

# Environmental refugees

Global warming has caused such significant changes in some areas on Earth that people can no longer live in those areas. These people are called environmental refugees.

## Who are environmental refugees?

Environmental refugees are people forced from their homes by changes to their environment. They may have to move somewhere else in their own country, or into another country. Many environmental refugees live on small islands, near coastal areas or in low-lying areas.

## Numbers of environmental refugees

Today about 25 million people can be described as environmental refugees. That is more than half of the world's total refugee population. Oxford University professor Norman Myers predicts that the number of environmental refugees will increase to 150 million over the next 50 years. People who live on small islands or near the coast will be among the most affected as sea levels rise.

### Fast fact

In China, the number of people displaced by the effects of global warming could one day be as great as 75 million.



The small Pacific island of Tuvalu is shrinking further each year as sea levels rise.



Floods in low-lying areas of Bangladesh have increased in recent years due to rising sea levels.

## CASE STUDY

# Flooding in Bangladesh

The country of Bangladesh has many low-lying areas that are prone to flooding. As sea levels rise, the country is at threat from more flooding.

## Rising sea levels

Rising sea levels are caused by water expanding, and by melting glaciers. As temperatures increase, water in oceans expands and sea levels rise. Today, approximately 15 per cent of the total rise in sea levels is due to melting glaciers. As more glaciers melt, sea levels will continue to rise.

## Flooding river deltas

Bangladesh has many low-lying river deltas that could flood if sea levels continue to rise. The Bangladeshi Environment Minister has warned that Bangladesh could have millions of environmental refugees within the next few decades.

### Fast fact

If sea levels across Earth rose by one metre, they would flood the city of Shanghai, in China. Shanghai is home to over 12 million people, and by 2030 it is expected to house 27 million people.



# Towards a sustainable future: Helping environmental refugees

Many environmental refugees need help to deal with the effects of global warming, such as rising sea levels. Measures are being put in place to help people prepare for the future.

## Fast fact

Developed countries are looking for technologies to adapt to changing climates. These technologies could be shared with developing countries that do not have access to the same resources.

## Aid and accommodation

Governments and non-government organisations can help to provide environmental refugees with emergency aid and accommodation. People at risk of becoming environmental refugees can also be taught ways to adapt to their changing environments. Many organisations are providing local people with information about global warming and strategies to minimise its effects.

## Planning for the future

In many regions, measures are being put in place to deal with rising sea levels. These measures include:

- building walls to hold back flood water
- establishing flood prevention schemes
- providing uncontaminated water supplies to low-lying areas.

*Providing farmers in developing countries with water-efficient crops may help them to adapt to new climate conditions.*



## Fast fact

The Carteret Islands are part of Papua New Guinea. They are located in the Pacific Ocean, 120 kilometres northeast of Bougainville.



*Many homes in the Carteret Islands are now close to the shoreline as sea levels rise.*

## CASE STUDY

# Carteret Islanders telling their story

The Carteret Islanders are the world's first cultural group to become environmental refugees as a result of current climate changes. Telling their story to others can help people to realise how much some people's lives have been affected by global warming.

## Rising sea levels in the Carteret Islands

It has been estimated that the Carteret Islands may be **uninhabitable** by 2015 due to rising sea levels. The local people have fought against rising sea levels for more than 20 years. Storm surges and high tides have washed away homes, destroyed vegetable gardens and contaminated fresh water supplies with salt water.

On 24 November 2005, the Papua New Guinean government authorised the evacuation of the Carteret Islands. The evacuation began in 2007, as ten families at a time were moved to the island of Bougainville.

## Speaking out for climate justice

A group of Carteret Islanders went on a speaking tour in Australia. They described the problems they faced due to rising sea levels, and talked about others in similar situations. The tour aimed to raise awareness about the problems faced by environmental refugees. Speakers hoped to gain people's interest and support to help affected communities.



# What can you do?

## Record local changes

You can record information about changes to your local ecosystem. This could help your community plan to protect local plants and animals.

### Keep records

Much of what we know about global warming comes from observing changes in local areas over time. You can keep records of events such as:

- rainfall
- temperatures
- the appearance of the first flowers, butterflies or birds in spring.

This information can help to show what is happening to the seasons in your area over the long term.

### Community surveys

There are many community groups that run surveys of the natural environment. You could become involved in a survey such as the Great Backyard Bird Count. This is an annual four-day event in the United States. It asks people to observe the birds in their local area. Anyone can participate, even if they are not usually bird-watchers.

*These people are looking for birds during the Great Backyard Bird Count.*

### Observing birds

Observe local birds in your area and record their movements. Any changes in the birds' behaviour could be a response to changes to their ecosystems. Your records could provide useful information to help protect bird species in the future.

### How to recognise birds

Bird observers need to learn how to recognise different species of birds.

There are many ways to identify a bird, including:

- noting its shape, size and colour
- observing special features, such as markings on its wings, face and body
- looking in books or field guides to help you to identify birds in your area
- asking experts at local bird-watching clubs or societies.

#### **Fast fact**

There are just over 10 000 known bird species worldwide.

*Use binoculars to observe birds in your local area, and record your observations in your notebook.*