

**3110U10-1**

**MONDAY, 23 MAY 2022 – MORNING**

**GEOGRAPHY**

**Unit 1: Changing Physical and Human Landscapes**

**1 hour 30 minutes plus your additional time allowance**

**Surname**

---

**First name(s)**

---

**Centre Number**

---

**Candidate Number**

**0**

---

## **ADDITIONAL MATERIALS**

### **Resource Folder**

**In addition to this paper you may use a calculator and a ruler if required.**

## **INSTRUCTIONS TO CANDIDATES**

**Use black ink, black ball-point pen or your usual method.**

**Write your name, centre number and candidate number in the spaces on the previous page.**

**Answer BOTH questions in Section A.**

**Answer ONE question from Section B.**

**Write your answers in the spaces provided in this booklet.**

**Additional space is provided for some questions within the booklet (if required). If further space is required for any question, you should use the lined page(s) at the end of this booklet. The question number(s) should be clearly shown.**

**(Turn over)**

**INFORMATION FOR CANDIDATES**

**The number of marks is given in brackets [ ] at the end of each question.**

**Your ability to communicate and organise your ideas will be assessed in questions that are worth 6 or 8 marks. The accuracy of your writing will be assessed in your answer to question 2(c).**

**(Turn over)**

**SECTION A – CORE THEMES**

Answer ALL questions in this section.

**THEME 1: Landscapes and Physical Processes**

1 Study the OS map extract of the area around Llandovery in the Resource Folder.

(a) (i) In which of the following grid squares do the rivers Afon Dulais and Afon Tywi meet?

TICK ( ✓ ) the correct answer in the box below. [1 mark]

GRID SQUARE	TICK ( ✓ )
7132	
3172	
7131	

(ii) Give the direction of flow of the Afon Dulais.

[1 mark]

---



---

(Turn over)



**1 (a) (iv) The process of abrasion takes place in the Afon Dulais. Describe this process. [2 marks]**

---

---

---

---

---

---

---

- 1 (b) (i) The scale of the map opposite has a ratio of 1:50 000. The distance between Llanwrda and Llandovery railway stations is 12 cm on the map. Calculate the actual distance in kilometres. Show your working. [2 marks]

Answer \_\_\_\_\_ kilometres

(Turn over)







1 (c) Study the diagram opposite.

(i) Give the correct label for box A.

TICK ( ✓ ) the correct answer from the box below. [1 mark]

LABEL	TICK ( ✓ )
Interception	
Transportation	
Deposition	

(ii) Identify ONE flow and ONE store of water in a drainage basin. [2 marks]

Flow \_\_\_\_\_

---

Store \_\_\_\_\_

---

(Turn over)







**THEME 2: Rural-Urban Links**

**2 (a) Study the map opposite.**

**(i) TICK ( ✓ ) THREE statements from the box below that are true. [3 marks]**

<b>STATEMENT</b>	<b>TRUE ( ✓ )</b>
<b>Around 70% of Wales can be classed as rural.</b>	
<b>North Wales is the most urbanised.</b>	
<b>Most of central and west Wales consists of rural settlements.</b>	
<b>There are no villages in central Wales.</b>	
<b>Around 10% of Wales can be classed as urban.</b>	
<b>More urban settlements are in south-east and north-east Wales.</b>	

**(Turn over)**

2 (a) (ii) TICK ( ✓ ) TWO characteristics of a rural settlement from the list below. [2 marks]

CHARACTERISTICS OF A RURAL SETTLEMENT	RURAL ( ✓ )
Large number of shops and businesses.	
Low population density.	
Surrounded by farmland and countryside.	
Many brownfield sites to build on.	
Linked together by a varied transport network.	

(Turn over)

**2 (a) (iii) Give ONE reason why mid-Wales is mainly rural. [2 marks]**

---

---

---

---

---

---

---

---

---

---

**2 (b) Study the map opposite.**

**(i) Describe the pattern of journey times to Accident and Emergency (A&E) hospitals for people living in Wales. [3 marks]**

---

---

---

---

---

---

---

---

---

---

---

**2 (b) (ii) Access to health care is a challenge facing people who live in remote rural areas of Wales.**

**Describe TWO other challenges. [4 marks]**

**1**

---

---

---

---

**2**

---

---

---

---













**SECTION B – OPTIONS**

**Answer ONE question in this section, either Question 3 OR Question 4.**

**THEME 3: TECTONIC LANDSCAPES AND HAZARDS**

**3 (a) Study the histogram opposite.**

**(i) How many tsunamis were caused by earthquakes of magnitude 6 to 6.5? [1 mark]**

---

**(ii) Give the modal class of earthquake magnitudes that caused tsunamis. [1 mark]**

---

**(Turn over)**

**3 (a) (iii) Give TWO reasons why a histogram was used to present this data rather than a bar chart. [2 marks]**

**1**

---

---

---

---

**2**

---

---

---

---

**3 (a) (iv) Explain why fewer tsunamis are caused by low magnitude earthquakes. [2 marks]**

---

---

---

---

---

---

---

---

---

---

**3 (b) Study the map opposite.**

**It shows the volcanic islands of Hawaii, in the Pacific Ocean.**

**(i) Describe the location of Mauna Loa, the largest of Hawaii's volcanoes. [2 marks]**

---

---

---

---

---

---

---

**3 (b) (ii) Mauna Loa is an example of a shield volcano.  
Describe TWO features of a shield volcano.**

**[4 marks]**

**1**

---

---

---

---

---

---

**2**

---

---

---

---

---

---

**(Turn over)**

- 3 (iii) The Hawaiian Islands have been created by a volcanic hot-spot.  
Explain why hot-spots can create chains of volcanoes.

You may use a diagram to help your answer.

[4 marks]

---

---

---

---

(Turn over)



- 3 (c) Study the information in the Resource Box opposite.**

### **FACT FILE**

- **The Hawaiian Volcano Observatory (HVO) monitors hazards from active volcanoes from 100 field stations with scientific instruments transmitting data 24 hours a day. The data is used to produce hazard maps to advise the population and emergency planners.**
- **The Kilauea volcano eruption in 2018 destroyed dozens of homes and burned hundreds of hectares of farmland, but the damage was confined to the Big Island. 2,000 people were evacuated in the 2018 eruption but there were no casualties.**
- **Tourism authorities reported that summer bookings for hotels on Big Island have fallen by almost 50 percent since the Kilauea volcano began spewing lava and toxic gases. Tourism generates US\$166 million per year for all of the Hawaiian Islands.**

**Volcanic lava flows present the most serious dangers to people and the economy.**

**To what extent do you agree with this statement?**

**Use the RESOURCE BOX AND FACTFILE to support your answer. You may refer to other examples you have studied. [8 marks]**

**(Turn over)**







**If you have answered Question 3 DO NOT answer  
Question 4**

**THEME 4: Coastal Hazards and their Management**

**4 (a) Study the histogram opposite.**

**(i) How many wind gusts had a wind speed between  
10 and 20m/s? [1 mark]**

---

**(ii) Give the modal class of wind speed. [1 mark]**

---

**(Turn over)**

4 (a) (iii) Give TWO reasons why a histogram was used to present this data rather than a bar chart.

[2 marks]

1

---

---

---

2

---

---

---

(Turn over)

**4 (a) (iv) Explain why the strength of wind during tropical storms concerns some people who live in coastal communities. [2 marks]**

---

---

---

---

---

---

---

---

---

---

---

---

**4 (b) Study the map opposite. It shows the areas of Bangladesh, South Asia, that are at high risk of coastal flooding.**

**(i) Describe the areas of Bangladesh at risk from coastal flooding. [2 marks]**

---

---

---

---

**4 (b) (ii) Describe ONE social and ONE economic factor that can increase the vulnerability of coastal communities to the impact of flooding.**

**[4 marks]**

**Social**

---

---

---

---

**Economic**

---

---

---

---

**(Turn over)**



- 4 (c) Study the information in the **RESOURCE BOX** opposite.

### **FACT FILE**

- Councils must decide whether to maintain or build new coastal defences through their Shoreline Management Plan (SMP). The SMP for Fairbourne has recommended that the village will enter **MANAGED RETREAT** in 2025. The council will then stop maintaining the sea defences.
- The council argues that it is unsafe and unsustainable to continue to protect low lying communities in the face of rising sea levels.
- There are 421 homes with over 850 residents living in Fairbourne. House prices have fallen by more than 40%. Many of the residents are elderly and retired.
- Villagers are angry that their village will be lost to the sea and they will have to move away. They have been described as 'Britain's First Climate Refugees'.
- Fairbourne's attractive 2-mile-long Blue Flag beach has attracted many tourists every year since Victorian times. There are several businesses that support locals and visitors.

Local councils in the UK should protect all communities from coastal flooding to stop them from disappearing.

To what extent do you agree with this statement?

Use the **RESOURCE BOX AND FACTFILE** to support your answer. You may refer to other examples you have studied.

[8 marks]  
(Turn over)







<b>Question number</b>	<b>ADDITIONAL PAGE, IF REQUIRED. WRITE THE QUESTION NUMBER(S) IN THE LEFT-HAND MARGIN.</b>

(Turn over)

<b>Question number</b>	<b>ADDITIONAL PAGE, IF REQUIRED. WRITE THE QUESTION NUMBER(S) IN THE LEFT-HAND MARGIN.</b>



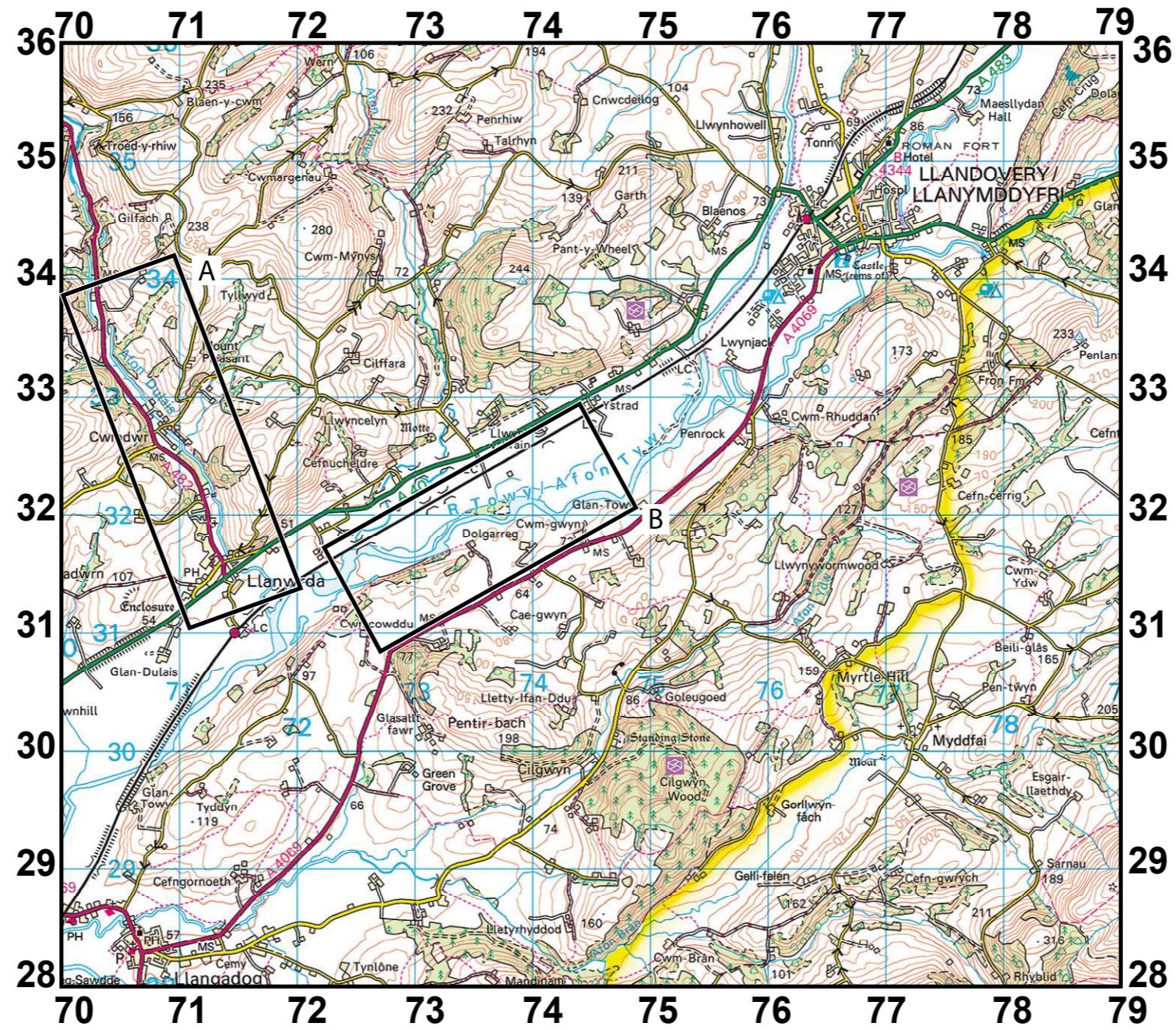
<b>Question number</b>	<b>ADDITIONAL PAGE, IF REQUIRED. WRITE THE QUESTION NUMBER(S) IN THE LEFT-HAND MARGIN.</b>

<b>For Examiner's use only</b>		
	<b>Maximum Mark</b>	<b>Mark Awarded</b>
<b>Question 1</b>	<b>28</b>	
<b>Question 2</b>	<b>28</b>	
<b>Writing accurately</b>	<b>3</b>	
<b>Question 3</b>	<b>24</b>	
<b>Question 4</b>	<b>24</b>	
<b>Total</b>	<b>83</b>	

either  
or

# Question 1(b)(i)

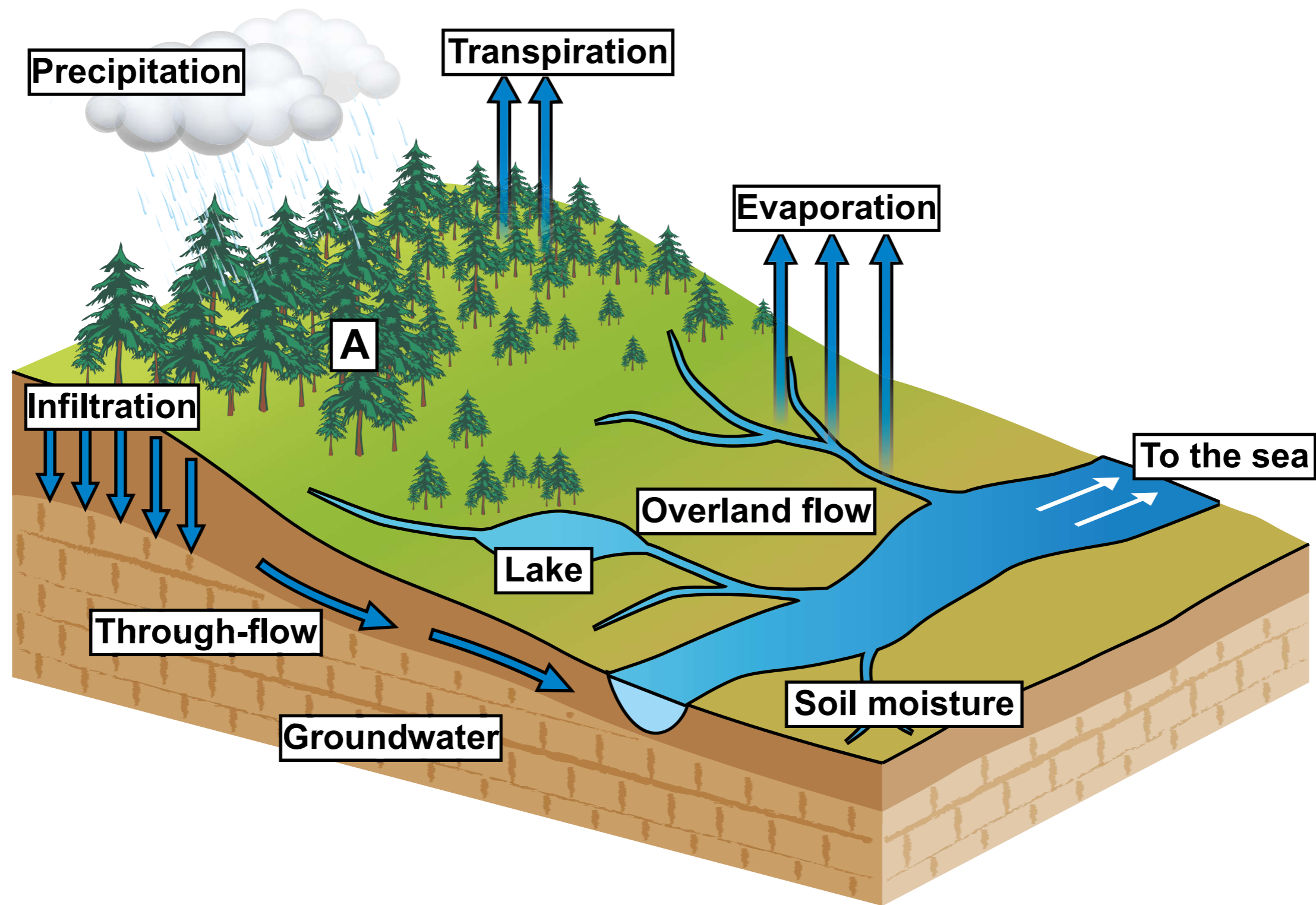
## OS MAP EXTRACT SHEET 146 LAMPETER & LLANDOVERY



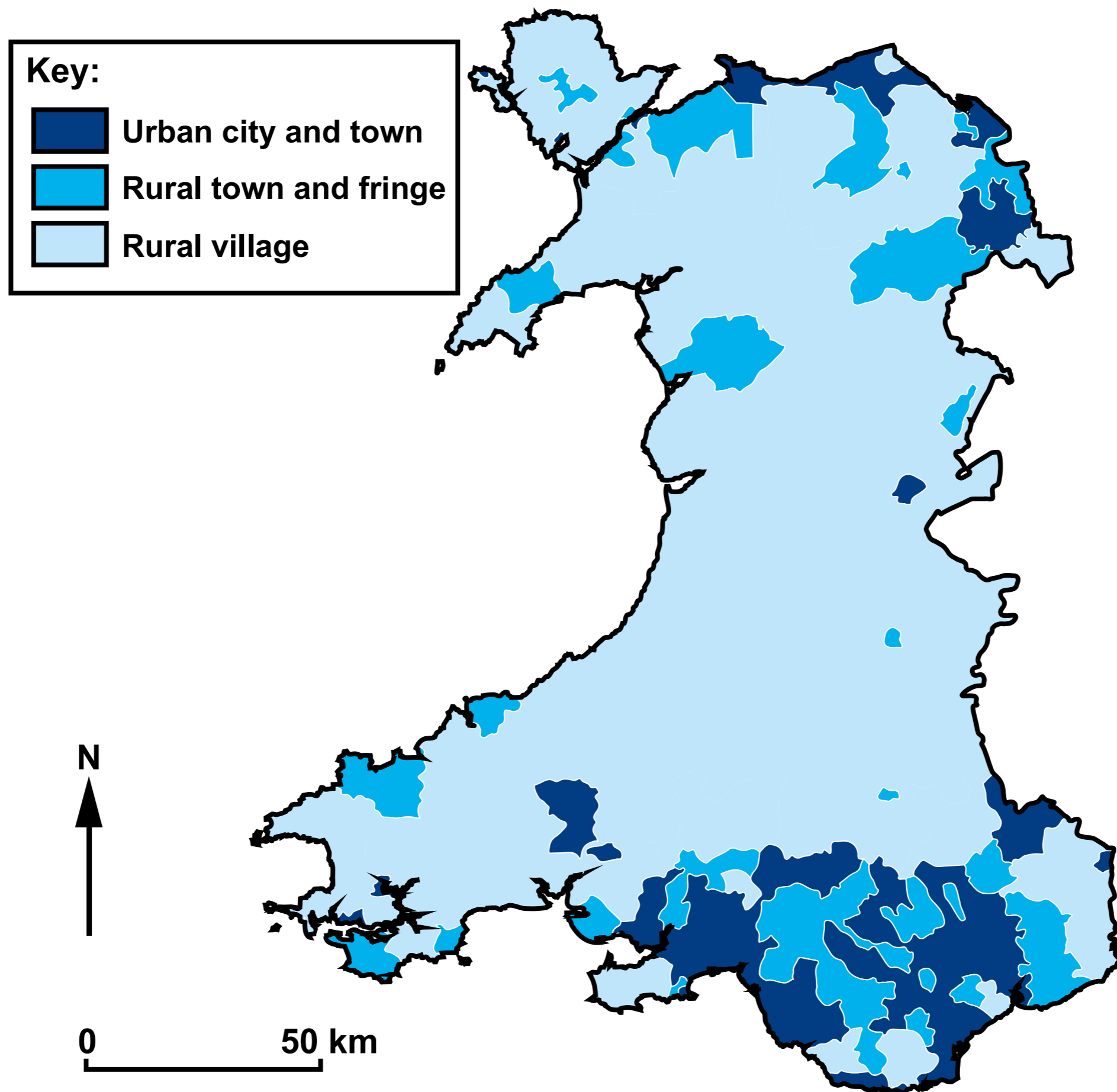
0 1km



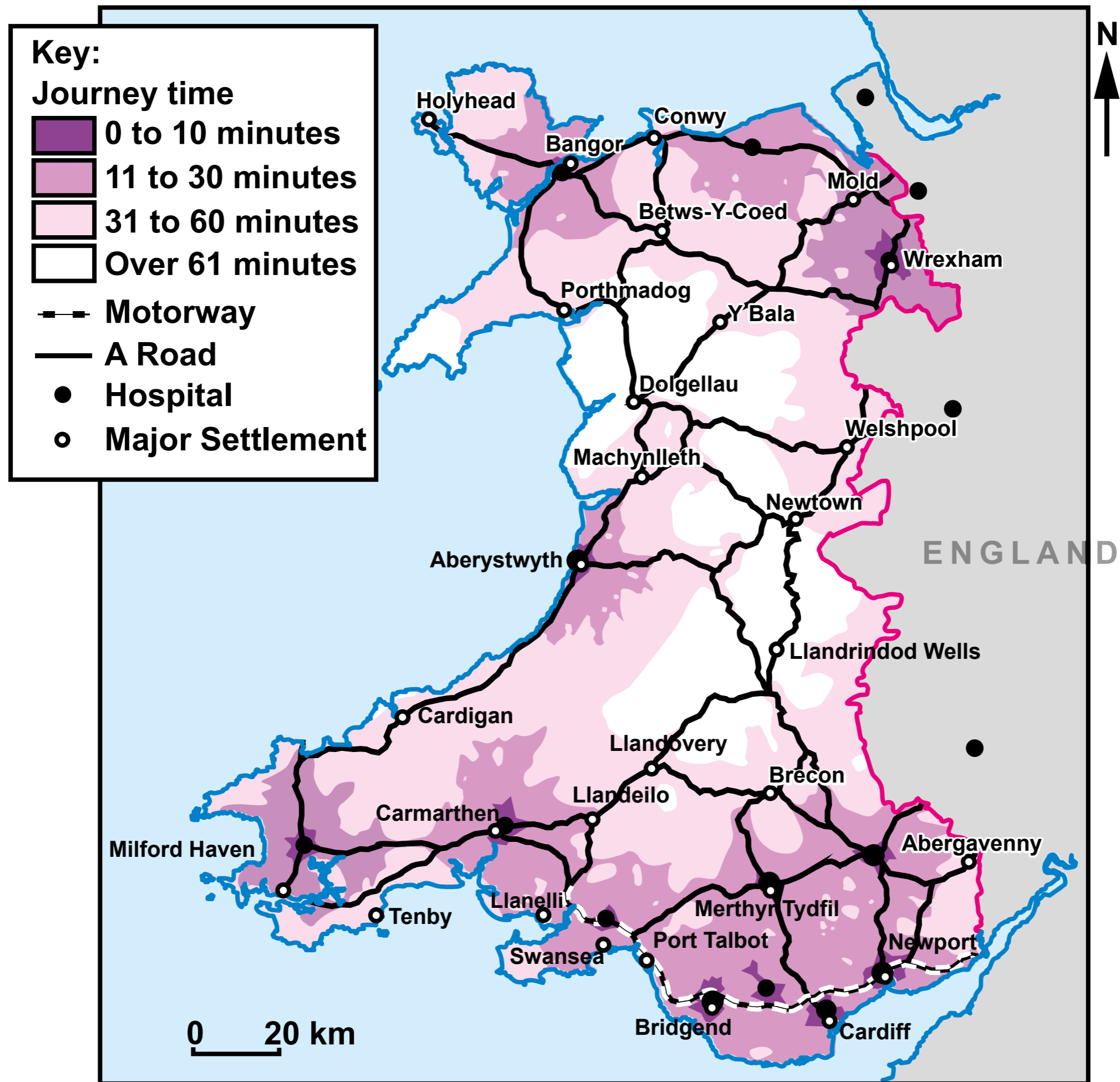
# FLOWS AND STORES IN A DRAINAGE BASIN



# CLASSIFICATION OF URBAN AND RURAL AREAS IN WALES



# JOURNEY TIMES TO ACCIDENT AND EMERGENCY (A&E) HOSPITALS FOR PEOPLE LIVING IN WALES



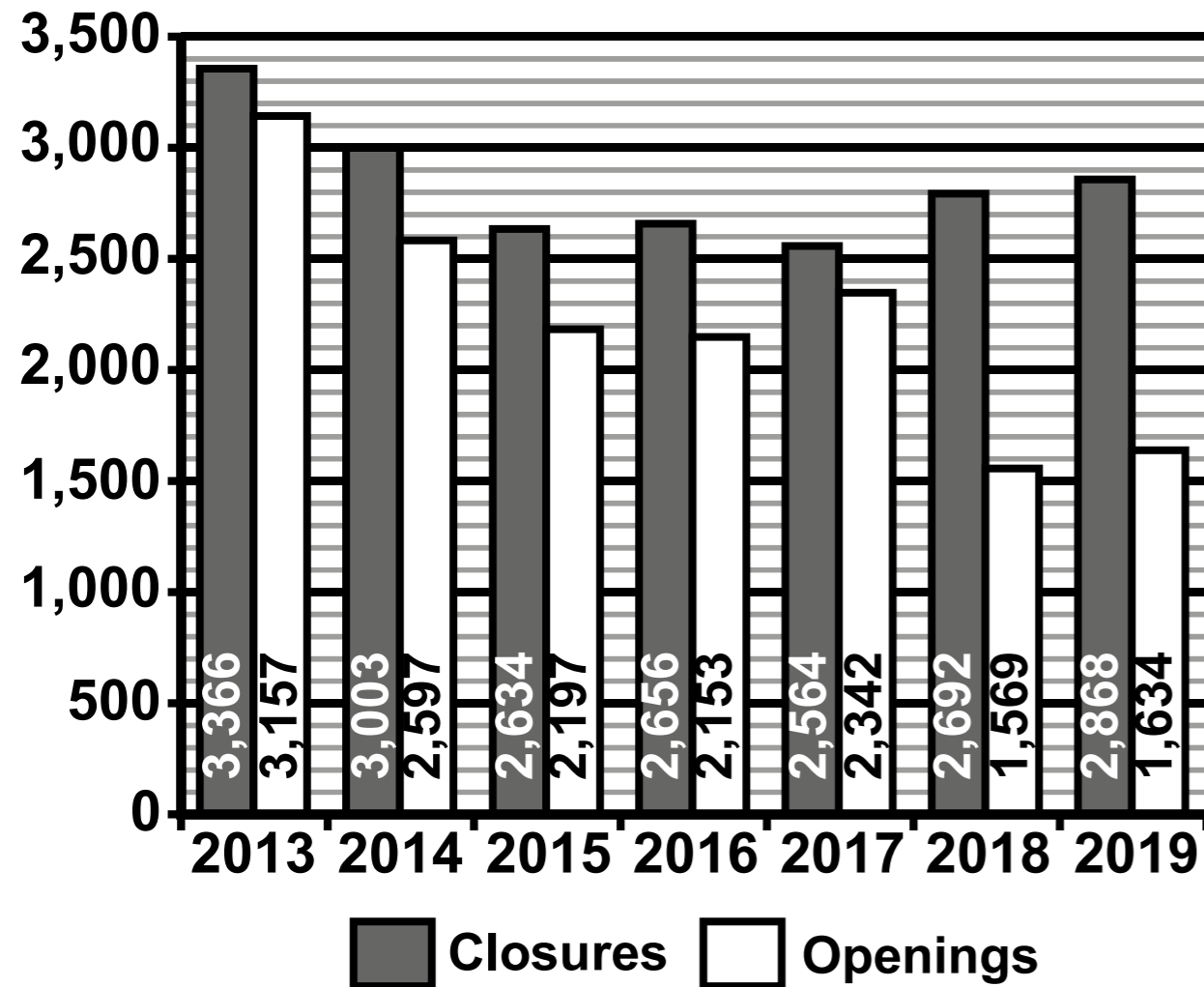
## HIGH STREET SHOP CLOSURE



## REDEVELOPED HIGH STREET



## UK HIGH STREET SHOP CLOSURES AND OPENINGS 2013-2019

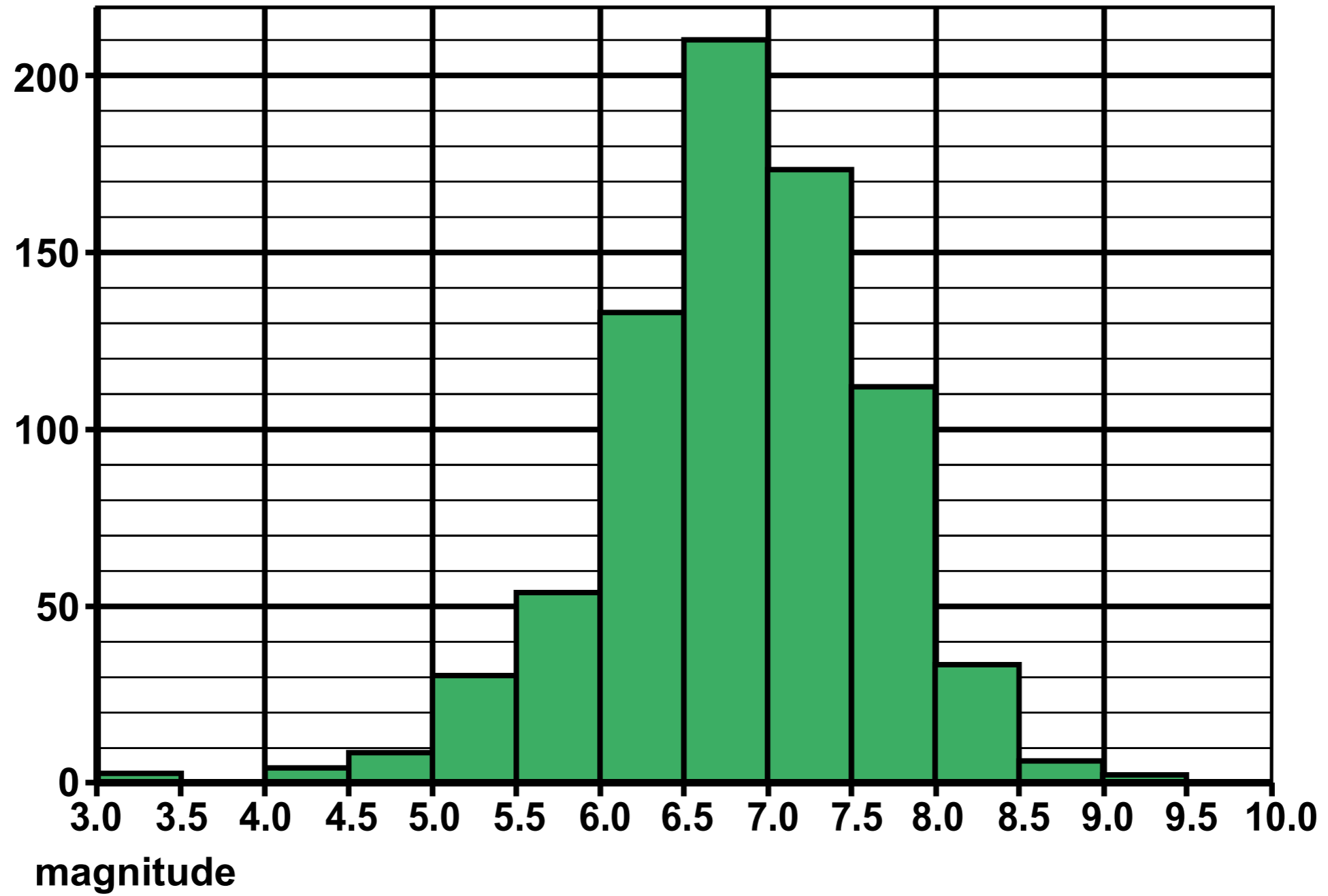


## OUT OF TOWN SHOPPING CENTRE

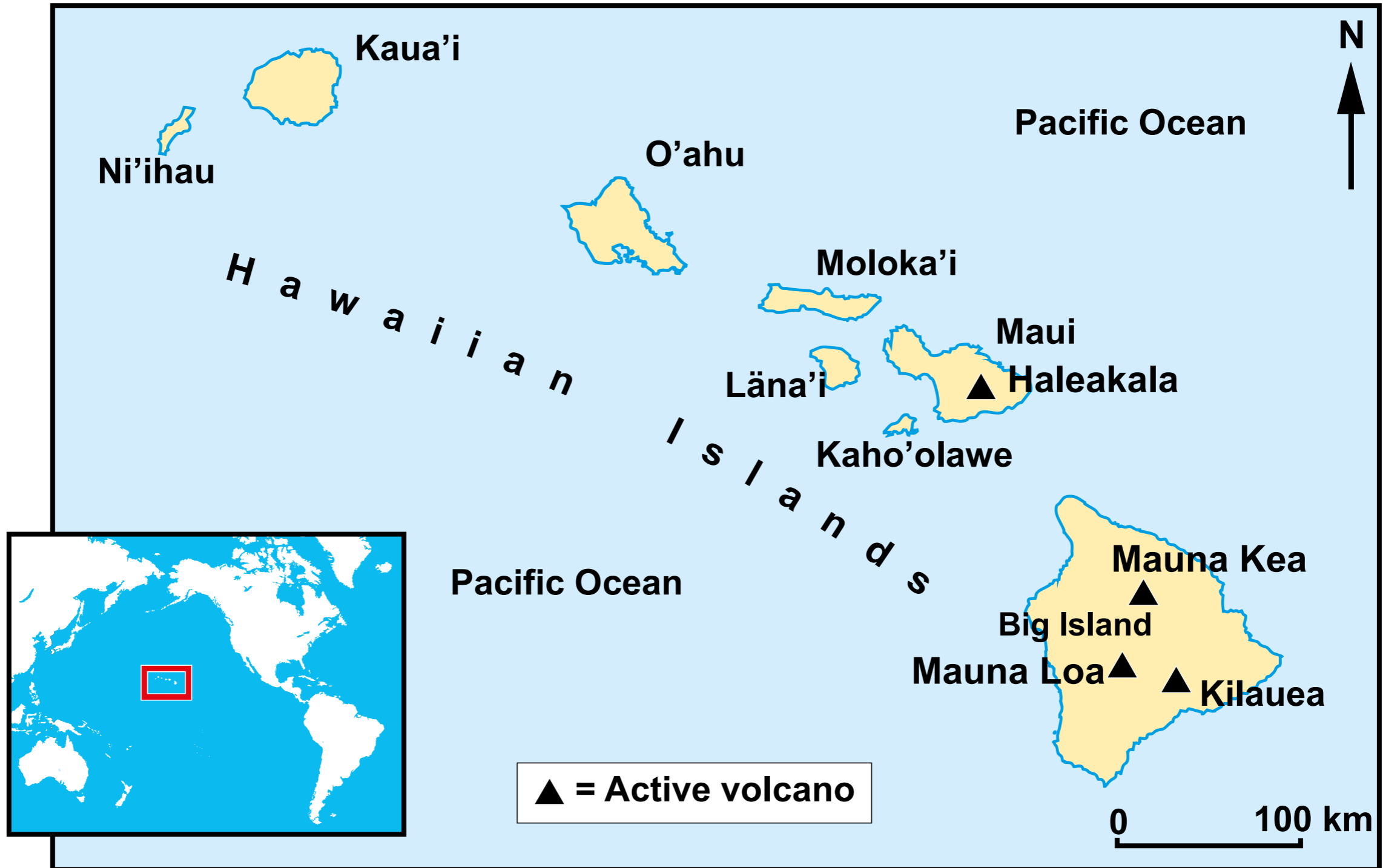


# EARTHQUAKE MAGNITUDES THAT CAUSED TSUNAMIS: 1900-2008

Frequency of  
tsunamis



# HAWAIIAN ISLANDS

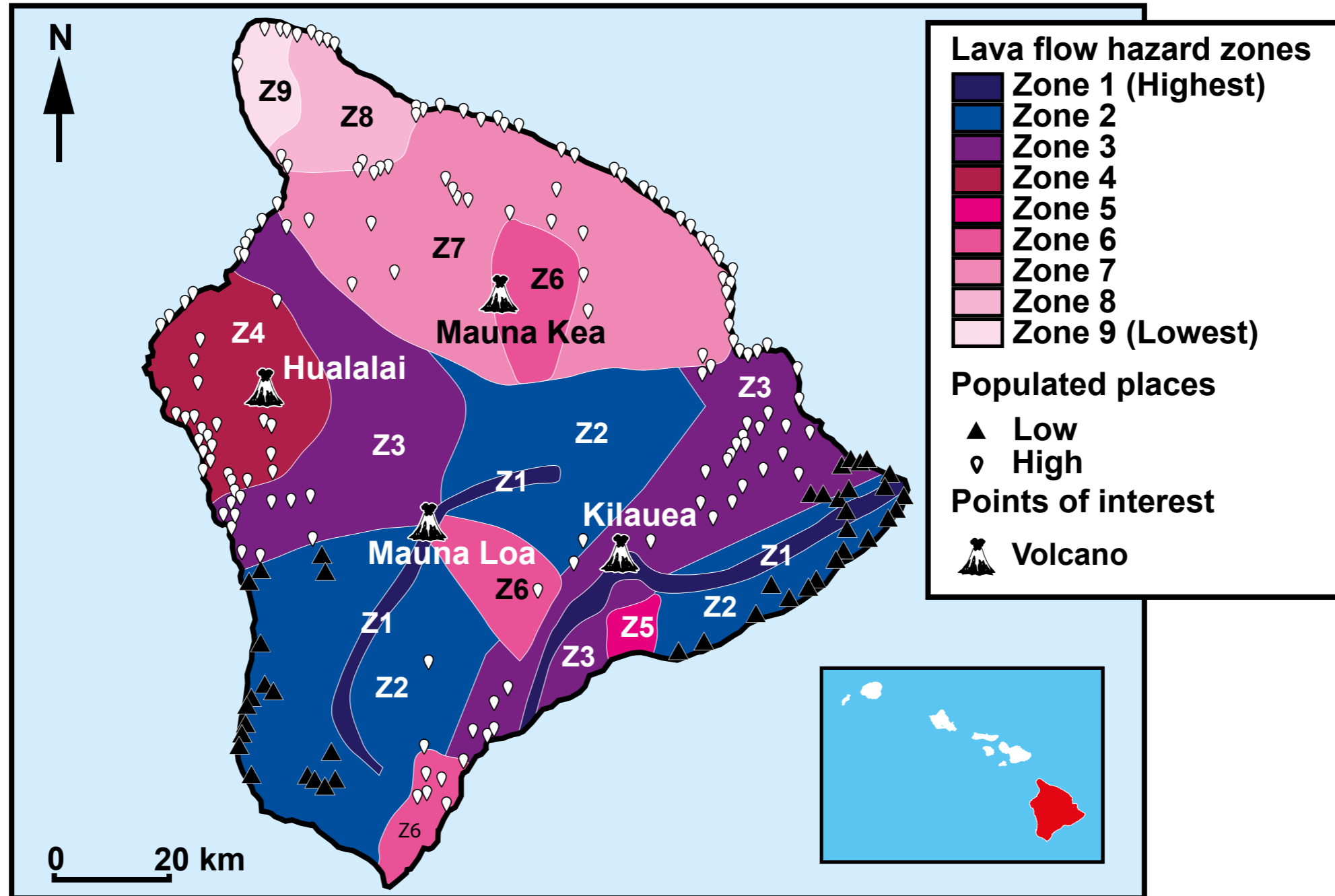


# RESOURCE BOX-VOLCANIC ERUPTIONS ON BIG ISLAND, HAWAII

## KILAUEA LAVA FLOWS

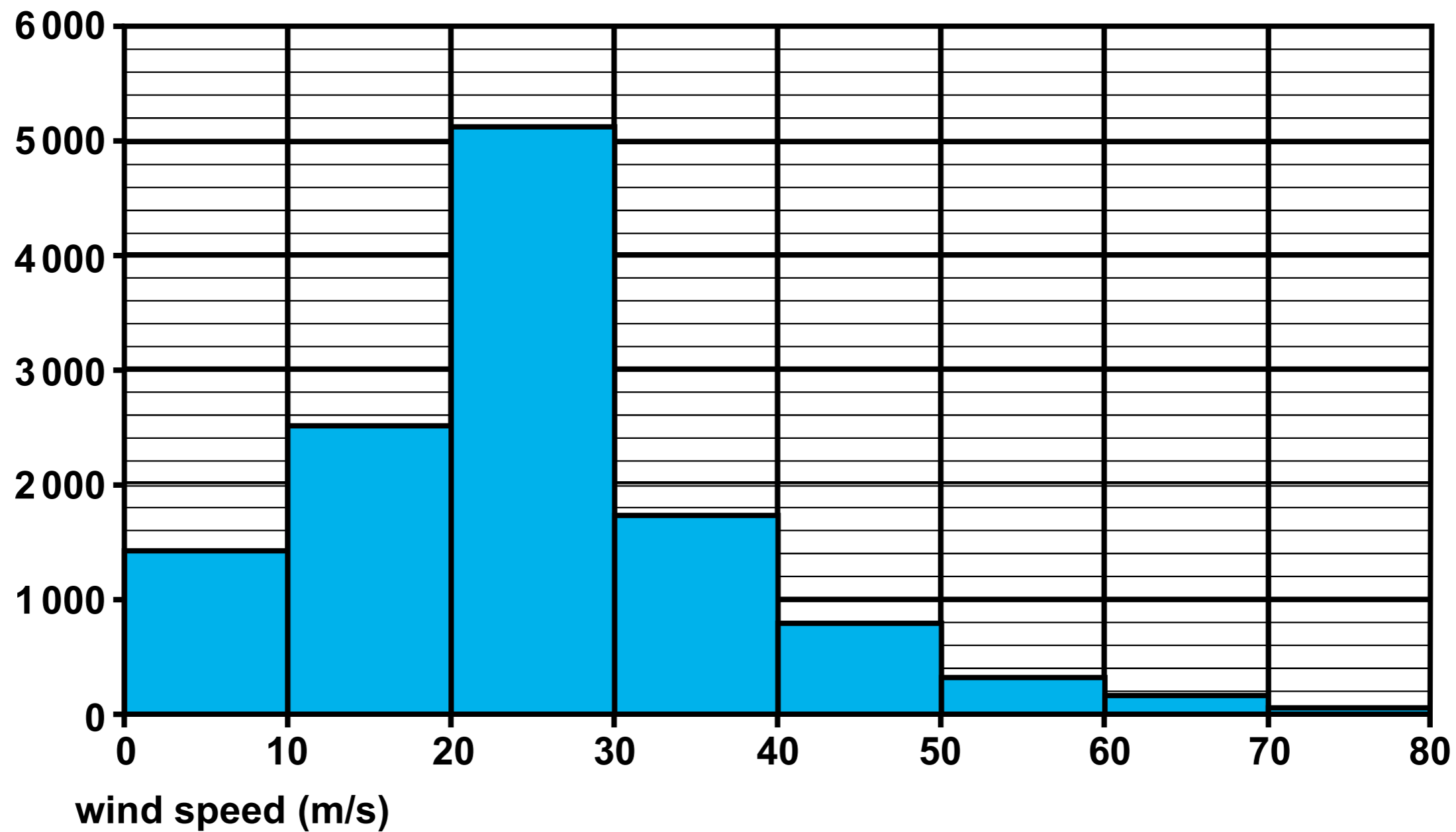


## BIG ISLAND, HAWAII: HAZARD ZONES AND POPULATED AREAS



# AVERAGE STRENGTH OF WIND GUSTS DURING A HURRICANE SEASON IN MIAMI, FLORIDA

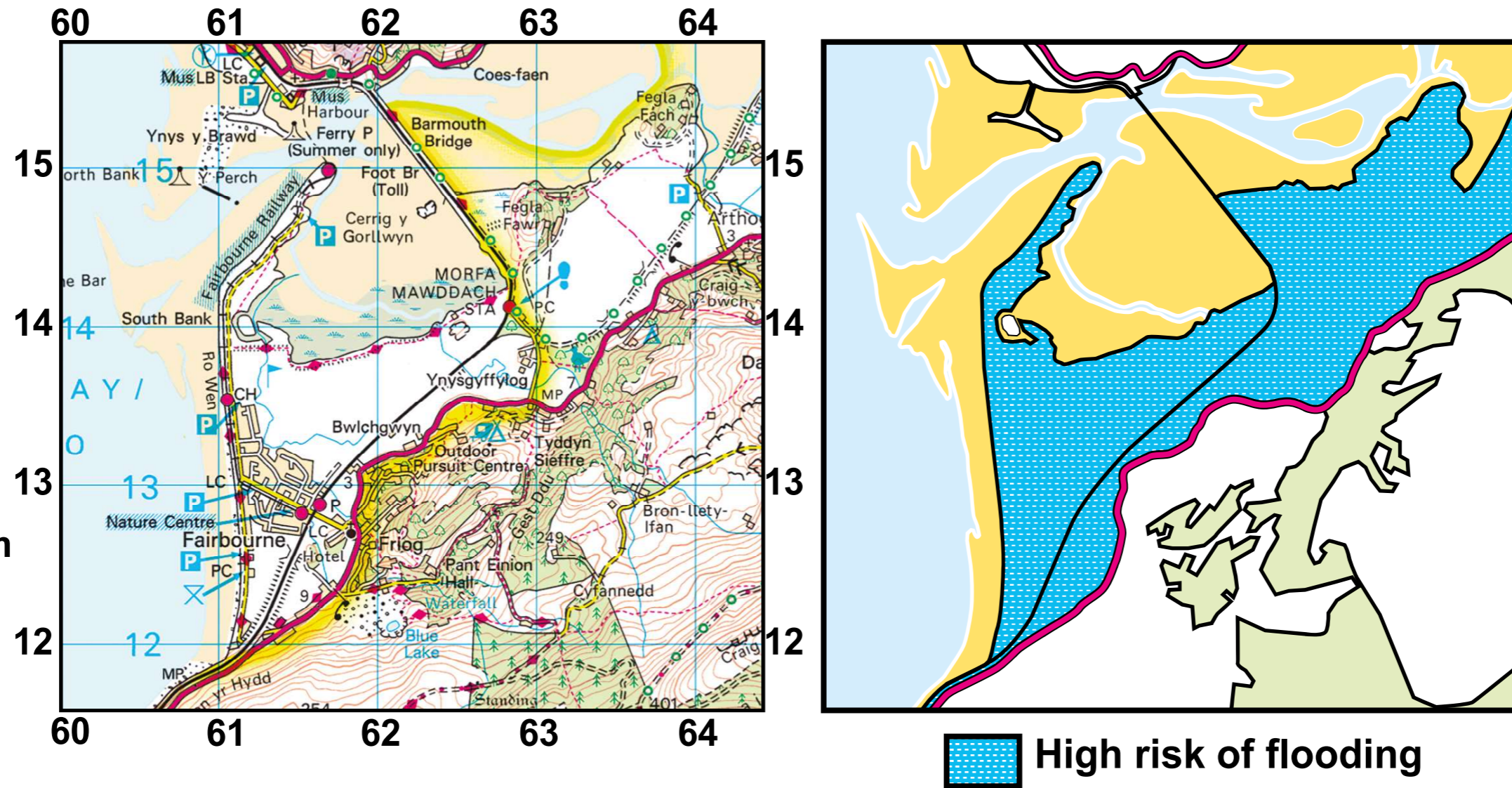
frequency of  
wind gusts



# COASTAL FLOODING IN BANGLADESH



# RESOURCE BOX - FAIRBOURNE ON THE WEST COAST OF WALES



The land is very flat, only just above sea level and at risk of flooding.

## STORM WAVES AT FAIRBOURNE





**GCSE**

**3110U10-1A**

**MONDAY, 23 MAY 2022 - MORNING**

## **GEOGRAPHY**

**Unit 1: Changing Physical and Human Landscapes**

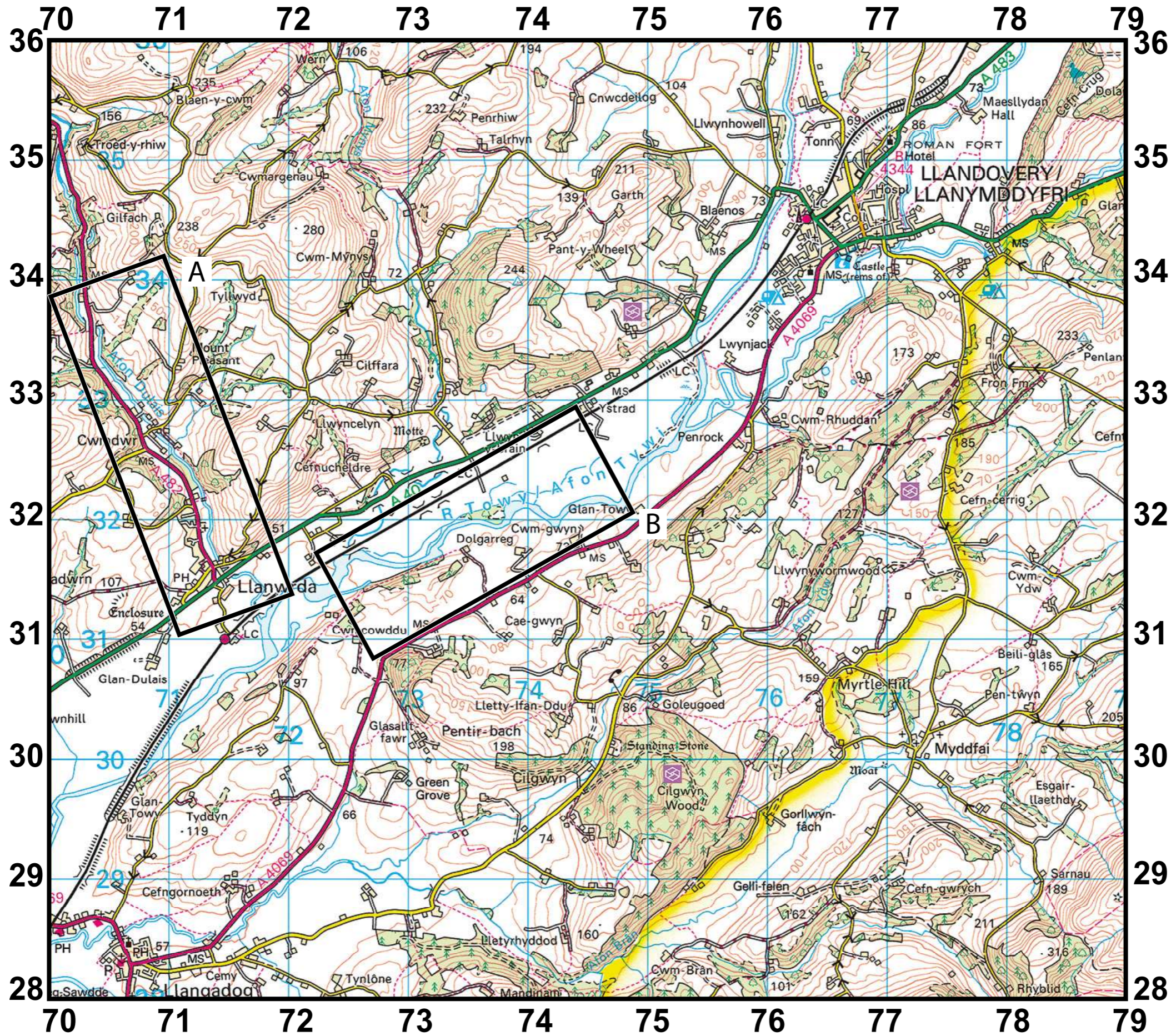
**1 hour 30 minutes plus your additional time allowance.**

## **RESOURCE FOLDER**

**This folder is for use with questions in UNIT 1:  
CHANGING PHYSICAL AND HUMAN LANDSCAPES.**

**This folder need not be handed in with your answer  
booklet.**

# OS MAP EXTRACT SHEET 146 LAMPETER & LLANDOVERY



# LANDRANGER MAP SYMBOLS

## ROADS AND PATHS Not necessarily rights of way

	Motorway (dual carriageway)
	Primary Route
	Main road
	Road under construction
	Secondary road
	Narrow road with passing places
	Road generally more than 4m wide
	Road generally less than 4m wide
	Other road, drive or track
	Path
	Gradient: steeper than 20% (1 in 5)/ 14% to 20% (1 in 7 to 1 in 5)
	Gates / Road tunnel
	Ferry (passenger) / Ferry (vehicle)

## LAND FEATURES

	Cutting, embankment		Graticule intersection at 5' intervals
	Electricity transmission line (pylons shown at standard spacing)		Landfill site or slag/spoil heap
	Pipe line (arrow indicates direction of flow)		Coniferous wood
	Buildings		Non-coniferous wood
	Important building (selected)		Mixed wood
	Bus or coach station		Orchard
	Glass structure		Park or ornamental ground
	Heliport		Access land (symbols indicate owner or agency - see below)
	Place of worship		Forestry Commission
	Triangulation pillar		Natural Resources Wales
	Mast		National Trust; always open, limited access - observe local signs
	Wind pump		National Trust for Scotland; always open, limited access - observe local signs
	Wind turbine		
	Windmill with or without sails		

## RAILWAYS

	Track multiple or single		Station, (a) principal
	Track under construction		Siding
	Light rail system, narrow gauge or tramway		Light rail system station
	Bridges, footbridge		Level crossing
	Tunnel, cutting		Viaduct, embankment

## ABBREVIATIONS See website for full list

Br	Bridge	MS	Milestone
Cemy	Cemetery	Mus	Museum
CG	Cattle grid	P	Post office
CH	Clubhouse	PC	Public convenience (in rural areas)
Coll	College	PH	Public house
Fm	Farm	Sta	Station
Ho	House	Sch	School
Hospl	Hospital	TH	Town Hall, Guildhall or equivalent
MP	Milepost	Univ	University

## PUBLIC RIGHTS OF WAY Not shown on maps of Scotland

	Footpath	Public rights of way shown on this map have been taken from local authority definitive maps and later amendments.  The symbols show the defined route so far as the scale of the mapping will allow.  Rights of way are liable to change and may not be clearly defined on the ground. Please check with the relevant local authority for the latest information. Rights of way are not shown on maps in Scotland.
	Bridleway	
	Restricted byway (not for use by mechanically propelled vehicles)	
	Byway open to all traffic	

## ARCHAEOLOGICAL AND HISTORICAL INFORMATION

	Site of antiquity	VILLA	Roman		Site of battle (with date)
	Visible earthwork	Castle	Non-Roman		

## OTHER PUBLIC ACCESS

	National Trail, Scotland's Great Trails, European Long Distance Path and selected Recreational Routes		Other route with public access (not normally shown in urban areas)
	On-road cycle route	The exact nature of the rights on these routes and the existence of any restrictions may be checked with the local highway authority. Alignments are based on the best information available. These routes are not shown on maps of Scotland	
	Traffic-free cycle route		
	Cycle Network number; National / Regional		

**Danger Area** Firing and Test Ranges in the area. Danger! Observe warning notices.

## HEIGHTS

Contours are at 10 metres vertical interval

Heights are to the nearest metre above mean sea level

## ROCK FEATURES

Where two heights are shown, the first is the height of the natural ground in the location of the triangulation pillar, and the second (in brackets) to a separate point which is the natural summit.

## BOUNDARIES

	National		County, Unitary Authority, Metropolitan District or London Borough
	District		National Park

## TOURIST INFORMATION

	Viewpoint 180°		Camp site / Caravan site
	Viewpoint 360°		Camping and caravan site
	Visitor centre		Selected places of tourist interest
	Walks / trails		Information centre, all year / seasonal
	Nature reserve		Parking
	Picnic site		Park & Ride, all year / seasonal
	Youth hostel		Phone, public / emergency / roadside assistance
	Golf course or links		Recreation / leisure / sports centre
	Garden / arboretum		World Heritage site or area

## WATER FEATURES