Question	Evidence		
1	**Basic answer:** Some terms identified such as environment, continent, latitude, sovereignty, landmass, sustainable, pristine, resources, climate change, ice shelf, glacier, polar, plateau	**Complex answer:** A range of terms identified PLUS Relevant definitions given for most.	**Excellence answer:** A thorough selection of terms identified PLUS Definitions accurate for most.
2	**Basic answer:** Antarctic Treaty		
3	**Basic answer:** • identifies an option and gives reasons why it is important • Some supporting evidence used	**Complex answer:** • identifies an option and gives reasons why it is more important than other options • numerous supporting evidence used	
4	**Basic answer:** • Southern hemisphere • Southern most continent	**Complex answer:** • Mainly between latitudes 66^{o}S and 90^{o}S • Surrounded by Oceans such as Indian and Pacific • South of Africa and South America	
5		**Complex answer:** Valkyrie Dome – Natural Vostock Research Station – Cultural Rothera Research Station – Cultural	
6	**Basic answer:** 90^{o}S 78- 83^{o}S 76 - 81^{o}S	**Complex answer:** 90^{o}S 80-81^{o}S 77-79^{o}S	
7	**Basic answer:** South		
8	**Basic answer:** India USA UK Russia France Japan Australia NZ		
9	**Basic Answer:** 1300 – 1600km	**Complex answer:** 1400-1500km	
10	**Basic Answer:** Reference to Antarctica being in light between March – Oct.	**Complex answer:** Reference to Antarctica facing the sun so is in light between March – Oct resulting in warmer temps	

		making travel possible. Should use terms such as “axis”, “Antarctic circle”.	
11	**Basic Answer:** 3832km		
12		**Complex Answer:** Transantarctic Mountains	
13		**Complex answer:** 3832 + 1353 = 5185km	
14	**Basic answer:** East		
15	**Basic Answer:** Ronne Ice Shelf Ross Ice Shelf		
16	**Basic Answer:** Line graph drawn with some accuracy – incl. plotting of data and use of conventions. See Appendix 1	**Complex answer:** Line graph drawn with a high degree of accuracy incl. Plotting of data and use of conventions. See Appendix 1	
17	**Basic answer:** Implies fluctuation: “up and down” etc.	**Complex answer:** Fluctuation explicit. Data is used to support answer.	
18	**Basic answer:** 19.4 million km²		
19	**Basic answer:** 2006/7 and 2012/13	**Complex answer:** 2007 and 2013	
20-22	**Basic answer:** 18.96 million km²		
21	**Basic answer:** 3.23 million km²		
22	**Basic answer:** 15.73 million km²		
23	**Basic answer:** Makes a link between temp and ice extent and gives a reason. Some reference to the data is made.	**Complex answer:** Makes a link between temp and ice extent. Gives a detailed reason using supporting data.	**Excellence answer:** Makes a link between temp and ice extent. Gives detailed reason(s) using supporting data and geo terminology.
24	**Basic answer:** Some features identified with supporting evidence.	**Complex answer:** Features identified with supporting evidence and an explanation is given as to why they are significant.	
25/26	**Basic answer:** 4 people located on continuum AND A reason given for the location of 2 of them.	**Complex answer:** 4 people located on continuum AND The perspective for 2 of them is identified with a supporting explanation.	
27	**Basic Answer:** Précis map drawn with	**Complex answer:** Précis map drawn with a high	

	some accuracy – incl. location of features and use of conventions. See appendix 2	degree of accuracy – incl. location of features and use of conventions. See appendix 2	
28		**Complex answer:** West	
29	**Basic answer:** 30 -40km	**Complex answer:** 34-38km	
30	**Basic answer:** Précis sketch drawn with some accuracy – incl. location of features and use of conventions. See appendix 3	**Complex Answer:** Précis sketch drawn with a high degree of accuracy – incl. location of features and use of conventions. See appendix 3	
31	**Basic answer:** Cross section drawn with some accuracy – incl. location of features and use of conventions. See appendix 4	**Complex answer** Cross Section drawn with a high degree of accuracy – incl. location of features and use of conventions. See appendix 4	
32	**Basic answer:** • Travelling on foot • Extreme cold weather on Polar plateau • Lack of oxygen on polar plateau • Katabatic winds • Crevasses on Beardmore Glacier • etc	**Complex answer:** As for basic but both problems need to be explained (i.e. why were they a problem?)	
33	**Basic answer:** Précis map drawn with some accuracy – incl. location of features and use of conventions. See appendix 5	**Complex Answer:** Précis map drawn with a high degree of accuracy – incl. location of features and use of conventions. See appendix 5	
34	Basic answer: 2km		
35	**Basic answer:** Cross section drawn with some accuracy – incl. use of conventions. See appendix 6	**Complex answer:** Cross Section drawn with a high degree of accuracy – incl. use of conventions. See appendix 6	
36	**Basic answer:** 2 of • Castle rock – natural • Scott Base – cultural • Kiwi Ski Slope - cultural	**Complex answer:** All 3 correct	
37	**Basic answer** **Relationship** = As wind energy rises, diesel	**Complex answer:** As with basic **plus** use of supporting data from the graph.	

	energy falls. **Reason** = wind energy is renewable so is preferred over diesel whenever possible.		
38	**Basic answer:** Any 3 of • Seals • Penguins • Flying birds • Baleen Whales • Silverfish • Squid	**Complex answer:** All 6 predators identified	
39	**Basic Answer:** One of • Toothed Whales • Seals	**Complex Answer:** Both • Toothed Whales • Seals	
40	**Basic Answer:** Toothfish		
41	**Basic Answer:** Bar graph drawn with some accuracy – incl. plotting of data and use of conventions. See Appendix 7	**Complex Answer:** Bar graph drawn with a high degree of accuracy – incl. plotting of data and use of conventions. See Appendix 7	
42	**Basic answer:** Reference must be made to either a Tooth Whales being disadvantaged OR Other competing species (eg penguins) being advantaged due to less competition for food (eg Silverfish)	**Complex answer:** Reference must be made to either a Tooth Whales being disadvantaged AND Other competing species (eg penguins) being advantaged due to less competition for food (eg Silverfish) PLUS specific evidence from resources included.	
43	**Basic Answer:** Statistical map drawn with some accuracy – incl. plotting of data and use of conventions. See Appendix 8	**Complex Answer:** Statistical map drawn with a high degree of accuracy – incl. plotting of data and use of conventions. See Appendix 8	

Concept checklist

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Understanding of the concept:
Answer shows an understanding of the concept of environments by:

- Describes the location of the environment
- Describes some natural AND cultural features in the environment
- Attempts to explain why the features are significant
- Includes some specific information from the resources

In depth understanding of the concept:
Answer shows an in-depth understanding of the concept of environments by:

- Describes the location in some detail
- Describes a range of natural AND cultural features of the environment in detail
- Explains in detail why some of the features are significant
- Includes a range of specific information from the resources

Comprehensive understanding of the concept:
Answer shows a comprehensive understanding of the concept of environments by:

- Describes the location in some detail
- Describes a range of natural AND cultural features of the environment in detail
- Explains in detail why most of the features are significant
- Includes geographic terms (including concept terms) throughout
- Includes specific information from the resources throughout

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Understanding of the concept:
Answer shows an understanding of the concept of change by:

- Explains some changes that are occurring in the environment
- Categorises these changes in some way (e.g. spatial, temporal etc.)
- Includes some specific information from the resources

In depth understanding of the concept:
Answer shows an in-depth understanding of the concept of change by:

- Explains in detail a range of changes that are occurring in the environment
- Effectively categorises the changes (e.g. spatial, temporal etc.)
- Includes a range of specific information from the resources

Comprehensive understanding of the concept:
Answer shows a comprehensive understanding of the concept of change by:

- Explains in detail a range of changes that are occurring in the environment
- Extensively categorises the changes (e.g. spatial, temporal etc.)
- Includes geographic terms (including concept terms) throughout
- Includes specific information from the resources throughout

Understanding of the concept:
Answer shows an understanding of the concept of Sustainability by:

- Identifies some ways our needs are being met in Ross Island/Sea area
- Explains some issues surrounding meeting these needs
- Explains a method employed to decrease the impact of these issues
- Makes a justified statement regarding the sustainability of NZ involvement in Antarctica
- Includes some specific information from the resources

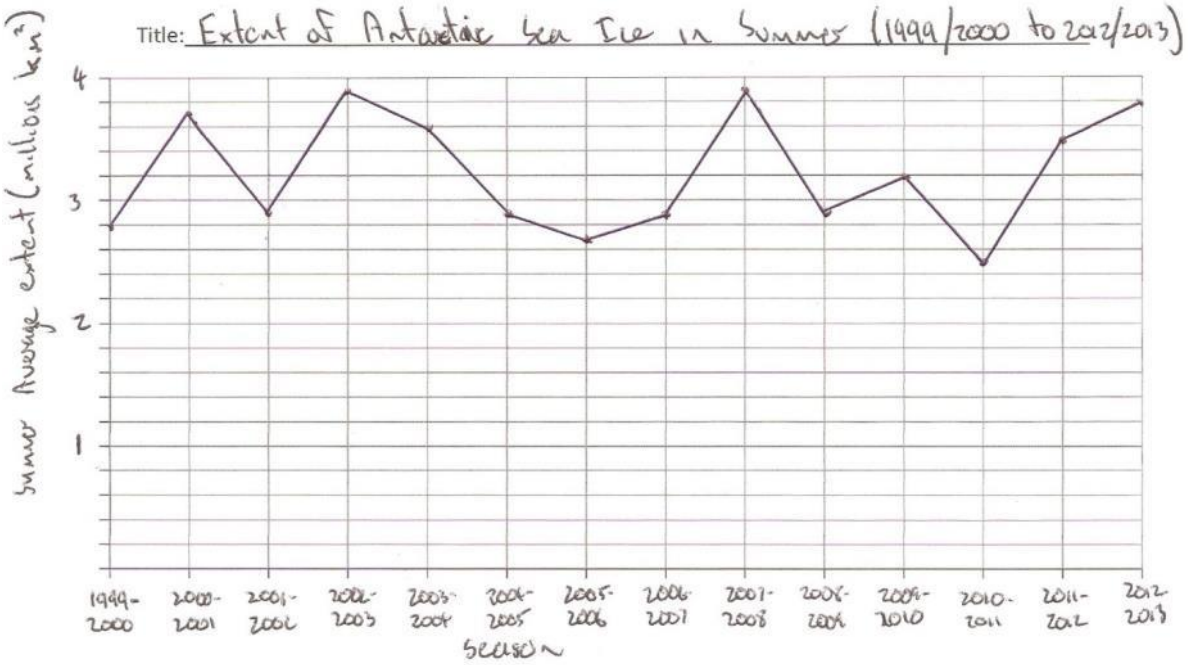
In depth understanding of the concept:
Answer shows an in depth understanding of the concept of Sustainability by:

- Identifies a range of ways our needs are being met in Ross Island/Sea area
- Explains a range of issues surrounding meeting these needs
- Explains methods employed to decrease the impact of these issues
- Justifies, in detail, the sustainability (or otherwise) of NZ involvement in Antarctica
- Includes a range of specific information from the resources

Comprehensive understanding of the concept:
Answer shows a comprehensive understanding of the concept of Sustainability by:

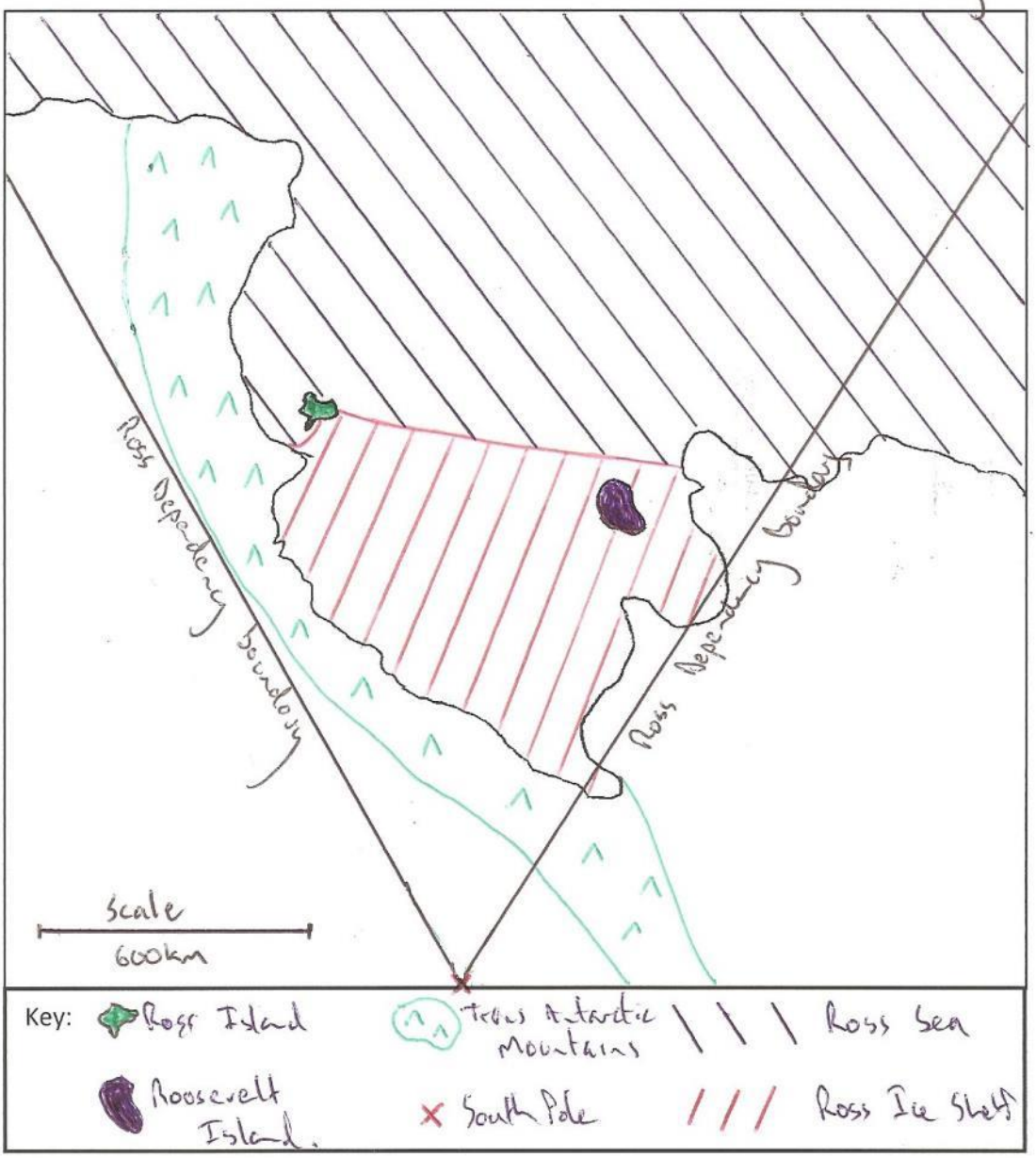
- Identifies a range of ways our needs are being met in Ross Island/Sea area
- Explains a range of issues surrounding meeting these needs
- Explains methods employed to decrease the impact of these issues
- Fully justifies the sustainability (or otherwise) of NZ involvement in Antarctica
- Includes geographic terms (including concept terms) throughout
- Includes specific information from the resources throughout

Appendix 1


Title: Extent of Antarctic Sea Ice in Summer (1999/2000 to 2012/2013)
Summer Average extent (million km²)
4
3
2
1
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
season

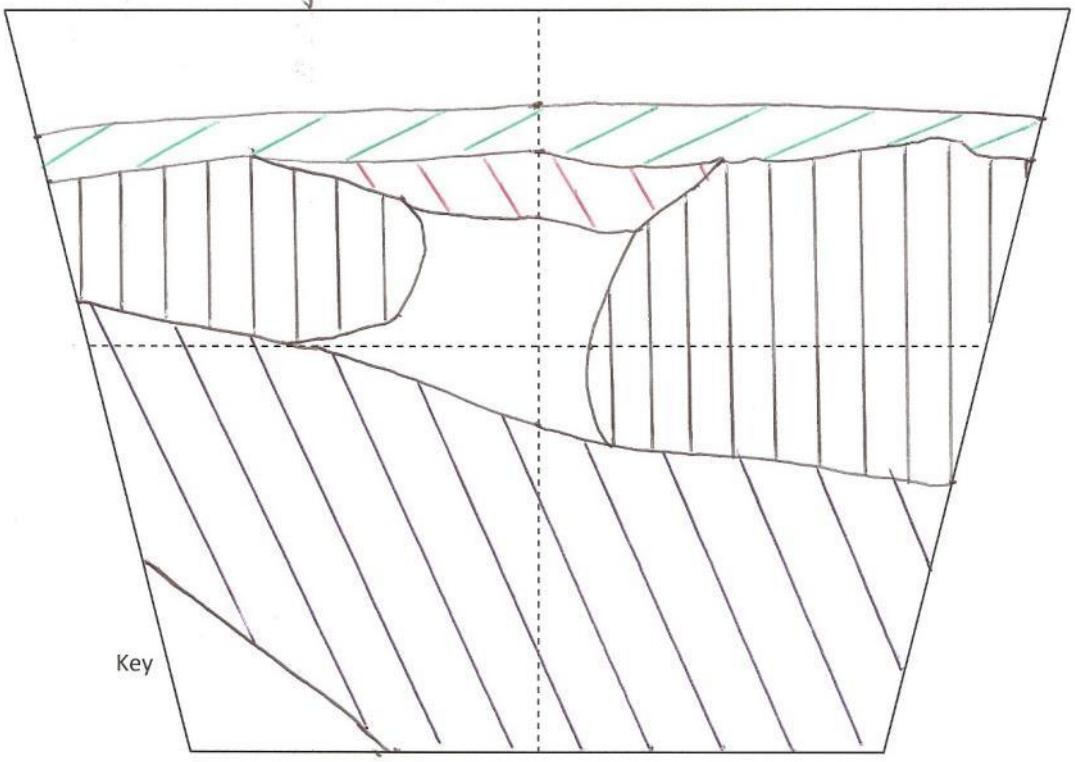
Appendix 2

Title: Natural Features of the Ross Dependency



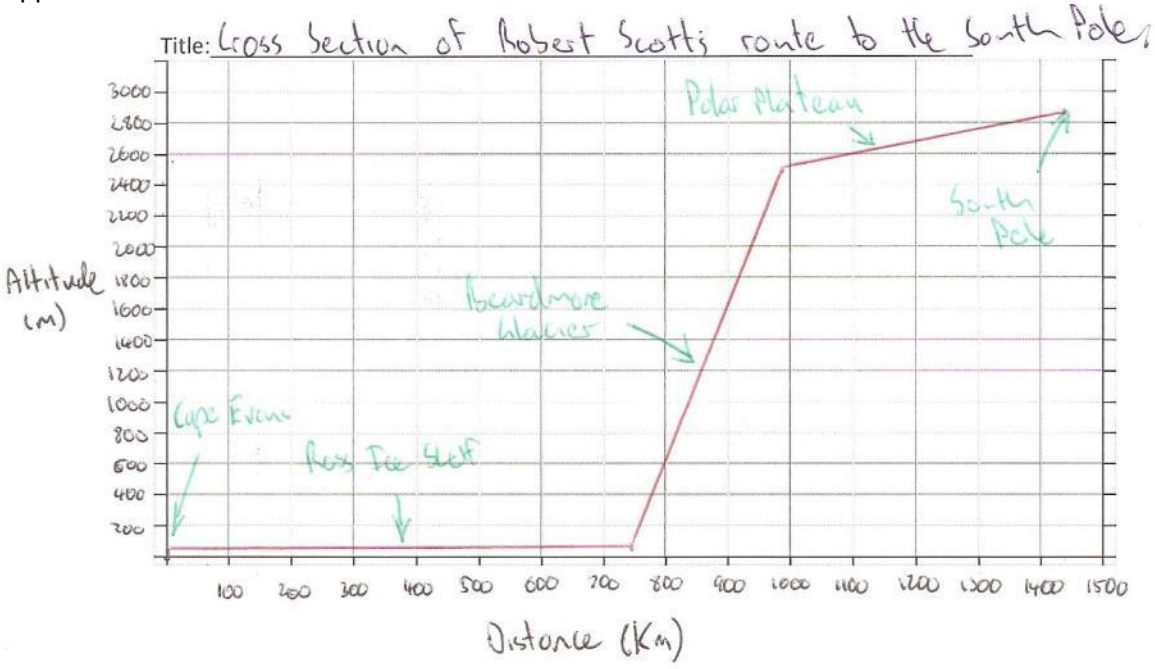
Appendix 3

Title: The Dry Valleys - Antarctica



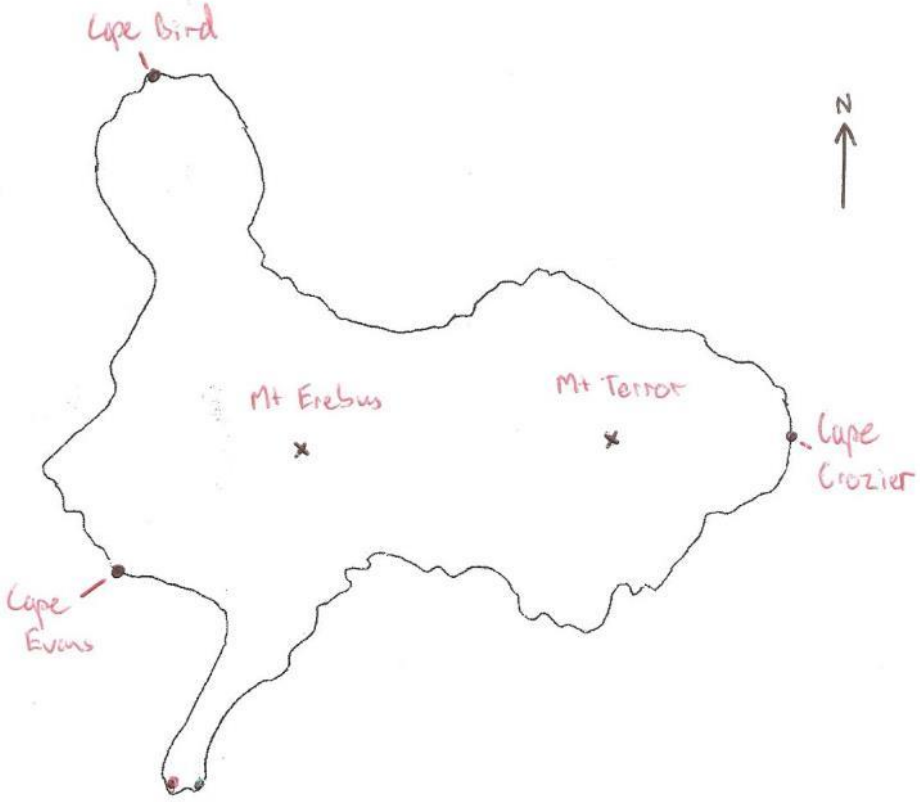
Trans Antarctic Mountains		Wright Valley	
McKelvey valley		Olympus Range	

Appendix 4


Title: Cross Section of Robert Scott's route to the South Pole
Altitude (m)
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
Cape Evans
Ross Ice Shelf
Beardmore Glacier
Polar Plateau
South Pole
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
Distance (Km)

Appendix 5

Title: Ross Island.

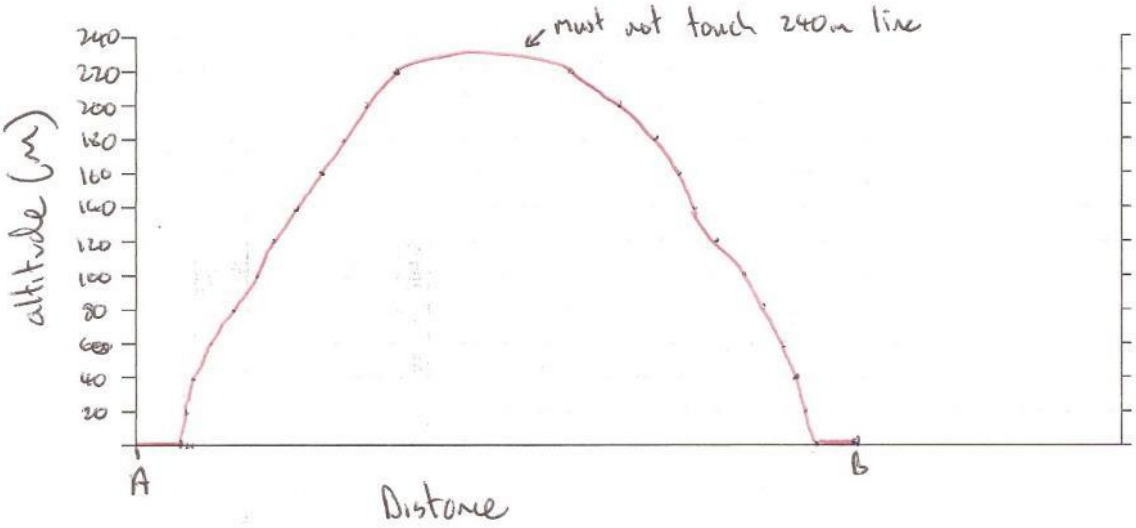


Key

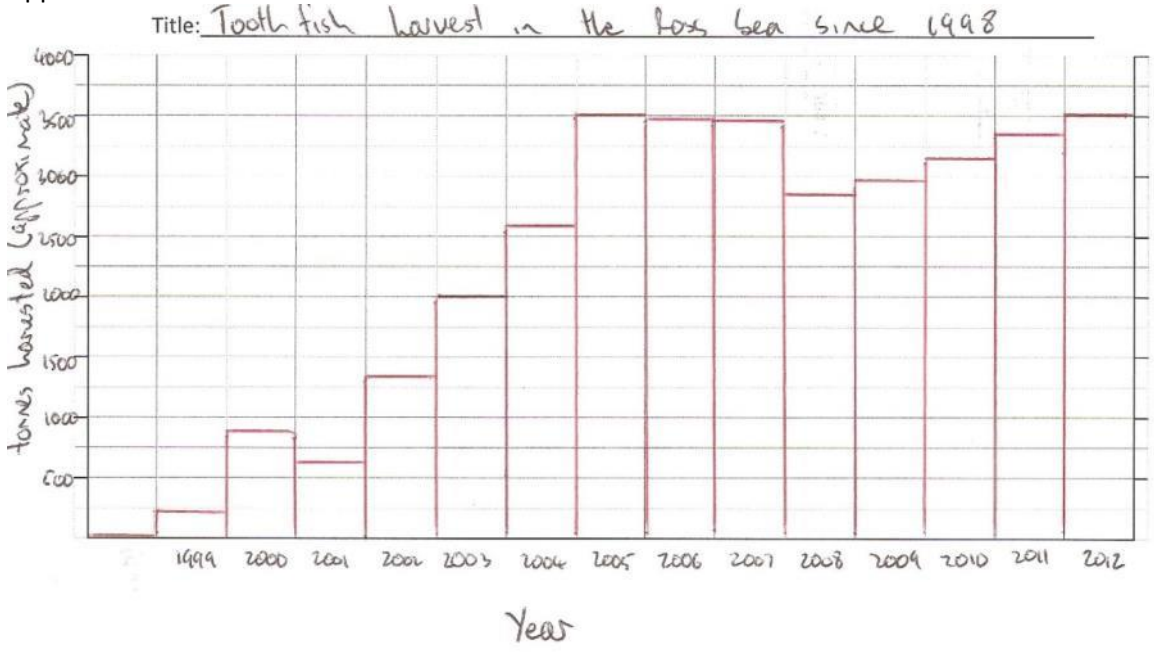
Mt Erebus		Cape Crozier	
Cape Bird		McMurdo Station	
Cape Evans		Mt Terra Nova	
scott base			

Appendix 6

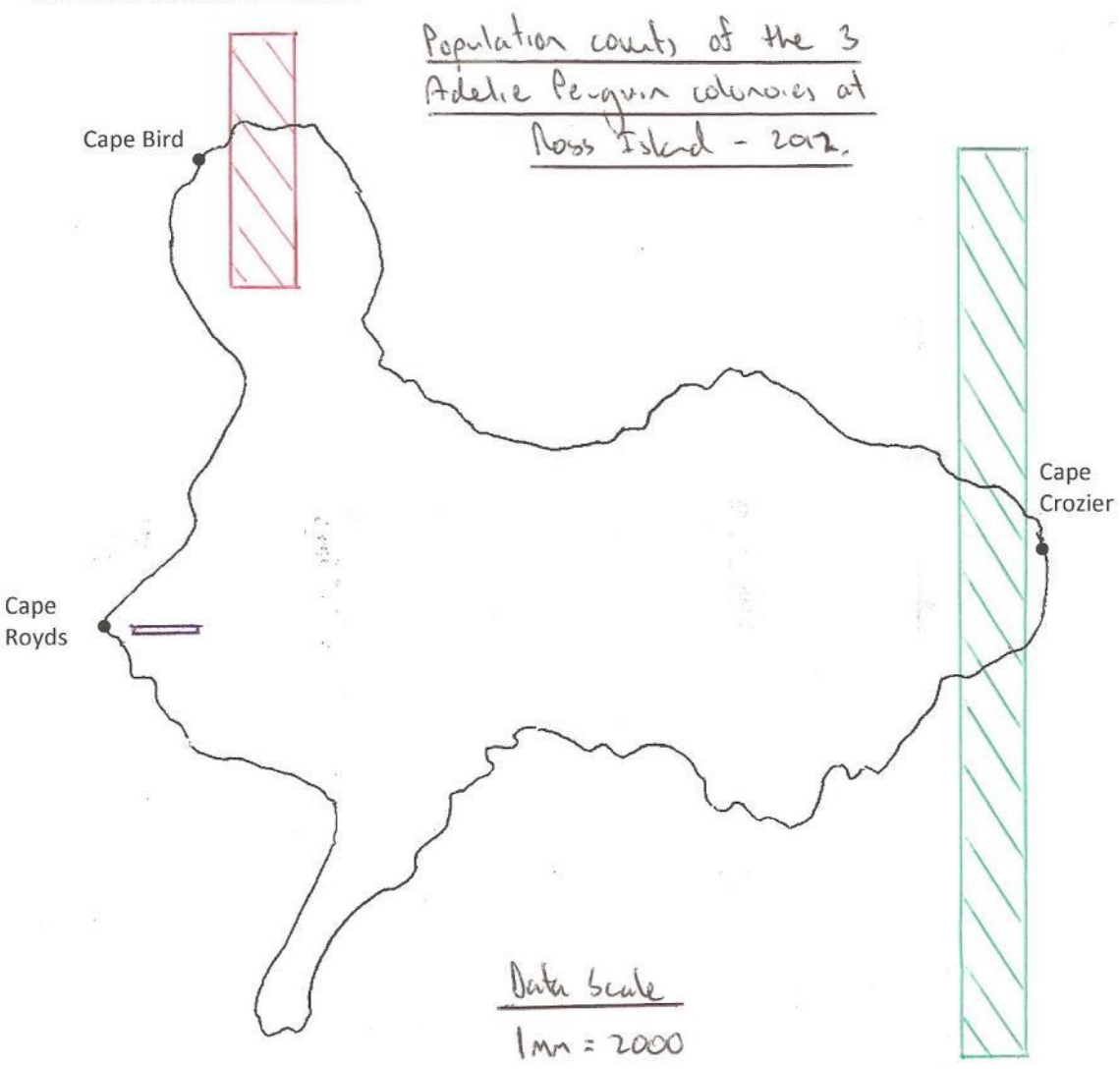
Title: Cross Section of Hut Peninsula - Ross Island (A-B)



Appendix 7


Title: Tooth fish harvest in the Ross Sea since 1998
tonnes harvested (approximate)
4000
3500
3000
2500
2000
1500
1000
500
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Years

Appendix 8


Population counts of the 3 Adelie Penguin colonies at Ross Island - 2012.
Cape Bird
Cape Crozier
Cape Royds
Data Scale
1mm = 2000