Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International GCSE (9–1)

Tuesday 12 November 2024

Morning (Time: 1 hour 10 minutes)

Paper reference **4WGE1/01**

Geography (Modular)

UNIT 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 unit 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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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 **one** feature of a drainage basin.

(1)

- ☒ **A** atmosphere
- ☒ **B** cloud
- ☒ **C** mouth
- ☒ **D** sun

(b) (i) Identify the best definition of relief.

(1)

- ☒ **A** changes in height of landscape
- ☒ **B** runoff from melting snow
- ☒ **C** the rainy season in South Asia
- ☒ **D** the study of rocks

(ii) Define the term **discharge**.

(1)

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(c) Explain **one** way precipitation can affect river regimes.

(2)

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

Identify a store in the hydrological cycle.

(1)

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

Suggest **two** reasons this region may experience water shortages.

You **must** refer to the resource in your answer.

(4)

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(f) Explain why some countries have high water usage for **one** industrial activity and **one** leisure activity.

(4)

industrial

leisure

(g) Explain **one** human cause of flooding.

(3)

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

Analyse the influence of erosion and deposition processes on the river landscape.

You **must** refer to the resource in your answer.

(8)

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(Total for Question 1 = 25 marks)

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

2 Coastal environments

(a) Identify the coastal landform created by deposition.

(1)

- ☒ **A** arch
- ☒ **B** cave
- ☒ **C** headland
- ☒ **D** spit

(b) (i) Identify the best definition of longshore drift.

(1)

- ☒ **A** fine sediment suspended in sea water
- ☒ **B** large sediment rolled along the seabed
- ☒ **C** medium sediment bounced along the seabed
- ☒ **D** zigzag movement of sediment along a coastline

(ii) Define the term **mass movement**.

(1)

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(c) Explain **two** processes of erosion in a coastal environment.

(4)

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

Identify the abiotic factor shown in the food web.

(1)

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(e) Explain **one** characteristic of a mangrove ecosystem.

(2)

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

Suggest **two** impacts sea level change may have had on this coastline.

You **must** refer to the resource in your answer.

(4)

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(g) Explain **one** way building design can reduce the impact of coastal flooding.

(3)

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

Analyse the reasons hard engineering may lead to conflict between different users of the coast.

(8)

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(Total for Question 2 = 25 marks)

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

3 Hazardous environments

(a) (i) Identify **one** feature of a volcano.

(1)

- ☒ **A** crater
- ☒ **B** epicentre
- ☒ **C** eye
- ☒ **D** focus

(ii) Identify **one** hazard associated with volcanic eruptions.

(1)

- ☒ **A** Coriolis force
- ☒ **B** pyroclastic flow
- ☒ **C** strong wind
- ☒ **D** wind shear

(iii) Explain **one** reason people live near volcanoes.

(2)

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(b) Define the term **earthquake risk assessment**.

(1)

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

Suggest **two** physical characteristics that make this volcanic region vulnerable.

You **must** refer to the resource in your answer.

(4)

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2 .....

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

Identify the latitude range in which tropical cyclones mainly occur.

(1)

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(e) Explain **one** impact tropical cyclones can have on people.

(3)

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(f) Explain why **Coriolis force** and **air pressure** are important factors in tropical cyclone formation.

(4)

Coriolis force

air pressure

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

Analyse the effectiveness of responses to reduce impacts from earthquakes.

You **must** refer to the resource in your answer.

(8)

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(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

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SECTION B

Geographical enquiry

Answer ONE question 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 4, put a cross in the box ☒ .

4 Investigating river environments

A group of students has undertaken an enquiry to investigate how processes create a river environment.

(a) State **one** piece of equipment the students could have used in their river enquiry.

(1)

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(b) Explain **one** advantage and **one** disadvantage of using annotated field sketches.

(4)

advantage

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disadvantage

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(c) Study Figure 4a in the Resource Booklet.

Calculate the percentage increase in velocity from day 1 to day 6.

You **must** show all your working in the space below.

(2)

..... %

(d) (i) Study Figure 4b in the Resource Booklet.

Plot the data for site 4 from Figure 4b (shown in the Resource Booklet) to complete Figure 4c in the Question Paper.

(2)

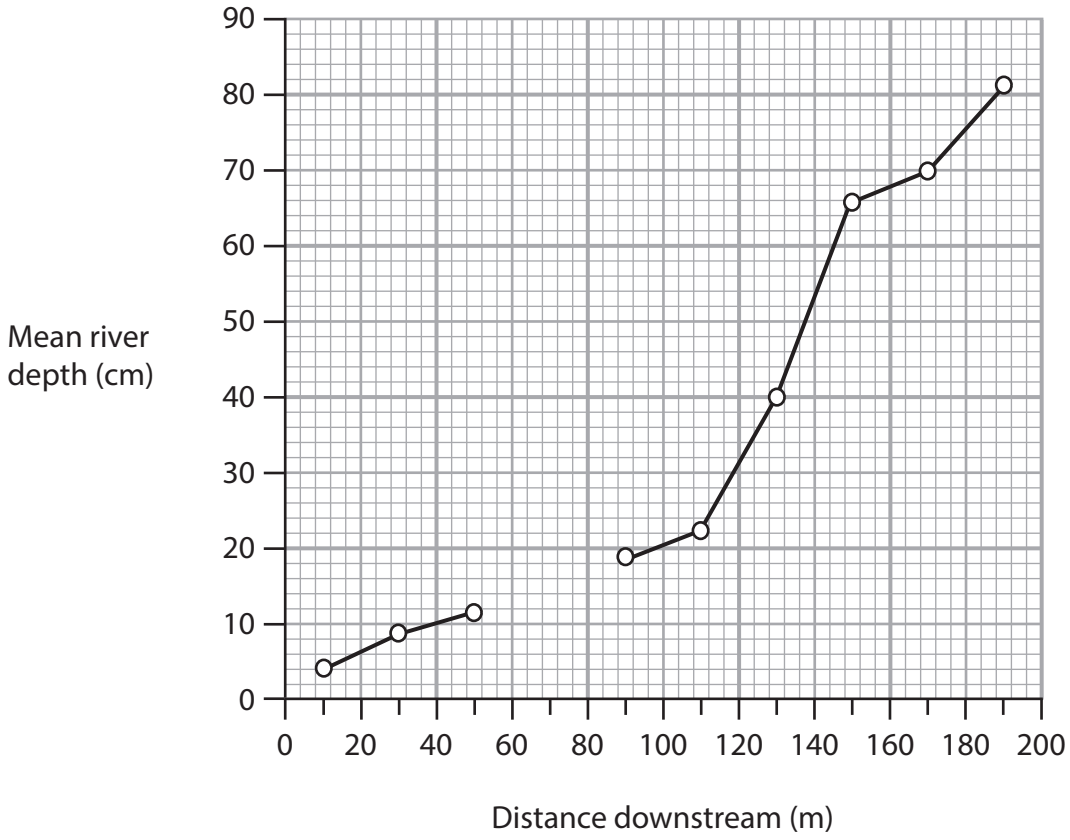

Figure 4c

Graph comparing distance downstream and mean river depth

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(ii) Suggest **one** conclusion the students could reach based on the data shown in Figure 4c.

(2)

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(iii) Identify the best definition of the term anomaly.

(1)

☒ **A** data that can be counted in numbers

☒ **B** data that does not fit the pattern

☒ **C** the general pattern of data

☒ **D** the way data is spread out

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(e) You have studied a river environment as part of your own geographical enquiry.

Evaluate how effective your site selection and sampling strategies were in helping you answer your enquiry title.

(8)

Geographical enquiry title

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(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 has undertaken an enquiry to investigate the influence of coastal processes on beach characteristics.

(a) State **one** piece of equipment the students could have used in their coastal enquiry.

(1)

.....

(b) Explain **one** advantage and **one** disadvantage of using annotated field sketches.

(4)

advantage

.....

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disadvantage

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(c) Study Figure 5a in the Resource Booklet.

Calculate the percentage increase in beach gradient from day 1 to day 6.

You **must** show all your working in the space below.

(2)

..... %

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(d) (i) Study Figure 5b in the Resource Booklet.

Plot the data for site 4 from Figure 5b (shown in the Resource Booklet) to complete Figure 5c in the Question Paper.

(2)

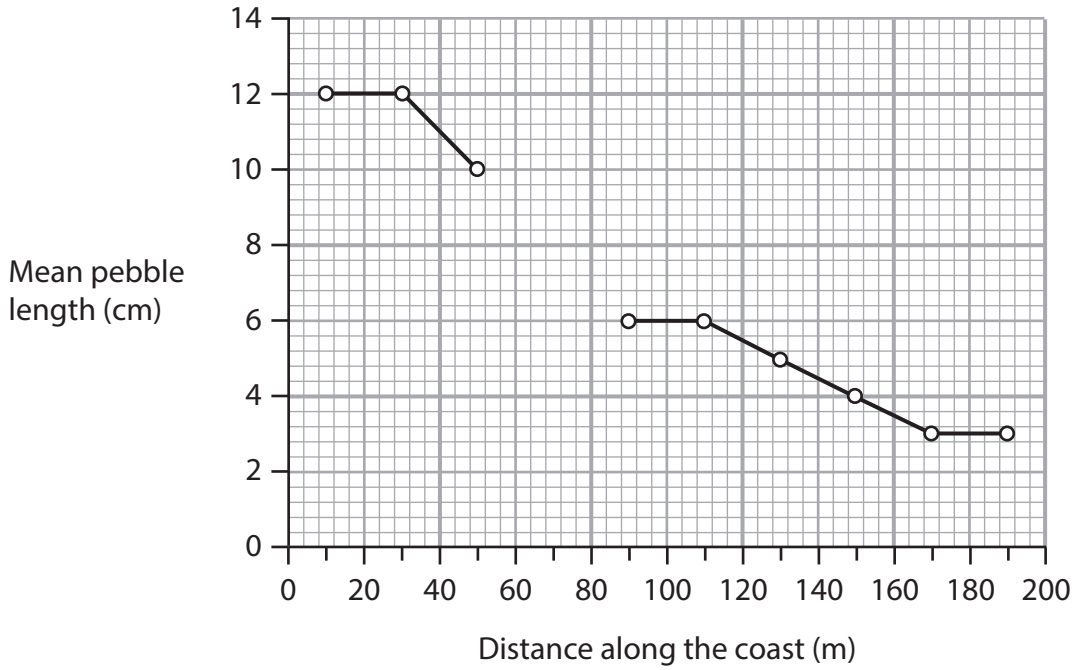

Figure 5c

Graph comparing distance along the coast and mean pebble length

(ii) Suggest **one** conclusion the students could reach based on the data shown in Figure 5c.

(2)

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.....

.....

.....

(iii) Identify the best definition of the term anomaly.

(1)

☒ **A** data that can be counted in numbers

☒ **B** data that does not fit the pattern

☒ **C** the general pattern of data

☒ **D** the way data is spread out

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

Evaluate how effective your site selection and sampling strategies were in helping you answer your enquiry title.

(8)

Geographical enquiry title

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(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 has undertaken an enquiry to investigate the changes in weather caused by an extreme weather event.

(a) State **one** piece of equipment the students could have used in their weather enquiry.

(1)

.....

(b) Explain **one** advantage and **one** disadvantage of using annotated field sketches.

(4)

advantage

.....

.....

.....

.....

disadvantage

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(c) Study Figure 6a in the Resource Booklet.

Calculate the percentage increase in temperature from day 1 to day 6.

You **must** show all your working in the space below.

(2)

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(d) (i) Study Figure 6b in the Resource Booklet.

Plot the data for site 4 from Figure 6b (shown in the Resource Booklet) to complete Figure 6c in the Question Paper.

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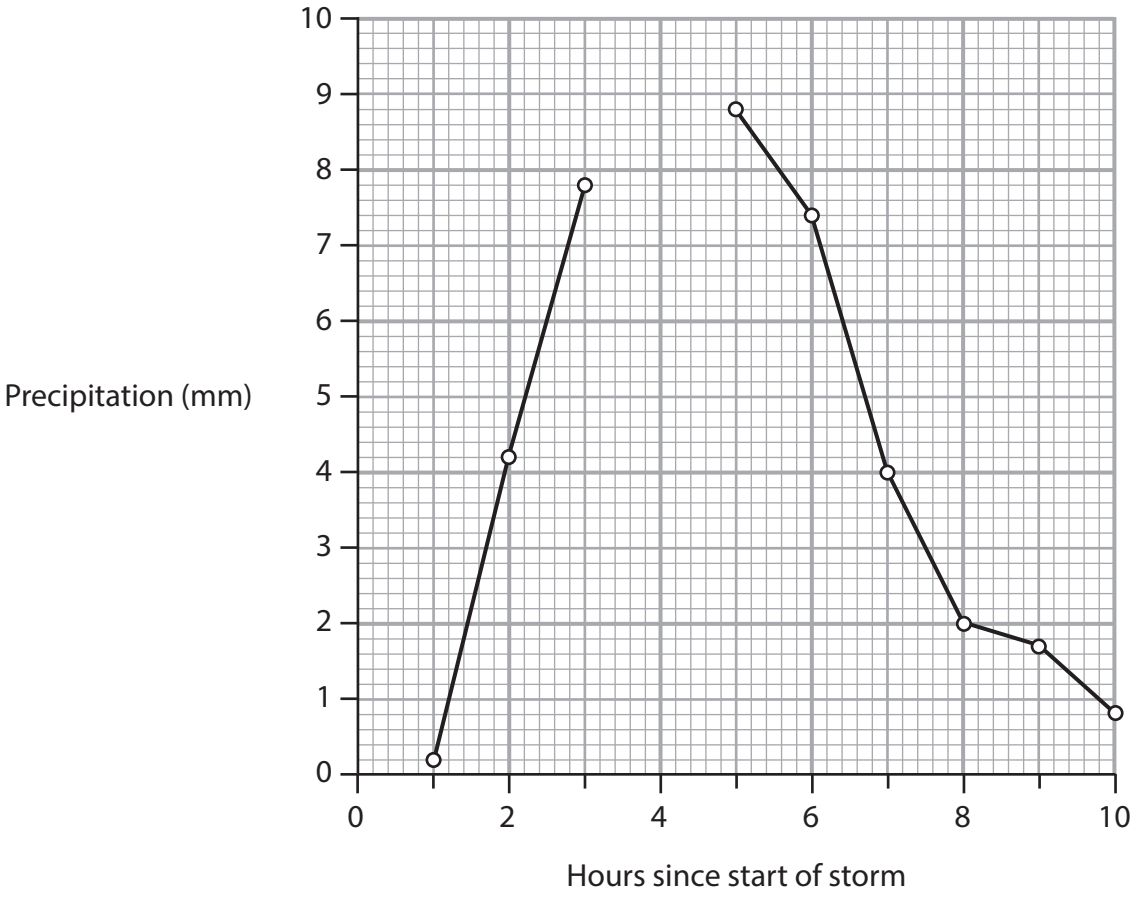

Figure 6c

Graph comparing hours since start of storm and precipitation

(ii) Suggest **one** conclusion the students could reach based on the data shown in Figure 6c.

(2)

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(iii) Identify the best definition of the term anomaly.

(1)

- ☒ **A** data that can be counted in numbers
- ☒ **B** data that does not fit the pattern
- ☒ **C** the general pattern of data
- ☒ **D** the way data is spread out

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

Evaluate how effective your site selection and sampling strategies were in helping you answer your enquiry title.

(8)

Geographical enquiry title

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(Total for Question 6 = 20 marks)

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

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Pearson Edexcel International GCSE (9–1)

Tuesday 12 November 2024

Morning (Time: 1 hour 10 minutes)

Paper reference **4WGE1/01**

Geography (Modular)

UNIT 1: Physical geography

Resource Booklet

Do not return this Booklet with the question paper.

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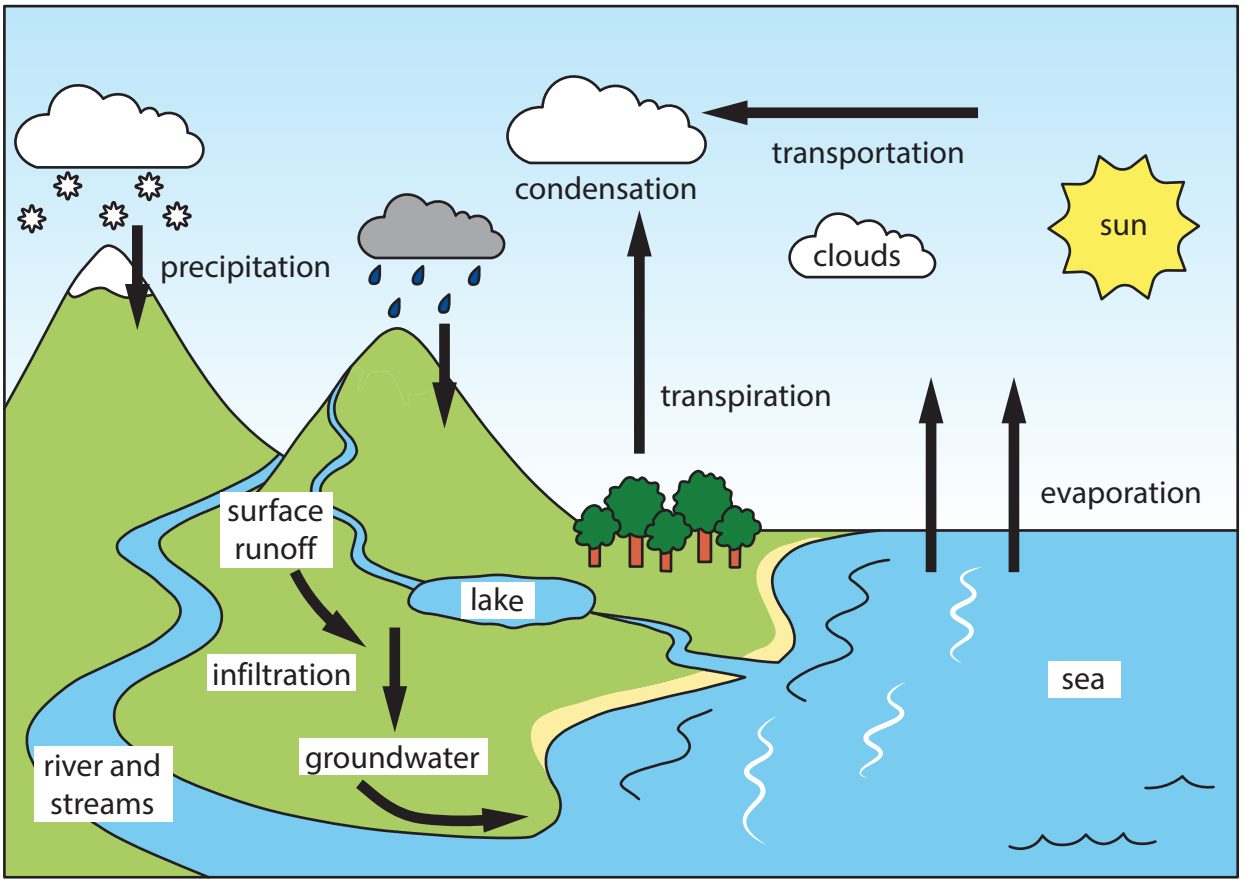


Figure 1a

Hydrological cycle

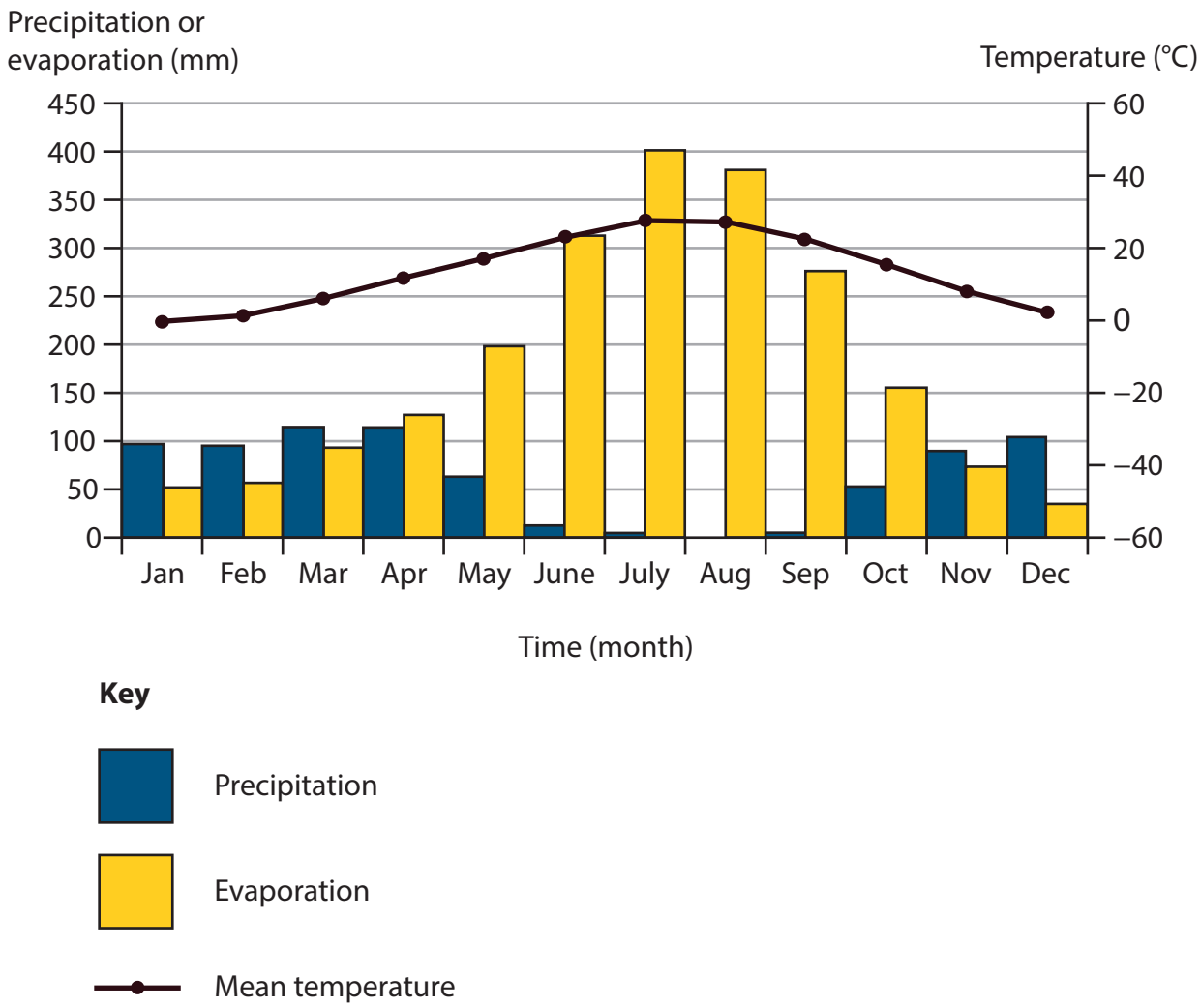
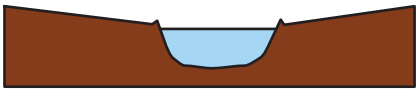


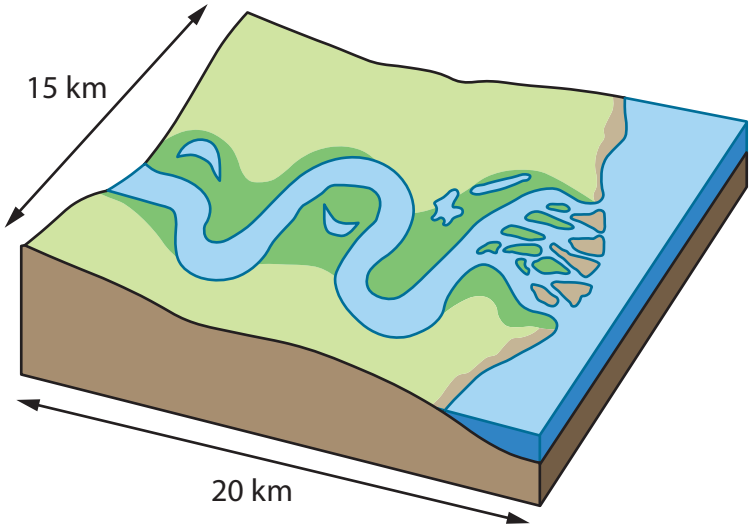
Figure 1b

Climate graph of mean precipitation, evaporation and temperature for Tigris basin, Türkiye



Typical cross profile of a lowland river landscape
Gradient: low/nearly flat
Water depth: deep

Floodplain



Oxbow lake

Levee

Figure 1c

Characteristics of lowland river landscape and selected landforms

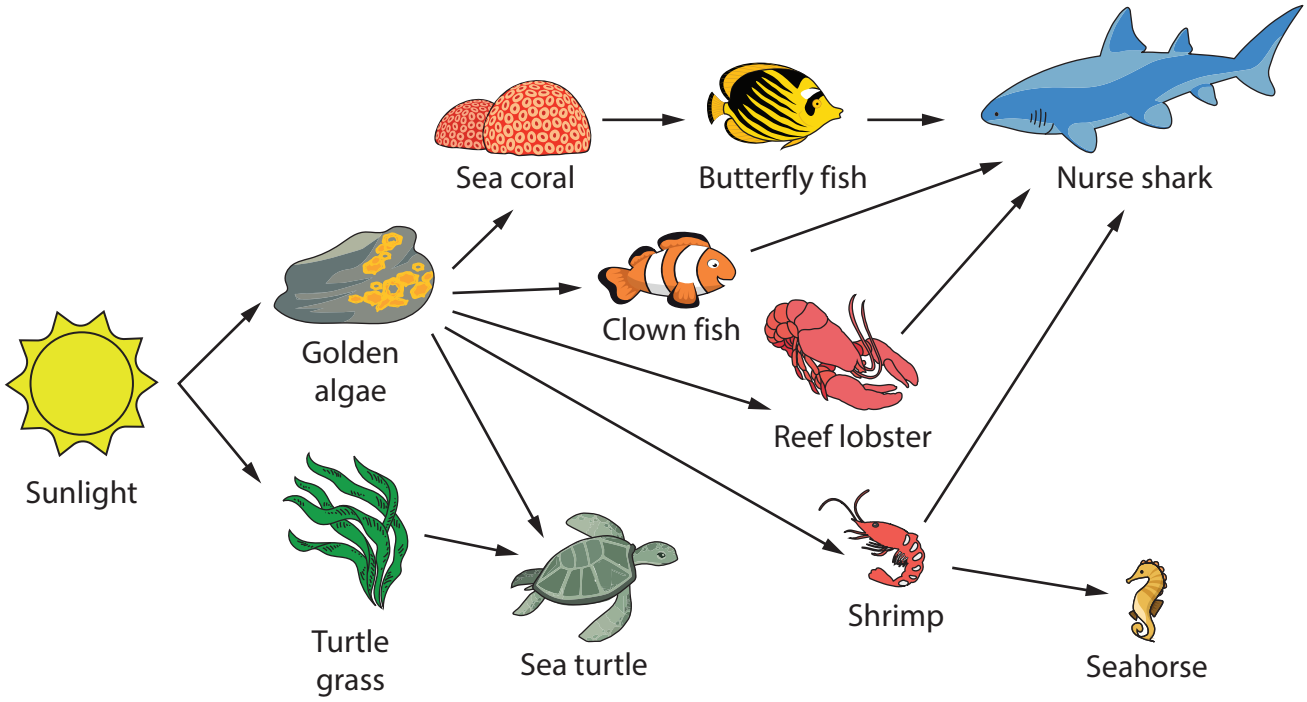
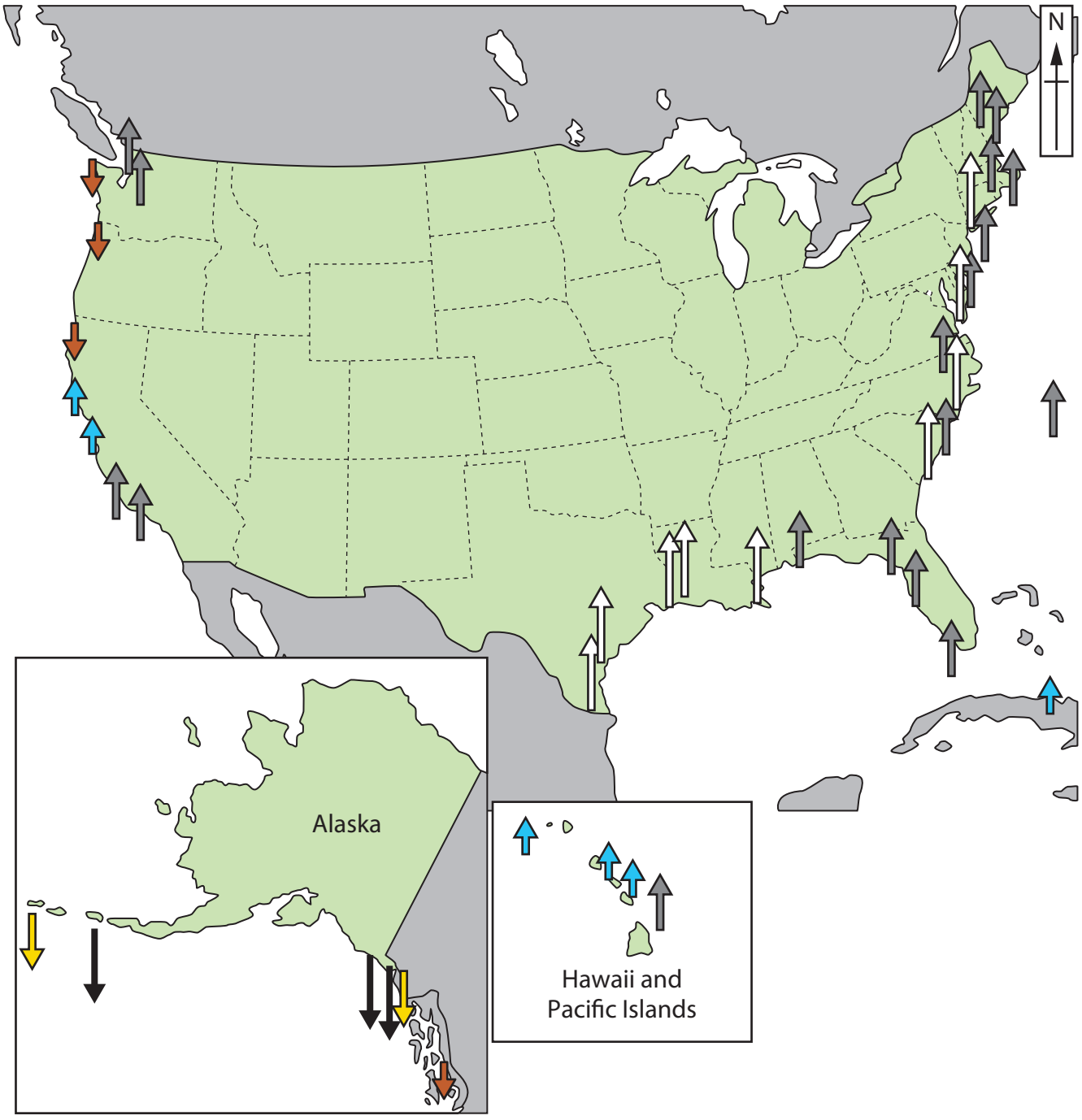


Figure 2a

Coral reef food web



Key: Relative sea level change (cm)

⩽−20	−10 to −19.99	0 to −9.99	0.01 to 10	10.01 to 19.99	⩾20
	decrease			increase	

Figure 2b

Relative sea level change along USA coastlines, 1960 to 2021

Average 3 m of erosion per year along this stretch of coast

Beach used by local people and tourists is protected by a sea wall and rock armour.

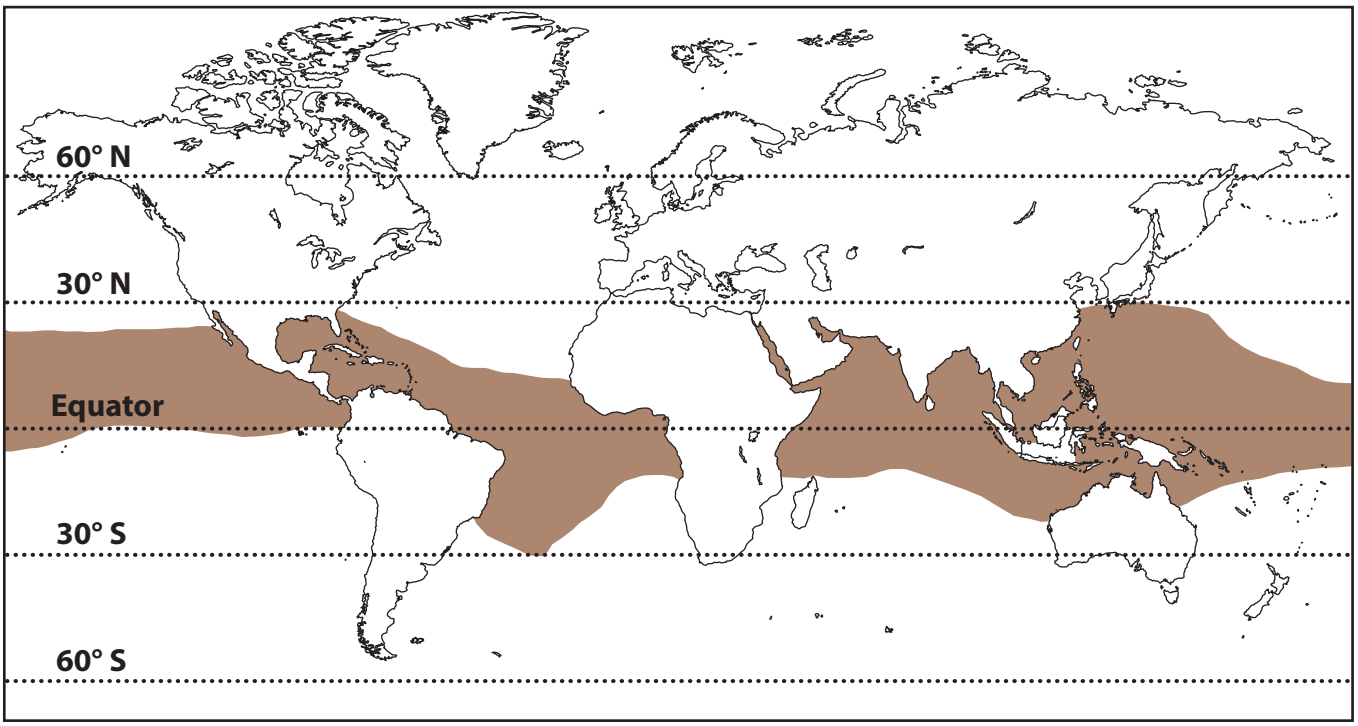
Groynes cost US$7 million to build and maintain, paid for by local government.

Figure 2c

Coastline managed using hard engineering and selected facts

Figure 3a

A volcanic region in Japan



Key

..... Lines of latitude

Locations where tropical cyclones occur

Figure 3b

Global distribution of tropical cyclones

	2010 Haiti earthquake	2021 Haiti earthquake
Date	12 January 2010	14 August 2021
Magnitude	7.0	7.2
Casualties (estimate)	220,000	2,200
Buildings damaged/ destroyed (estimate)	350,000	130,000
Economic loss (estimate)	US$8 billion	US$1.7 billion

Data comparing 2010 and 2021 Haiti earthquakes

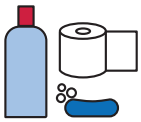
USAID response to Haiti 2021 earthquake

US$32 million in humanitarian aid provided by the United States to support people affected by the earthquake.

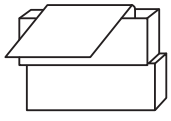
Critical food and relief supplies

830 metric tons of food

700 jerry cans to store safe drinking water



2,900 hygiene kits to prevent disease



2,700 heavy-duty plastic sheets and **2,300** shelter kits to repair homes

USAID Disaster Assistance Response Team

65 search and rescue professionals

4 dogs

24,000 kilograms of equipment, saws, torches, drills and medical supplies

Figure 3c

Impacts of 2010 and 2021 Haiti earthquakes and USAID information

Day	Weather conditions	River velocity (m/s)
1	Dry	0.1
2	Dry	0.3
3	Dry	0.3
4	Rain	0.4
5	Heavy rain	0.6
6	Heavy rain	0.8
7	Dry	0.7
8	Dry	0.6
9	Dry	0.5
10	Dry	0.3

Figure 4a

River velocity and weather conditions data for each day

Site	Distance downstream (m)	Mean river depth (cm)
1	10	4
2	30	9
3	50	11
4	**70**	**20**
5	90	19
6	110	22
7	130	40
8	150	66
9	170	70
10	190	81

Figure 4b

Mean river depth data going downstream

Day	Weather conditions	Mean beach angle (gradient) by shoreline (°)
1	Calm	1.0
2	Calm	2.5
3	Calm	2.0
4	Rough	5.0
5	Stormy	7.8
6	Stormy	8.0
7	Rough	7.4
8	Rough	7.6
9	Calm	7.0
10	Calm	6.0

Figure 5a

Mean beach angle (gradient) by shoreline and weather conditions for each day

Site	Distance along coast (m)	Mean pebble length (cm)
1	10	12
2	30	12
3	50	10
4	**70**	**8**
5	90	6
6	110	6
7	130	5
8	150	4
9	170	3
10	190	3

Figure 5b

Mean pebble length data going along the coast

Day	Weather conditions	Mean temperature (°C)
1	Clear	5
2	Clear	7
3	Clear	7
4	Cloudy	8
5	Very cloudy	10
6	Very cloudy	13
7	Cloudy	10
8	Clear	9
9	Clear	9
10	Clear	6

Figure 6a

Extract from a weather diary showing mean daily temperature and weather conditions

Hours since start of storm (low pressure system)	Precipitation (mm)
1	0.2
2	4.2
3	7.8
4	**8.0**
5	8.8
6	7.4
7	4.0
8	2.0
9	1.7
10	0.8

Figure 6b

Recorded precipitation since the start of a storm

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Acknowledgements

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Figure 3c: data from www.instech.com
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