RBMP Shellfish Water Focus Area Update 2017

The update paper contains the following topics;

SWPA Update

A key objective of the second and third River Basin Management Plans is the protection and improvement of identified bathing waters and shellfish waters which are at risk of failing Water Framework Directive, WFD objectives due to bacterial contamination.

The reasons for the downgrade of SWPAs are not well understood there is a need to improve source identification, apportionment and risk factors to allow mitigation measures to be appropriately targeted. All of these waters may be at risk from multiple sources of bacterial contamination originating from land use within their respective catchments. Such sources may include septic tanks, grazing livestock, farm steadings, wildlife, marinas, human effluents, etc. Transport pathways to bathing and shellfish waters are also key to the impact of bacterial contamination. Where transport pathways are long and slow then natural die-off will reduce the need for measures compared to catchments with high connectivity. In addition, sources of contamination from within the catchments need to be understood and quantified.

These complexities mean we must work to improve our confidence in existing monitoring information and further develop tools to inform targeted and proportionate regulatory mechanisms to identify and mitigate the pressures. SEPA has made significant progress in this line of work through the Bathing Waters work and the lessons learned and gaps in knowledge that have been identified will inform our progress to investigate the impacts in the SWPAs.

RBMP Data- where to look for what you need?

The Second River Basin Management Plans were published using 2014 classification data. All of the information for both of the plans, Scotland and Solway Tweed districts, can be found in the Water environment hub. It provides information on each waterbody, pressures, measures and the objectives (targets) that we have set.

The 2015 classification data has now been published and can be found at the SEWeb – water body classification page**.**

In summary, for information about the plans and objectives use Water environment hub, for the 2015 classification results use SEWeb – water body classification page.

Please contact us if you have any questions or queries about where to access the data you need, via RBMP@sepa.org.uk

RBMP Research and Investigations

Review of Current Monitoring

FSS and SEPA are currently working together to source funding to undertake a review the current monitoring programme. The outcome would be to develop recommendations to allow both organisations to meet their respective regulatory requirements, while being scientifically robust, efficient and cost-effective.

In the interim investigative monitoring is being undertaken, by SEPA, in a number of different SWPAs across Scotland during 2017.

Microbial Source Tracking

Resource has been secured in SEPA for additional microbial source tracking on 4 SWPA for 2017. Microbial Source Tracking, MST, is a very useful tool, it identifies the types of faecal sources impacting a water system. Unlike the current monitoring undertaken by FSS this additional monitoring will allow us to determine whether any faecal pollution in a water sample is from human, ruminant or “other” sources. If the amount of DNA markers from a known source, in this case from species-specific gut bacteria known as bacteriodales, is compared to the total amount of faecally derived DNA (Allbac) then we can determine the relative proportion from each source and use this to ascertain whether a sample is being impacted by human (Hubac), agricultural (BacR) or other pollution. Once we know what type(s) of pollution are affecting any given receiving water we can then look into the catchment to try and isolate, and remediate, the sources.

At present we can differentiate between human, ruminant and "other" sourced pollution though we are working to expand our toolkit to include a wider variety of species markers such as birds.

- Loch Ryan SWPA
- Dornoch Firth SWPA 13
- Cat Firth SWPA 8
- Wadbister Voe SWPA81

Loch Ryan has been chosen because, despite significant investment within the catchment to remove discharges, some sample results continue to be disappointing. Dornoch Firth has been brought in to compare results with another SEPA investigative monitoring project that is running (BLITZ monitoring), further information can be found below. Dornoch is also being targeted by the diffuse pollution priority catchment approach, details below. This monitoring will help inform that programme of works. We are also aware of a desire to expand production in the area. Cat Firth and Wadbister Voe were put forward by the industry as priority areas.

CREW Research

Scotland Centre for Expertise in Water, CREW is funding a project to Development of a methodology for screening and identifying potential sources of bacteria to improve bathing, shellfish and drinking water quality (Phase 2).

As part of Phase 1 of this study there was a project that reviewed all methodologies, screening tools and models etc. that are used for the source identification and apportionment of bacteria. Further information can be found here; http://www.crew.ac.uk/project/screening-framework-improve-bathing-shellfish-water-quality

In this Phase 2 of the project there is a need to identify the major sources of bacterial inputs within a catchment and the treatment system (where applicable). The project team will be required to consider factors which increase the loading to the raw water, mapping the zone of influence and recommendations for mitigating the risks to shellfish and bathing waters and drinking water supplies (which may include catchment management measures and/or treatment). These recommended measures will be expected to achieve relevant WFD and drinking water objectives.

The outputs of this project will help to:

- Inform catchment measures to protect water quality
- Inform catchment and/or treatment solutions to protect drinking water supplies
- Inform and influence policy on catchment management measures to protect raw water quality
- Assist local authorities with risk assessing their local private water supplies

Blitz Catchment Monitoring Proposals - 2017

Last year, SEPA initiated a new monitoring methodology in 3 priority catchments in Scotland and initial results have been reported. Blitz monitoring is an intensive spatial monitoring programme which aims to provide rapid monitoring and investigation of the catchment to identify the main pressures in the catchment and to help target improvement measures.

Proposals for 2017 monitoring are currently being planned. If resource is agreed in 2017 – 3 sites with SWPAs may be included in 2017 Blitz monitoring

- Fairlie – SWPA16 – Fair in 2014
- Dornoch – SWPA13 – Fair in 2014
- Cromarty – SWPA11 – Fair in 2014

Blitz monitoring for these areas are not specifically driven by Shellfish Waters Protected Area failures however the detailed study of the catchments would provide very useful information to characterise potential FIO sources which would be of relevance to the receptor SWPAs and would inform on operational areas to tackle in any improvement programme.

Our two primary drivers are to pinpoint diffuse pollution hotspots in priority catchments that are causing bathing waters failures and Water Framework Directive, WFD <Good for water quality. However, 2 catchments that are high on our list of priorities (Ayrshire Coastal and Cromarty Coastal) because of bathing water and WFD fails also happen to contain failing shellfish waters.

This provides an opportunity to see if the blitz approach can be modified to help identify the main hotspots of diffuse pollution that might be affecting these shellfish waters. We use a combination of rapid ecological assessments, General Binding Rules, GBR and soil erosion surveys, chemistry probes, micro and MST analysis to do this. Blitz is all about rapid spatial

coverage, so whilst it's good at picking up significant hotspots there aren't lots of repeat visits to establish trends or determine effectiveness of measures that other monitoring programmes will achieve over the longer term.

We're still in the process of evaluating our final selection of 2017 blitz catchment proposals and confirming resource allocation for 2017. Further information will be available once that is confirmed.

RBMP Delivery Updates

Rural Diffuse Pollution Work

RBMP2 will see an expanded programme of works to address sources of rural diffuse pollution with 43 additional priority catchments being added to the original 14, from Cycle 1. The distribution of this work can be seen in Figure 1 below.

SEPA has also made changes to the way in which this work is done. Inspections will be targeted in at risk and downgraded waterbodies instead of catchment wide. Land unit staff will be conducting more farm visits per day and there will only be 1 revisit to a non-compliant farm before initiating enforcement action.

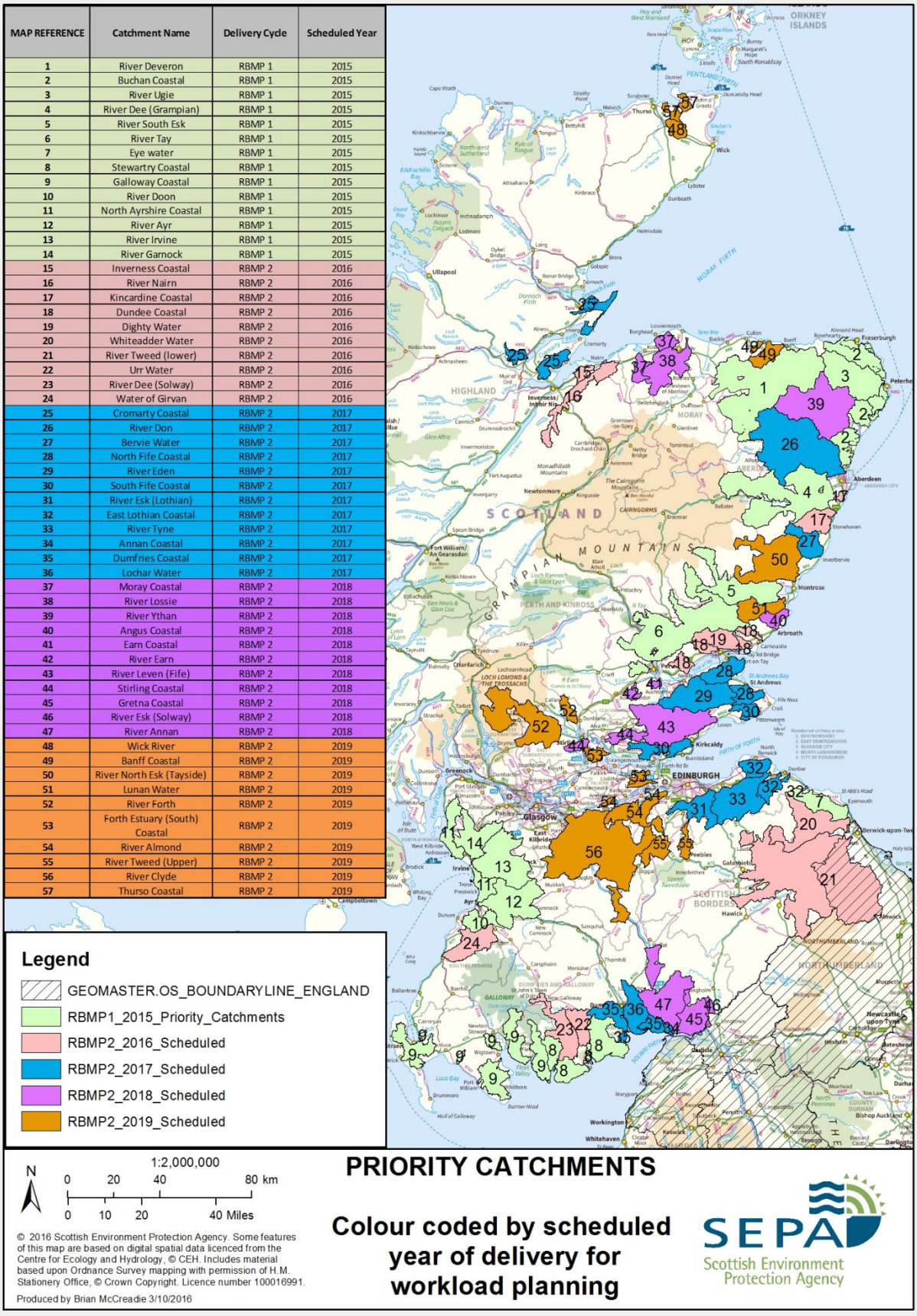
SEPA has invested significantly in additional resource to expand the priority catchment work in RBMP2 with 7 additional permanent staff and 1 fixed term post. Work has now started in the next round of priority catchments, with 222 farm visits completed in the Whiteadder, Stonehaven, Nairn and Ken/Dee catchments.

SEPA have also been working in partnership with Scotland's Rural College to launch an awareness raising campaign under the brand of "Farming and Water Scotland". The brand encompasses both regulatory messages and advice for farming business on diffuse pollution and the General Binding Rules. Farming and Water Scotland attended 34 agricultural shows across Scotland and plan to attend a further 4 winter events.

It is expected that the focused priority catchment work, supported by the wider engagement will reduce pollution inputs significantly.

Figure 1: Map of the distribution and schedule for priority catchment work.

MAP REFERENCE	Catchment Name	Delivery Cycle	Scheduled Year
1	River Deveron	RBMP 1	2015
2	Buchan Coastal	RBMP 1	2015
3	River Ugie	RBMP 1	2015
4	River Dee (Grampian)	RBMP 1	2015
5	River South Esk	RBMP 1	2015
6	River Tay	RBMP 1	2015
7	Eye water	RBMP 1	2015
8	Stewartry Coastal	RBMP 1	2015
9	Galloway Coastal	RBMP 1	2015
10	River Doon	RBMP 1	2015
11	North Ayrshire Coastal	RBMP 1	2015
12	River Ayr	RBMP 1	2015
13	River Irvine	RBMP 1	2015
14	River Garnock	RBMP 1	2015
15	Inverness Coastal	RBMP 2	2016
16	River Nairn	RBMP 2	2016
17	Kincardine Coastal	RBMP 2	2016
18	Dundee Coastal	RBMP 2	2016
19	Dighty Water	RBMP 2	2016
20	Whiteadder Water	RBMP 2	2016
21	River Tweed (lower)	RBMP 2	2016
22	Urr Water	RBMP 2	2016
23	River Dee (Solway)	RBMP 2	2016
24	Water of Girvan	RBMP 2	2016
25	Cromarty Coastal	RBMP 2	2017
26	River Don	RBMP 2	2017
27	Bervie Water	RBMP 2	2017
28	North Fife Coastal	RBMP 2	2017
29	River Eden	RBMP 2	2017
30	South Fife Coastal	RBMP 2	2017
31	River Esk (Lothian)	RBMP 2	2017
32	East Lothian Coastal	RBMP 2	2017
33	River Tyne	RBMP 2	2017
34	Annan Coastal	RBMP 2	2017
35	Dumfries Coastal	RBMP 2	2017
36	Lochar Water	RBMP 2	2017
37	Moray Coastal	RBMP 2	2018
38	River Lossie	RBMP 2	2018
39	River Ythan	RBMP 2	2018
40	Angus Coastal	RBMP 2	2018
41	Earn Coastal	RBMP 2	2018
42	River Earn	RBMP 2	2018
43	River Leven (Fife)	RBMP 2	2018
44	Stirling Coastal	RBMP 2	2018
45	Gretna Coastal	RBMP 2	2018
46	River Esk (Solway)	RBMP 2	2018
47	River Annan	RBMP 2	2018
48	Wick River	RBMP 2	2019
49	Banff Coastal	RBMP 2	2019
50	River North Esk (Tayside)	RBMP 2	2019
51	Lunan Water	RBMP 2	2019
52	River Forth	RBMP 2	2019
53	Forth Estuary (South) Coastal	RBMP 2	2019
54	River Almond	RBMP 2	2019
55	River Tweed (Upper)	RBMP 2	2019
56	River Clyde	RBMP 2	2019
57	Thurso Coastal	RBMP 2	2019



Update on Bathing Waters

The expected EU water quality classifications for 2016 were calculated at end Sept and indicate that we anticipate 26 excellent, 36 good, 10 sufficient and 12 poor classifications. This is 5 less than in 2015, but we also need to maintain progress to ensure we maintain their class improvement. The Bathing Waters report 2016 is available; http://apps.sepa.org.uk/bathingwaters/

SEPA's Bathing Waters Delivery Group are responsible for coordinating the delivery of improvements for this workstream. Bathing water improvement plans for 19 specific bathing waters has been produced and shared with Scottish Government and Scottish Water. Actions to be delivered include additional investigative monitoring and inspections of relevant rural and urban catchment pollution sources. The plans are now on-going and shall evolve as new actions or issues are identified.

Engagement with Scottish Government/Scottish Water is ongoing in order to deliver the actions/tasks within the delivery plans. Beach stakeholder groups have been formed and groups have met at Nairn and Kinghorn in Fife. Bathing Water stakeholder partnership action groups have also been formed with relevant organisations for the Ayrshire coast and similar for Edinburgh and Lothians.

Consultations

Revision to policy on new discharges in or near shellfish waters in 2017.

A consultation will be published later this year which proposes a change in policy which is intended to ensure that new development does not compromise water quality for shellfish production.

SEPA currently has a guidance document WAT-RM-13 which sets out the requirements for new or modified point source continuous and intermittent discharges where potentially infectious micro-organisms require to be controlled for bathing and shellfish waters. For the protection of shellfish, levels of *E.coli* are required to be controlled in new or modified discharges. This revision of policy, and subsequently WAT-RM-13, is intended to help meet new classification standards.