

2. The destruction of ecosystems

Human settlements

Pacific Island nations, along with coastal cities across the world, are threatened with existential menaces. **Thermal expansion** caused by the warming of the ocean and the increased **melting** of land-based ice, such as glaciers and ice sheets, result in **rising sea levels**. In turn, they lead to:

- the **flooding** of low-lying areas ;
- the contamination of **freshwater sources with saltwater** (destroying the fauna and the flora of lakes and rivers, endangering species depending on freshwater) ;
- **erosion**, damaging homes, roads and infrastructure ;
- **displacements** and **relocations** of communities.

The climate crisis also destroys infrastructure because of the increased frequency and intensity of **extreme weather events**, such as hurricanes and cyclones, heatwaves and droughts, heavy rainfalls, and wildfires. The resulting **water scarcity** and **food insecurity** may lead to:

- political tensions and conflicts (Egypt/Sudan/Ethiopia over the Nile waters ; the Darfur conflict in Sudan ; Bolivia/Ecuador/Peru ; India-Pakistan tensions) ;
- the spread of disease vectors like mosquitoes (malaria, Zika, dengue) ;
- climate migration.

The British crisis water crisis

Because of climate change, population growth and rising demand from households and businesses, the UK already anticipates a **shortfall** of water in the next 30 years (6 billion litres per day will be lacking).

On top of the supply stress, the management of clean water has been especially poor: serious pollution incidents are multiplying, notably because of three water companies: Thames Water, Southern Water, and Yorkshire Water. **Water management** has been dealt with by private companies since privatisation in 1989 (Margaret Thatcher), thus shifting priorities from the **maintenance** and the **upgrading** of sewage infrastructure to **shareholder returns**. These businesses operate in monopolies, meaning that no competition forces the improvement of **service quality** and that the water bills improve for the customers.

Meanwhile:

- water is lost through chronic **leakages** and pipe failures
- **sewage** (wastewater) is poorly dealt with:
 - the combination of rain and wastewater storage tanks leads to spills and “storm overflows” into waterways ;
 - illegal **discharges** from businesses (industrial runoffs), farms (fertilisers and pesticides) and individual homes (residues of pharmaceutical products) into rivers and the sea ;
- water companies receive billions of pounds in government fundings for their alleged environmental action ;
- the payouts in dividends to **shareholders** of parent companies between 1991 and 2019 amounted to £57bn (half the sum they spent on maintaining and improving infrastructure in that period).

Endangered species and extinction

The ecosystems are changing too fast for animal species to adapt. Many of the conditions they rely on for survival are disappearing or becoming unstable, such as:

- **Temperatures rising.** Example: coral reefs are bleaching and dying when water is 2°C warmer than normal
- **Habitats are being destroyed.** Examples: the Arctic ice ; rainforests ; freshwater rivers ; zones of migration (bc of the extraction of shale gas in Alaska) ; etc.
- **Changes in food availability.** Examples: bird migration patterns and insect development may be out of sync.
- **Extreme weather events.** Example: Australia's 2019-20 wildfires killed or displaced nearly 3 billion animals.
- **Pollution of water ecosystems** (deoxygenation creating “dead zones” ; ocean acidification)
- **Impact of humans:**
 - cities and roads isolating species leading to genetic diversity drops
 - overfishing and poaching
 - deforestation