



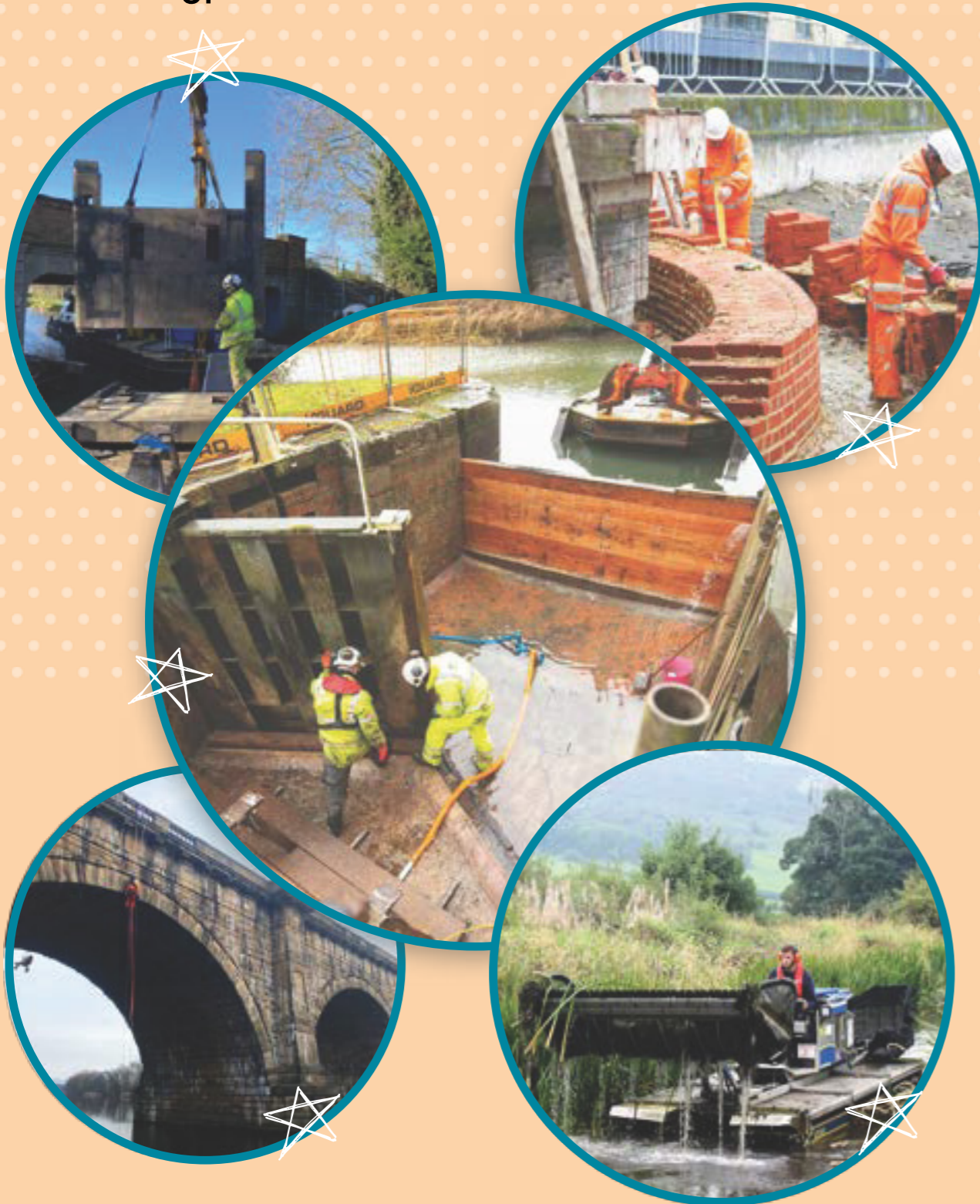
# Climate Change Resource: Part 3

## Managing, maintaining and restoring canals and rivers

[canalrivertrust.org.uk/stem](https://canalrivertrust.org.uk/stem)

What type of work is needed?

What are the benefits of this work?





Environmentalist



Hydrologist



Engineer



Heritage



Ecologist



Apprentice

**It costs millions of pounds every year to keep the 250-year-old network in working order.**

These are some of the costs for 2022/23:

- Major infrastructure works = £46 million
- Regeneration projects = £15.3 million
- Maintenance and repairs = £34.5 million

**What type of work do you think might be included in each of the costs.**

**Which job(s) are needed for each type of work?**

# The challenge of climate change



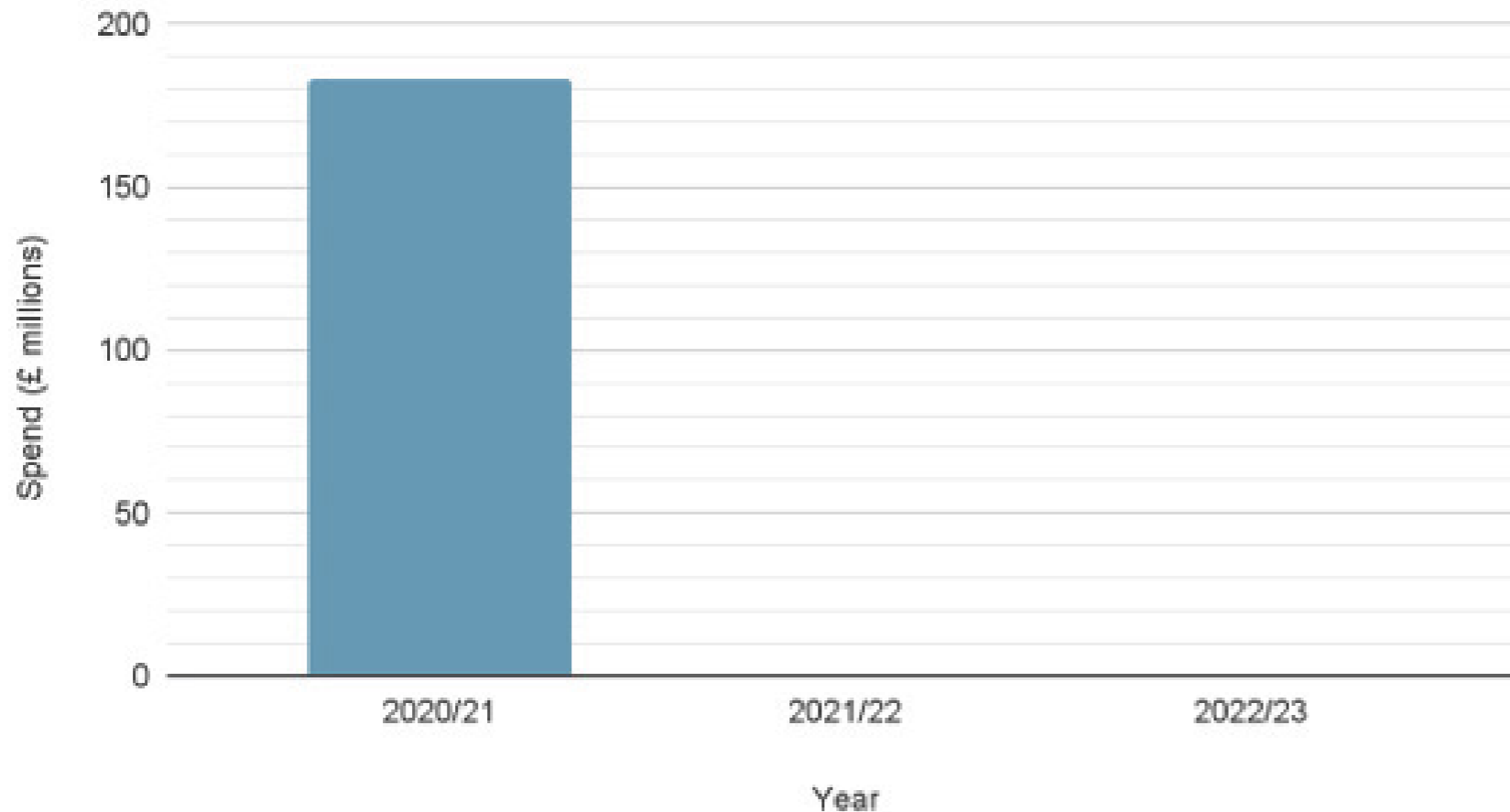
What can you see in the pictures?

What do you think has caused this?

How can the network of canals and rivers become resilient to the effects of climate change?



## Annual spend: Caring for canals and rivers



**Annual spend: 2021/22  
£180.2 million 2022/23  
£199.5 million**

**Round the amounts for 2021/22 and 2022/23 to the nearest million and plot these onto the graph.**

How much more was spent in 2022/23?

What was the percentage increase year on year?

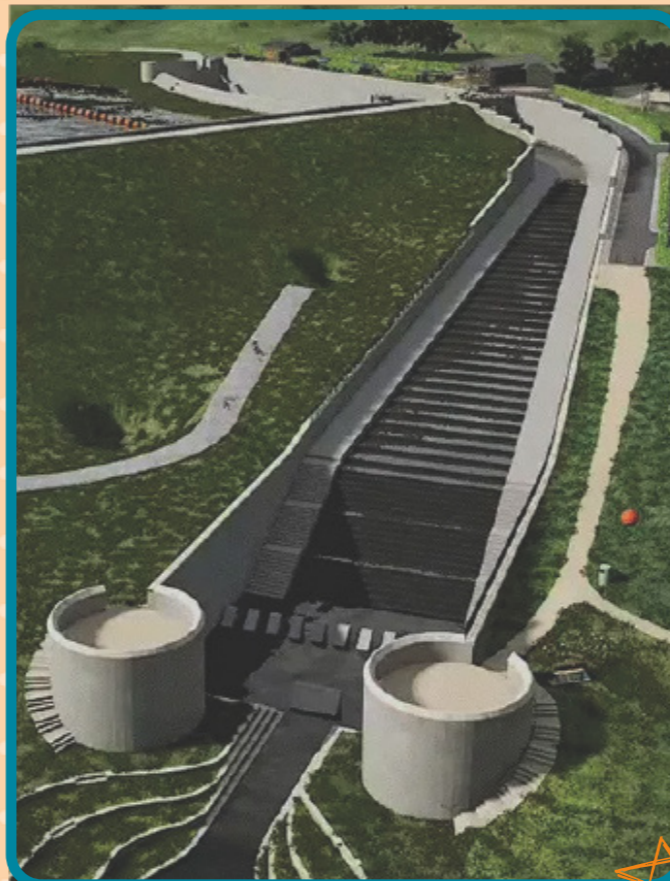
## Reservoir fact file

- 71 reservoirs store water to top up canals
- £40 million invested in the last 3 years
- Plus £20 million/year going forward

### Reservoirs currently protect:

- 387 substations
- 34 schools
- 55 railways
- 18 Motorways
- 193,663 people
- 80,693 properties

**If a reservoir fails it has huge impact**



## Toddbrook reservoir

**Opened:** 1840

**Length:** 1.1km

**Dam wall height:** 23.8 metres

**Volume:** 1,238 megalitres (enough to fill almost 500 Olympic sized swimming pools)

**Environmental status:**

SSSI (Site of Special Scientific Interest)

# Toddbrook reservoir: case study

Reorder these pictures to show what happened at Toddbrook



David Brockhurst SWSN



A spillway is the part of a dam that releases water to prevent flooding.

1. The spillway was releasing water following intense heavy rainfall.
2. On 1 August 2019, serious damage occurred to the spillway at Toddbrook.
3. Further collapse of the spillway occurred.
4. There were concerns that the dam might fail and 1,500 people were evacuated and sandbags were used to secure the spillway.
5. The water level was reduced, and the dam was stabilised.
6. A £50 million restoration project is underway to create a new spillway.



**Weirs increase depth and slow the flow of water, to make it suitable for navigation.**

**Weirs can obstruct the path of fish and disrupt habitat.**

They should be designed with nature in mind. For example:

- Build a fish pass
- Add roosting ledges and overhangs instead of smooth surfaces
- Installing bat boxes in nearby buildings
- Bankside planting to create new habitats





**Label the photograph to show:**

- Weir
- Fish pass
- River
- Canal
- Lock
- Towpath
- Bridge



The Montgomery Canal was closed due to a breach in 1936.

Slowly it is being restored so that people and boats can return there.

What are the benefits of restoring the canal?

Think about:

- Social benefit?
- Economic benefit?
- Environmental benefit?

**What issues need to be considered if the canal is restored?**