Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel

International GCSE (9-1)

Centre Number | | | | | |

Candidate Number | | | | |

Tuesday 21 May 2019

Afternoon (Time: 1 hour 10 minutes) | Paper Reference **4GE1/01R**

Geography

Paper 1: Physical Geography

You must have:
Resource Booklet (enclosed), calculator

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- In Section A, answer **two** questions from Questions 1, 2 **and** 3.
- In Section B, answer **one** question from Questions 4, 5 **and** 6.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- Calculators may be used.
- Where asked you must **show all your working out** with **your answer clearly identified** at the **end of your solution**.

Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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1/1/1/1/1/1/1

P 5 9 9 0 1 A 0 1 2 8

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SECTION A

Answer TWO questions from this section.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

If you answer Question 1 put a cross in the box ☒ .

1 River Environments.

(a) Identify the statement below that best describes the channel shape in the upper course of a river.

(1)

☒	**A** narrow river channel with shallow sides
☒	**B** narrow river channel with steep sides
☒	**C** wider river channel with shallow sides
☒	**D** widest river channel with very shallow sides

(b) (i) Identify **one** process of river transportation.

(1)

☒	**A** suspension
☒	**B** abrasion
☒	**C** attrition
☒	**D** deposition

(ii) State **one** store in the hydrological cycle.

(1)

.....

(iii) Explain **one** method of water transfer in the hydrological cycle.

(2)

.....

.....

.....

.....

(c) Study Figure 1a in the Resource Booklet.

Suggest **two** ways in which water quality can be affected by people.

(4)

1 .....

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.....

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2 .....

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.....

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(d) Explain **one** way precipitation can affect a river regime.

(3)

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.....

(e) Study Figure 1b in the Resource Booklet.

Identify the river landform at X.

(1)

.....

(f) Explain the formation of an oxbow lake.

(4)

(g) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse the reasons why areas differ in their risk of river flooding.

(8)

(Total for Question 1 = 25 marks)

If you answer Question 2 put a cross in the box ☒ .

2 Coastal Environments.

(a) Identify the statement below that best describes the characteristics of a constructive wave.

(1)

☒	**A** long wavelength and weak backwash
☒	**B** short wavelength and strong backwash
☒	**C** long wavelength and strong backwash
☒	**D** short wavelength and weak backwash

(b) (i) Identify **one** depositional landform.

(1)

☒	**A** headland
☒	**B** spit
☒	**C** cave
☒	**D** stack

(ii) State **one** type of weathering that affects coastal landscapes.

(1)

.....

(iii) Explain the process of longshore drift.

(2)

.....

.....

.....

.....

(c) Study Figure 2a in the Resource Booklet.

Suggest **two** ways geology influences the shape of this coastline.

(4)

1 .....

.....

.....

.....

2 .....

.....

.....

.....

(d) Explain **one** physical factor that influences the distribution of coral reef ecosystems.

(3)

.....

.....

.....

.....

.....

.....

(e) Study Figure 2b in the Resource Booklet.

Identify the coastal landform X.

(1)

.....

(f) Explain the formation of a cliff.

(4)

(g) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the reasons for the choice of the different hard engineering strategies shown.

(8)

(Total for Question 2 = 25 marks)

If you answer Question 3 put a cross in the box ☒ .

3 Hazardous Environments.

(a) Identify the statement below that best describes a destructive (convergent) plate margin.

(1)

☒	**A** the plates pull apart and magma rises
☒	**B** the plates push together and both plates are destroyed
☒	**C** the plates pull apart and volcanoes erupt
☒	**D** the plates push together and one plate is destroyed

(b) (i) Identify **one** measurement of a volcanic hazard.

(1)

☒	**A** Volcanic Mercalli Scale
☒	**B** Volcanic Saffir-Simpson Scale
☒	**C** Volcanic Explosivity Index
☒	**D** Volcanic Eruption Source

(ii) State **one** human factor that affects the impact of a tectonic hazard.

(1)

.....

(iii) Explain **one** physical impact of a volcanic eruption.

(2)

.....

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.....

.....

(c) Study Figure 3a in the Resource Booklet.

Suggest **two** factors that influence the distribution of a tropical cyclone.

(4)

1 .....

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.....

.....

2 .....

.....

.....

.....

(d) Explain **one** way a hotspot can lead to a tectonic hazard.

(3)

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(e) Study Figure 3b in the Resource Booklet.

Identify the building design characteristic in Box X that makes this building more resistant to collapse.

(1)

(f) Explain why people live in areas at risk from hazardous events.

(4)

(g) Study Figure 3c and Figure 3d in the Resource Booklet.

Analyse the use of GIS in managing earthquake risk.

(8)

(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

SECTION B

Geographical Enquiry

Answer ONE question from this section.

If you answer Question 4 put a cross in the box ☒ .

4 Investigating River Environments.

A group of students have undertaken a study exploring changes in a river channel.

(a) (i) Identify **one** risk that the students may identify when undertaking a risk assessment for this investigation.

(1)

.....

(ii) State **one** way that this risk could be managed.

(1)

.....

.....

Study Figure 4a in the Resource Booklet. It shows some sample data from one site on a river. A cork float was used to measure the time taken to travel between two points.

(iii) Calculate the mean time taken for the cork float to travel from site A to site B.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

..... seconds

(iv) Complete Figure 4b below for samples 1 and 4 using data in Figure 4a (in the Resource Booklet).

(2)

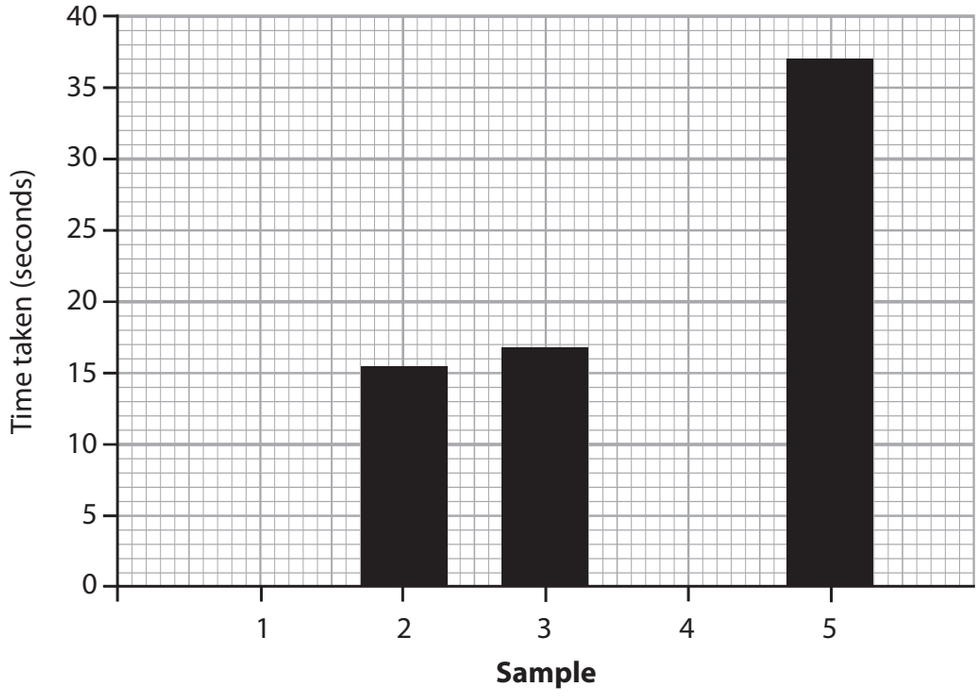

Figure 4b

Time taken for float to travel between site A and B

(v) Sample 5 shows an anomalous result.

Suggest **one** possible explanation for this.

(2)

.....

.....

.....

.....

(b) To extend the river study, students were asked to use one additional quantitative and one qualitative technique.

Describe the **two** additional fieldwork techniques the students may have selected.

(4)

Quantitative

Qualitative

You have studied river processes as part of your own geographical enquiry.

(c) Evaluate the effectiveness of the data collection methods in relation to the purpose of the study.

(8)

Enquiry question

(Total for Question 4 = 20 marks)

If you answer Question 5 put a cross in the box ☒ .

5 Investigating Coastal Environments.

A group of students have investigated processes and landforms along a stretch of coastline.

(a) (i) Identify **one** risk that the students may identify when undertaking a risk assessment for this investigation.

(1)

.....

.....

(ii) State **one** way that this risk could be managed.

(1)

.....

Study Figure 5a in the Resource Booklet. It shows some sample data about shingle size along a stretch of coastline.

(iii) Calculate the mean shingle size across the five sites.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

..... mm

(iv) Complete Figure 5b below for sites 1 and 4 using data in Figure 5a (in the Resource Booklet).

(2)

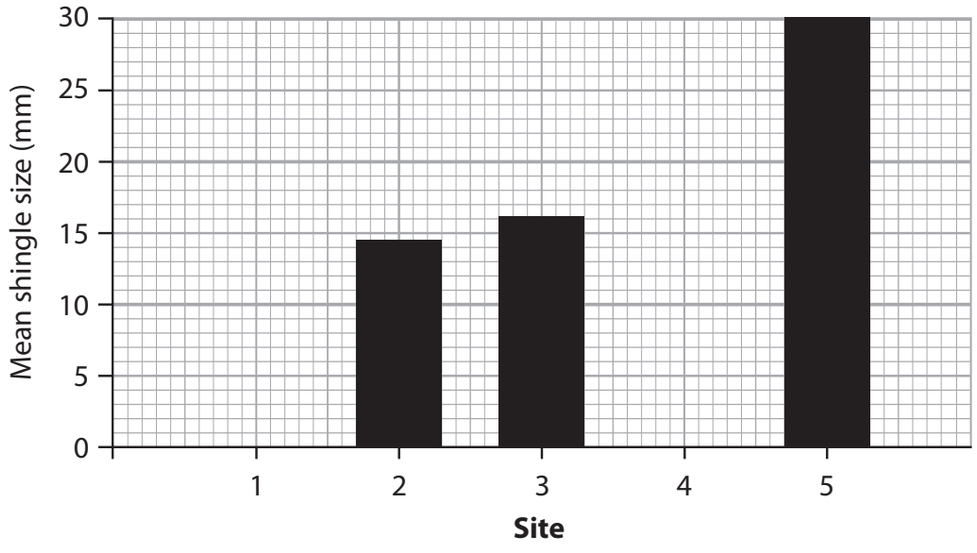

Figure 5b

Shingle size along a stretch of a coastline

(v) Site 5 shows an anomalous result.

Suggest **one** possible explanation for this.

(2)

.....

.....

.....

.....

(b) To extend the coastal study, students were asked to use one additional quantitative and one qualitative technique.

Describe the **two** additional fieldwork techniques the students may have selected.

(4)

Quantitative

Qualitative

You have studied a coastal environment as part of your own geographical enquiry.

(c) Evaluate the effectiveness of the data collection methods in responding to the purpose of the study.

(8)

Enquiry question

(Total for Question 5 = 20 marks)

If you answer Question 6 put a cross in the box ☒ .

6 Investigating Hazardous Environments.

A group of students have investigated the physical processes involved in an extreme weather event, by recording a weather diary.

(a) (i) Identify **one** risk that the students may identify when undertaking a risk assessment for this investigation.

(1)

.....

.....

(ii) State **one** way that this risk could be managed.

(1)

.....

.....

Study Figure 6a in the Resource Booklet. It shows some sample data about wind speed recordings during a tropical storm.

(iii) Calculate the mean wind speed across the five samples.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

..... mph

(iv) Complete Figure 6b below for sites 1 and 4 using the data in Figure 6a (in the Resource Booklet).

(2)

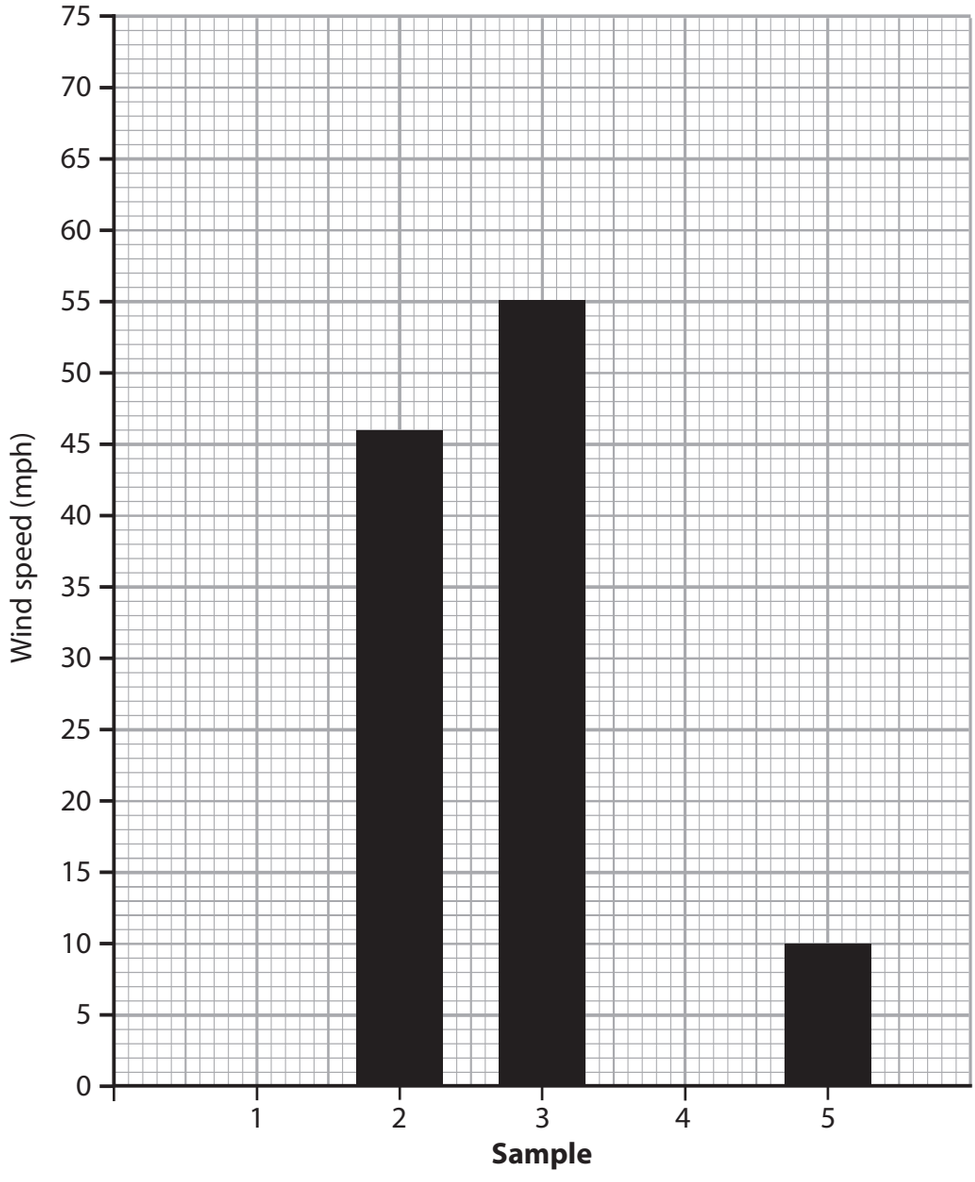

Figure 6b

Wind speed during a tropical storm

(v) Sample 5 shows an anomalous result.

Suggest **one** possible explanation for this.

(2)

(b) To extend the hazardous environment study, students were asked to use one additional quantitative and one qualitative technique.

Describe the **two** additional fieldwork techniques the students may have selected.

(4)

Quantitative

Qualitative

You have studied a hazardous environment as part of your own geographical enquiry.

(c) Evaluate the effectiveness of the data collection methods in responding to the purpose of the study.

(8)

Enquiry question

(Total for Question 6 = 20 marks)

TOTAL FOR SECTION B = 20 MARKS
TOTAL FOR PAPER = 70 MARKS

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Pearson Edexcel International GCSE (9–1)

Tuesday 21 May 2019

Afternoon (Time: 1 hour 10 minutes) | Paper Reference **4GE1/01R**

Geography

Paper 1: Physical Geography

Resource Booklet

Do not return the Resource Booklet with the question paper.

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Pearson

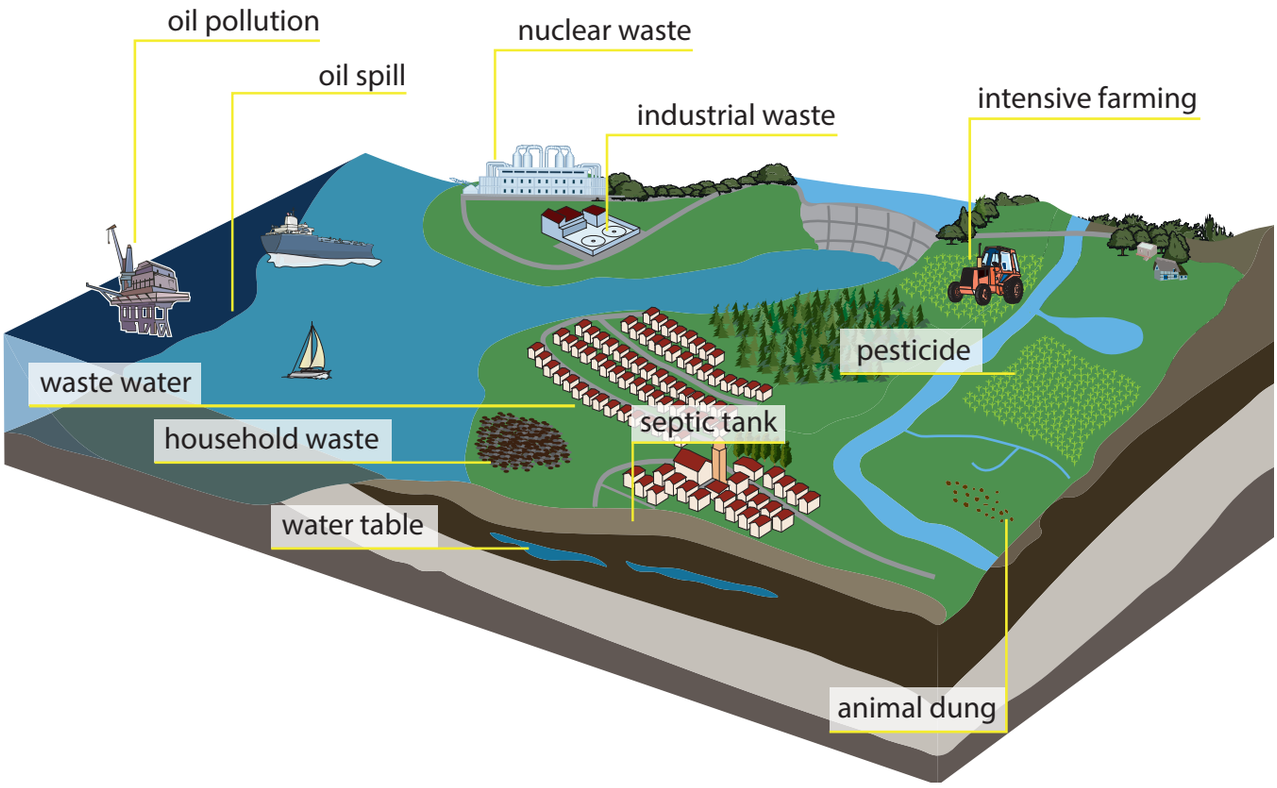


Figure 1a

Factors influencing water quality

(Source: Reproduced with the permission of QA International, www.ikonet.com from the book "The Visual Dictionary". © QA International, 2003. All rights reserved.")

Figure 1b

A fluvial landscape in southwest Iceland

(Source: © David Holmes)

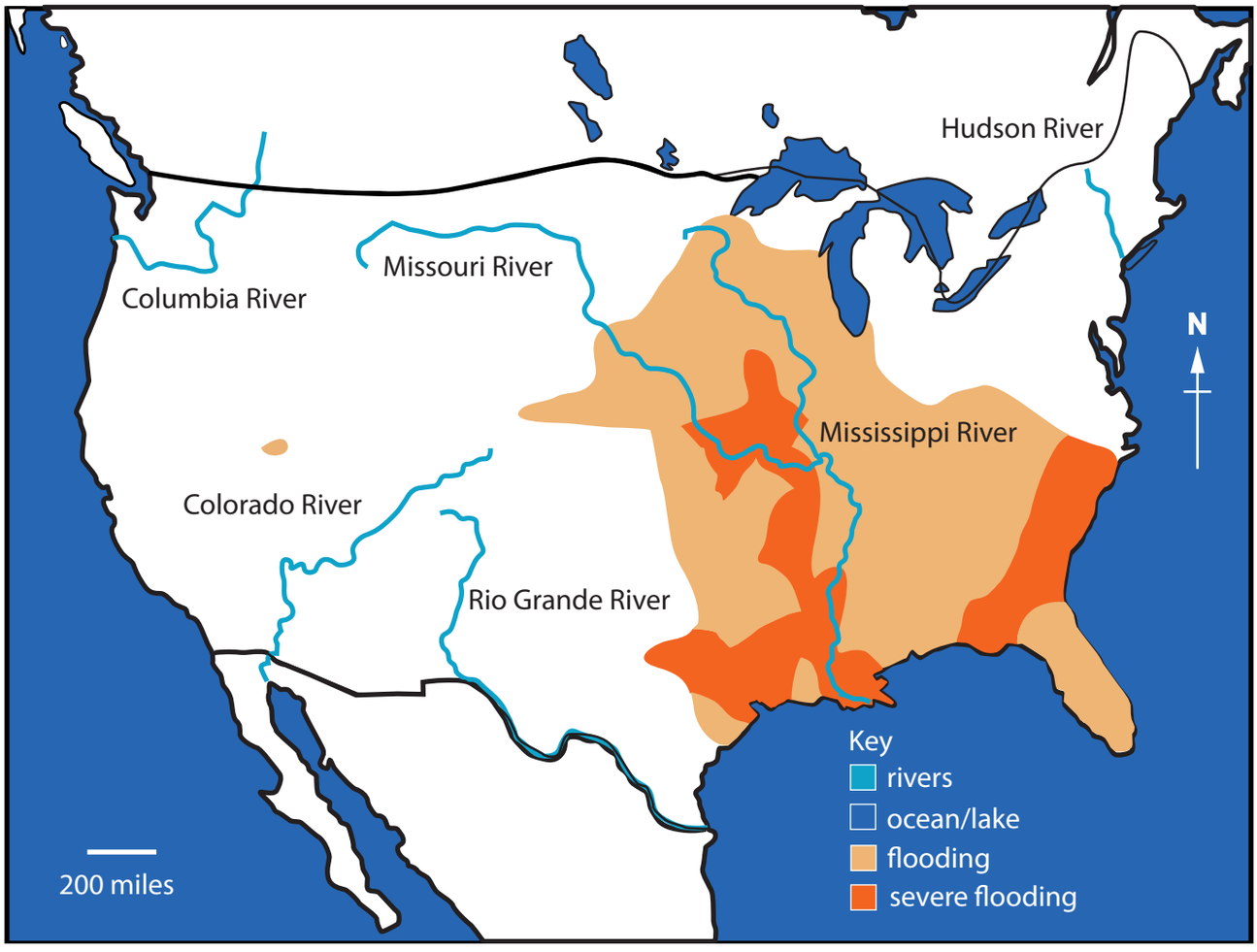
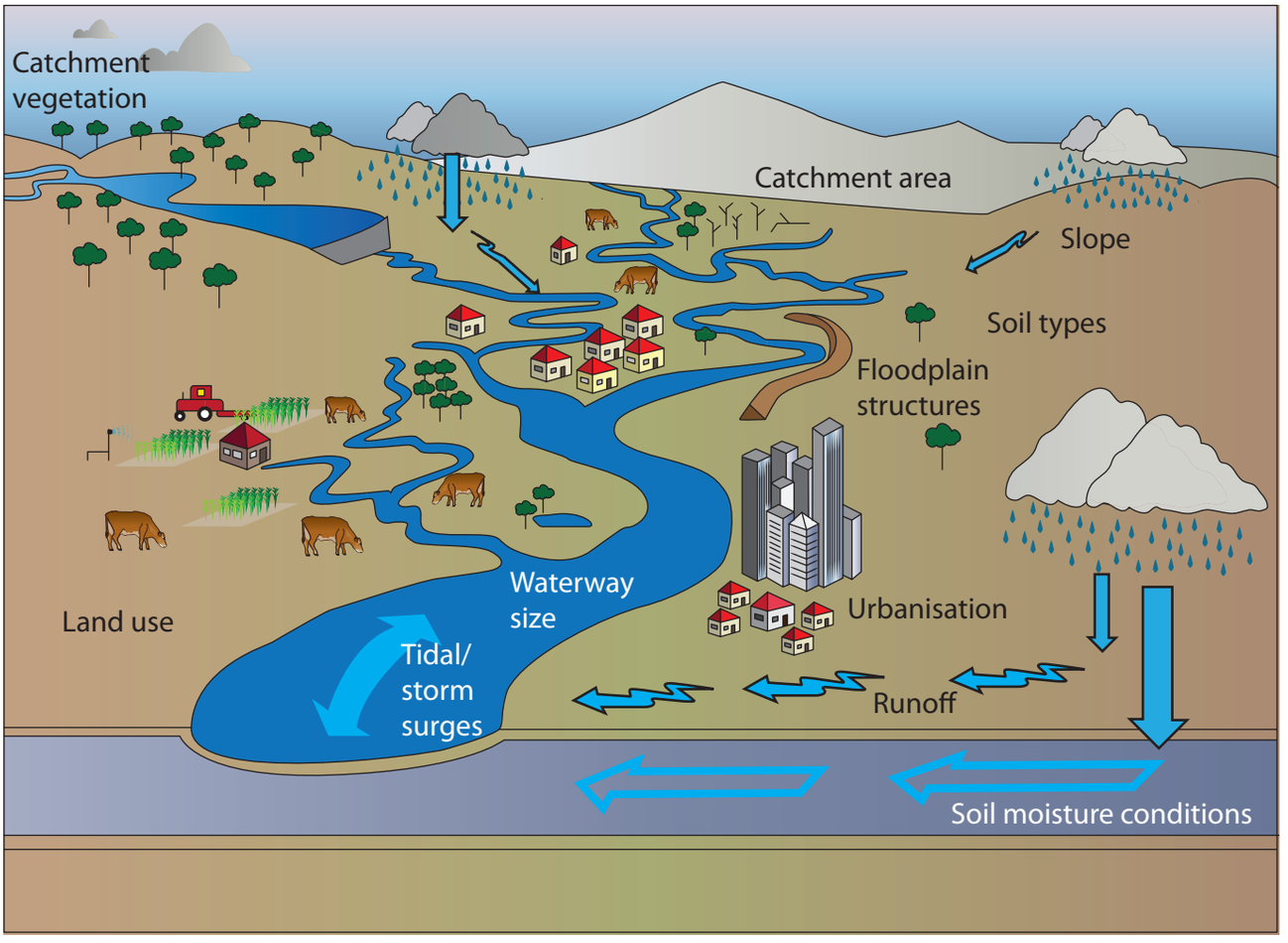


Figure 1c

Levels of river flood risk across the USA in 2016



Key

Rainfall

Figure 1d

Factors affecting river flooding

(Source from: © The State of Queensland 2018)

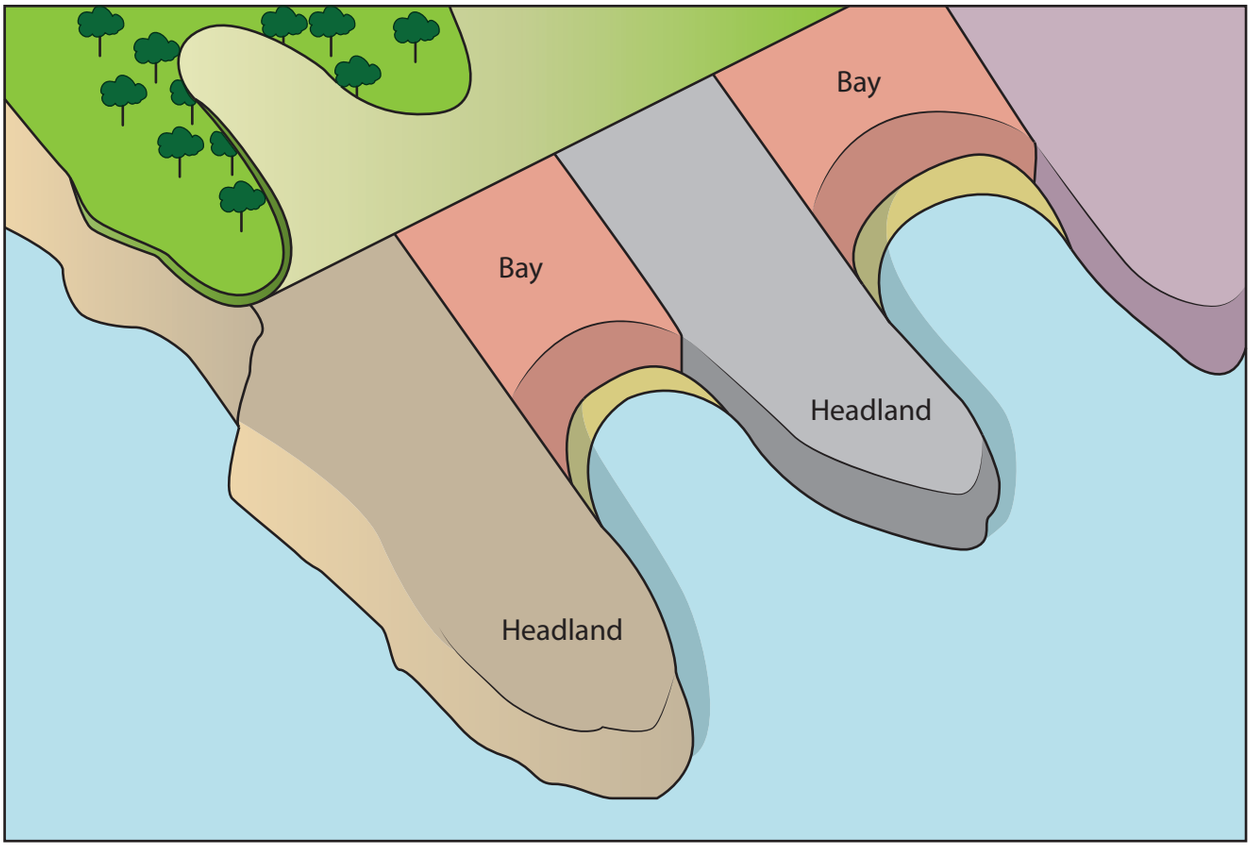


Figure 2a

An example of a coastal landscape

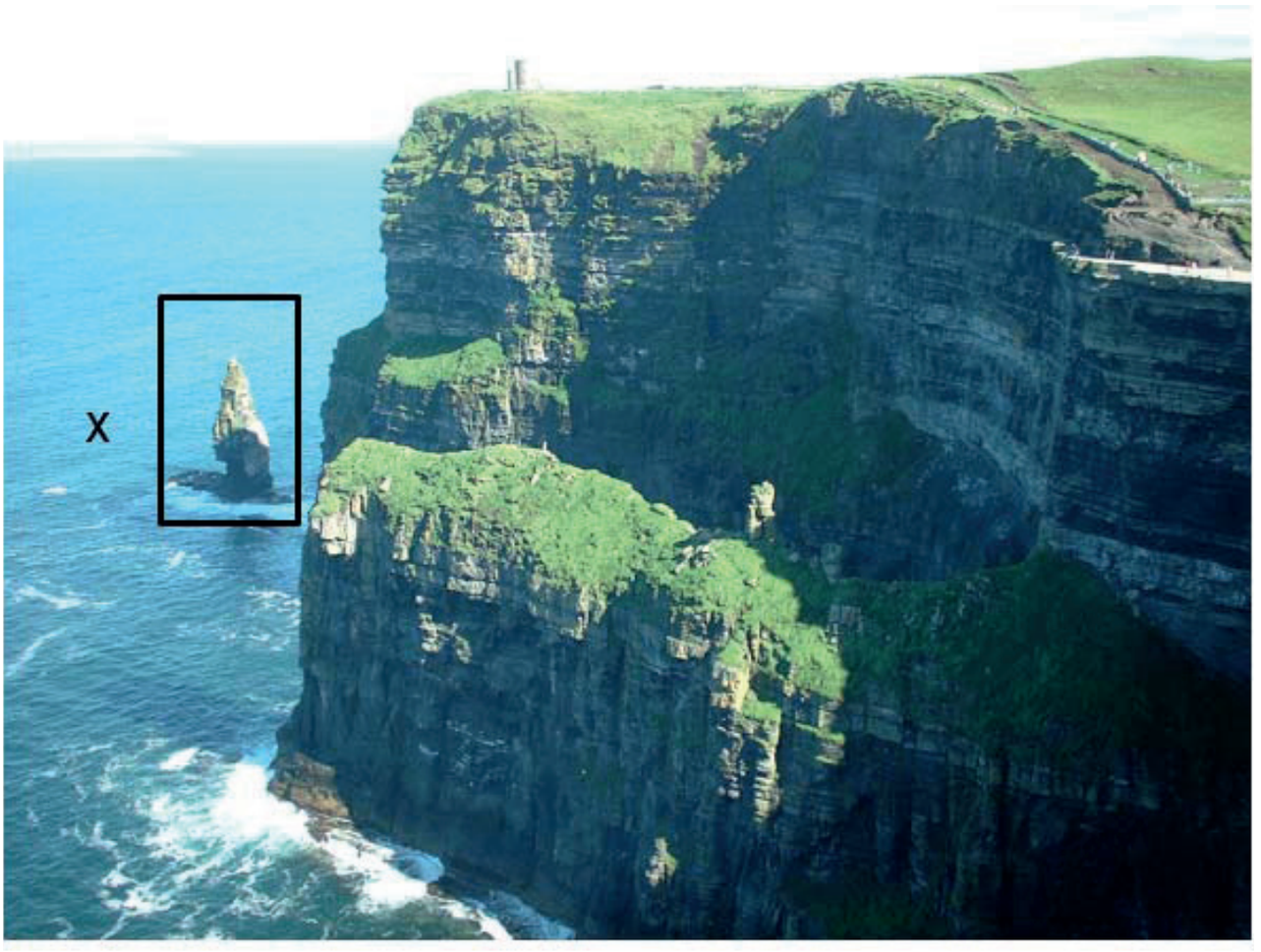


Figure 2b

A coastal landscape in the Republic of Ireland

(Source: © David Holmes)

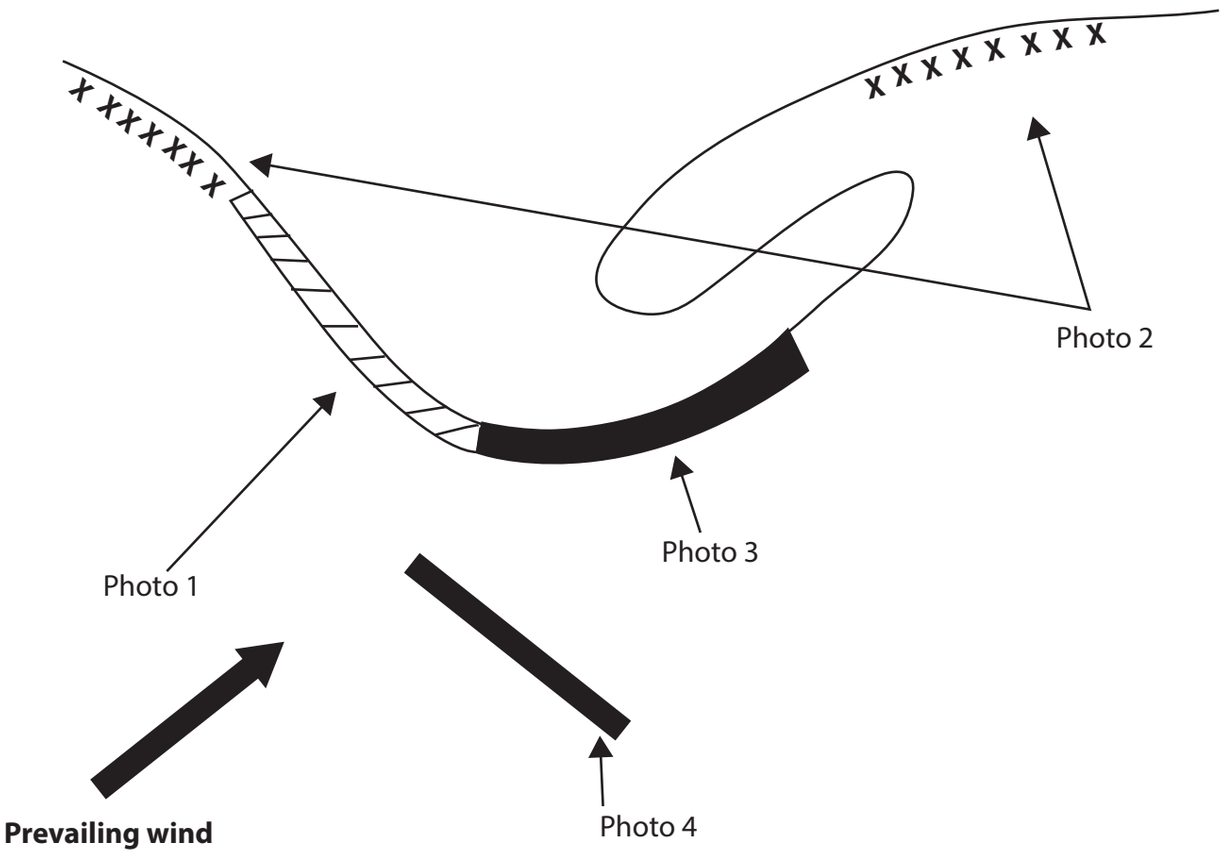


Figure 2c

Different approaches to shoreline management along a stretch of coastline

Photo 1.
Rock Armour.
Medium maintenance cost.
High cost per metre, £1,350 – £6,000.

Photo 2
Beach Groynes:
Medium maintenance cost.
High cost per metre, £1,600 – £4,700.

Photo 3.
Sea Wall.
Low maintenance cost.
High cost per metre, £700 – £5,400.

Photo 4.
Offshore Breakwater.
Medium maintenance cost.
High cost per metre, £2,500 – £7,000.

Figure 2d

Photographic evidence of beach management techniques referred to in Figure 2c

(Source: Photo 1: © Mark Godden/Shutterstock)

(Source: Photo 2: © Paul Wishart/Shutterstock)

(Source: Photo 3: © Sasha Samardzija/Shutterstock)

(Source: Photo 4: © Ondrej Huk/Getty Images)

KEY:

= Sea temperature range from 24°C to 27 °C

→ = Direction of tropical cyclone

Figure 3a

Characteristics of tropical cyclones

Figure 3b

An earthquake resistant building

("Sourced from: Te Ara – The Encyclopedia of New Zealand
Photograph by Alastair McLean")

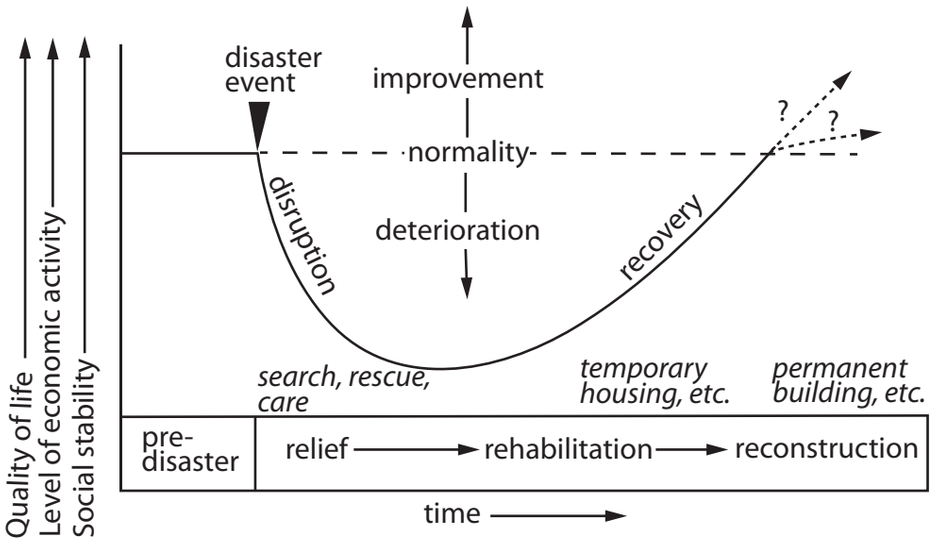


Figure 3c

A timeline to show the changes in quality of life for people living in regions affected by hazardous events

(Source from: © Chris Park)

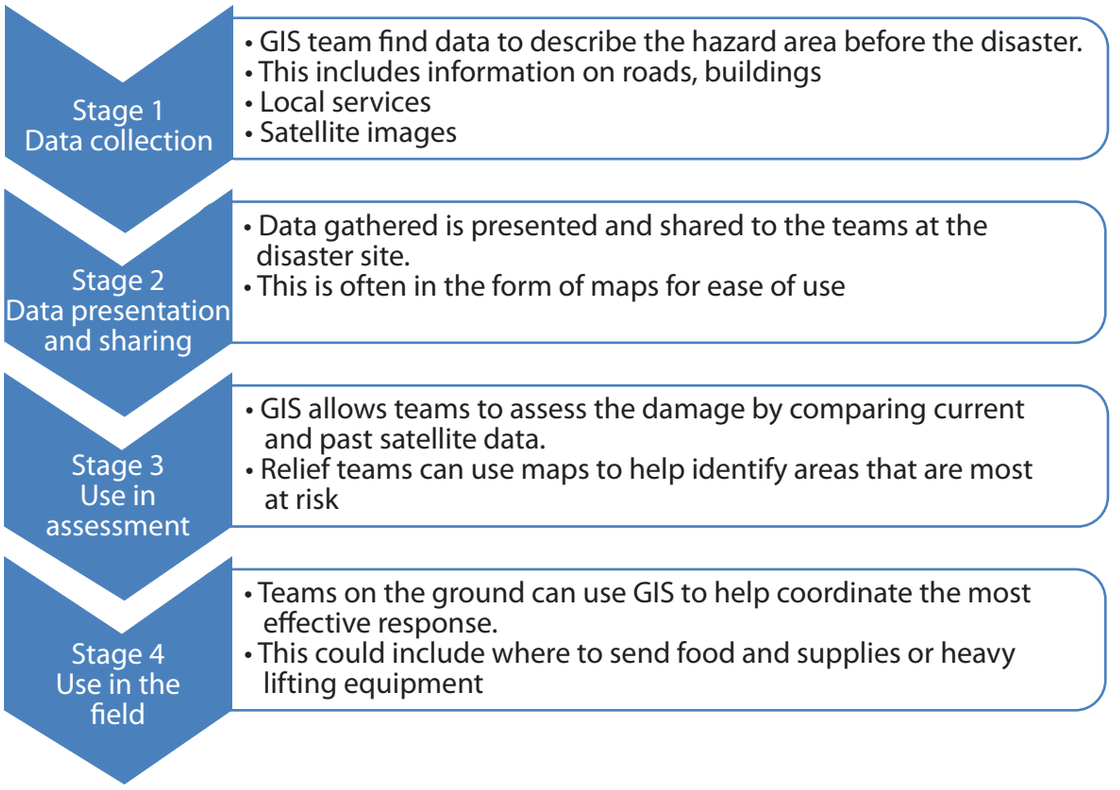


Figure 3d

Flow diagram showing how GIS supports short-term planning in response to natural hazards

Sample	Time taken (seconds)
1	13.1
2	15.4
3	16.8
4	20.0
5	37.0

Figure 4a

River data collected by a group of students

Site	Mean shingle size (mm)
1	8.1
2	14.5
3	16.1
4	15.0
5	30.0

Figure 5a

Coastal data collected by a group of students

Sample	Average Wind speed (mph)
1	60.0
2	46.0
3	55.0
4	70.0
5	10.0

Figure 6a

Hazardous environment data collected by a group of students