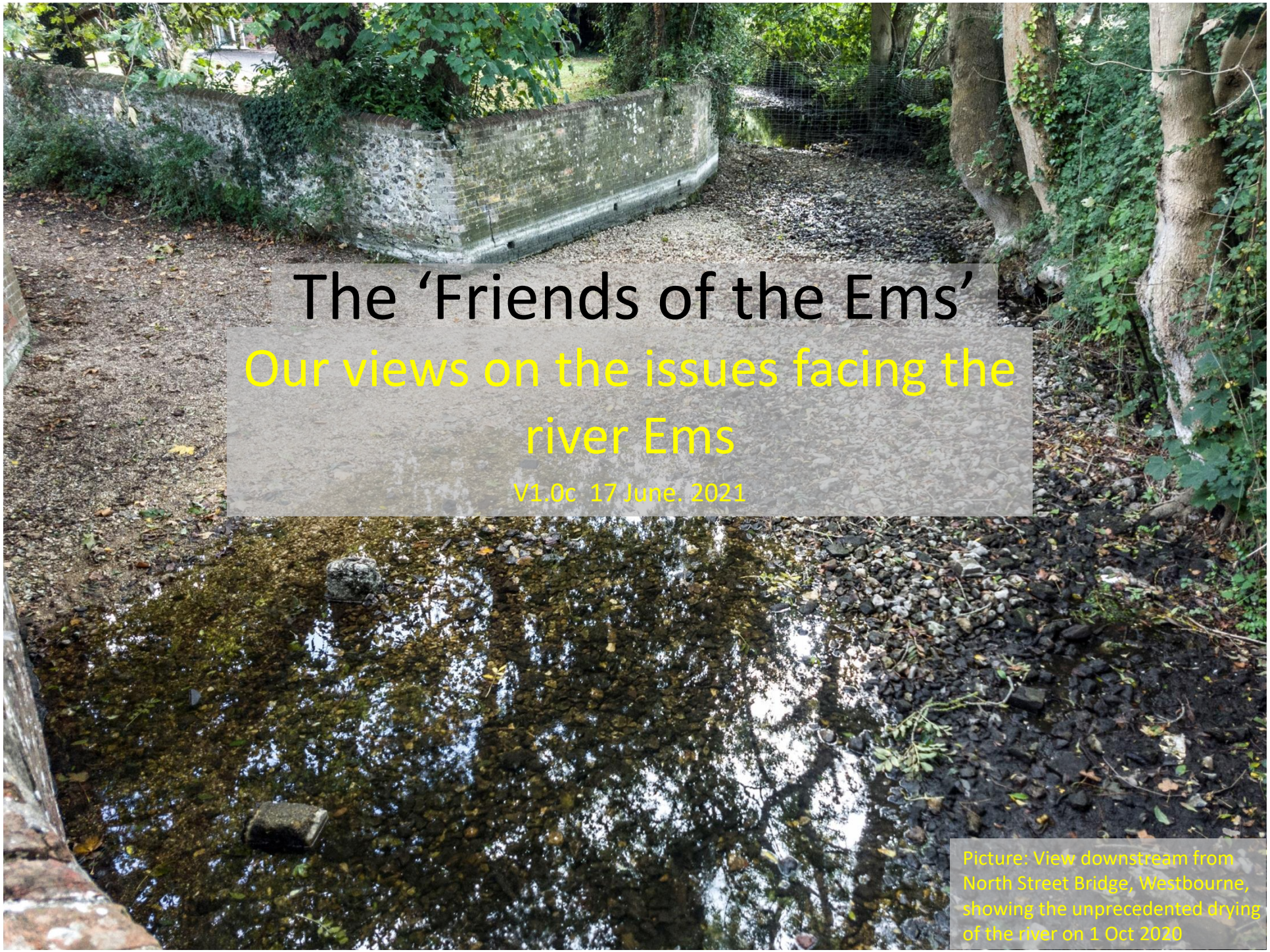

The ‘Friends of the Ems’

Our views on the issues facing the river Ems

V1.0c 17 June. 2021

Picture: View downstream from North Street Bridge, Westbourne, showing the unprecedented drying of the river on 1 Oct 2020

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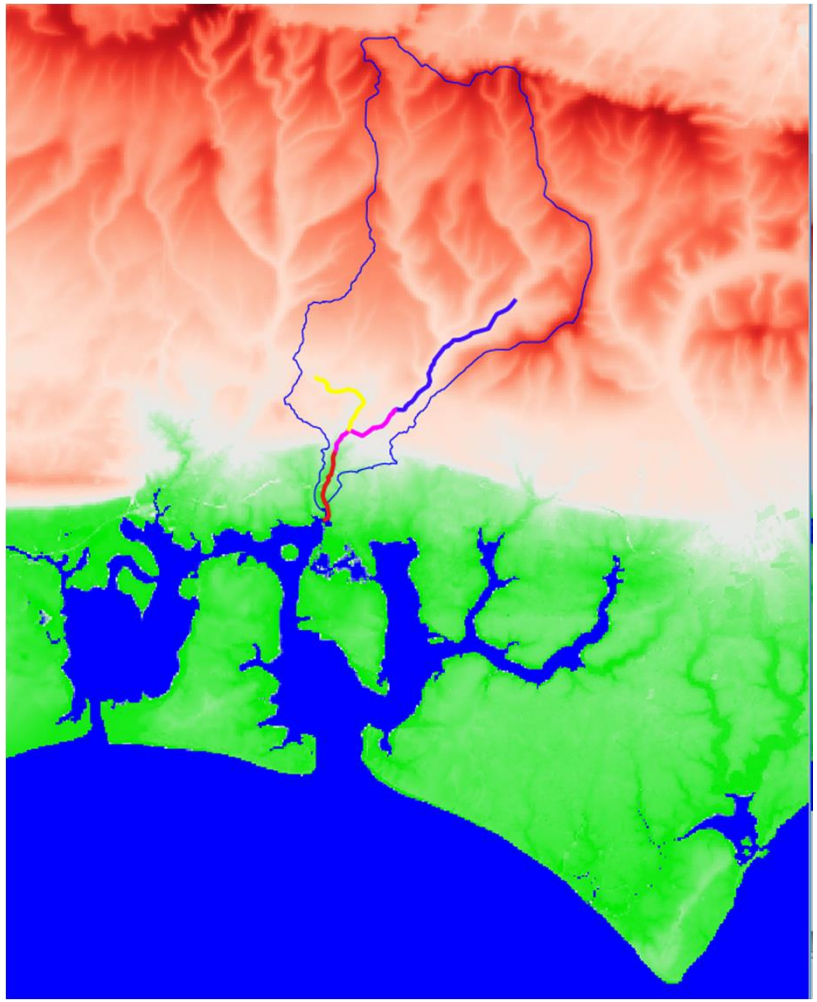
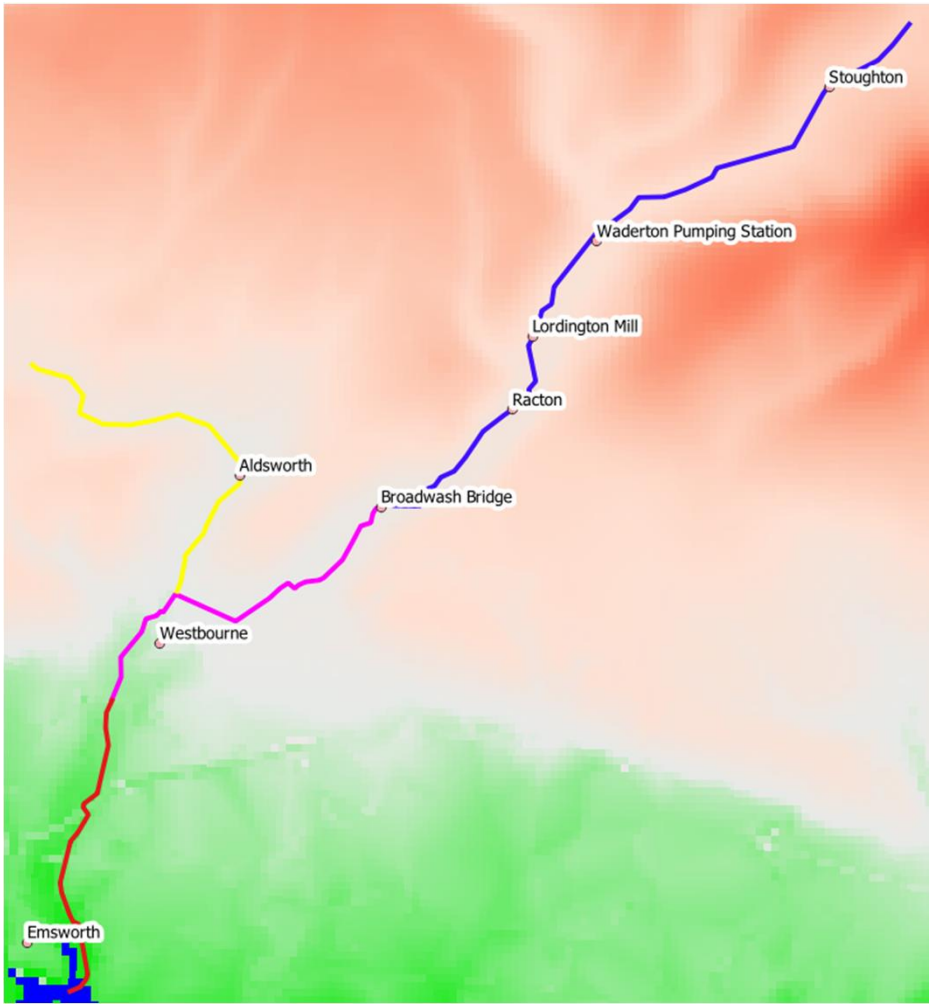
The River Ems – An Overview

- 2 arms rising at Stoughton and Stansted / Aldsworth.
- Only 8km long passing through Westbourne village and discharging at Emsworth into Chichester Harbour.
- Very rare ecosystem - only c. 260 chalkstreams globally. Apart from lack of water the ecology is very healthy.
- Upper parts of the river have always been seasonal.
- Length and duration of river seasonal drying increased dramatically when abstraction from the chalk aquifer at Walderton began in the mid-sixties by Portsmouth Water Company (PW).
- In September 2020 the river was completely dry right into Westbourne village – i.e. less than 1.5km out of the total length of the river had any flow. This was unprecedented.



The Ems is an important Chalk Stream

- Only c 260 chalk streams in the world. >85% in the southern half of England.
- A 2014 WWF review found that:
  - Only 12 out of England's 224 chalk streams are protected. 50% unlikely to meet conservation targets without changes to management or external pressures.
  - **All chalk streams should support healthy populations of brown trout, the most recent data showed observations on just a third of chalk streams.**
  - More than three-quarters are failing to meet the required Good status.
  - The key pressures causing failure are: **physical modification ,over abstraction**, **pollution**
  - But the Ems does not suffer from significant pollution or deleterious physical modification. By far **the biggest threat is over abstraction** at critical low flow periods.



Ecology of the River Ems

- The Ems has the ecology and biodiversity of a good quality chalk stream.
- The Ems has many rare and endangered species:
  - Water Voles – present along the perennial river
  - Kingfishers – regularly seen along the river
  - Rare plants and algae – including one species found nowhere else in England
  - Brown Trout
  - Possibly Sea Trout
  - Otters - recently seen
  - Freshwater sponges
  - Eels
  - Bats
  - Pike
  - (Heron,
  - Egret,
  - mink)

The Ems gives value to many

- A vital resource for local people's **physical and mental health**.
- It's a crucial **wildlife** habitat. It forms the most important wildlife corridor between the South Downs National Park and Chichester Harbour. Maintaining this is critical during housing development programmes along the E-W corridor in the coastal plain east.
- **Walkers** find beauty and relaxation along its banks;
- **Children** play in it and experience nature;
- Horses and farm **livestock** drink from it;
- **Dogs** use it to splash in.

The Marmot Review (2010) sets out the **positive impact that nature has on people's physical and mental health**: "High-quality natural environments foster healthy neighbourhoods; green spaces encourage social activity and **reduce crime**. The natural environment can **help children's learning**, whilst low engagement is likely to lead to impacts such as lower involvement in wider issues of sustainability." (Marmot, 2010).

"When the river was up in 2021, there was a change in the spirits of many locals, and the river clearly brought people a sense of happiness and calm, and it could be used for leisure activities not just by the residents (for a variety of purposes) but also tourists with children playing pooh-sticks and for people to let their dogs splash round in." Resident of Stoughton, 30 Apr 2021

The Ems was much stronger before abstraction began in the 1960s

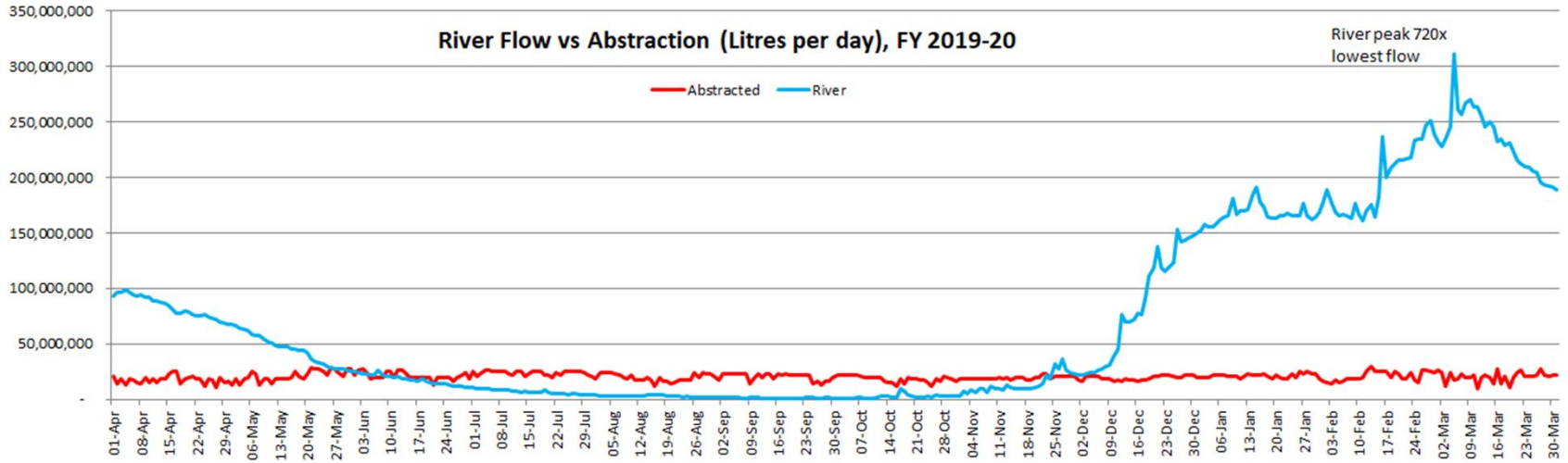
- Angling guides record ‘rises above Racton’ and has ‘good trouting’ from 1928-1966. Not afterwards.
- The area had extensive water meadows and watercress beds, visible to this day on aerial maps. **Watercress Growers were all gone by the end of the 70s**.
- The Domesday Book (1086) listed **four mills and a fishery at Westbourne**, and another mill further upriver at Lordington.
- There was a sheepwash below Broadwash Bridge that was used to **wash flocks in June** before they were sheared.
- **Numerous oral history records** suggest that the river was never dry below Aldemoor/Lord’s Fishpond, north of Westbourne, before abstraction began in the 1960s. It was rarely dry below Broadwash Bridge.
- Plant and animal surveys reported to the Environment Agency in 2007 suggest the Ems used to be perennial (flowing year-round) below Broadwash bridge.

The Ems today is surviving on a knife-edge

- When abstraction began in the 60s **the point of permanent flow moved 1.9Km from below Aldemoor to just below Westbourne Millpond**, which has dried up many times in the last 40 years.
- Every time the millpond dries, it takes 5 years to properly recover.
- In September 2021 PW accidentally turned off the contractual augmentation for **just 5 days** and caused the river to be reduced to a series of disconnected puddles all through Westbourne.

The current PW abstraction licence is inappropriate (Pg 1)

- PW's licence **does not reflect the seasonal nature of the river, which had over 720x the flow at its peak in the spring as opposed to the lowest point in the autumn.** Put simply, we believe that PW is taking far too much water when the river has the least to give.



- Let us put it another way. Let us say that you and I have a long established contract where I have to give you a litre of water a day. But this contract gives me a big problem - in some months (eg Feb, March) I have up to 700 litres a day available and hardly notice the litre that I give to you, but in other months (eg Aug/Sep/Oct) I have less than 1 litre a day available, and once you have taken your litre there is none left for me.

The current PW abstraction licence is inappropriate (Pg 2)

- PW has no significant reservoirs, so currently **has to abstract every single day**, even during periods of extreme drought. Every drop of water that comes out of consumers' taps will have been taken from a well, river, or spring between 18 and 48 hours previously.
- A condition of PW's licence is that **if the river level falls too low**, **PW must compensate** by pumping water into the river from their Woodmancote borehole. The river gets so low that this augmentation is required almost every single year.
- As a final straw, brown trout like to migrate, but the very low flow rates in the Autumn hinder or delay brown trout migration and spawning.

3 things to make a river (and its people) happy

Water Flow + Water Quality + Habitat Quality

No flow = no river

Poisons & Sewage

Concrete & Culverts,
Barriers to fish

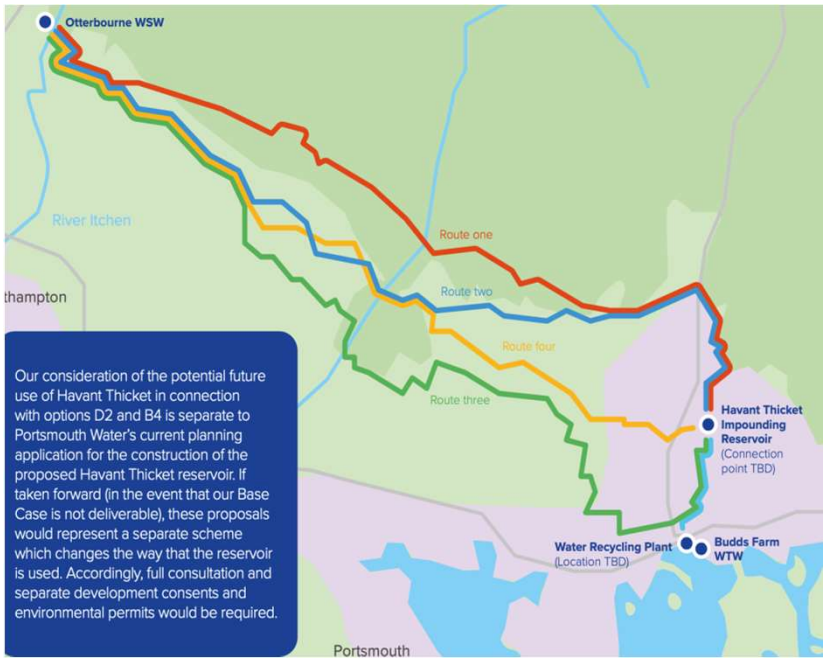
Water Quality

- **The River Ems is currently classified overall as 'Poor',** with ecological status 'Poor' and chemical status as 'Fail'.
- The **ecological status is 'poor' due to 'fish',** everything else is 'high' or 'moderate'. The river is 'poor' for fish because of 'groundwater abstraction' and 'flood protection structures', ie this classification ignores the actual fish themselves, which have not been surveyed since 2015, and even then only in the lower reaches.
- In 2019, **the chemical status is 'fail' as a result of flame retardants and Mercury.** Everything else is 'good'. T**hese chemicals have never been measured** in the Ems, and the Fail status has been determined by 'expert judgement'.
- It is the view of the FotE that **these classifications are very misleading** and should be corrected. The river would not support the wildlife mentioned earlier if the water was consistently poisoned.
- On the plus side, the Ems is one of only a few rivers in the entire country that is **not polluted by large sewage** / waste water or industrial discharges into the river.

What can be the solutions?

The need is for "new" water - not robbing Peter to pay Paul – many generic solutions:

- **Desalination** Eg Southern Water (SW) plan for a desalination plan at Fawley.
- **Water treatment –** recycling
- **Water transfer** across catchments/regions of UK with excess. (RAPID)
- **Water storage .** Havant Thicket Reservoir but water to Southern Water. Goes live in 2029.
- **Reduce consumer use** through cultural change and **Water Meters**.
- **Reduce leakage**. PW leaked 23ML per day last year with target 20% reduction by 2025.
- **Slow down runoff**. Catchment water retention processes including gully dams, beavers, tree planting, and storage ponds.
- **Take the water <u>after</u> it has flowed through the river, not before**. Ems?



But these are all medium /long term answers and will not solve the problems we are facing today …….

Atkins report 2021

Recommended work packages :

1 – Evidence gathering: Collect necessary evidence to support packages 2 & 3 and to justify requests for financial support from Ofwat, as appropriate.

2 – Middle Ems and augmentation flow regime: Ensure that the augmentation flow regime supports the Lower Ems and lowermost Middle Ems

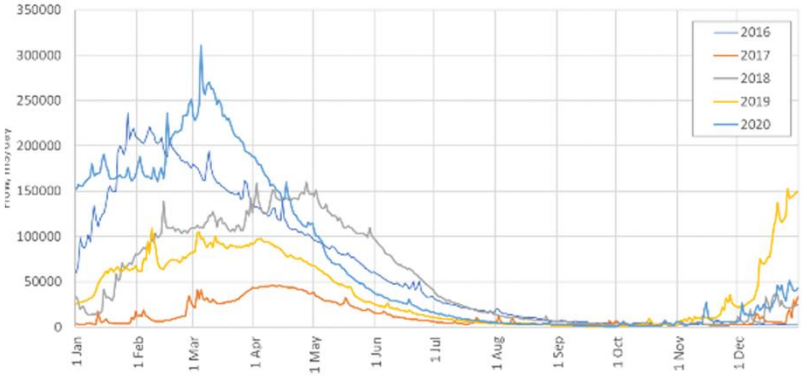
3 – Future catchment objectives and opportunities for betterment : Recommend opportunities for flow betterment within the catchment

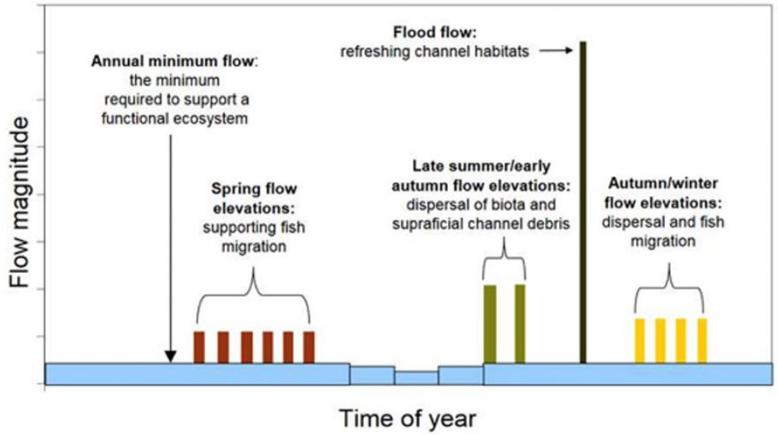
But only Work Task 1 has been commissioned to date ……

How much more evidence collecting is really necessary??

What has the report told us?

- **Increased abstraction** over the last 4 years averaging 10% p.a.
- Modelling confirms that the middle part of the river effectively **would have dried** without augmentation during the last 4 years.
- There is confirmation that the **abstraction has moved the perennial headwater** 1500 metres downstream.
- 2015/16 morphological **improvements failed to 'rescue' the River.**
- **Adequate flow rates to date have not been achieved by increasing** the flow trigger value at which augmentation is started and doubling the augmentation flow.
- Modelling confirms that **only Spring flows** are remotely near those needed to satisfy an idealised hydrograph to maintain the ecology.
- That the **environmental monitoring** of a river on the knife edge has been negligent and in recent years almost non existent.





ure 10-1 Annual flows at Westbourne (2016-2020) compared to a flow hydrograph for ecological intenance from WFD UKTAG (2013)

Proposals FotE support to be happening now:

What is urgent are **short term actions** to support the river until medium/long term mitigations are implemented – **otherwise there will be no river to save .**

FotE supports the following short term measurements

- **Optimise augmentation** as a short term rescue measure. To include further increased trigger flow levels, timing, volume and duration of augmentation.
- **Reduce seasonal abstraction at Walderton** to improve flow in the Summer and Autumn. (n.b Currently 50% local supply 50% export to PW grid).
- **Quantitative determination and utilization of available water from other sources** e.g. Havant and Bedhampton springs – to offset reduced Walderton pumping.
- Address FotE concerns that **ecological and direct water quality monitoring has been neglected**.
- The Aldsworth stream contributes 30-40% of flow in the Ems when it is flowing. Any **suggestions to take from this subcatchment should be dismissed**.
- **PWC to oversee completion of Atkins Work Tasks** to provide definitive recommendations to means of reducing abstraction from the Ems.
- …..and then **PWC to actively promote "new water " options** to mitigate confirmed future reduced abstraction on the chalk aquifer and its chalk streams.