

READING PRACTICE 1

9

Rising sea levels and climate change

UNIT AIMS

READING SKILLS

Classifying information
Recognizing trends
Skimming for key data

EXAM PRACTICE

Labelling a map
Completing a table
Short answer questions



Identifying the topic

- 1 Look at these images and answer the questions.
 - a How are these images connected?
 - b Could you organize these pictures in a different order? Explain how you would decide.
 - c Do you think global warming is the result of human activity? Give reasons for your opinion.

Skills

Classifying information

Before you read a text you can ask yourself a few questions:

- 1 Does the title give me a clear idea of the content?
 - The title of a text about factual events may give you important clues about the topic, focus, date and location of the information.
- 2 Do I know anything about this topic?
 - If you know something about the topic, think of the key vocabulary you might expect to find in the text. Try to remember alternative words (synonyms) associated with these key words.
- 3 What kind of information can I expect to find in the passage?
 - The title might refer to some or several of the following: dates, percentages, figures, currency, geographical locations, volumes, ratios and measurements.
- 4 Can I predict the structure of the text from the title?
 - The time frame and the tense of the verb in the title will indicate whether the text will describe past events or the current situation or predict future developments.



- 2 Read the following titles of articles about rising sea levels and answer questions 1–4 above.

- a Sea level change – 100 years of annual tide-gauge records
- b Rate of acceleration of global mean sea-level rise since 2000
- c US east coast cities affected by two-metre rise in ocean levels
- d Nineteenth and twentieth century rises in sea level

Rising sea levels and climate change

- 3 Scan the passage below and complete the table with the type of information found in the text.

Dates/Periods of time	Measurements	Geographical locations

Sea level rising

Global average sea level has increased over 8 inches since 1880, and global warming has caused the great majority, if not all, of that rise. Warming has acted in two main ways: by heating up and thus expanding the global ocean; and by attacking glaciers and polar ice sheets, pouring meltwater and icebergs into the sea. The planet has heated by more than one degree Fahrenheit over the last century, rising faster as we have burnt coal, oil and gas faster, and so sent ever more heat-trapping gases into the air. Scientists overwhelmingly agree that these building gases are responsible for most of the warming observed thus far.

Warming and sea-level rise are both accelerating, as is the rate of decay of ice sheets on Greenland and Antarctica. Loss of ice from these sources has the potential to raise sea level by many tens of feet over centuries. In the warm period before the last Ice Age – when the planet was as warm as we expect it to become by 2100 or sooner, at least without deep and immediate cuts to pollution – global sea level very likely reached over 20 feet higher than it is today, an eventual sea level we could be committing to within decades if not already. That rise would be enough to drown many major coastal metropolises.

This century, scientists expect about 20 to 80 more inches of global sea-level rise, depending significantly on how much more heat-trapping pollution humankind puts into the sky. The amount also depends on just how strongly pollution translates into warming, and just how strongly warming translates into sea rise.

- 4 Complete the following sentences with the correct tense of the verbs in brackets.

- a Over the last 130 years the sea level _____ (rise) nearly 10 inches.
- b Even now the volume of the ocean _____ (expand) as the planet gets warmer and polar ice melts.
- c Experts calculate that over the next century human activity _____ (cause) sea levels to match those of the Ice Age.

Skills

Recognizing trends in charts, diagrams, tables and maps

Texts that give factual information often include statistics and figures that can also be represented in charts, diagrams, tables and maps. In the text, the writer will usually:

- a describe the data or information.
- b compare figures over a period of time, or at different points in time.
- c highlight the most significant aspects of the data; for example, exceptionally high and low figures, percentages and ratios in a chart, unusual data patterns, exceptions to the norm and trends.
- d explain the possible causes of and reasons for the figures and changes in the chart.

Unit 9

Exam skills

Labelling a map

In some questions you will be asked to complete labels on a map using words or numbers from the reading passage. You can write numbers in figures or words, but remember that in the reading test spelling counts. If you write the numbers in words, you must take care to spell them correctly.

- 5 Read the following passage and complete the map with the predicted rise in sea level that will completely submerge each city. Write a NUMBER from the text.

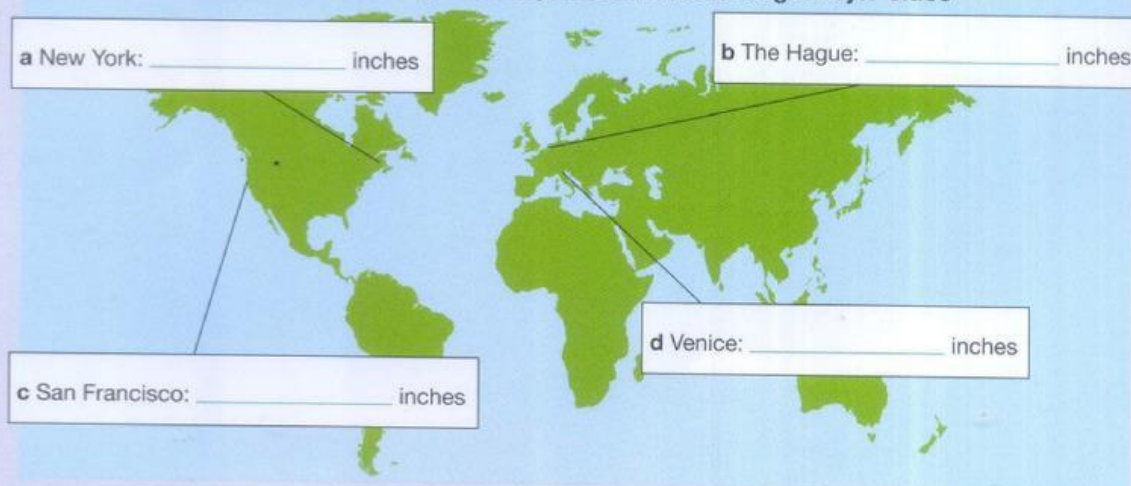
Rising sea levels threaten coastal cities

Since 1880, sea levels have risen an average of 8 inches globally. Calculations vary, but there is common consensus that, as a result of global warming, oceans will heat up and expand at an increasing pace and sea levels will consequently rise more rapidly. Some scientists calculate that the sea will rise between 6 and 15 inches by 2050 and between 12 and 48 inches by 2100. Experts predict that if this trend continues, many coastal settlements will be susceptible to flooding within the next century, and that some will be in danger of disappearing altogether.

Unusually high tides and storm surges in recent years, have already caused serious flooding in cities worldwide, including New York, New Orleans and Venice. Although, this in itself does not pose an immediate threat to their survival, there is evidence that rising sea levels could lead to the inundation of major cities by the end of the 21st century.

If scientific calculations are accurate, Venice would be completely submerged if sea levels rose by 42 inches. The Hague in Holland, another low-lying European city, would also be affected by rising sea levels. Like Venice, it is only 39 inches above today's sea level, and would be totally submerged if sea levels rose by 45 inches. On the other hand, central New York, at an elevation of 79 inches above sea level, would not be submerged until the level of the ocean rose by 80 inches, while the greater part of San Francisco would disappear under the sea with a rise in sea level of only 42 inches.

Rise in sea levels (in inches) needed to submerge major cities



- 6 Scan the text again and identify the organizational words and phrases that express relationships of:

a cause

b effect

c comparison

Skills

Skimming for key data

Skimming is an effective technique for identifying the overall message and structure of a reading passage (see Unit 1). Key words from the topic sentence are repeated and extended throughout the passage, indicating points in the text where sub-topics and themes are developed. Words and phrases that express opinions and logical arguments outline the structure of the text.

7 Skim the following text for:

- a key vocabulary in the topic sentence.
- b repetitions of key and associated vocabulary in the text.
- c sub-topics or themes.
- d words that indicate the logical argument and structure of the text.

Traditional knowledge and past experience

Adaptive capacity and resilience can also be strengthened through the application of traditional knowledge and past experience of environmental changes. In the TAR*, Nurse et al (2001) noted that some traditional island assets, including subsistence and traditional technologies, skills and knowledge, and community structures, and coastal areas containing spiritual, cultural and heritage sites, appeared to be at risk from climate change, and particularly sea-level rise. They argued that some of these values and traditions are compatible with modern conservation and environmental practices.

Since then, several examples of such practices have been described. For instance, Hoffmann (2002) has shown that the implementation of traditional marine social institutions, as exemplified in the Ra'ui in Rarotonga, Cook Islands, is an effective conservation management tool, and is improving coral reef health; while Aswani and Hamilton (2004) show how indigenous* ecological knowledge and customary sea tenure* may be integrated with modern marine and social science to conserve the bumphead parrotfish in Roviana Lagoon, Solomon Islands. Changes in sea tenure, back to more traditional roles, have also occurred in Kiribati (Thomas, 2001).

The utility of traditional knowledge and practices can also be expanded to link not only with biodiversity* conservation but also with tourism.*For instance, in a coastal village on Vanua Levu, Fiji, the philosophy of *vanua* (which refers to the connection of people with the land through their ancestors and guardian spirits) has served as a guiding principle for the villagers in the management and sustainable use of the rainforest, mangrove forest, coral reefs and village gardens. Sinha and Bushell (2002) have shown that the same traditional concept can be the basis for biodiversity conservation, because the ecological systems upon which the villagers depend for subsistence are the very same resources that support tourism. These examples indicate that local knowledge, management frameworks and skills could be important components of adaptive capacity in those small islands that still have some traditional foundations.

* **TAR** – Third Assessment Report of the Intergovernmental Panel on Climate Change

* **indigenous** – characteristic of a specific region

* **tenure** – possessing or looking after something (usually property)

* **biodiversity** – a variety of plant or animal life

Unit 9

Exam skills

Table completion

One type of question asks you to complete a table which summarizes information from one section of the text. The answers may not be in the same order as the information in the reading passage. You should write the words exactly as they appear in the reading passage. Check the spelling and make sure you do not exceed the number of words you are asked to write.

- 8 Complete the table with information from the passage on page 73. Write NO MORE THAN THREE WORDS in your answer.

Location	Traditional practice	Beneficial to
Cook Islands	using ancient a _____ societies	b _____
Solomon Islands and c _____	application of local d _____ information	bumphead parrot fish
Fiji	consulting with forefathers and e _____	forests, coral formations and f _____

Exam skills

Short answer questions

In this type of exercise you are required to answer questions about factual details in a reading passage using words from the text. The answers to the questions are in the same order as the information in the text. You must write the number of words indicated in the instructions.

- 9 Read the passage on page 73 and answer the questions (a–e) with words from the text. Write NO MORE THAN TWO WORDS.
- a Where exactly are the cultural and religious places that Nurse et al (2001) consider to be endangered by a rise in sea level? _____
 - b According to Nurse et al (2001), how do time-honoured community wisdom and current environmental and conservation methods relate? _____
 - c Which features of managing the sea have been reintroduced in Kiribati? _____
 - d What role does *vanua* play in the ecological practices of the population of Vanua Levu? _____
 - e What determines both the islanders' survival and the tourist industry? _____