Correlations between rat presence and geographical features

Iris Clerx

June 28, 2015

HAS University of Applied Sciences
Onderwijsboulevard 221
PO Box 90108
5223 DE ’s-Hertogenbosch

Document title:	Correlations between rat presence and geographical features
Status:	Final
Company:	Ark in the Park
Company supervisor:	Laurence Béchet
Institute tutor:	Irene Pleizier
Student:	Iris Clerx
Field of study:	Geo Media & Design
Teaching institute:	HAS University of Applied Sciences
Location:	Auckland
Date:	June 28, 2015

Abstract

Ark in the Park is interested in knowing whether there are correlations between rat presence and geographical features. This information will mean that areas that need enhanced baiting can be accurately identified.

When bait lines are baited (3 times a year) the amount eaten from the previous baiting is recorded. In order to analyse the bait uptake, this data is then reclassified. To avoid the variable of reinvasion skewing the results, bait stations within 600 metres of the border were not taken into account.

Geographical analyses of environmental variables (aspect, elevation, rivers and slope) were performed with ArcGIS. The statistical analysis of the data derived from GIS analyses was performed with SPSS. To answer the research questions, the chi-square test was performed. The hypotheses were:

- H_0: there is no correlation between rat presence and the geographical feature ($p > a$)
- H_1: there is a correlation between rat presence and the geographical feature ($p < a$)

Results showed that rat presence was significantly related to elevation, river distance and season. No relationships were found between rat presence and aspect or rat presence and slope.

Rats were shown to respond to seasonally available food resources. In addition, they were recorded in poorly drained areas. With these results the habitat preference of rats can be better understood.

It is recommended to do a full baiting in winter. Also, it is recommended to bait stations within 50 metres of a river with big bags. Further research into the positive correlation between rat presence and elevation might be needed. Finally, an interesting future research topic might be to investigate correlations between rat presence and vegetation.

Table of contents

Abstract 3
1. Introduction 5
2. Materials and methods 6
   2.1 Study site 6
   2.2 Habitat use by rats 6
   2.3 Rat baiting 6
   2.4 Geographical analysis 8
   2.5 Statistical analysis 8
3. Results 9
   3.1 Differences in rat presence by aspect 9
   3.2 Differences in rat presence by elevation 9
   3.3 Differences in rat presence by distance to rivers 10
   3.4 Differences in rat presence by season 11
   3.5 Differences in rat presence by slope 12
4. Discussion 13
   4.1 Aspect 13
   4.2 Elevation 13
   4.3 Distance to river 13
   4.4 Seasonality 13
   4.5 Slope 13
5. Conclusion 14
6. Recommendations 15
7. Acknowledgements 16
8. References 17
9. Appendices 18
   A. Elevation map 18
   B. Contour map 19
   C. Slope map 20
   D. Aspect map 21
   E. Manual hydrology tools 22
   F. Manual field calculator 26
   G. Procedure Chi-square test 28

1. Introduction

New Zealand split away from the supercontinent Gondwana about 85 million years ago. Due to its isolation, New Zealand's plants and animals evolved without predatory land mammals (Brockie, 2012). Many species are endemic – found nowhere else in the world. When humans arrived, they brought invasive mammals with them: rats, possums, stoats etc (Diamond, 2011). Invasive species became the most significant threats to the native species, 50% of bird species became extinct (Brockie, 2012). Removing introduced predators and halting the extinction and loss of population size of native species became the focus for conservation in New Zealand.

Ark in the Park is a partnership between Forest & Bird and the Auckland Council. It is a conservation project at the Cascade Kauri Park located in the northern part of Auckland's Waitakere Ranges regional park. They do pest control to help restore the ecology of this area to its natural state. Pest control involves baiting and trapping. They also have reintroduced native species such as North Island robins (*Petroica longipes*), kokako (*Callaeas cinerea*) and whiteheads (*Mohoua albicilla*).

Ark in the Park is interested in knowing whether there are correlations between rat presence and geographical features such as: slope, rivers and season. This information will mean that areas that need enhanced baiting can be accurately identified. An objective of the project is to maintain rat numbers at 5% or less. Improved data analyses and future developments of alternative pest control devices should enable toxin use to be minimised.

The aim of this report is to answer the research question: 'Are there correlations between rat presence and geographical features? '. Chapter 2 briefly explains the research methodology and an explanation of why certain decisions were made is given. In chapter 3 the results of the research are described and illustrated by graphs. In chapter 4 the conclusions and recommendations have been formulated. This chapter presents the main findings of this study. Finally, the remaining information concerning this research can be found in the appendices referenced in the text. The appendices include detailed manuals and maps derived from the data.

2. Materials and methods

2.1 Study site

The study area was the 2100-ha Cascade Kauri Park, which forms part of the Waitakere Ranges, Auckland. The Waitakere Ranges are an elevated plateau created by massive uplift of hard volcanic basalt (Waitakere City Council, 2007). The maximum elevation within the plateau is 474m. Steep rugged hills within the Ranges created good drainage for Kauri trees (*Agathis australis*). The climate is cool and windy with rainfall of approximately twice that of the rest of Auckland. The Ranges have a good network of streams, freshwater wetlands and lakes (Waitakere City Council, 2007).

2.2 Habitat use by rats

The Waitakere Ranges have two introduced species of rat: Norway rat (*Rattus norvegicus*) and ship rat (*Rattus rattus*). Norway rats can be found around wetlands, coastal areas (Department of Concervation, 2014) or in damp forest (Forest & Bird, 2009). They are able to climb, but they spend most of their time on the ground. Also, they are excellent swimmers. Norway rats have very broad diets incorporating both plants and animals. They are a particular threat to indigenous species that nest on the ground, especially in braided river beds (Department of Concervation, 2014). Ship rats can be found throughout New Zealand and are abundant in kauri forest (Brockie, Introduced animal pests - Rats and mice, 2012). They mostly live and make their nests in trees (Forest & Bird, 2009). Ship rats are omnivorous and have very broad diets including fruit, seeds, invertebrates, eggs, chicks and sitting adults of forest birds (Department of Concervation, 2014). Their diet varies seasonally and depends on what food resources are available (Atkinson, 1973). The vast majority of rats at Ark in the Park are ship rats.

2.3 Rat baiting

Ark in the Park has a grid of 4263 bait stations installed, 50 or 100 metres apart. Bait lines are re-baited three times a year. Volunteers complete a card (figure 1) recording the amount eaten from the previous baiting. For several years this uptake has been entered into a database (Ark in the Park, 2014). In order to analyse the data, the uptake is reclassified:

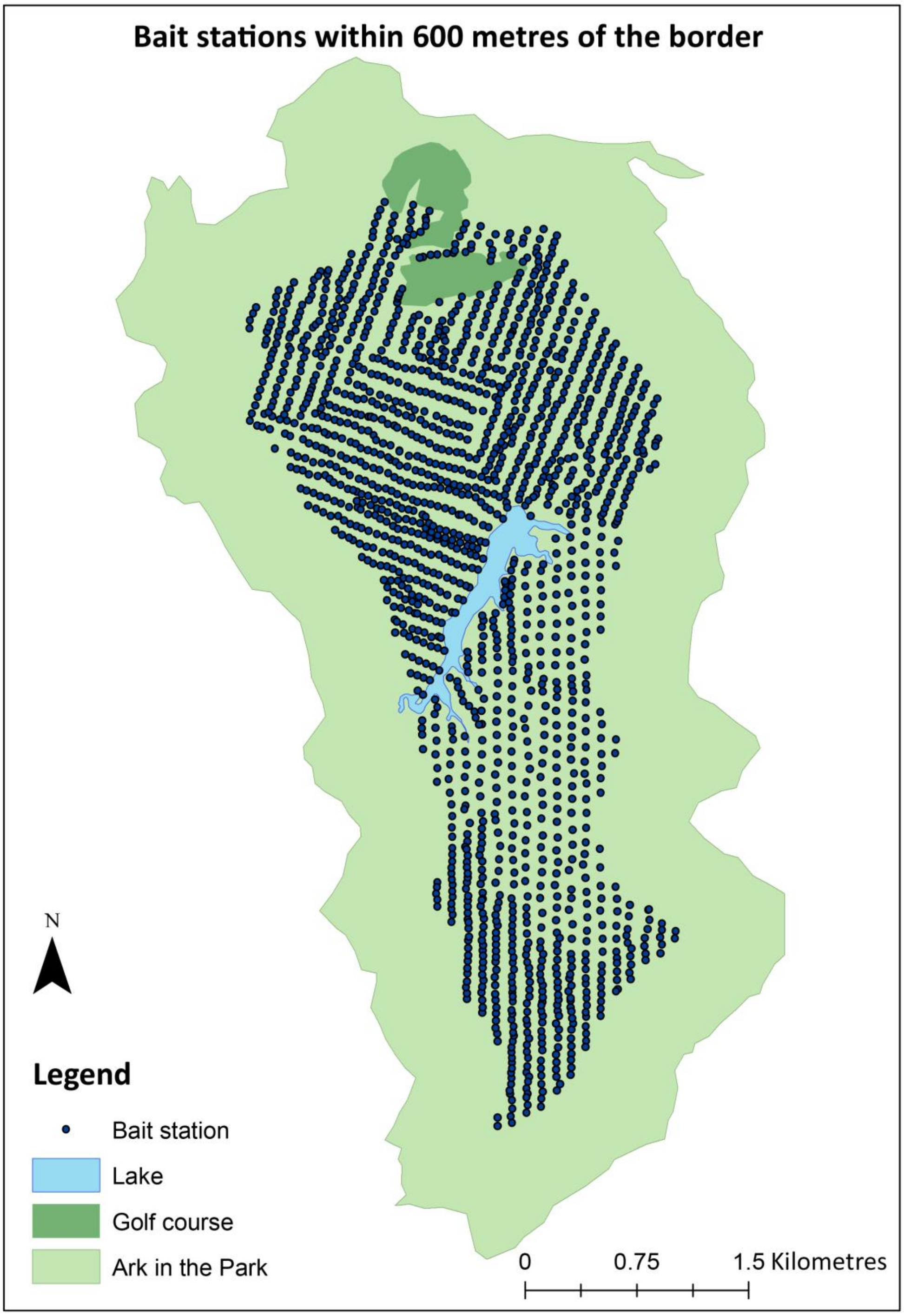
1. No activity: not eaten and nibbled
2. Activity: less than half eaten, more than half eaten, all gone and bag pulled out

Figure 1 Example of a bait card

Line:		Date:		Volunteers (all names):				
Station Number	Old bait colour	Not eaten	Bag nibbled	< 1/2 gone	> 1/2 gone	All gone	Bag pulled out	Birds sighted / Comments
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							
	B - R - Y							

In addition, bait stations within 600 metres of the border were not taken into account (figure 2), because previous research had shown that rat numbers decline from 16.7% at the border to 0% at 600 metres within the sanctuary (Eruera, 2013). Removing these bait stations from the analyses therefore eliminates the variable of reinvasion which may skew results as rats are more likely to eat from the first station they come across rather than showing a preference for the geographical aspects of certain stations within their territory.

Figure 2 Map of the bait stations within 600 metres of the border



2.4 Geographical analysis

The geographical analyses of the available data were performed with ArcGIS 10.2.2:

- The join tool was used to match each bait station to the bait uptake of all previous rounds.
- An elevation model (appendix A) was created from contours (appendix B). With this elevation model the slope and aspect (appendix C & D) from each cell of a raster surface was identified. Also, a stream network (appendix E) was derived from the elevation model in case no correlations were found between rat presence and distance to rivers.
- The near tool was used to calculate the distance between each bait station and the nearest river.
- The sample tool was used to create a table that shows the values of cells from the elevation, slope and aspect raster for each bait station.
- Python was used to reclassify (appendix F) the values of the cells from the river, elevation, slope and aspect raster.
- The table was converted to a Microsoft Excel workbook.

2.5 Statistical analysis

The statistical analysis of the data derived from GIS analyses was performed with IBM SPSS 22. To answer the question: 'Are there correlations between rat presence and geographical features?' the chi-square test (appendix G) was performed, the hypotheses were:

- H_0: there is no correlation between rat presence and the geographical feature (exceedance probability (p) > a)
- H_1: there is a correlation between rat presence and the geographical feature (exceedance probability (p) < a)

The applied confidence level was 95%, this means a level of precision of a = 0.05.

The chi-square test is used to determine whether two categorical variables are related. Each of these variables can have two or more categories. For each cell of the crosstab the number of observed cases is compared with the number that you would expect by chance. With the chi-square test you can test whether the deviation between the observed result and the expected result is so large that it is significant and therefore not coincidental. In order to use the chi-square test:

- No expected cell frequency may be less than 1;
- At least 80% of the expected cell frequencies must have an expected value which is greater than 5;
- The variables may not have too many categories.

3. Results

A total of 14 baiting rounds achieved 15512 valid cases, of which 6839 (44.6%) were rats.

3.1 Differences in rat presence by aspect

The output generated from the chi-square test is shown below.

Table 1 Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.832[a]	7	.348
Likelihood Ratio	7.857	7	.345
Linear-by-Linear Association	.000	1	.998
N of Valid Cases	15512		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 565.13

Footnote 'a' below table 1 indicates that 0 cells (0.0%) have expected count less than 5. This means that the assumption is not violated and the chi-square test may be applied.

The Pearson Chi-Square value is 7.832, with an exceedance probability (presented in the column headed Asymp. Sig. (2-sided) of .348. The Sig. value of .348 is larger than the level of precision of .05, so H_0 is accepted. This means that there is no significant relationship between rat presence and aspect.

3.2 Differences in rat presence by elevation

Table 2 Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.212[a]	5	.000
Likelihood Ratio	27.182	5	.000
Linear-by-Linear Association	12.724	1	.000
N of Valid Cases	15512		

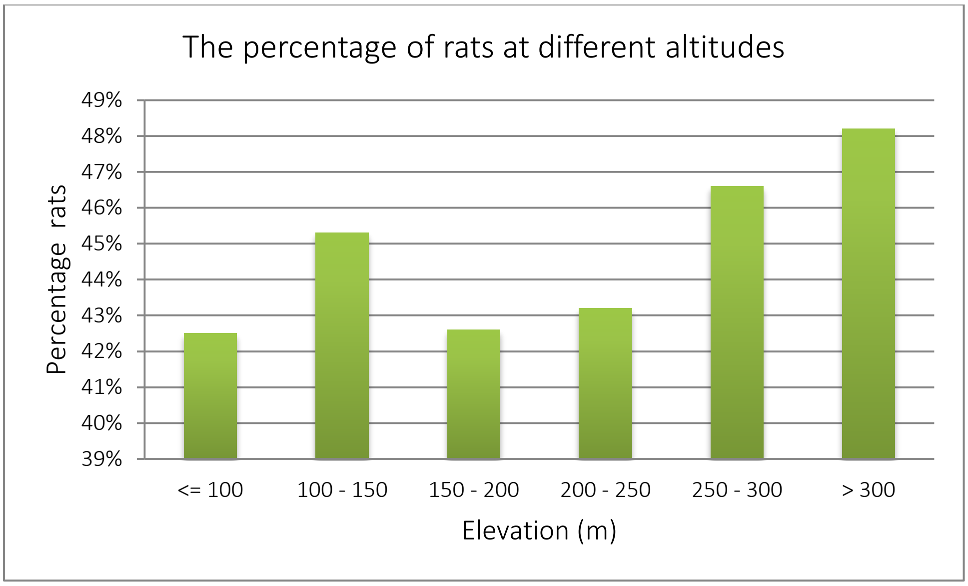
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 893.87

Footnote 'a' below table 2 indicates that 0 cells (0.0%) have expected count less than 5. This means that the assumption is not violated and the chi-square test may be applied.

The Pearson Chi-Square value is 27.212, with an exceedance probability (presented in the column headed Asymp. Sig. (2-sided) of .000. The Sig. value of .000 is smaller than the level of precision of .05, so H_0 is rejected. This means that there is a significant relationship between rat presence and elevation.

Table 3 Overview of the differences in rat presence by elevation

Elevation	No rat		Rat		Total	
m	n	%	n	%	n	%
<= 100	1152	57.5	852	42.5	2004	100
100 – 150	1613	54.7	1334	45.3	2947	100
150 – 200	1624	57.4	1205	42.6	2829	100
200 – 250	1893	56.8	1439	43.2	3332	100
250 – 300	1102	53.4	963	46.6	2065	100
> 300	1209	51.8	1126	48.2	2335	100



As shown by table 3, rats are more often at a high altitude than at a low altitude. In 42.5% of the cases at an altitude of 100m or less there were rats present, while in 48.2% of the cases at an altitude of more than 300m there were rats present.

3.3 Differences in rat presence by distance to rivers

Table 4 Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.042[a]	5	.000
Likelihood Ratio	32.998	5	.000
Linear-by-Linear Association	19.311	1	.000
N of Valid Cases	15512		

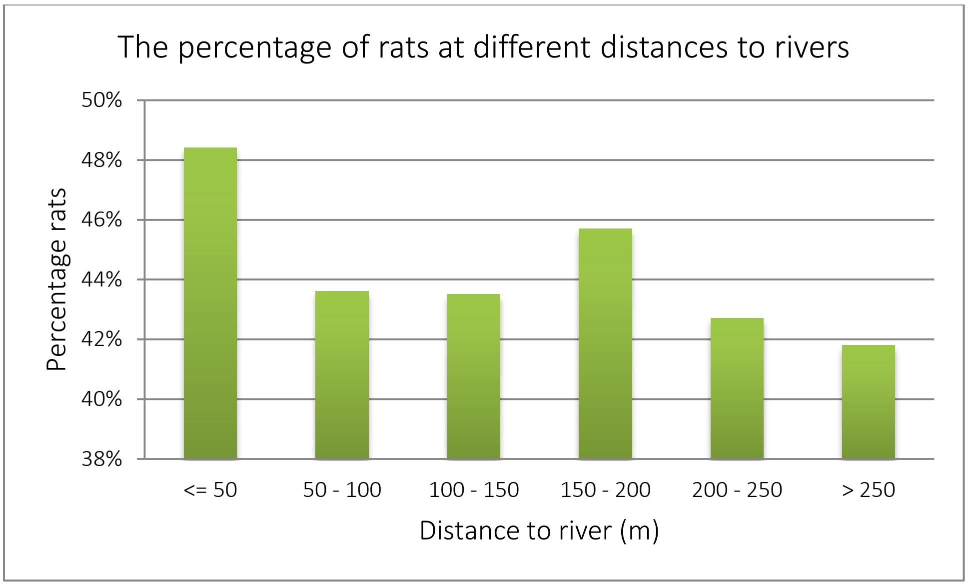
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 875.58

Footnote ‘a’ below table 4 indicates that 0 cells (0.0%) have expected count less than 5. This means that the assumption is not violated and the chi-square test may be applied.

The Pearson Chi-Square value is 33.042, with an exceedance probability (presented in the column headed Asymp. Sig. (2-sided) of .000. The Sig. value of .000 is smaller than the level of precision of .05, so H_0 is rejected.

Table 5 Overview of the differences in rat presence by distance to rivers

River distance	No rat		Rat		Total	
m	n	%	n	%	n	%
<= 50	1778	51.6	1665	48.4	3443	100
50 – 100	1502	56.4	1163	43.6	2665	100
100 – 150	1571	56.5	1210	43.5	2781	100
150 – 200	1334	54.3	1121	45.7	2455	100
200 – 250	1124	57.3	839	42.7	1963	100
> 250	1284	58.2	921	41.8	2205	100



It turns out that there is a significant relationship between rat presence and river distance. As can be seen in table 5, rats are more often close to a river than further away. In 48.4% of the cases there were rats within a distance of 50m of a river, while in 41.8% of the cases there were rats at a distance of more than 250m of a river.

3.4 Differences in rat presence by season

Table 6 Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	60.532[a]	2	.000
Likelihood Ratio	60.577	2	.000
Linear-by-Linear Association	4.577	1	.032
N of Valid Cases	15512		

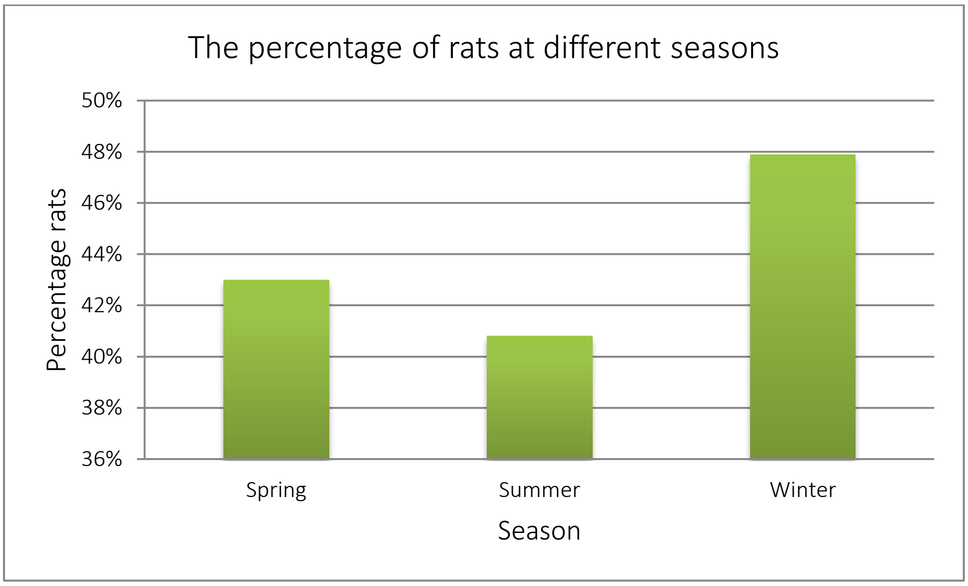
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 1888.09

Footnote 'a' below table 6 indicates that 0 cells (0.0%) have expected count less than 5. This means that the assumption is not violated and the chi-square test may be applied.

The Pearson Chi-Square value is 60.532, with an exceedance probability (presented in the column headed Asymp. Sig. (2-sided) of .000. The Sig. value of .000 is smaller than the level of precision of .05, so H_0 is rejected.

Table 7 Overview of the differences in rat presence by season

Season	No rat		Rat		Total	
	n	%	n	%	n	%
Spring	2411	57.0	1822	43.0	4233	100
Summer	2590	59.2	1788	40.8	4378	100
Winter	3592	52.1	3309	47.9	6901	100



Results show that there is a significant relationship between rat presence and season. As shown in table 7, number of visits by rats to bait stations are highest in winter (as recorded in spring) and lowest in summer (as recorded in autumn). 47.9% of the cases in winter were rats, while 40.8% of the cases in summer were rats.

3.5 Differences in rat presence by slope

Table 8 Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.271[a]	3	.736
Likelihood Ratio	1.271	3	.736
Linear-by-Linear Association	.697	1	.404
N of Valid Cases	15512		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 463.44

Footnote ‘a’ below table 8 indicates that 0 cells (0.0%) have expected count less than 5. This means that the assumption is not violated and the chi-square test may be applied.

The Pearson Chi-Square value is 1.271, with an exceedance probability (presented in the column headed Asymp. Sig. (2-sided) of .736. The Sig. value of .736 is larger than the level of precision of .05, therefore H_0 is accepted. This means that there is no significant relationship between rat presence and slope.

4. Discussion

4.1 Aspect

There was no significant relationship between rat presence and aspect (the compass direction that a slope faces). This matches results which Laurent (2013) had recorded. Ark volunteers suggested that rats may respond to temperature differences, e.g. North-facing slopes are much drier and receive more direct sun. An interesting further study might be into correlations between rat presence and temperature.

4.2 Elevation

Rat presence was significantly related to elevation. Maximum rat presence was at an altitude of more than 300m. Minimum rat presence was at an altitude of 100m or less. This positive correlation is not supported by the data collected by Russell (2014). This might be explained by the difference in maximum elevation. An interesting further study might be into the reasons behind this positive correlation.

4.3 Distance to river

Christie et al (2009) recorded that poorly drained areas increased the probability of rat capture, which is supported by this study. The relative number of visits by rats to bait stations were higher within a distance of 50m of a river. Minimum rat presence was at a distance of more than 250m of a river.

4.4 Seasonality

The relative presence of rats fluctuated seasonally. This suggested that rats are responding to seasonally available food resources. Maximum rat presence was in winter, which Harper (2005) also recorded. Minimum rat presence was in summer. This peak breeding season for rats is similar on Kapiti Island (Innes, 2001), although in warmer regions such as Auckland rats can breed all year round.

4.5 Slope

King et al. (1996) and Christie et al. (2009) recorded that steeper sites increased the probability of rat capture. This is not supported by the data used by this study; there was no significant relationship between rat presence and slope.

5. Conclusion

This study investigated whether there are correlations between rat presence and geographical features. Rat presence was significantly related to elevation, river distance and season. No relationships were found between rat presence and aspect or rat presence and slope.

Relative number of visits by rats to bait stations were maximum (42.5%) at an elevation of more than 300m and minimum (48.2%) at an elevation of 100m or less. This positive correlation cannot be explained by this study.

Furthermore, number of visits by rats to bait stations were the highest in winter (47.9%) and the lowest in summer (40.8%). This may suggest that rats are responding to seasonal available food resources. The peak breeding season for rats is in summer by the provision of extra food resources, although in warmer regions of New Zealand such as Auckland rats can breed all year round.

Finally, rats are recorded in poorly drained areas. The relative number of visits by rats to bait stations were maximum (48.4%) within a distance of 50m of a river and minimum (41.8%) at a distance of more than 250m of a river.

With these results the habitat preference of rats can be better understood. The improved data analyses mean that areas that need enhanced baiting can be accurately identified.

6. Recommendations

Given that rats are responding to seasonal available food resources, it is recommended to do a full baiting during winter. A full baiting is when all stations are re-baited. During winter natural food resources are scarce. A full baiting will ensure there is enough (fresh) bait.

As it is recorded that rats are more likely close to a river, it is recommended to bait stations within 50 metres of a river with big bags.

Further research into the positive correlation between rat presence and elevation might be needed to understand this result.

An interesting future research topic might be into correlations between rat presence and vegetation. At the moment there is not enough data available to do this study. In order to gain environmental data, it is recommended to record the main vegetation type (e.g. set five categories) around each station on bait cards.

7. Acknowledgements

I undertook the research into ‘Correlations between rat presence and geographical features’ as part of the curriculum in the 4-Year Bachelor Degree in Geo Media and Design.

I have completed this study under the able guidance and supervision of Laurence Béchet. I acknowledge the esteemed assistance and knowledge I have received towards fruitful and timely completion of this work. I’m also thankful to Gillian Wadams and the volunteers of Ark in the Park for excellent teamwork. Finally, I would like to thank Irene Pleizier for her supervision throughout this project.

8. References

Ark in the Park. (2014). *Bait Uptake Maps*. Retrieved from Ark in the Park: http://www.arkinthepark.org.nz/maps/bait-uptake-maps/

Atkinson, I. (1973). Spread of the ship rat (Rattus r. rattus L.) in New Zealand. *Journal of the Royal Society of New Zealand 3*, pp. 457-472.

Brockie, B. (2012, July 13). *Introduced animal pests - Rats and mice*. Retrieved from Te Ara - the Encyclopedia of New Zealand: http://www.teara.govt.nz/en/introduced-animal-pests/page-3

Brockie, B. (2012, November 21). *Native plants and animals*. Retrieved from Te Ara : http://www.teara.govt.nz/en/native-plants-and-animals-overview/page-1

C.M. King, J. I. (1996). *Distribution and abundance of small mammals in relation to habitat in pureora forest park.* Wellington: New Zealand Ecological Society.

Clout, J. C. (2004). *Modelling the distribution and interaction of introduced rodents on New Zealand offshore islands.* Auckland: Global Ecology and Biogeography .

Department of Concervation. (2014). *Norway rat*. Retrieved from Pest detective: http://www.pestdetective.org.nz/culprits/norway-rat/

Diamond, J. (2011). *Native Plants and Animals*. Retrieved from Forest and Bird: http://www.forestandbird.org.nz/saving-our-environment/native-plants-and-animals

Forest & Bird. (2009). *Rats*. Retrieved from Kiwi Conservation Club: http://www.kcc.org.nz/rats

Grant A. Harper, K. J. (2005). *Habitat use by three rat species (Rattus spp.) on Stewart Island/Rakiura, New Zealand.* Dunedin: New Zealand Ecology Society.

Innes, J. (2001). Advances in New Zealand mammalogy 1990-2000: European rats. *Journal of the Royal Society of New Zealand*, pp. 111-125.

J.E. Christie, D. B. (2009). *Environmental predictors of stoat (Mustela erminea) and ship rat (Rattus rattus) capture succes.* Wellington: Department of Conservation.

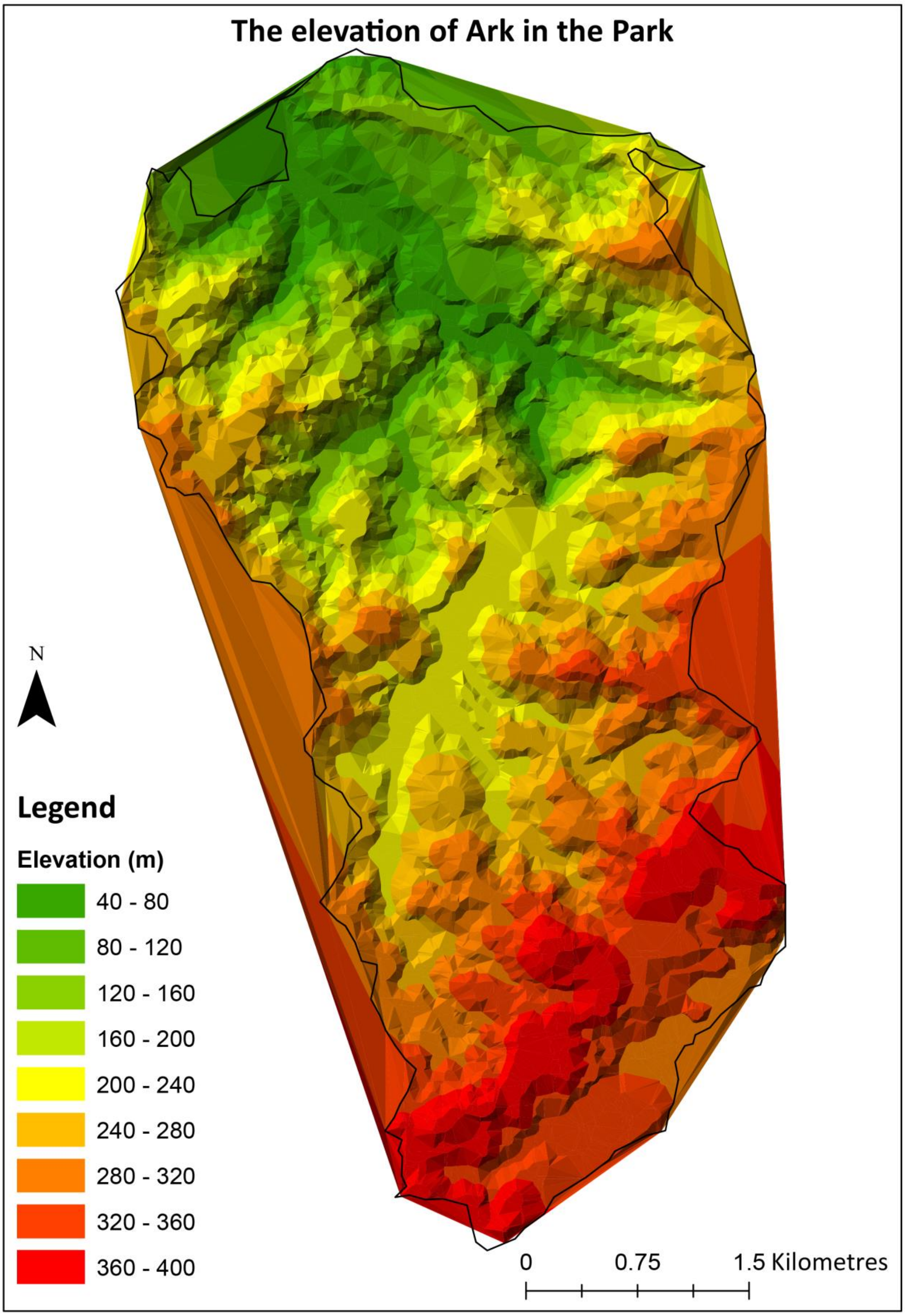
Laurent, C. (2013). *Internship report for Ark in the Park.* Auckland.

Martineau, A. (n.d.). *Management and predator control in a 'Mainland Island' ecosystem: Assessment of rodent control efficiency.*

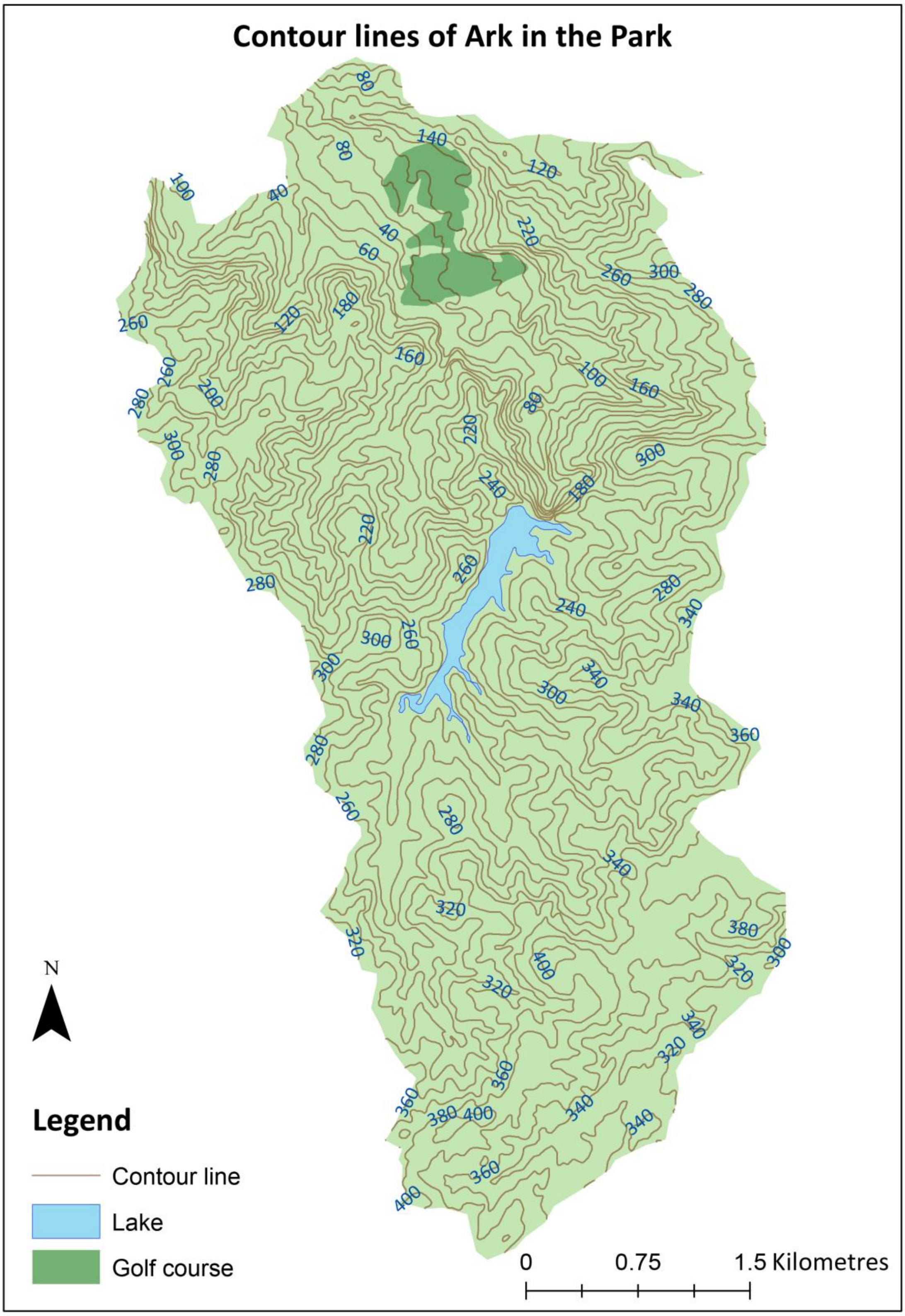
Waitakere City Council. (2007). *Biodiversity of the Waitakere Ranges heritage area.* Auckland.

9. Appendices

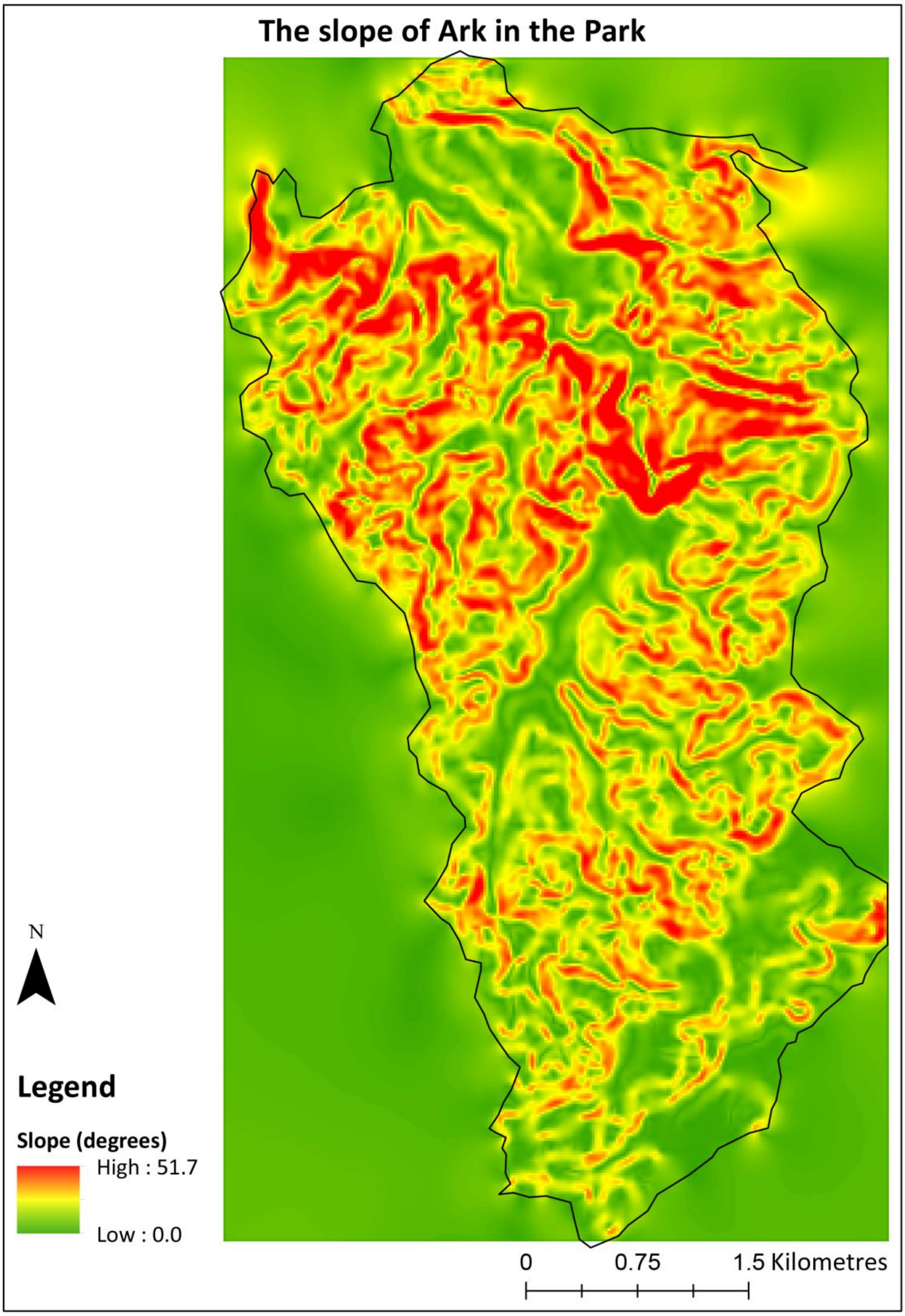
A. Elevation map



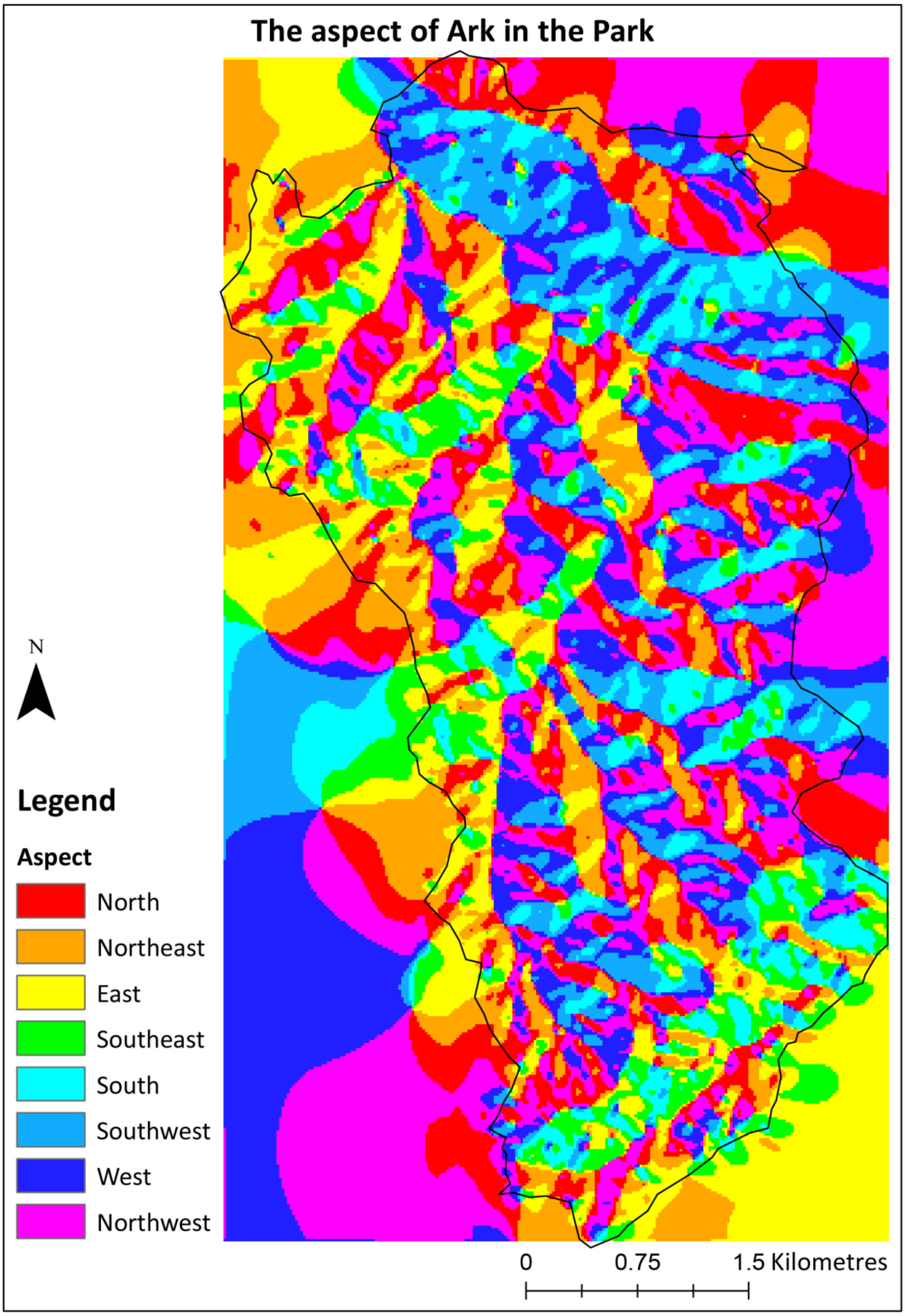
B. Contour map



C. Slope map

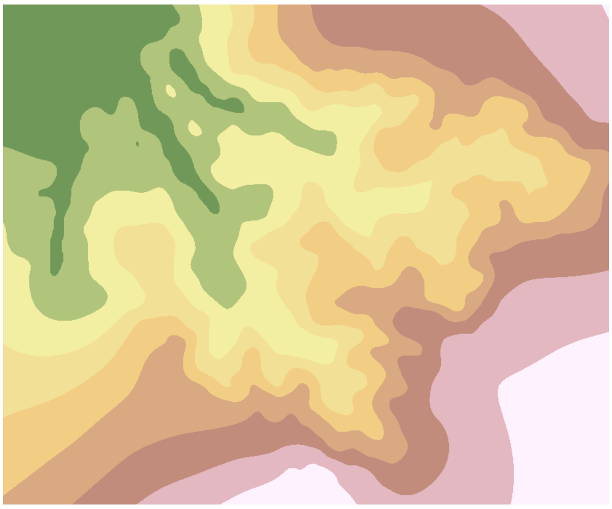

The slope of Ark in the Park
N
Legend
Slope (degrees)
High : 51.7
Low : 0.0
0
0.75
1.5 Kilometres

D. Aspect map

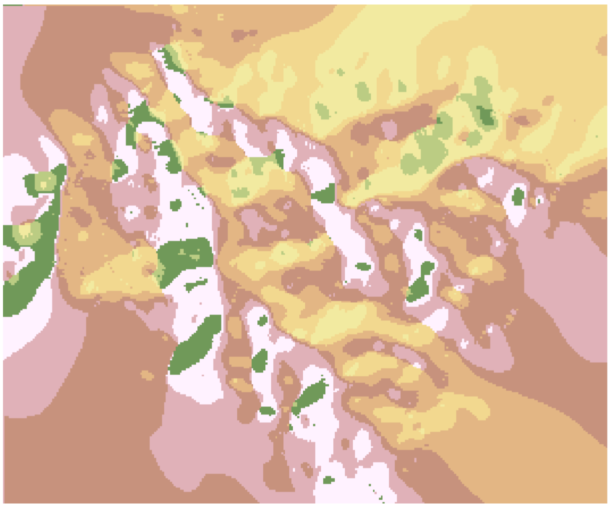

The aspect of Ark in the Park
N
Legend
Aspect
North
Northeast
East
Southeast
South
Southwest
West
Northwest
0
0.75
1.5 Kilometres

E. Manual hydrology tools

The image below is the elevation model on which the hydrologic analysis will be performed.

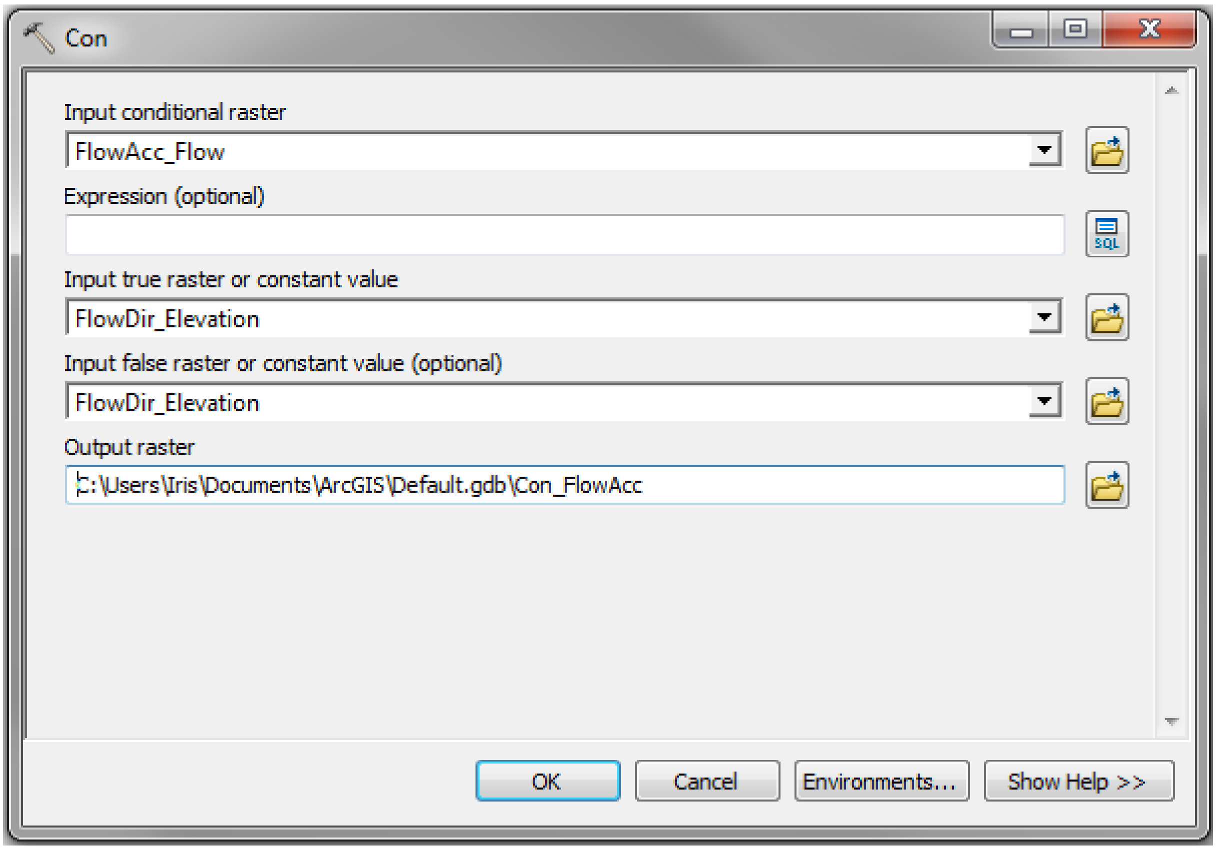


The direction in which water would flow out of each cell is determined by using the elevation model as input into the **Flow Direction** tool.

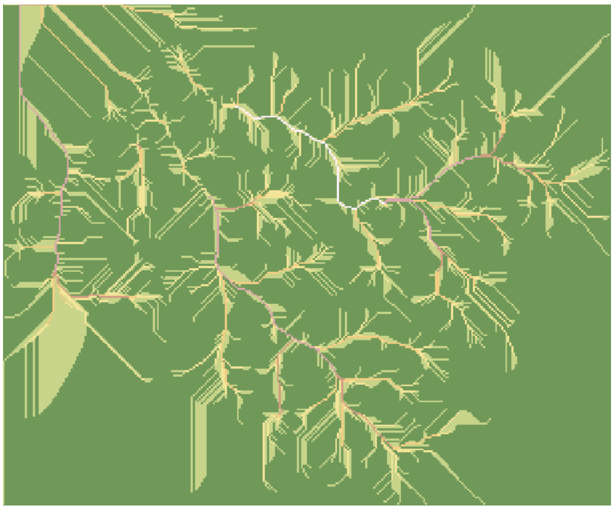


The number of upslope cells flowing to a location is determined by using the output of the Flow Direction tool from above as input into the **Flow Accumulation** tool.

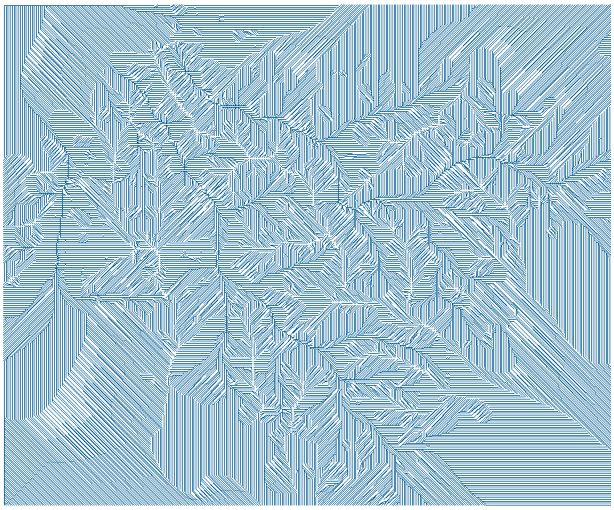
A conditional if-else evaluation on each of the input cells in the Flow Accumulation raster is performed by the **Con** tool.



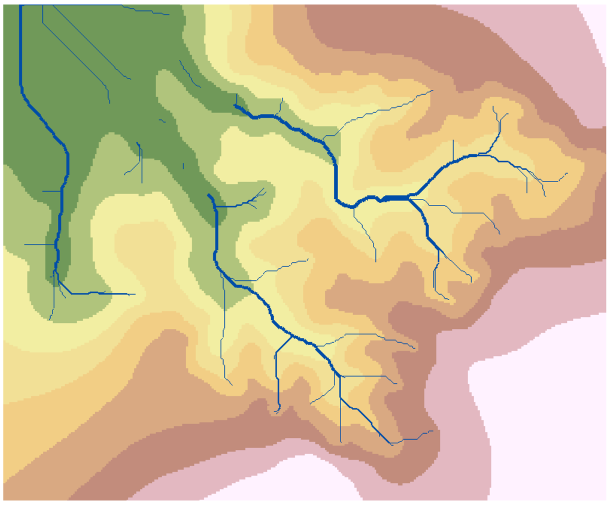
A numeric value for cells that represent branches of a stream network is calculated by using the output of the Con tool from above as input into the **Stream Order** tool. The used method for ordering is Strahler.



To vectorise the stream network use the output of the Stream Order tool from above as input into the **Stream to Feature** tool.



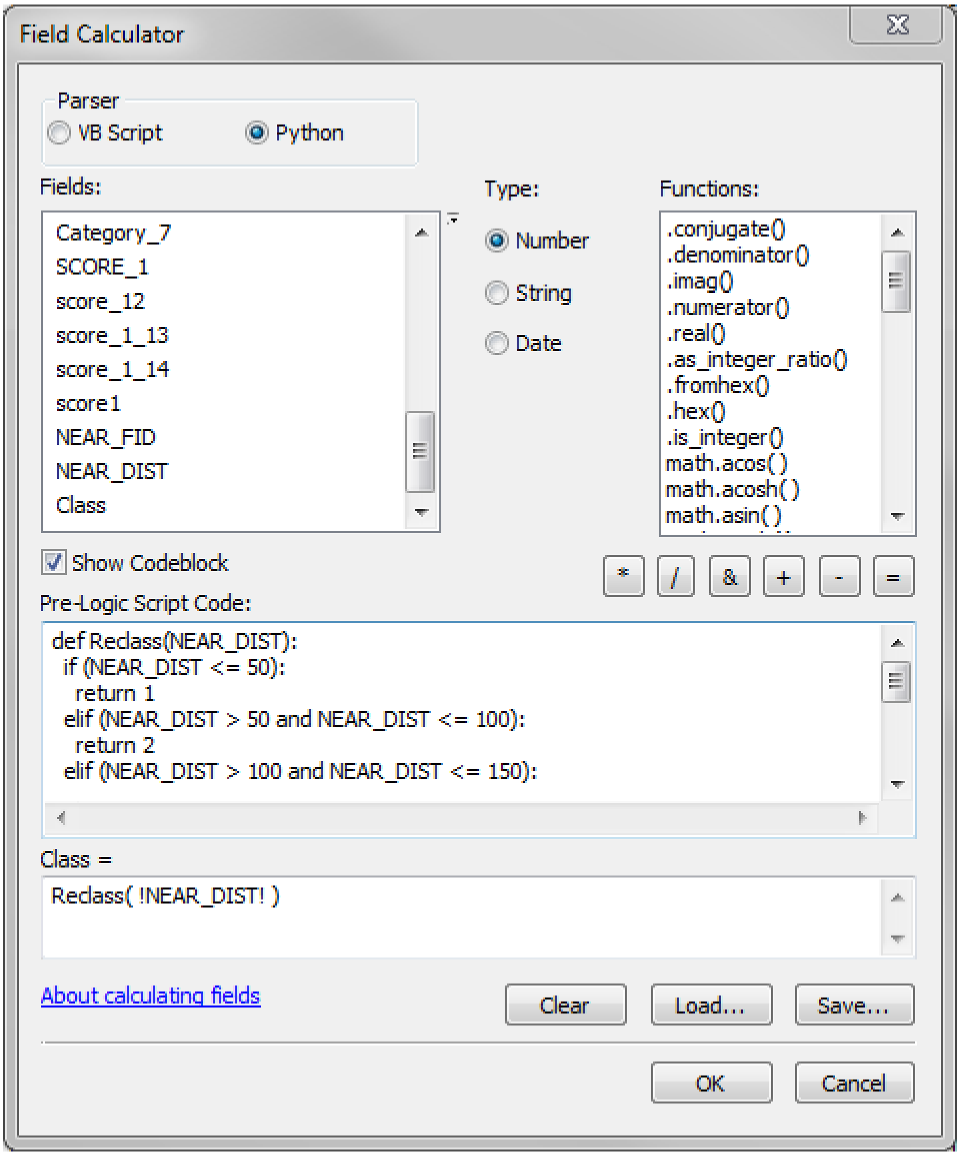
1. Right-click the **Stream to Feature** layer and then click on **Properties** to open the Layer Properties window.
2. Click on the **Definition Query** tab: **grid_code <> 1 AND grid_code <> 2 AND grid_code <> 3**
3. Click on **OK.**
4. Right-click the **Stream to Feature** layer and click on **Properties** to open the Layer Properties window.
5. Click on the **Symbology** tab.
6. Click on **Graduated symbols** found beneath the **Quantities** category.
7. Choose **grid_code** as the value field.
8. You may need to reset the color to blue by clicking on **Template** and choosing a suitable blue color.
9. Click on **OK.**



F. Manual field calculator

1. Right click the **River** layer and then click on **Open Attribute Table**.
2. Click on  button and then click on **Add Field**.
3. Choose **Double** as the type.
4. Click on **OK.**
5. Right click the **Field** you've just added and click on **Field Calculator**.

Python functions are defined using the **def** keyword followed by the **Reclass** function and the function's input parametres. Values are returned from the function using a **return** statement.



Code Block:

```
def Reclass(NEAR_DIST):
 if (NEAR_DIST <= 50):
  return 1
 elif (NEAR_DIST > 50 and NEAR_DIST <= 100):
  return 2
 elif (NEAR_DIST > 100 and NEAR_DIST <= 150):
  return 3
 elif (NEAR_DIST > 150 and NEAR_DIST <= 200):
  return 4
 elif (NEAR_DIST > 200 and NEAR_DIST <= 250):
  return 5
 elif (NEAR_DIST > 250):
  return 6
```

Expression

```
Reclass( !NEAR_DIST! )
```

G. Procedure Chi-square test

Python functions are defined using the **def** keyword followed by the **Reclass** function and the function's input parametres. Values are returned from the function using a **return** statement.

1. From the menu at the top of the screen click on: **Analyze**, then click on **Descriptive Statistics**, then on **Crosstabs**.
2. Move one of your variables (e.g. Distance to river [River]) into the box labelled **Row(s)**.
3. Move one other variable (e.g. Rat activity all rounds [Rat activity]) into the box labelled **Colum(s)**
4. Click on **Statistics**, choose **Chi-square** and then click on **Continue**
5. Click on **Cells**
6. In the **Counts** box choose **Observed** and **Expected**.
7. In the **Percentages** box choose **Row**.
8. Click on **Continue** and then on **OK**.