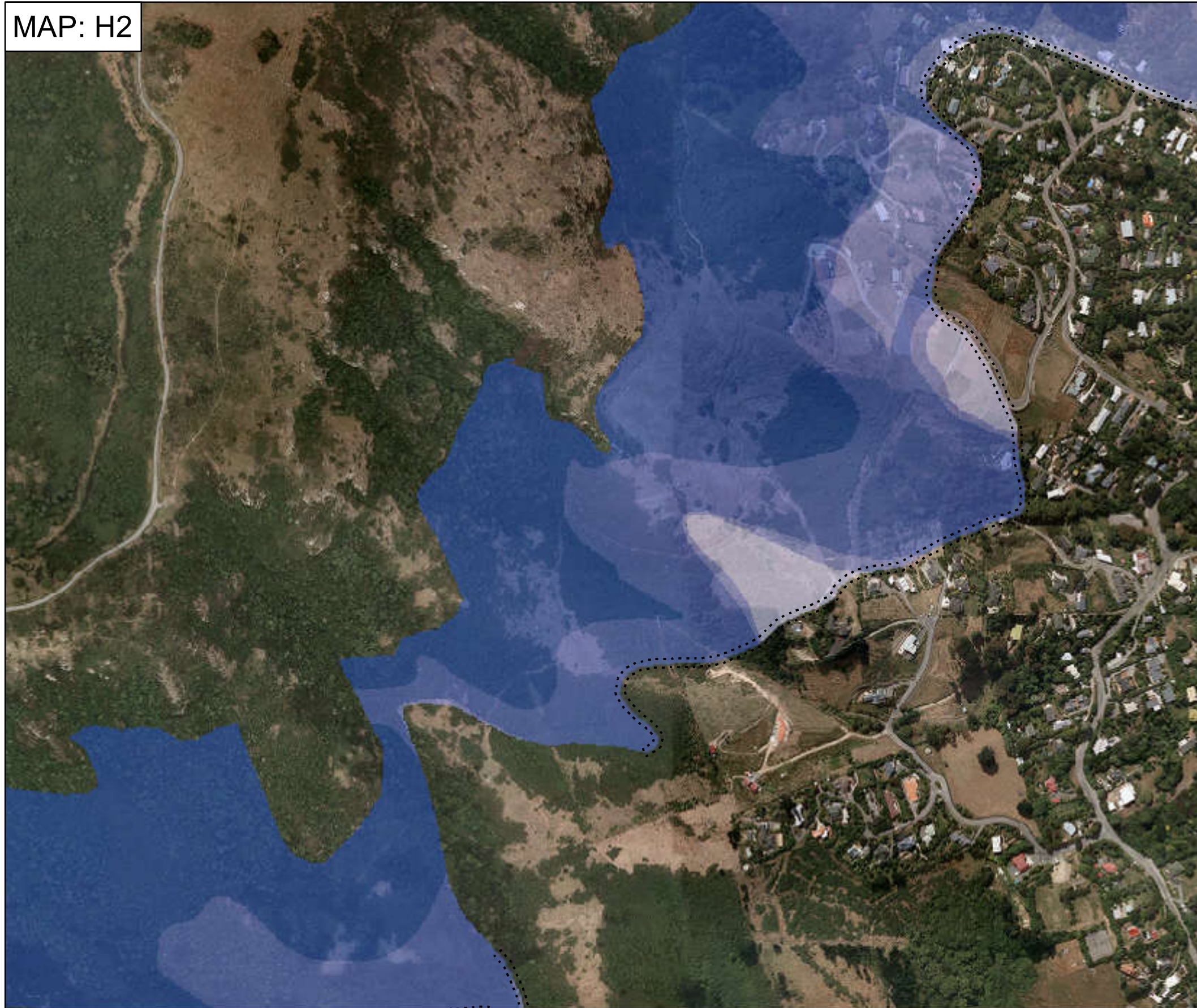


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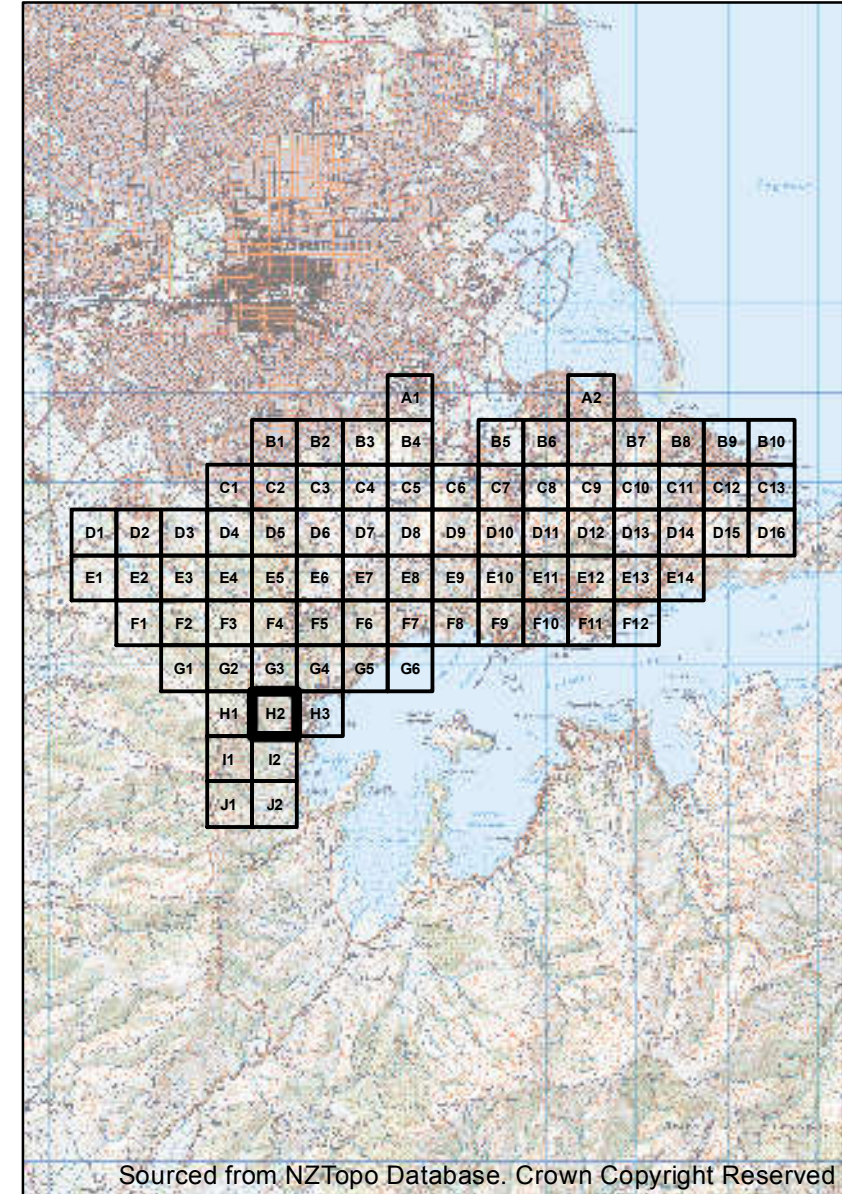
See Map: G3

MAP: H2



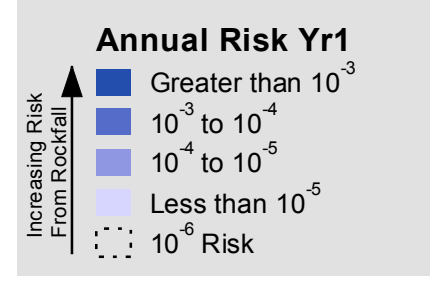
See Map: H1

See Map: I2



See Map: H3

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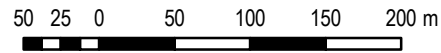


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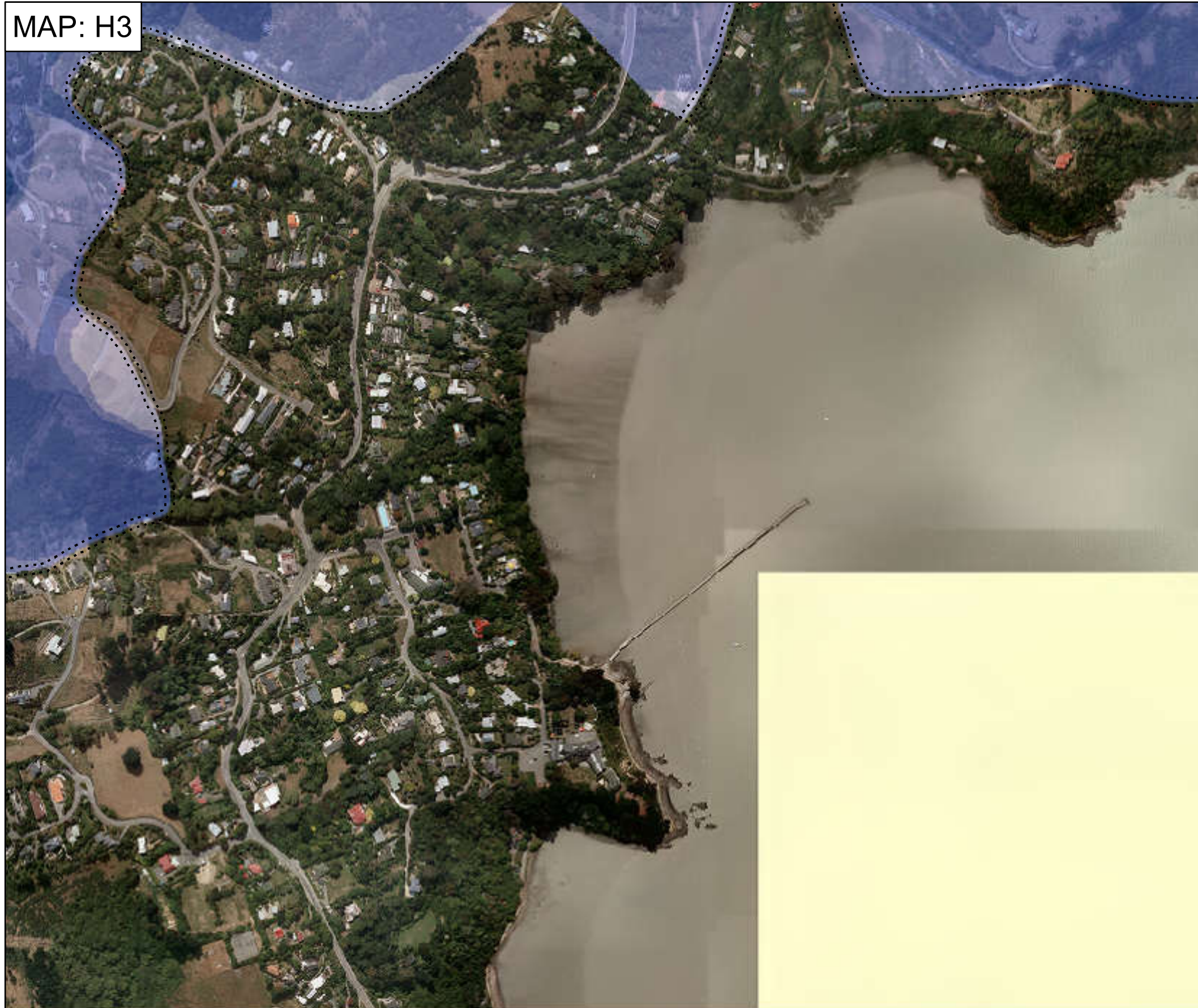


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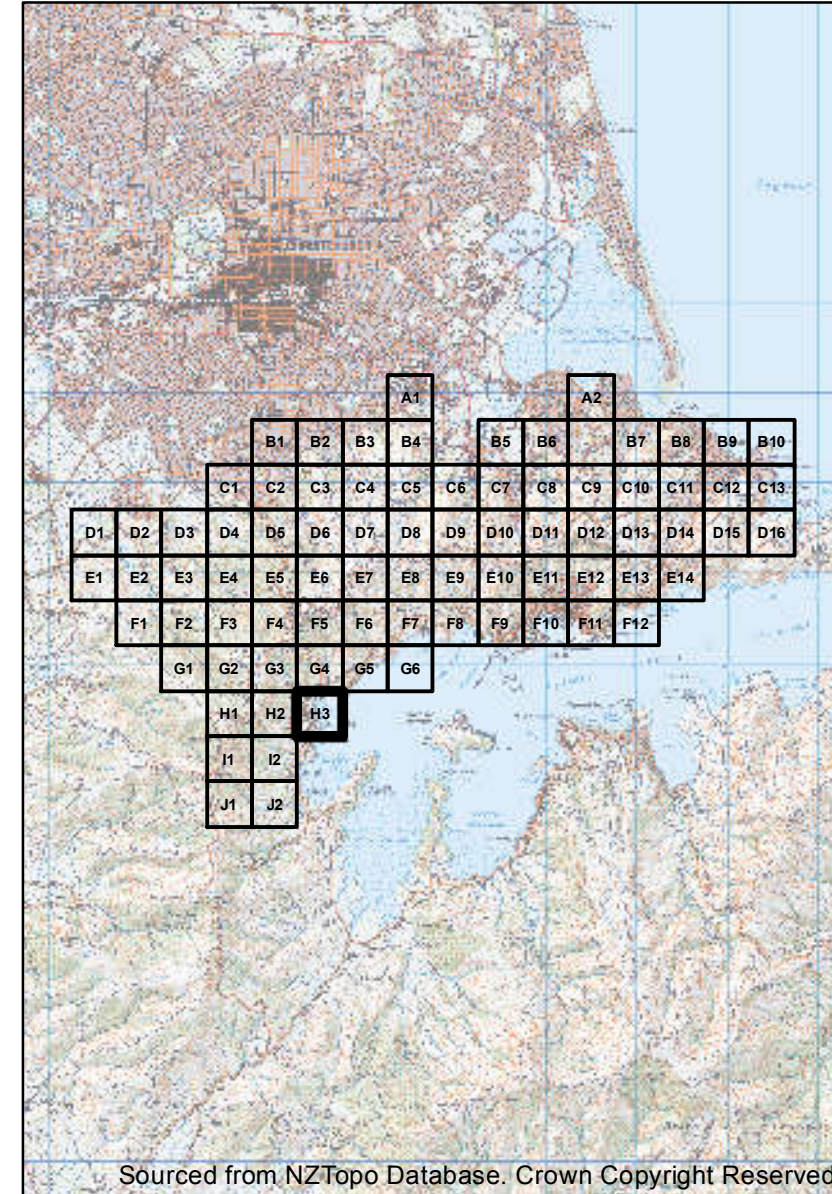
See Map: G4

MAP: H3



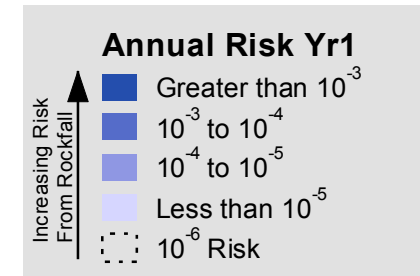
See Map: H2

See Map:



See Map:

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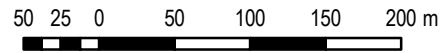


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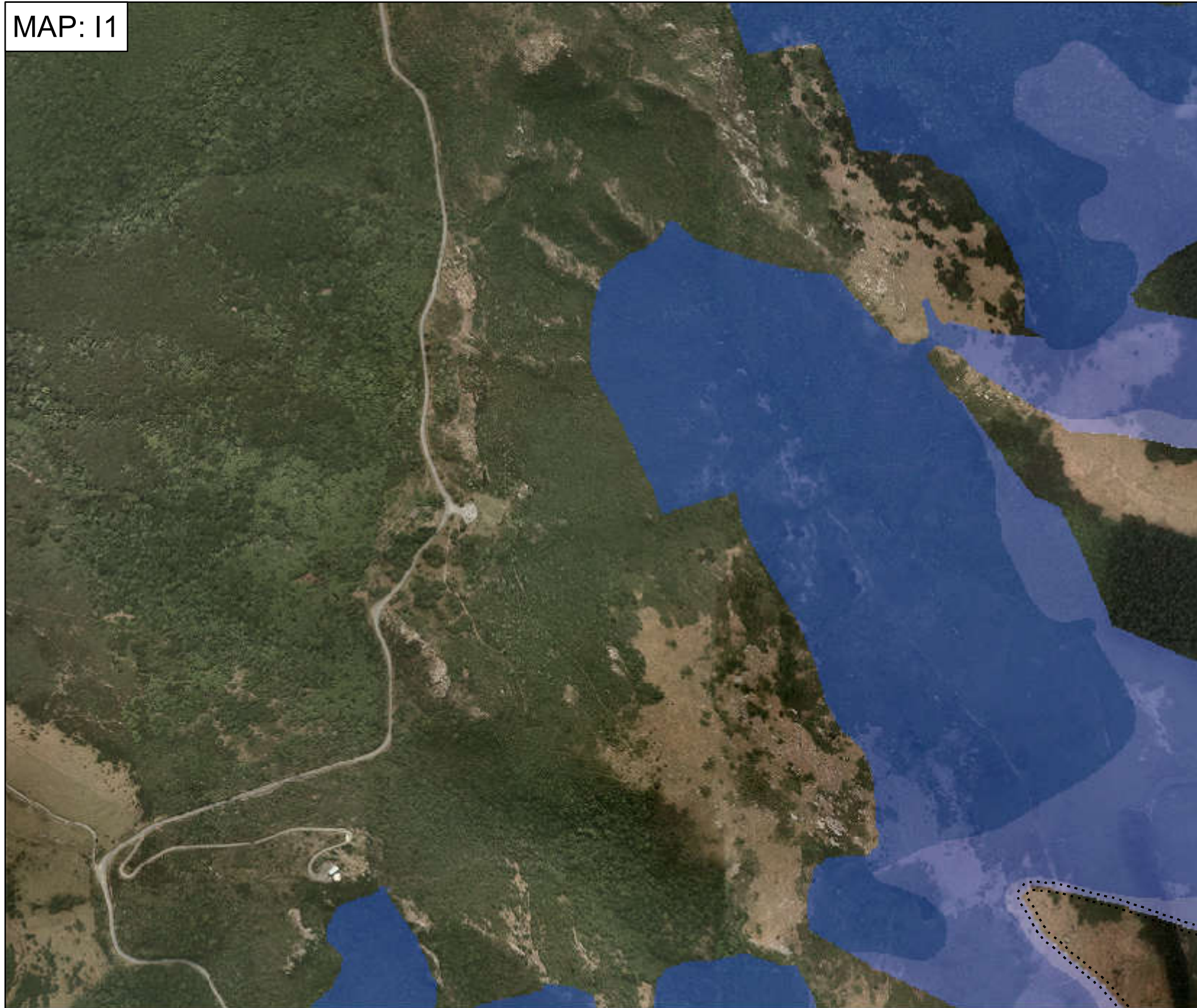


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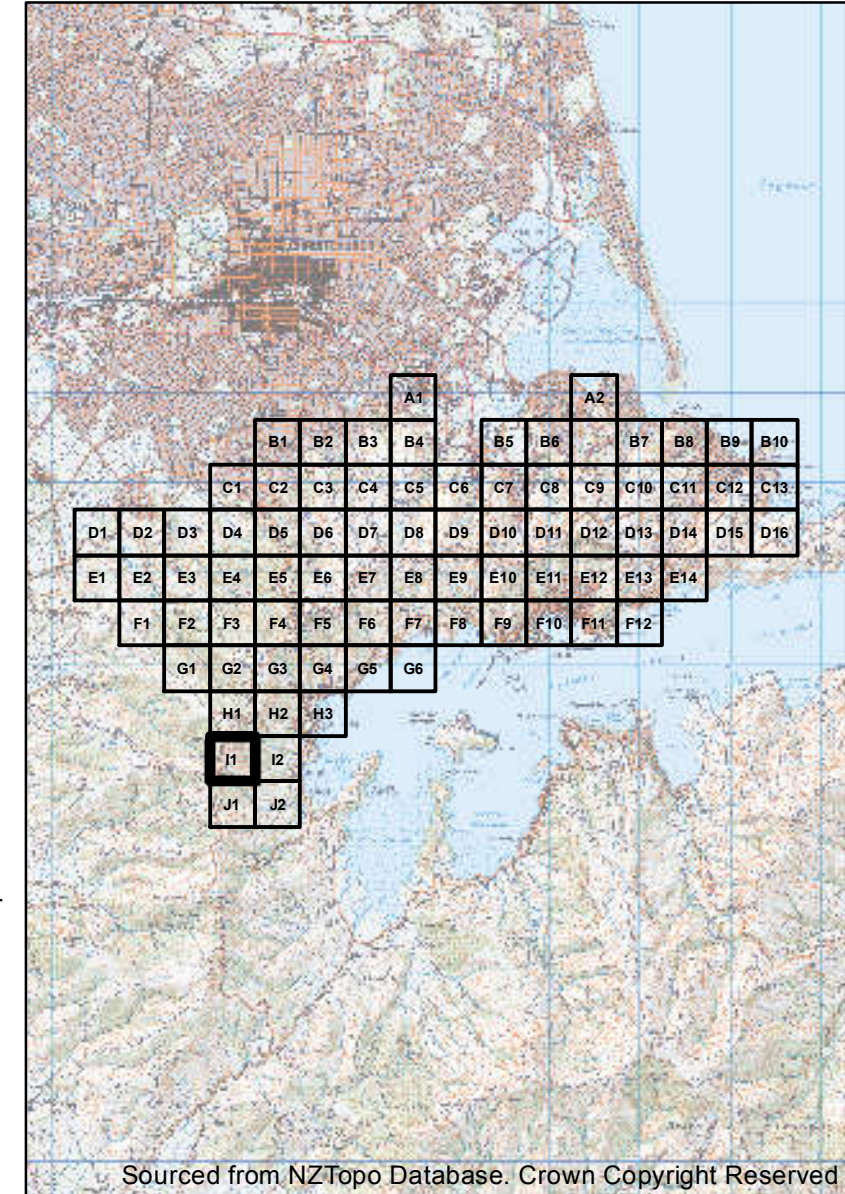
See Map: H1

MAP: I1



See Map:

See Map: J1



See Map: I2

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**Annual Risk Yr1**

- Greater than  $10^{-3}$
- $10^{-3}$  to  $10^{-4}$
- $10^{-4}$  to  $10^{-5}$
- Less than  $10^{-5}$
- $10^{-6}$  Risk

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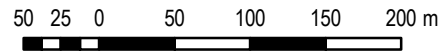


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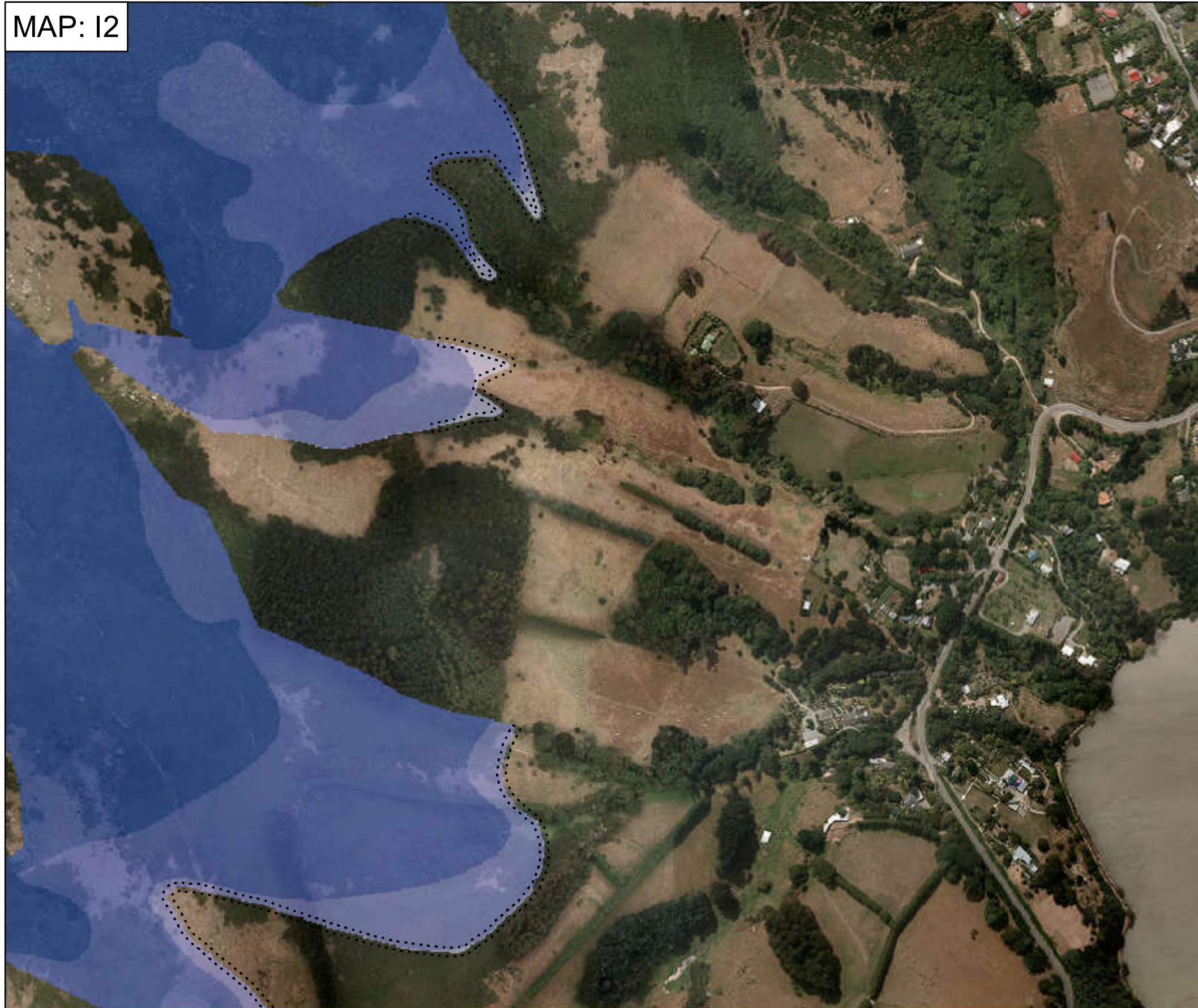


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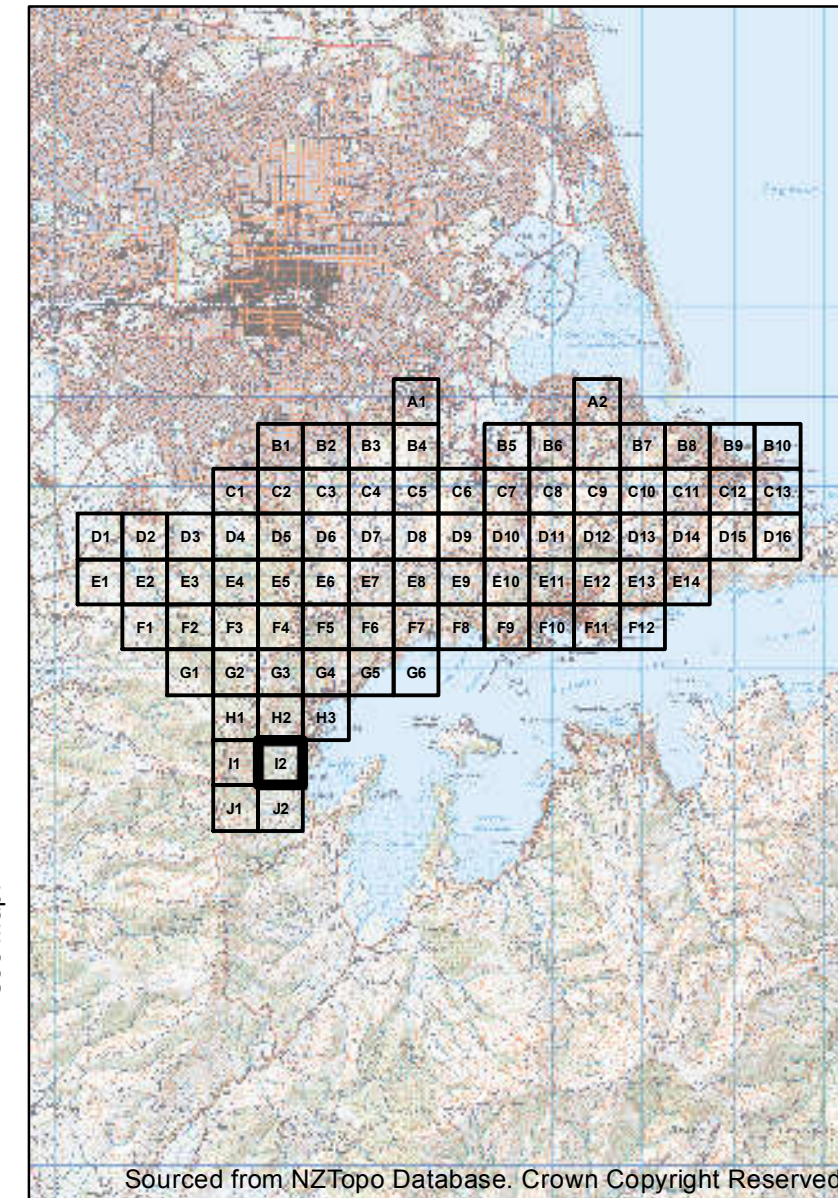
See Map: H2

MAP: I2



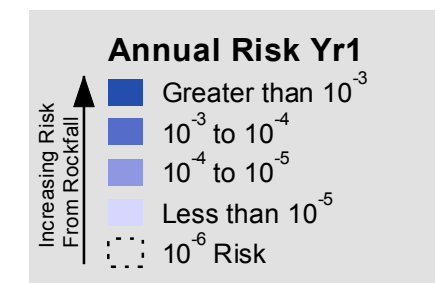
See Map: I1

See Map: J2



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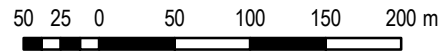


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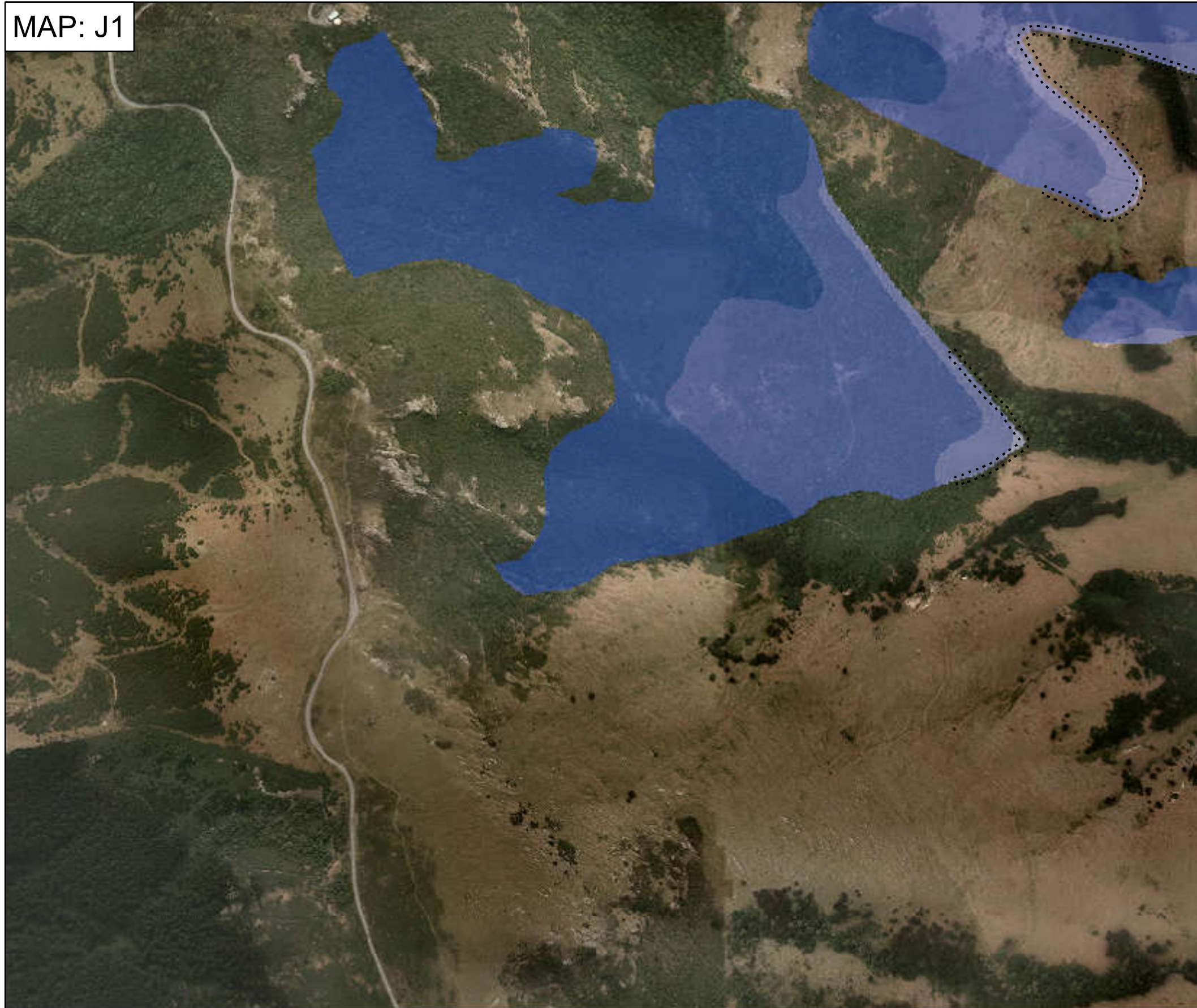


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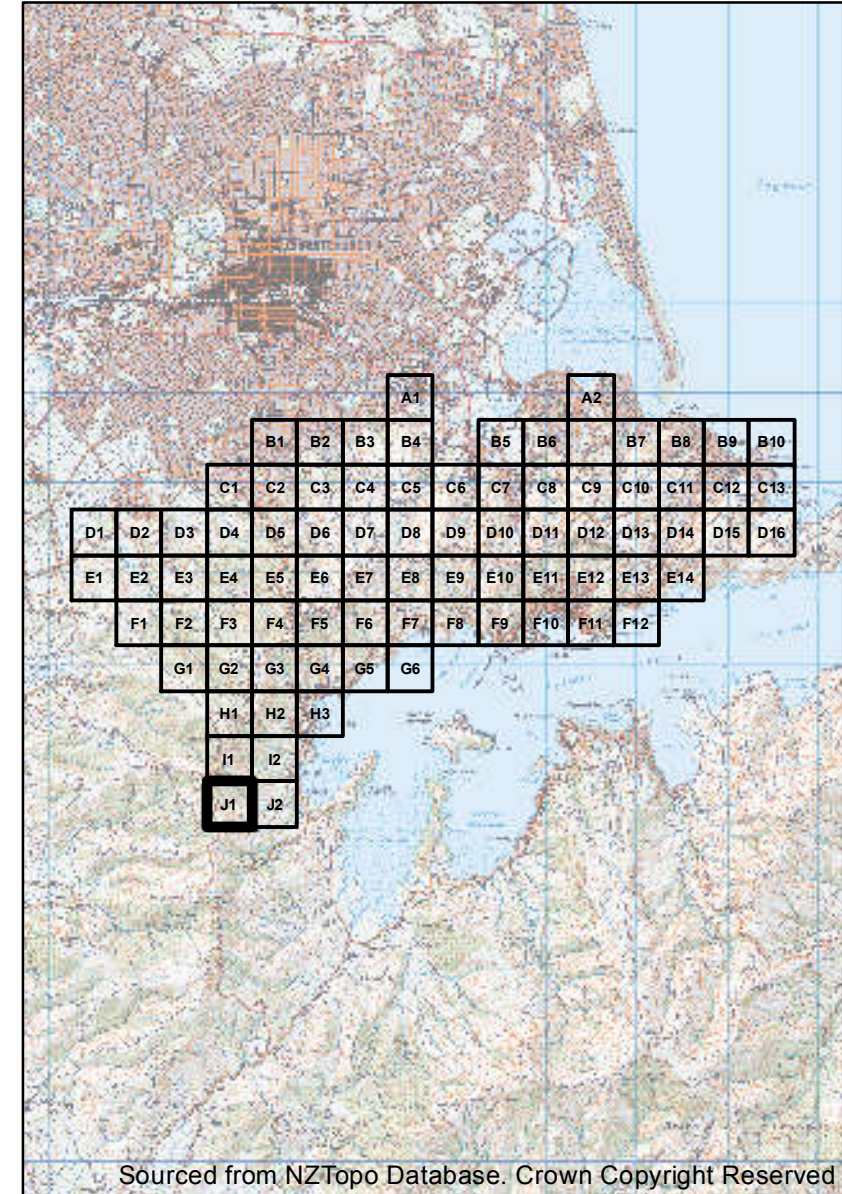
See Map: I1

MAP: J1

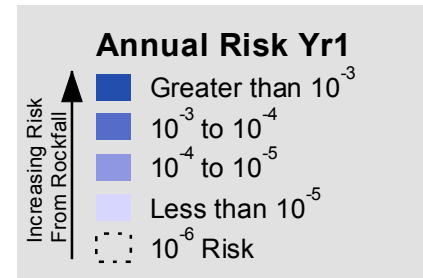


See Map:

See Map:



See Map: J2



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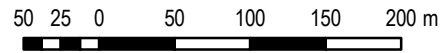
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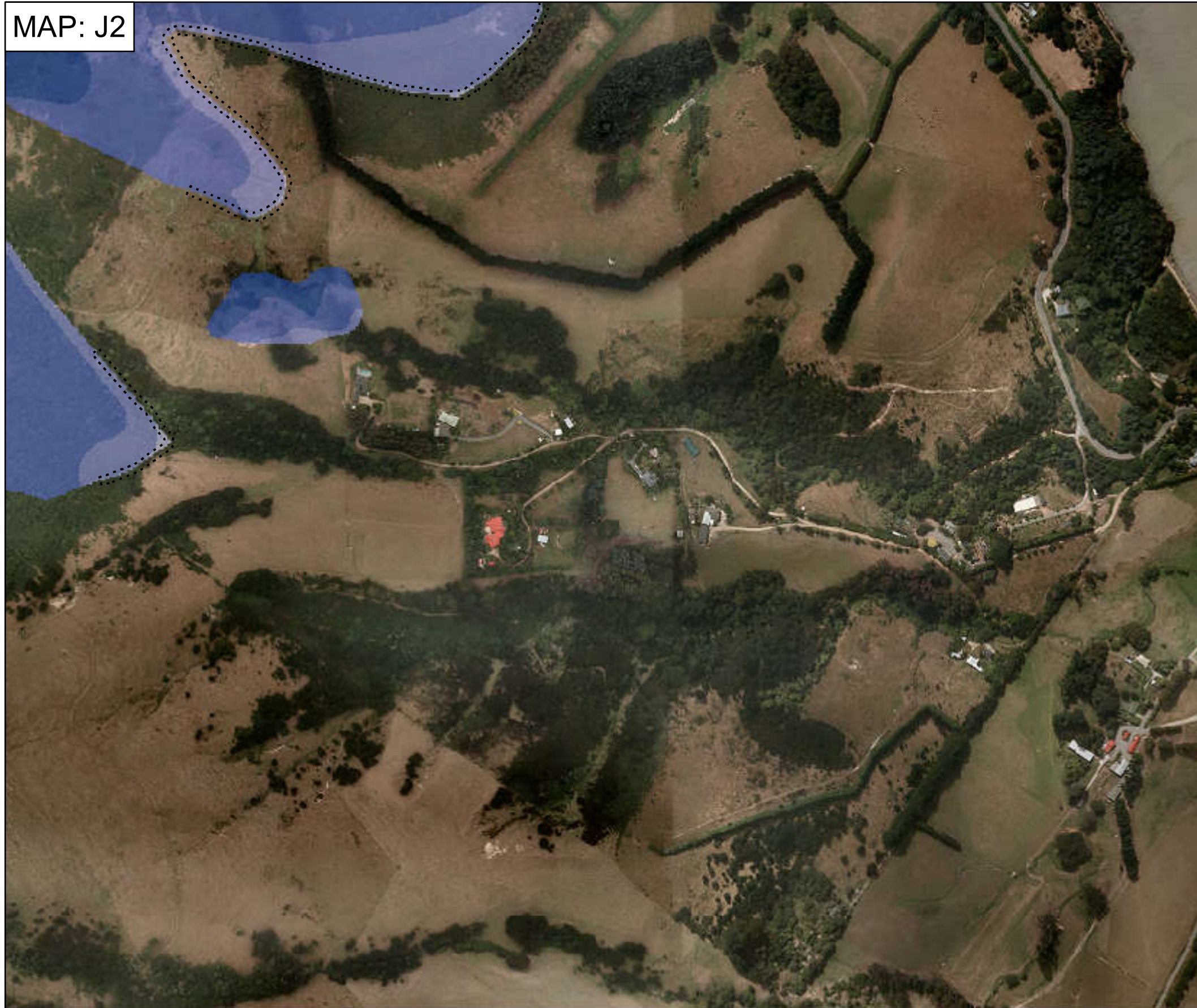


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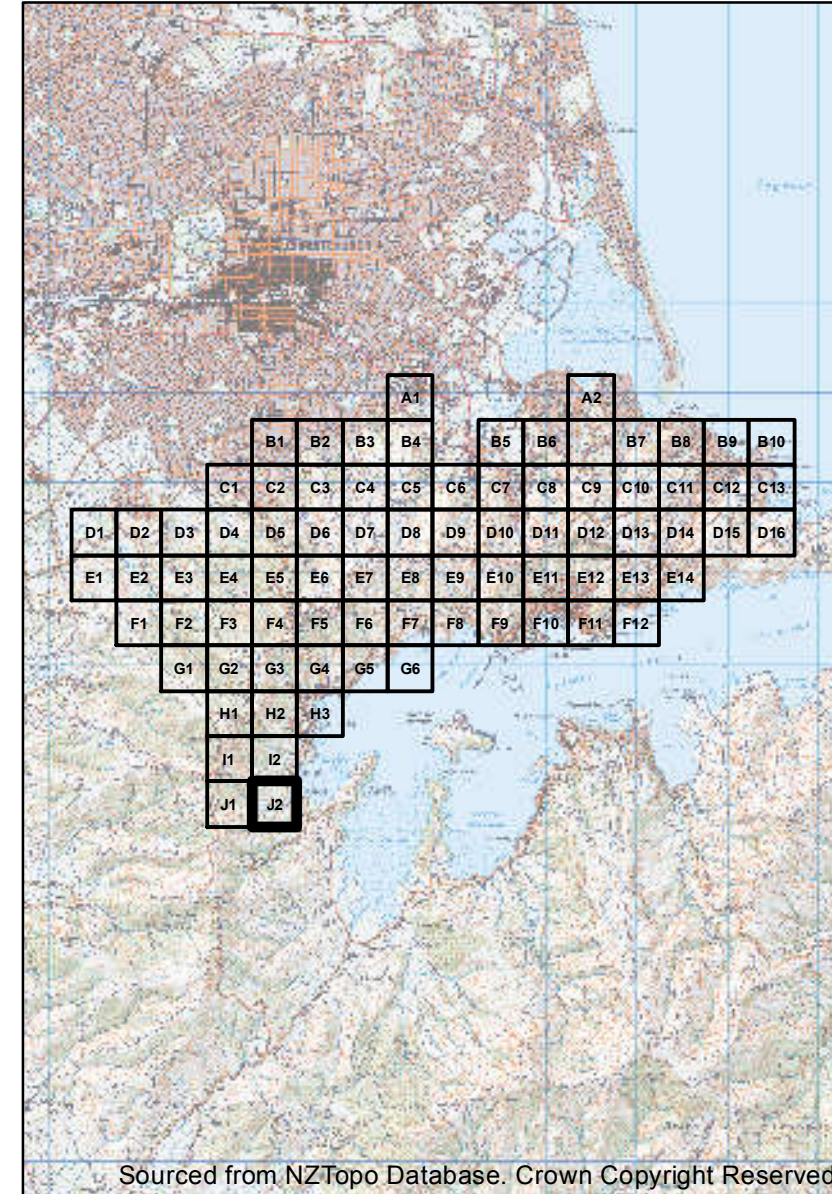
See Map: I2

MAP: J2



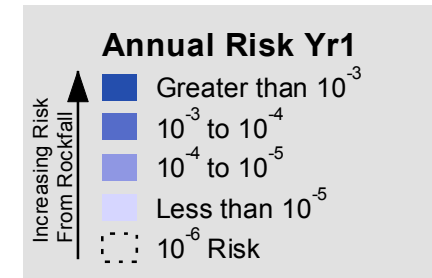
See Map: J1

See Map:



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