River Almond catchment profile

Introduction

The River Almond rises in the Cant Hills near Shotts in North Lanarkshire and flows into the sea at Cramond, Edinburgh, but most of its catchment is in West Lothian. The main stem of the river is 48 km in length, with a catchment size of 375 km^2.

Historically, West Lothian supported significant coal and oil shale industries. This has left its legacy; evidenced by the numerous bings seen littered around the landscape. It has also left its mark on our water environment – bing water run-off and minewater rebound have resulted in significantly elevated levels of iron in our water courses, with ferruginous inputs smothering habitat and reducing biodiversity. Work is ongoing to address the issue; as a result we are seeing improvements to surface water bodies. However, time is required to enable natural recovery.

The catchment is also highly urbanised with a number of commercial and industrial sites, most of which are concentrated around Livingston. The consequences of the development boom in West Lothian over the last decade is a sewerage system which is over-stretched and beyond its capacity.

There are 21 baseline[1] surface water bodies within the catchment, of which the Gogar Burn (Union Canal to River Almond) is heavily modified due to flood defence and the Union canal (Craigton to Murray Burn is artificial. There are two groundwater bodies associated with the catchment.

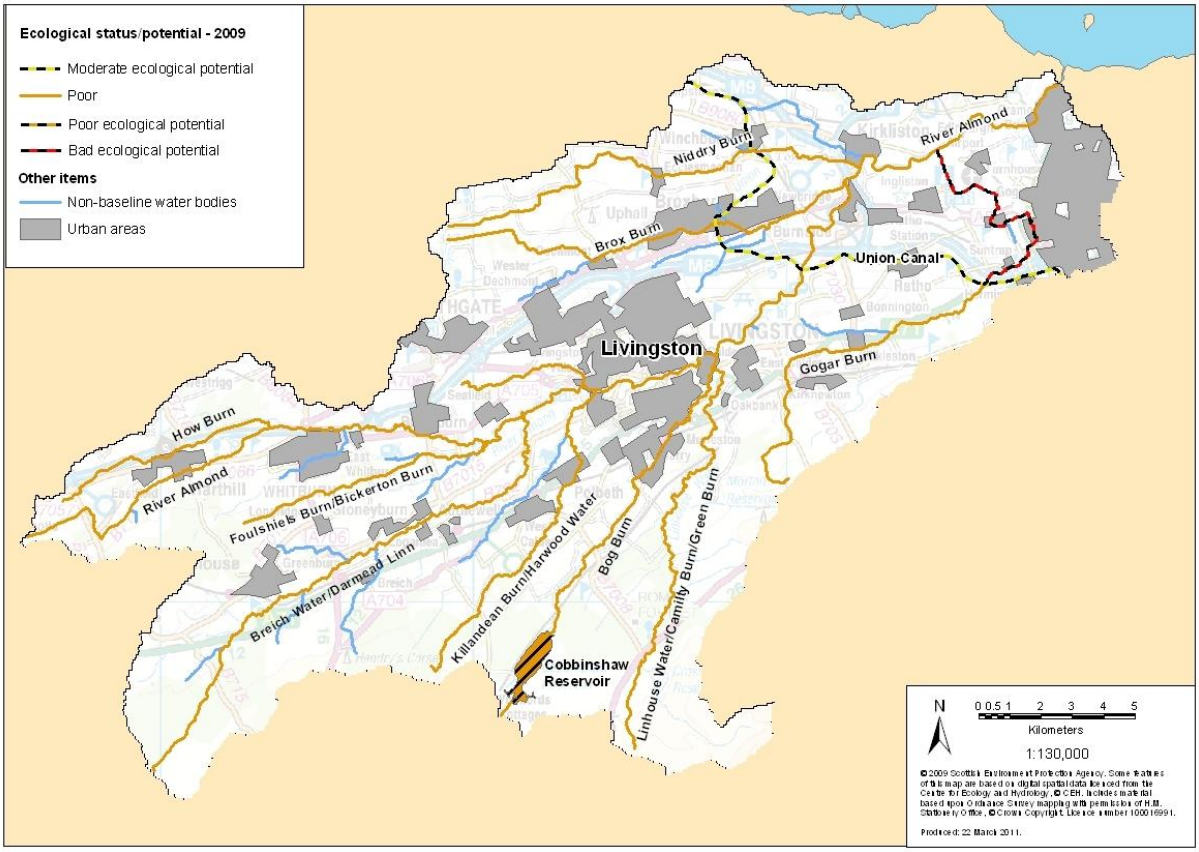

Figure 1: River Almond catchment

[1] A baseline water body is a river which drains a catchment greater than 10km^2, lochs bigger than 0.5km^2, all coastal waters out to three nautical miles, transitional waters such as estuaries and groundwaters. A non-baseline water body is a river or loch which falls below the size threshold.

Water-dependent protected areas

The catchment contains the following water-dependant protected areas which are all currently achieving their objectives:

- Two drinking water protected areas – Edinburgh and Livingston bedrock and localised sand and gravel aquifers; Stirling and Falkirk bedrock and localised sand and gravel aquifers
- Two freshwater fish – River Almond and the Union Canal
- Two urban waste water treatment directive sensitive areas – River Almond and the River Almond (including Brox Burn, Niddry Burn, Gogar Burn)

Further information on the River Almond catchment can be found on the RBMP interactive map

The Forth Area Management Plan and other catchment profiles within the Forth sub-basin district can be found on SEPA's website

Classification, pressures and objectives summary

Table 1: Classification status, pressures and objectives for baseline surface water bodies within the River Almond catchment in 2009; water bodies are ordered from the upstream extent of the catchment to the downstream extent

Surface water bodies	Water body ID	2009 classification	Pressures	Good by
River Almond (Source to Foulshiels Burn confluence)	3003	Poor ecological status	Point source pollution – sewage Morphology – fish barriers, agriculture Diffuse source pollution – mining and quarrying of coal, road transport	2027
How Burn	3031	Poor ecological status	Point source pollution – sewage Diffuse source pollution – sewage Morphology – fish barriers, agriculture, road culverts	2027
Foulshiels Burn/Bickerton Burn	3027	Poor ecological status	Diffuse source pollution – agriculture, mining and quarrying of coal Morphology – fish barriers	2021
River Almond (Foulshiels Burn to Breich Water Confluences)	3002	Poor ecological status	Point source pollution – sewage Morphology – fish barriers Diffuse source pollution – mining and quarrying of coal	2021
Breich Water/Darmead Linn	3021	Poor ecological status	Morphology – fish barriers Point source pollution – sewage, mining and quarrying of coal Diffuse source pollution – mining and quarrying of oil-shale	2027

Darmead Linn	3022	Poor ecological status	Morphology – fish barriers	2021
River Almond (Breich Water confluence to Maitland Bridge)	3001	Poor ecological status	Point source pollution – sewage Morphology – fish barriers Diffuse source pollution – urban development	2027
Lochshot Burn	3020	Poor ecological status	Point source pollution – sewage Morphology – fish barriers, culverting, agriculture, embankments	2027
Killandean Burn/Harwood Water	3018	Poor ecological status	Morphology – fish barriers Diffuse source pollution – mining and quarrying of coal	2021
Drainage ditch upstream of Cobbinshaw Reservoir	3017	Poor ecological status	Morphology – fish barrier (multiple)	2027
Cobbinshaw Reservoir	100295	Poor ecological status	Point source pollution – aquaculture Morphology – fish barrier (multiple) Diffuse source pollution – agriculture	2027
Bog Burn	3016	Poor ecological status	Morphology – fish barrier (multiple)	2027
Murieston Water	3015	Poor ecological status	Morphology – fish barrier (multiple) Diffuse source pollution – mining and quarrying of coal	2021
Linhouse Water/Camilty Burn/Green Burn	3014	Poor ecological status	Abstraction – water industry Flow regulation – water industry Morphology – fish barrier (multiple) Diffuse source pollution – agriculture	2027
Brox Burn (by Wester Tartraven to Ryal Burn Confluence)	3009	Poor ecological status	Morphology – downstream fish barriers Point source pollution – manufacturing	2015
Brox Burn (Ryal Burn confluence to River Almond)	3008	Poor ecological status	Abstraction – manufacturing and agriculture Morphology – downstream fish barriers Point source pollution – sewage, urban	2027

			development Diffuse source pollution – sewage, urban development	
River Almond (Maitland Bridge to Cramond)	3000	Poor ecological status	Point source pollution – sewage Diffuse source pollution – air transport, Morphology – fish barrier, flood defence embankments	2027
Niddry Burn	3007	Poor ecological status	Point source pollution – sewage Diffuse source pollution – agriculture Morphology – downstream fish barrier	2027
Gogar Burn (Source – Union Canal)	3005	Poor ecological status	Morphology – downstream fish barrier Point source pollution – sewage Diffuse source pollution – sewage and agriculture	2027
Gogar Burn (Union Canal to River Almond)	3004	Bad ecological potential	Morphology – multiple pressures Point source pollution – sewage and air transport Diffuse source pollution – agriculture	2027
Union Canal (Craigton – Murray Burn)	8	Moderate ecological potential*	Diffuse source pollution*	2015

NB: Pressures that have already been addressed and pressures that have been assessed as having achieved good ecological potential (GEP) are not included within this table.

*Some aspects of canal classification have yet to be fully developed and agreed. Once they are implemented, the classification status for individual canal water bodies may change. At present, it is not absolutely certain that there is a diffuse pollution pressure on the Union Canal water body and as a consequence no measure for this pressure is proposed at present.

Small water bodies

There are a number of small (non-baseline[2]) surface water bodies associated with the catchment. We are aware of issues associated with the following small water bodies: Swine Burn; Caw Burn; Ryal Burn/Beugh Burn; Liggat Syke; Dechmont Burn; Dedridge Burn; West Calder Burn; Woodmuir Burn; Holehouse Burn; Claughrie Burn; Kitchen Linn; Foulshiels Burn; stream from Whitrigg Bing, and White Burn.

If there are any issues associated with these small water bodies which significantly impact a downstream baseline water body, then a pressure will be noted against the baseline water body so that it will be addressed. It should be noted however that as the Water Framework Directive applies to the whole water environment we should be harnessing opportunities to improve the condition of any small water body where possible.

Table 2: Classification status, pressures and objectives for the groundwater bodies associated with the River Almond catchment in 2009

Groundwater	Water body ID	2009 classification	Pressures	Good by
Stirling and Falkirk bedrock and localised sand and gravel aquifers	150234	Poor chemical status	Diffuse source pollution from mining and quarrying of coal	Less than good beyond 2027
		Poor hydrological status	*To be completed. New failure – awaiting further information*	-
Edinburgh and Livingston bedrock and localised sand and gravel aquifers	150227	Poor chemical status	Diffuse source pollution from mining and quarrying of oil-shale	Less than good beyond 2027
		Poor hydrological status	Abstraction – livestock farming & manufacturing	2027

[2] Under the Water Framework Directive we are only required to formally identify pressures, determine the classification status, develop and implement measures and report progress to the European Commission for baseline water bodies which is why the non-baseline water bodies are not included within Table 1. However, the Water Framework Directive applies to the whole water environment and if any pressures exist on non-baseline water bodies we would seek to address these through river basin planning; especially, for example, where an activity on a non-baseline water body causes, or has the potential to cause, a downgrade in status to a downstream baseline water body or protected area.

Pressures, measures and objectives summary

No deterioration objectives
For those water bodies currently less than good ecological status/potential the objective is to ensure that no further deterioration occurs, in addition to any improvement objectives.

Verification of good ecological potential
In the case of the Gogar Burn (Union Canal to River Almond), a heavily modified water body on account of the flood defences in place; Cobbinshaw Reservoir, heavily modified on account of the regulated flow regime; and the Union Canal, an artificial water body, there is a need for SEPA to verify the assessment that the pressures on them are at good ecological potential. The objective for these is to ensure that there is no deterioration.

Water resources

Abstraction
The abstraction pressure on the Linhouse Water/Camilty Burn/Green Burn water body at Crosswood Reservoir is associated with the Alnwickhill Water Treatment Works. Discussions need to take place with Scottish Water to ensure that appropriate investment takes place to address this pressure by 2025.

The Brox Burn (Ryal Burn confluence to River Almond) surface water body and Edinburgh and Livingston bedrock and localised sand and gravel aquifers groundwater body have abstraction pressures associated with livestock farming activities in the Bangour area and manufacturing activities in Livingston. Discussions with the CAR licence holders and a review and modification of the CAR licences, if appropriate, is required to address these pressures by 2027.

Flow regulation
The impoundment on Crosswood Burn, which is associated with the Alnwickhill Water Treatment Works abstraction, also creates a flow regulation pressure on the Linhouse Water/Camilty Burn/Green Burn water body. It is proposed that this will be addressed through Scottish Water investment by 2025.

Morphology

Barriers to fish passage
There are numerous barriers to fish passage throughout the catchment. Indeed a recent report by the Cramond Angling Club (2010) has identified 40 potential obstructions within the catchment which may present barriers to migratory fish and therefore warrant further investigation. This information will be used to refine the next WFD water body classification.

Peggie's Mill weir, which is located 400 m upstream of the tidal limit at the bottom of the catchment, is the first major barrier encountered by fish as they ascend the River Almond and is therefore recorded as a fish barrier pressure on every upstream water body. The Cramond Angling Club and River Forth Fisheries Trust have been instrumental in identifying the most serious barriers on the main stem of the Almond; 10 of which were scoped by Atkins in 2010 to determine appropriate mitigation through a Water Environment Restoration Fund project: Peggies Mill; Dowies Mill; Clifton weir; Mid Calder weir; Livingston rugby club weir; Cobbled weir; Almond Valley Bridge weir; Howden Bridge weir; Kirkton weir and Seafield weir.

Once the mitigation options are fully considered, it is likely that a further application will be made to the Water Environment Restoration Fund to help enable the appropriate solutions to be implemented. If all of these barriers are dealt with then it would open up the main stem of the Almond up to Whitburn and would address the fish barrier pressure on the Lochshot Burn and Brox Burn tributaries.

If access for migratory fish is enabled beyond Mid Calder weir then British Waterways will look at options for installing a screen at the mouth of the lade at Horseshoe weir – the offtake for the Union Canal – to avoid smolts being drawn into the lade and subsequently facing difficulties trying to swim back.

In the case of the Linhouse Water, it is not expected that the man-made barrier will be removed as there is a natural barrier immediately upstream.

A barrier to fish passage has been identified on the Bog Burn water body just upstream of Annetscross Bridge. However, there is a waterfall just downstream therefore discussions need to take place with the River Forth Fisheries Trust and Cramond Angling Club to identify if the waterfall presents a natural barrier. If the man-made barrier does require to be addressed then it is hoped that appropriate mitigation could be taken forward through discussions with the landowner with funding potentially through the Water Environment Restoration Fund.

The Cobbinshaw Reservoir impoundment is currently not recorded as presenting a barrier to fish passage on the Cobbinshaw Reservoir or drainage ditch upstream of Cobbinshaw Reservoir water bodies. This requires to be investigated, but these water bodies may not be downgraded if the natural waterfall on the downstream Bog Burn is identified as a barrier.

The weir on the Gogar Burn (Union Canal to River Almond) water body at the downstream end of the culvert which flows under the runway presents a barrier to fish passage on this and the upstream Gogar Burn (Source – Union Canal) water body. The British Airports Authority has a measure to address this by 2020.

Urban development
The Lochshot Burn water body contains morphological pressures associated with urbanisation. There is a requirement to identify the necessary improvements which are required to improve this modified habitat and initiate discussions with appropriate landowners. The objective is for measures to be delivered to address these pressures by 2027.

On the Gogar Burn (Union Canal to River Almond), the cumulative impact of the many morphological modifications place this water body under significant pressure which has resulted in the current status of bad ecological potential. The British Airports Authority has measures to address these pressures by 2020.

Agriculture
The River Almond (Source to Foulshiels Burn confluence), How Burn and Lochshot Burn are impacted by multiple morphological pressures associated with farming activities. Measures to address these pressures are expected to be delivered by 2026 through working with landowners and are not currently linked in with the priority catchment work which is forecast to be delivered between 2015 and 2021.

Point source pollution

Sewage
Sewage pollution is a significant problem within the catchment with the entire main stem of the Almond together with the Brox Burn, Gogar Burn, Lochshot Burn and Niddry Burn impacted from point source sewage pollution. At present the key issues are associated with limited storm tank capacity at waste water treatment works and untreated discharges from combined sewer overflows (CSOs). In the Blackburn and West Whitburn areas there are significant problems with CSOs.

A catchment-wide River Almond Strategic Study is being delivered as part of the present Scottish Water Quality and Standards Investment Programme. The planned programme of work contains two parallel areas of study; looking at investigations into the performance of the drainage network and also a specific water quality study for the river itself. It is expected that the outcomes of this study will be used to direct future sewerage investment in the catchment in the next investment period.

- In the River Almond (Source to Foulshiels Burn confluence) water body, the sewage pressure is associated with problems when the Whitburn WWTW CSO discharges untreated effluent due to storm tanks exceeding capacity. Intermittent discharges from various CSOs in Blackburn and West Whitburn also cause problems on this water body. Future Scottish Water investment will be informed by the results of the catchment-wide study and works required would be expected to deliver improvements by 2020.

- Discharges from the CSO at Harthill WWTW is downgrading the How Burn water body. Future Scottish Water investment will be informed by the results of the catchment-wide study and works required would be expected to deliver improvements by 2020.

- For the River Almond (Foulshiels Burn to Breich Water confluences) water body, discharges from the Blackburn WWTW CSO and storm tank overflow impact water body status. Future Scottish Water investment will be informed by the results of the catchment-wide study and works required would be expected to deliver improvements by 2020.

- In the Breich Water/Darmead Linn water body, the Fauldhouse WWTW final effluent quality and storm tank overflow is creating a pressure. Scottish Water investment is expected to deliver phased improvements to address these issues by 2025. In addition, unauthorised intermittent discharges from the Burnbrae Road CSO in Stoneyburn are affecting water quality. Scottish Water investment is expected to deliver phased improvements to fully address these issues by 2025.

- Within the River Almond (Breich Water confluence to Maitland Bridge) water body, the problems associated with the Broxburn WWTW CSO are expected to be addressed by 2020. Whilst the final effluent quality from Livingston WWTW is not breaching current licence conditions, there are water quality issues on this water body. Future Scottish Water investment will be informed by the results of the catchment-wide study and works required would be expected to deliver improvements by 2025.

- The problems caused by the Muirfield Way CSO which discharges to the Lochshot Burn in Livingston are expected to be addressed by 2025.

- There are currently water quality issues on the River Almond (Maitland Bridge to Cramond) water body. Whilst the final effluent quality from Newbridge WWTW is not breaching current licence conditions, it may still be having an impact on the water body. Future Scottish Water investment will be informed by the results of the catchment-wide study and works required would be expected to deliver improvements by 2025. 4-Nonylphenol, a priority substances associated with the final effluent at the upstream East Calder WWTW, is also downgrading this water body and will be dealt with by 2025.

- Whilst the final effluent quality from Winchburgh WWTW is not breaching current licence conditions, elevated phosphorous levels are a problem in the Niddry Burn water body. The nature of this issue will be informed by the results of the catchment-wide study and works required would be expected to deliver improvements by 2025.

- On the Gogar Burn (Source – Union Canal) water body, the Linburn WWTW and the private treatment scheme operated by the Marriot Dalmahoy are currently compliant with licence conditions. However, classification results highlight water quality is an issue on this water body. Again, the catchment-wide study will be used to inform discussions between SEPA, Scottish Water and the Marriot Dalmahoy and direct future sewerage investment in this area to deliver improvements by 2025.

Surface water outfalls

The point source pollution on the Brox Burn (by Wester Tartraven to Ryal Burn confluence) water body is associated with the surface water outfall on the Deans North Industrial Estate. It is expected that this will be addressed by Scottish Water by 2015 with mitigation options identified through a surface water action plan. As there is land availability at this site, the installation of a sustainable urban drainage system is a potential solution.

The surface water outfall associated with Greendykes Industrial Estate discharges into the non-baseline Liggat Syke which enters the downstream end of the Brox Burn (by Wester Tartraven to Ryal Burn confluence). However, as the burn enters below the Water Framework Directive monitoring point, the impacts are captured from monitoring data on the downstream Brox Burn (Ryal Burn confluence to River Almond) water body. Through engagement with relevant stakeholders e.g. SEPA, West Lothian

Council and those businesses operating on the industrial estate, Scottish Water is currently producing a surface water action plan which will aim to put in place measures to address this pressure by 2015.

On the Brox Burn (Ryal Burn confluence to River Almond), the East Mains Industrial Estate surface water outfall is causing problems. In addition, the Houston Industrial Estate surface water outfall to the Caw Burn, which discharges to the Brox Burn (Ryal Burn Confluence to River Almond) at Burnside, is also creating a pressure. Scottish Water investment at both industrial estates, either through a surface water action plan or through the installation of a sustainable urban drainage system, should deliver improvements to enable the water body to achieve good status by 2025.

On the Gogar Burn (Union Canal to River Almond) water body, the South Gyle surface water outfall is creating a pressure. Scottish Water investment either through a surface water action plan or through the installation of a sustainable urban drainage system, should deliver improvements to enable the water body to achieve good status by 2025. This water body is also under pressure from surface water outfalls at Edinburgh Airport and the British Airport Authority is expected to increase treatment by 2015.

Mining and quarrying of coal and oil shale
Coal Authority remediation schemes are in place at Polkemmet (Whitburn) and Cuthill (Addiewell), and West Lothian Council are delivering treatment at Whitrigg (East Whitburn). The Polkemmet treatment scheme is currently underperforming and will be relocated and improved as part of the future Heartlands development. West Lothian Council have been assigned the measure to drive this forward through the development planning process. This was originally forecast to be delivered by the end of 2009. However, the economic downturn has delayed this development and the measure delivery date has been amended to 2021.

On the Breich Water/Darmead Linn water body, an iron-rich discharge was recently identified on the bank opposite the pumping station which is part of the current Cuthill minewater treatment scheme. The Coal Authority who manages the Cuthill scheme is aware of this issue and it is hoped that it can be addressed by the end of 2026.

Aquaculture
On Cobbinshaw Reservoir, there is an aquaculture-related point source pressure associated with the Cobbinshaw Hatchery outlet. Liaison with the operator and an amendment to the Controlled Activities Regulations licence will enable this pressure to be addressed by 2026.

Diffuse source pollution

Agriculture
The catchment is a candidate priority catchment for work in the second river basin planning cycle (2015 – 2021). This means that focused work to tackle the agricultural diffuse pollution pressures associated with the Foulshiels Burn/Bickerton Burn, Linhouse Water/Camilty Burn/Green Burn, Cobbinshaw Reservoir, Niddry Burn, Gogar Burn (Source – Union Canal), Gogar Burn (Union Canal to River Almond) water bodies should commence in 2015 with an aim to achieve improvements by 2021.

In advance of the priority catchment work, currently forecast to commence in 2015, a review of all water bodies within the catchment will take place. All water bodies identified with diffuse pollution pressures at that time will be incorporated within the priority catchment initiative.

Further information on the priority catchment approach can be found on the priority catchment page on SEPA's website.

Mining and quarrying of coal and oil shale
The cumulative impact of multiple diffuse sources of iron associated with historic mining activities is an issue throughout the catchment. In the River Almond (Source to Foulshiels Burn confluence) there is a diffuse pollution pressure associated with mining and quarrying of coal, most likely associated with Polkemmet. It is hope that the improvements to Polkemmet discussed above will help alleviate this problem.

The Foulshiels Burn/Bickerton Burn is impacted from minewater discharges associated with Whitrigg Bing in East Whitburn. Depending on funding, West Lothian Council have plans in place to develop a Whitrigg Phase II treatment project to complement the existing on site treatment. It is hoped that this will be delivering improvements by 2019.

The River Almond (Foulshiels Burn to Breich Water confluences) water body is impacted from run-off to Mid Breich bing. SEPA will need to undertake discussions with West Lothian Council to explore options to hopefully deliver improvements by 2019.

For the Breich Water/Darmead Linn water body, SEPA will need to undertake discussions with West Lothian Council to explore options to deliver improvements by 2025.

In the Killandean Burn/Harwood Water, ferruginous outbreaks have been reported in the Pate's Hill/Baadsmill area. These are regarded as low risk by the Coal Authority with the development Harwood minewater treatment scheme being deferred until the 2021-2027 river basin planning cycle.

In the case of the elevated iron levels in the Murieston Water, these are associated with Torphin Quarry and other minor discharges. The Coal Authority expects to address this issue by 2025.

Sewage

Diffuse source pollution from septic tanks in the area west of Harthill and Eastfield is affecting the How Burn. Options to address this pressure need to be investigated further and discussions initiated with Scottish Water to see if the provision of first time sewage treatment is a possibility. Engagement with landowners through the diffuse pollution priority catchment work to promote good septic tank management should also help alleviate the problem by 2027.

Septic tanks are also causing problems to the Brox Burn (Ryal Burn Confluence to River Almond) water body. Discussions will need to take place with Scottish Water to see if first time sewerage provision could be installed as part of a future Scottish Water investment by 2025. Engagement with landowners through the diffuse pollution priority catchment work to promote good septic tank management should also help alleviate the problem.

On the Gogar Burn (Source – Union Canal), diffuse sewage pollution associated with septic tanks is noted as a pressure. Engagement with landowners through the diffuse pollution priority catchment work to promote good septic tank management will be required to help alleviate the problem by 2021.

Road/industrial estate run-off

Road drainage from the M8 between Harthill and Whitburn is causing diffuse pollutants to enter the River Almond (Source to Foulshiels Burn confluence) water body. Transport Scotland is the appropriate agency to deliver measures to address this issue and SEPA will need to enter into discussions with Transport Scotland to ensure the necessary improvements are in place and effective by 2027.

Run-off from the East Mains, Houston North, Houston South and Greendykes Industrial Estates is also creating a diffuse pollution pressure on the Brox Burn (Ryal Burn confluence to River Almond) water body. The measures outline above to address the point source pressures associated with these industrial estates will also help alleviate the diffuse source pressures. Education on good practice and promotion of the diffuse pollution general binding rules by SEPA will also help alleviate problems.

In the River Almond (Breich Water confluence to Maitland Bridge) water body, urban run-off is downgrading the water body. This needs to be investigated further and discussions initiated with West Lothian Council to see if retrofit/upgraded SUDS could be installed, potentially through development planning process, by 2027.

The River Almond (Maitland Bridge to Cramond) water body is impacted from seasonal diffuse inputs associated with de-icer run-off from Edinburgh Airport. The British Airport Authority measure to address the point source surface water outfalls pressure discussed above should also address this problem by 2014.

Invasive non-native species

No water bodies are currently downgraded to less than good on account of the presence of aquatic invasive non-native species.

Riparian invasive non-native species such as Japanese knotweed, giant hogweed, Himalayan balsam and rhododendron are currently not incorporated into the morphology component of the Water Framework Directive classification scheme. However, this is expected to change before the end of the first river basin planning cycle. Efforts should be targeted to map the location of riparian invasive non-native species as this can be used by SEPA to inform future classification outputs. Please contact SEPA for a copy of the survey method. The Water Environment Restoration Fund can be used to fund eradication projects.

The River Forth Fisheries Trust has produced a biosecurity plan for the Forth district which covers a very similar area to the Forth sub-basin district. Key objectives of the plan include preventing the introduction and spread of invasive non-native species, establishing a framework for detection and surveillance, and developing co-ordinated control and eradication programmes for invasive non-native species. This work will directly assist the achievement of RBMP objectives.

Japanese knotweed, giant hogweed and Himalayan balsam are all present within the catchment. West Lothian Council have delivered a Japanese knotweed control project on the Brox Burn which has been effective at preventing further spread. The Council recently commissioned the River Forth Fisheries Trust to prepare a River Almond Invasive Non-Native Species Action Plan which will help focus action to target riparian invasive non-native species within the catchment.

Areas for action

No.	Action	Suggested owner	Date
1	Engage with Scottish Water to promote appropriate projects into future quality and standards investment periods and ensure measures are on track to deliver	SEPA quality and standards team/Scottish Water	Ongoing - 2027
2	Raise awareness of diffuse pollution and diffuse pollution general binding rules to support future priority catchment work	Forth AAG/SEPA Land Unit/RBMP coordinator/local operations team	Ongoing - 2027
3	Continue to promote good practice and raise awareness of diffuse pollution general binding rules at industrial estates	SEPA local operations team	Ongoing - 2027
4	Harness opportunities through planning to install retrofit SUDS in the Livingston area to reduce diffuse inputs to River Almond (Breich Water confluence to Maitland Bridge water body)	West Lothian Council/SEPA planning service/SEPA local operations team	Ongoing - 2027
5	Work through AAG INNS sub-group to ensure co-ordinated action to tackle invasive non-native species to meet RBMP objectives.	River Forth Fisheries Trust/AAG INNS sub group	Ongoing - 2027
6	Continue to raise profile of RBMP and requirement to protect and improve the water environment.	All SEPA/All AAG members	Ongoing - 2027
7	Continue to gather information on location of barriers to fish passage from appropriate stakeholders	Cramond Angling Club/River Forth Fisheries Trust/SEPA	Ongoing - 2027
8	Use results of fish barrier scoping project to determine next steps for the 10 barriers and ensure solutions are implemented	Forth AAG members	2011-ongoing
9	Ensure horseshoe weir smolt screen is installed if fish passage is enabled at Mid Calder weir.	British Waterways	Following completion of action 8
10	Identify whether fish barrier on Bog Burn requires to be addressed – downstream waterfall could cause natural barrier	SEPA/FDSFB/Cramond Angling Club	2012

11	Identify whether Cobbinshaw Reservoir impoundment presents a fish barrier and review findings in line with outcomes of assessment on downstream waterfall on Bog Burn	SEPA/FDSFB/Cramond Angling Club	2012
12	Confirm British Airport Authority on track to deliver improvements to airport surface water outfalls	SEPA local operations team	2012
13	Discuss options to tackle run-off from Mid Breich bing and inputs to Briech Water/Darmead Linn water body	SEPA local operations team/West Lothian Council	2012
14	Verification of pressures at good ecological potential on Gogar Burn (Union Canal to River Almond), Cobbinshaw Reservoir and the Union Canal water bodies.	SEPA local operations team	2014
15	Use outputs of the catchment-wide River Almond Strategic Study to inform investment to improve water quality throughout the catchment	SEPA quality and standards team/Scottish Water/Marriot Dalmahoy	2014
16	Ensure priority catchment work progresses	SEPA land unit	2015
17	Raise awareness of good septic tank management within the Gogar Burn (Source – Union Canal) catchment as to help address diffuse source pollution problem as part of priority catchment work.	SEPA local operations team	2015
18	Ensure Whitrigg Phase II bing water treatment scheme is delivered and is effective	West Lothian Council/SEPA local operations team	2019
19	Ensure Polkemmet minewater treatment scheme relocation progresses and is effective	Coal Authority/West Lothian Council	2015/2019
20	Improve modified habitat on the Gogar Burn (Union Canal to River Almond) water body	British Airports Authority	2020
21	Deliver measure to address weir on Gogar Burn (Union Canal to River Almond) water body at the downstream end of the culvert which flows under the runway.	British Airports Authority	2020
22	Identify required improvements to modified habitat on the Lochshot Burn and initiate discussions with appropriate landowners.	SEPA hydromorphology specialists/RBMP co-ordinator/local operations team	2021
23	Identify necessary morphological improvements required on the River Almond (Source to Foulshiels Burn confluence), How Burn and Lochshot Burn to address agriculture related alterations. Initiate dialogue with landowners.	SEPA hydromorphology specialists/RBMP co-ordinator/local operations team	2021
24	Ensure Coal Authority measures on track to deliver at Cuthill, Pate's Mill/Baadsmill and Torphin Quarry	SEPA/Coal Authority liaison meetings	2021
25	Review CAR abstraction licences associated with livestock farming activities in the Bangour area and manufacturing activities in Livingston.	SEPA local operations team	2021 - 2027
26	Review Cobbinshaw Hatchery licence to address aquaculture-related pressure	SEPA local operations team	2021 - 2027
27	Discuss options for retrofit SUDS along M8 at Harthill and install where appropriate	Transport Scotland/SEPA	2021 - 2027
28	Monitor groundwater quality to ensure improving	SEPA local operations team	Ongoing – beyond 2027