

Information on a significant pollution event downstream of Donkey Wood detected by the Citizen Crane Project in January and February 2017

10th March 2017



The Citizen Crane Project

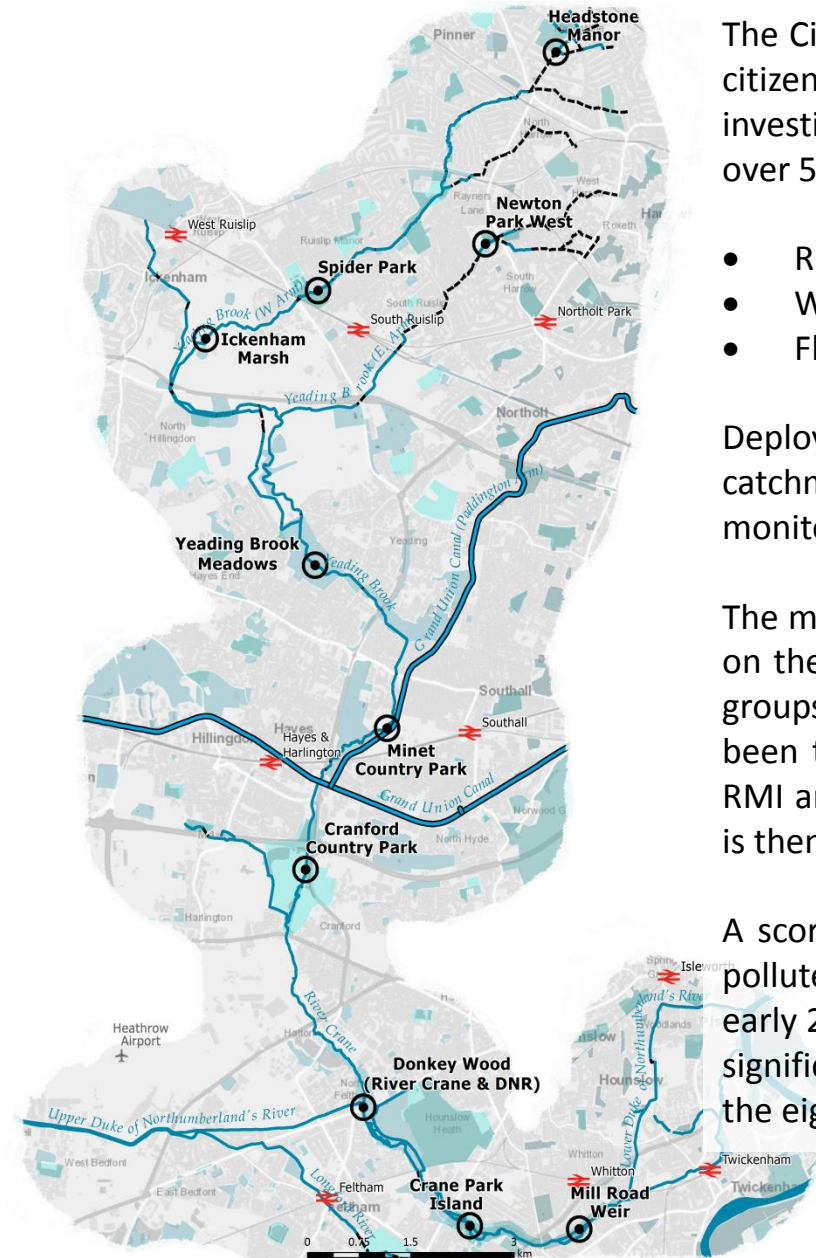
The Citizen Crane project was set up in early 2014. It uses teams of trained citizen science volunteers to work with the catchment partnership to investigate water quality issues in the Crane catchment. The network of over 50 volunteers at 11 sampling sites gather the following monthly data;

- Riverfly Monitoring Initiative (RMI) kick sample scores
- Water quality samples for analysis by Thames Water
- Flow data

Deployed by approximately 2000 volunteers annually on over 80 river catchments, the Riverfly Monitoring Initiative it is a national system for monitoring the health of rivers and detecting pollution events.

The method allows comparable samples to be taken over time and is based on the presence and abundance of eight, relatively easy to identify, target groups of invertebrates as indicators of river health. Once a sample has been taken it is analysed on the river bank. Invertebrates relevant to the RMI are separated from the sample and counted. Their relative abundance is then converted into a score for the sample.

A score below a pre agreed 'trigger level' indicates that the river may be polluted and is reported to the EA's national environmental incident line. In early 2017 sites in the catchment downstream of Donkey wood experienced significant trigger level breaches. During the same time period RMI scores at the eight sites upstream remained relatively unchanged.



Donkey Wood- Crane



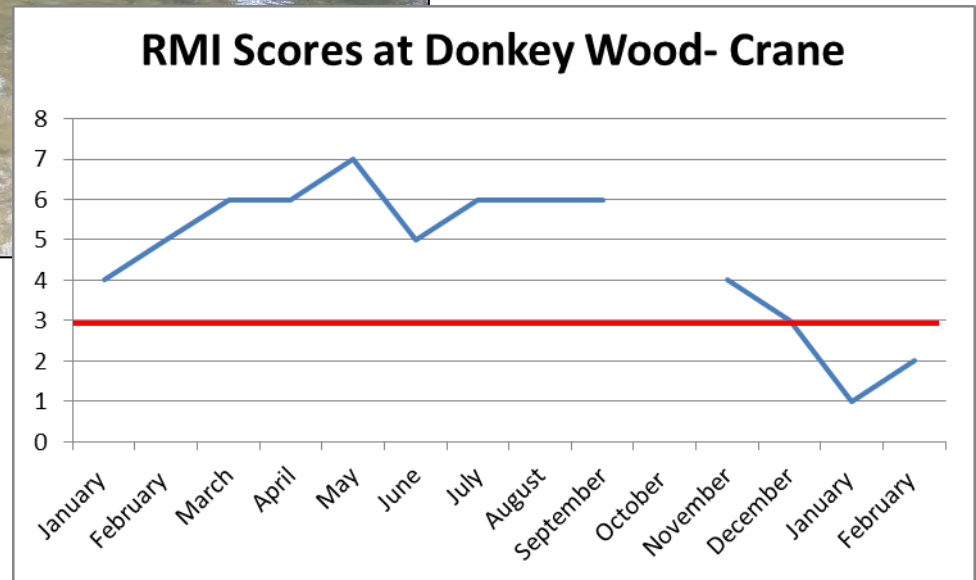
Key



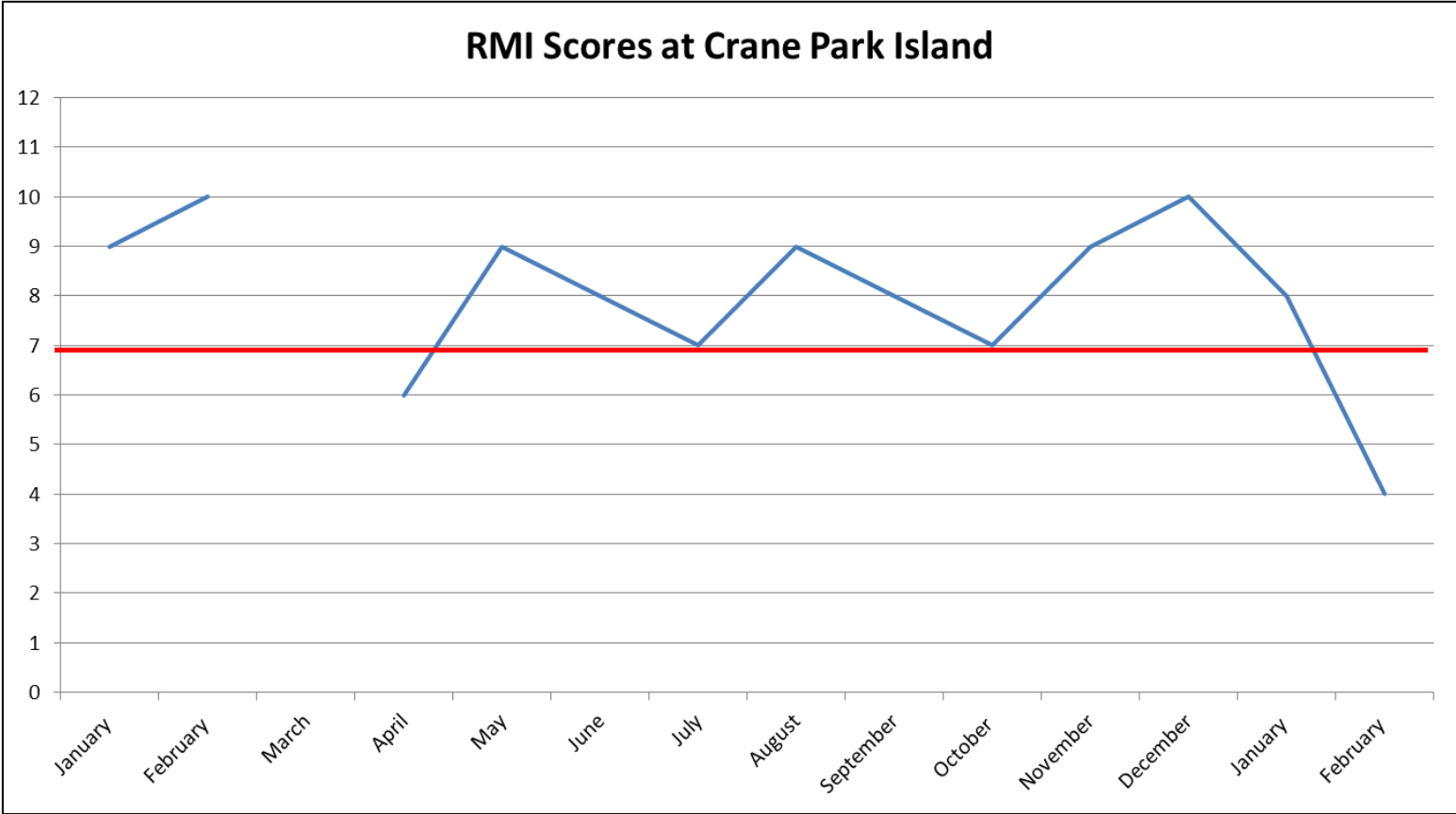
RMI score (derived from the presence and abundance of key invertebrate species)





Trigger level (score agreed with the EA that triggers a pollution call in to 0800807060)



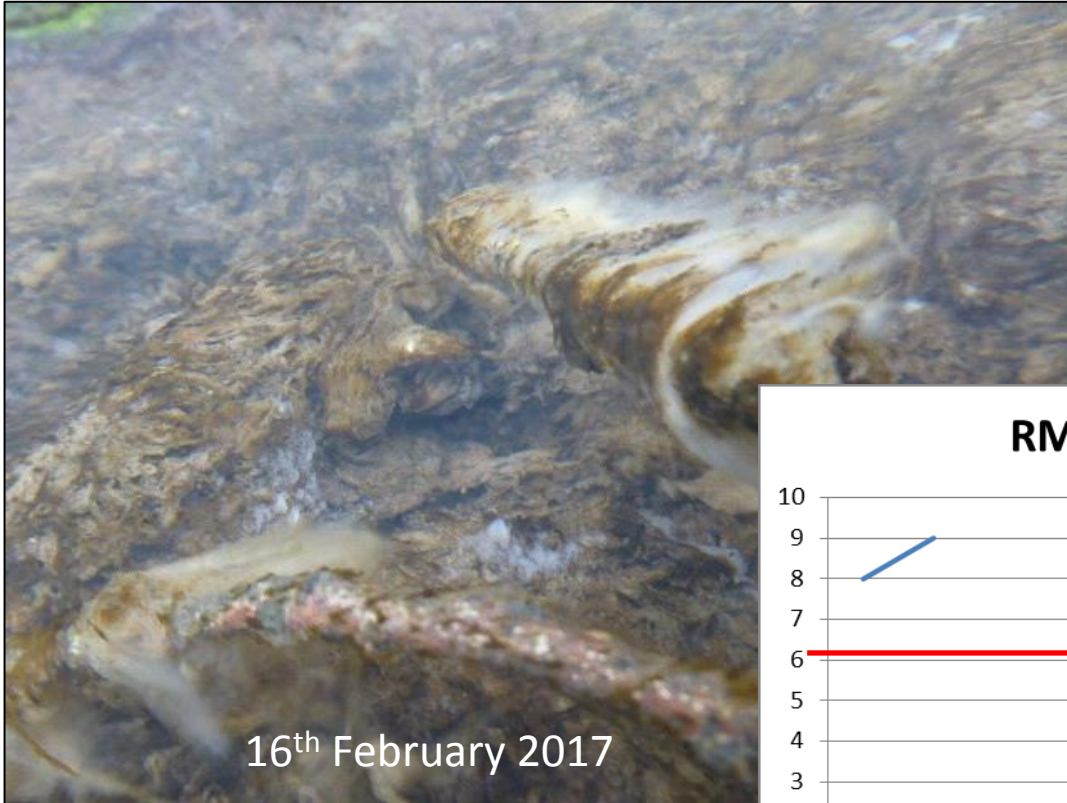
Crane Park Island



Key

-  RMI score (derived from the presence and abundance of key invertebrate species)
-  Trigger level (score agreed with the EA that triggers a pollution call in to 0800807060)

Mill Road Weir



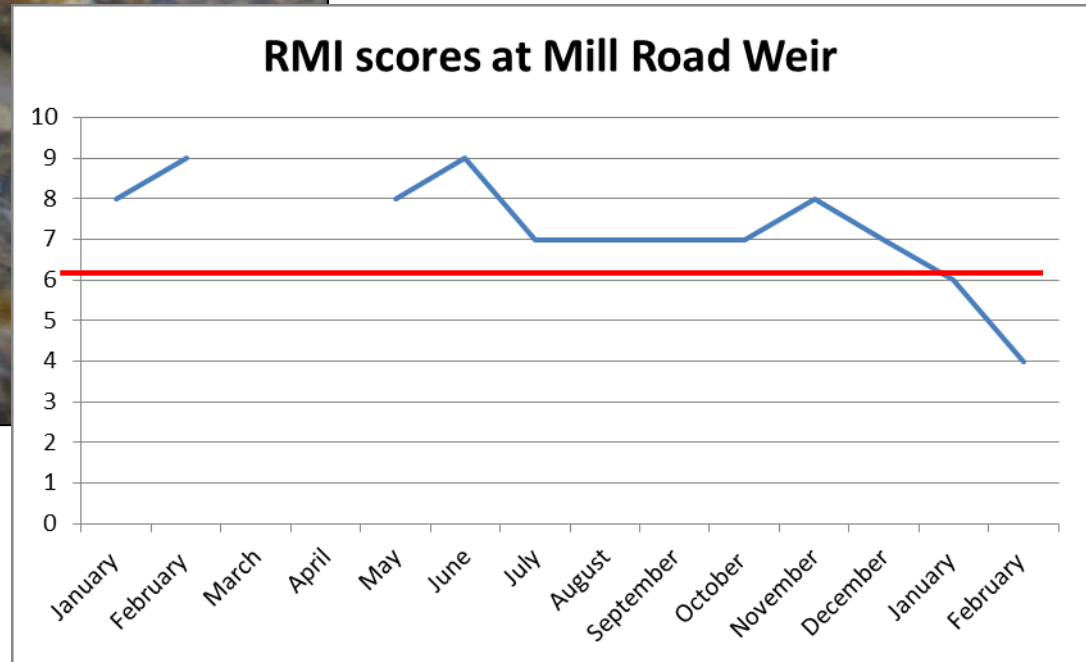
Key



RMI score (derived from the presence and abundance of key invertebrate species)



Trigger level (score agreed with the EA that triggers a pollution call in to 0800807060)



Review of the Pollution Event (P1)

- Citizen Scientists working on the Crane identified a length of riverbed greater than 5km with a heavy covering of sewage fungus for a period of around six weeks
- This has been linked to significant reductions in RMI score and significant trigger breaches at three monitoring sites in the lower Crane in January and February 2017
- The incident has been classified as a Category 2 pollution incident by the EA – “having a significant impact upon the environment”
- Sewage fungus smothers plants and animals on the riverbed. It results from an excess of organics in the river and causes high Biochemical Oxygen Demand (BOD) that depletes oxygen and can harm river life.
- Sewage effluent has a BOD of around 200 mg/l. Misconnected properties typically result in a sewage fungus cover to the apron of the outfall pipe downstream as recorded by Citizen Crane surveys during 2015 and 2016
- Glycol, used as a de-iceant, has a BOD in dilute form of 500,000 mg/l i.e. at least 3 orders of magnitude higher than sewage effluent



Review of the Pollution Event (P2)

- Glycol is used as a de-iceant at airports and other commercial operations in the catchment. Non-commercial sources include use on private vehicles as a de-icer which can also find its way into rivers
- Minimum temperatures recorded in the Crane catchment regularly reached near or below zero °C for a period of four weeks between late December 2016 and late January 2017
- Evidence gathered by the Citizen Crane team suggests that a major high BOD input has entered the River Crane upstream of the Donkey Wood monitoring site resulting in this category 2 pollution incident
- Recent site visits (late February, 2017) indicate that heavy rain is helping to flush out the sewage fungus from the river. Monthly monitoring by the Citizen Crane team (next due 18th March 2017) will assess any on-going damage to the ecosystem
- The Citizen Crane project team is providing evidence gathered by Citizen Scientists to the Environment Agency as part of their investigation of this incident
- The dedication of Citizen Scientists working in the Crane catchment has helped provide an accurate record of this serious pollution incident





For further information on the project and the Crane Valley please visit:
www.cranevalley.org.uk and www.force.org.uk

To Contact the Citizen Crane Project Team please write to:
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