River Teme in Ludlow
Action Improvement Plan (2025)

Bathing site history and planned actions for improvement

Coekin, Tom

Action plan: River Teme at Ludlow

Location	Ludlow, Shropshire	**EA bathing water number**	36060
Type of bathing water *(delete as appropriate)*	River	**Local authority**	Ludlow Town Council / Shropshire Council
EA area	West Midlands	**Designated in**	2024
EA area contact – bathing water quality:	Tom Coekin	**Area Environment Manager**	Dan Trewin
EA area contact - comms:	Katy Lewis	**EA Area Director**	Marc Lidderth
Expected result 2024	Poor		

Year	2023	2024
Classification	n/a	Poor

Bathing water history and characteristics

Bathing water history

- Designated in May 2024. Application made by **Shropshire Bather Waters group** who were and continue to campaign for Severn Trent Ltd to improve the standard of its discharges into the river.

Bathing water profile

- The bathing water site, known as 'River Teme at Ludlow', is located on the River Teme at Ludlow, close to the Ludlow Linney play area. The bathing river area stretches from the Linney boating pontoon just over 200m downstream to the Ludlow Mill beach, just upstream of Dinham bridge. This stretch of river crosses the Ludford Mill Wier. Access to the swimming area is via the Ludlow Mill beach.
- The Teme is a rural river, passing through the market towns of Ludlow and Tenbury Wells before joining the River Severn south of Worcester. It is the second largest tributary of the River Severn. The area is popular for tourism and is nationally recognised for its wildlife.
- The River Teme is classed as a Site of Special Scientific Interest (SSSI).
- The catchment includes tributaries such as the rivers Clun, Onny, Corve, and Rea, and larger brooks like the Ledwyche, Kyre, Sapey, Leigh, and Laughern.
- Water quality can be impacted by sewage and agricultural run-off from higher in the catchment.

Local context

- The current MP is Stuart Anderson who has a keen interest in protecting rivers from pollution. The previous MP, Philip Dunne has campaigned locally for improving water quality in the river in the past.
- There is high media interest in the bathing water as part of 27 new sites designated in 2024, a large number of which were inland river sites.
- In Ludlow, the Ludlow Bathing Waters group has been set up to better understand the context of the River Teme and Ludlow bathing site. The group consists of stakeholders from the local authority, water company, regulators and the general public.

Last updated: 13/05/25

Author: Tom Coekin

Action plan: River Teme at Ludlow

What are the pollution sources?

As this is the first year since designation, only statutory monitoring has been undertaken to better understand bacteriological concentrations throughout the bathing season.

Initial compliance and investigatory sample results show that high bacteria levels are present following rainfall events. However, environmental water quality at '*Teme - conf R Onny to conf R Severn*' is generally good with WFD classifications shown in the table below:

	Ecological			Phys-Chem		
WFD Element	**Fish**	**Invertebrates**	**Macrophytes and Phytobenthos**	**Ammonia**	**Dissolved Oxygen**	**Phosphate**
Classification (2022)	Good	High	Good	High	High	Moderate

WFD classifications are classified between Bad, Poor, Moderate, Good and High (Excellent). WFD classifications do not assess bacteriological concentrations.

Localised rainfall can lead to the operation of storm overflows in and upstream of Ludlow; these are short term issues and although they may have a significant impact on bathing water quality when they are operating, once they stop discharging the pollution soon passes. However, EA investigations have shown that the bacteria levels in the river can remain high for up to 120 hours after rainfall which suggests that bathing water quality is potentially influenced by the whole of the River Teme catchment upstream.

Estimations of time of travel of the river are around **8.5 hours** from Leintwardine to Ludlow which is around **14 miles** and demonstrates the connectivity of the bathing water with the upstream catchment. This travel time is estimated using average flows (Q51) but at low flows (<20 m^3/s), the travel time is increased to **14.8 hours**.

As this is a new designation, only 20 bacteriological samples have been taken at this time, at the bathing site, as part of the statutory monitoring programme. As this site is riverine, there is less knowledge available around the characteristics and behaviour over a season. Until more information is gathered through investigations and continued statutory sampling, confidence in 'normal' bacteriological river concentrations will be statistically low. However, as the upstream catchment of the River Teme upstream of Ludlow is still unmanaged in terms of bacteriological sources, it is likely that river concentrations will continue to be high and elevated during rain events.

Agriculture %	**Sewage %**	**Other[1] %**
55	40	5

Confidence in estimate	**Basis of estimate**
Low	Desktop study assessment of urban and rural land use and preliminary Microbial Source Tracking.

- Improving the accuracy of this data is expected through the use of stakeholder data, and further upstream investigations with data collected by Microbial Source Tracking (MST)
- Provisional results show that high bacteriological concentrations are generally present following rainfall events, although high bacteriological concentrations have been observed throughout the last bathing season.

[1] Diffuse pollution sources.

Last updated: 13/05/25

Author: Tom Coekin

- Our monitoring also shows that following rainfall the proportion of human and ruminant bacteriological markers changes to become more dominated by ruminant sources however we have very limited data.

What has been done so far?

- Statutory monitoring to establish baseline river *E.coli* and *Intestinal Enterococci* concentrations.
- TRACE MST on selected monitoring results.
- Rainfall and river flow analysis of upstream catchment.

Summary of planned future actions

Sewage

- Bathing site investigations and subsequent improvements under bathing water drivers (BW_INV and BW_IMP) in AMP8, in WINEP.
  - Bathing water investigations are to evaluate any potential impact of the water companies' assets and to propose solutions on downstream bathing water sites.
  - BW_INV delivery dates anticipated April 2027.
  - BW_IMP delivery dates anticipated March 2030. This will be dependent on the outcome of the investigation above.
- Environment Act drivers (EnvAct_IMP3) to reduce spills from storm overflows to an average of 1 / bathing season, initially proposed for AMP9 (2035) but subject to further planning.

Agriculture

- EA-led investigation of agricultural activity in upstream rural catchments.
- Potential actions off the back of investigations including increased education and impact awareness and enhanced regulation in the area.

Other

- Microbial source tracking is proposed for samples during the 2025 bathing season to further understand the full range of bacteriological concentrations and weather conditions.
- An EA-led investigation to determine bacteriological concentrations and sources within the upstream Severn catchment of Shrewsbury.
  - Freshwater monitoring undertaken at suitable locations over the summer of 2025.
  - Monitoring locations proposed at confluences of major river catchments to provide more site-specific insight into potential contributing sources.
  - Data analysis of collected results will require several years of results before any statistical conclusions on predominant sources can be made.
- River Severn Partnership - Wireless Innovation Fund
  - A fund to encourage wireless technology and reporting. The EA is investigating the feasibility of a project at Shrewsbury utilising real-time freshwater data collection to better understand in-river bacteriological concentrations.
  - A trial of this technology and approach is currently underway at Ludlow bathing site (running February to March 2025).

Last updated: 13/05/25

Author: Tom Coekin

Action plan: River Teme at Ludlow

Planned improvement actions (funded)

	Action description	Owner	Expected completion date (month/year)	Cost (£)	Funding source	Expected outcome	Expected impact on classification
Agriculture							
1.	Agricultural Regulatory inspections and improvements	EA	Ongoing			Reduced bacteriological inputs into the upstream catchment through regulatory inspections and incident response.	Improvement
Sewage							
1.	Bathing site investigations	Water Company (SvT)	03/2027	tbc	Water Industry National Environment Programme (WINEP)	Investigations to determine impact and risk of water company assets on downstream bathing sites. Leading to targeted improvements to improve assets to Bathing water and Environment Act standards by 2030.	No change
2.	Bathing site improvements	Water Company (SvT)	03/2030	tbc	Water Industry National Environment Programme (WINEP)	Targeted improvements to improve assets to Bathing water and Environment Act standards by 2030.	Improvement
3.	Bathing site Event Duration Monitoring returns	Water Company (SvT)	03/25	tbc	Water Industry National Environment Programme (WINEP)	Evidence of spill behaviour informs investigations to determine impact and risk of water company assets on downstream bathing sites. Leading to targeted improvements to improve assets to Bathing water and Environment Act standards by 2030 through WINEP or SOAF.	No change
4.	Green recovery modelling ‘Making rivers safer to swim in’ project	Water Company (SvT)	05/2025	tbc	Green recovery additional fund (Water Industry National Environment Programme)	River model calculated from water company asset inputs to determine river bacteriological concentrations	No change

Last updated: 13/05/25
Author: Tom Coekin

Action plan: River Teme at Ludlow

5.	Green recovery CSO improvements 'Making rivers safer to swim in' project	Water Company (SvT)	05/2025	tbc	Green recovery additional fund (Water Industry National Environment Programme)	Reduced spill count of high spilling CSOs.	Improvement
Other							
1.	An EA-led investigation to determine bacti concentrations and sources within the upstream Teme catchment of Ludlow. • Freshwater monitoring undertaken at suitable locations over the summer of 2025. • Monitoring locations proposed at confluences of major river catchments. • MST analysis	EA	10/2025	£15,000	Quality monitoring commission	To provide more site-specific insight into potential contributing sources of bacteria. To better understand the relationship between nutrient concentrations and bacteriological levels.	No change
2.	Microbial Source Tracking (MST) analysis alongside statutory sampling of 2024 sampling	EA	03/2025	£5000	EPR	To provide more site-specific insight into potential contributing sources of bacteria.	No change
3.	Microbial Source Tracking (MST) analysis alongside statutory sampling of 2025 sampling	EA	03/2026	£5000	Quality monitoring commission	To provide more site-specific insight into potential contributing sources of bacteria.	No change
4.	River Severn Partnership – Wireless Innovation fund trial • Real time freshwater data project • A proof-of-concept project at Ludlow	EA	10/2025	£25,000 (PoC)	RSPAWIR	Increased visibility of water quality utilising wireless methods. Better knowledge of the water quality provides better informed choice for swimmers and recreational users.	No change

Last updated: 13/05/25
Author: Tom Coekin

	utilising real-time freshwater bacteriological data and present this information to the public through wireless connectivity.						
5.	River Severn Partnership – Wireless Innovation fund extension • Real time freshwater data project • Continuation of the Ludlow project, utilising real-time freshwater bacteriological data and present this information to the public through wireless connectivity. Extension funding allows the project to be expanded to Shrewsbury for initial data collection and at Ludlow to further extend data confidence and density over the 2025 bathing season.	EA	10/2025	£45,000 (full project cost)	RSPAWIR Phase 2	Increased visibility of water quality utilising wireless methods. Better knowledge of the water quality provides better informed choice for swimmers and recreational users.	No change

Action plan: River Teme at Ludlow

Planned improvement actions (subject to securing funding)

	Action description	Owner	Projected completion date (month/year)	Cost (£)	Potential funding source	Projected outcome	Projected impact on classification
Agriculture							
1.	Tighter regulatory presence in upstream rural areas • EA agriculture regulation	EA	10/28	£114,000 (2 G5 FTE @ £57k ea)		Decreased ruminant entry and discharges into watercourses	Improvement
2.	Catchment Sensitive farming • EA/NE integrated agriculture advice	EA	10/28	£28,500 (0.5 G5 FTE @ £57k ea)		Decreased ruminant entry and discharges into watercourses	Improvement
Sewage							
1.	Private discharges regulation and wider pollution measures	EA	10/28	£114,000 (2 G5 FTE @ £57k ea)		Decreased untreated sewage discharges and leaks / misconnections leading to reduced bacteria concentrations in the river.	Improvement
Other							
1.	River Severn Partnership – Wireless Innovation fund project – continuation • Real time freshwater data project • Further development of the Ludlow monitoring project, utilising real-time freshwater bacteriological data and present this information to the public through wireless connectivity. • Intention to extend this project to all three WMD bathing sites (Ludlow, Shrewsbury and Ironbridge).	EA	10/2025	£25000 / site (full project cost)	RSPAWIR Phase 2	Increased visibility of water quality utilising wireless methods. Better knowledge of the water quality provides better informed choice for swimmers and recreational users.	No change
2.	Area discussion around prioritisation and future plans	EA	Ongoing			Compiling of local and expert knowledge to better understand	

Last updated: 13/05/25
Author: Tom Coekin

						and prioritise areas of investigation and improvement. Decreased ruminant entry and discharges into watercourses	
3.	Consultant-led investigation of bathing water inputs, source apportionment and impact assessment	EA	10/28	£300,000	tbc	Through consultant-led investigation to better understand the inputs, impacts and potential improvements in the upstream Severn catchments.	Improvement

Planned engagement

	Engagement description	**Owner**	**Completion date (month year)** *(if applicable)*	**Cost (£)** *(if applicable)*	**Funding source** *(if applicable)*	**Expected outcome**
1.	Letter to MP regarding bathing water and classifications	EA	11/2024			Proactive awareness of MP of the bathing water and the ongoing improvement plans and work.
2.	Ludlow trial technical event	EA / RSPAWIR	2/2025	-	RSPAWIR	Technical launch event as part of RSPAWIR funding to launch the Ludlow monitoring trial running Feb – March 2025. MP for Ludlow and Ludlow mayor both in attendance.
3.	Launch of Shropshire Wild Bathing app	RSPAWIR	5/2025	£5000	RSPAWIR	Launch of publicly available application that informs the public on the real time condition of the River Teme using sensors as part of the Ludlow Monitoring project. Trigger sensors alert bathers of deteriorating water quality.

Last updated: 13/05/25
Author: Tom Coekin