Water pollution report:
Beverley Brook at Palewell Common & Fields

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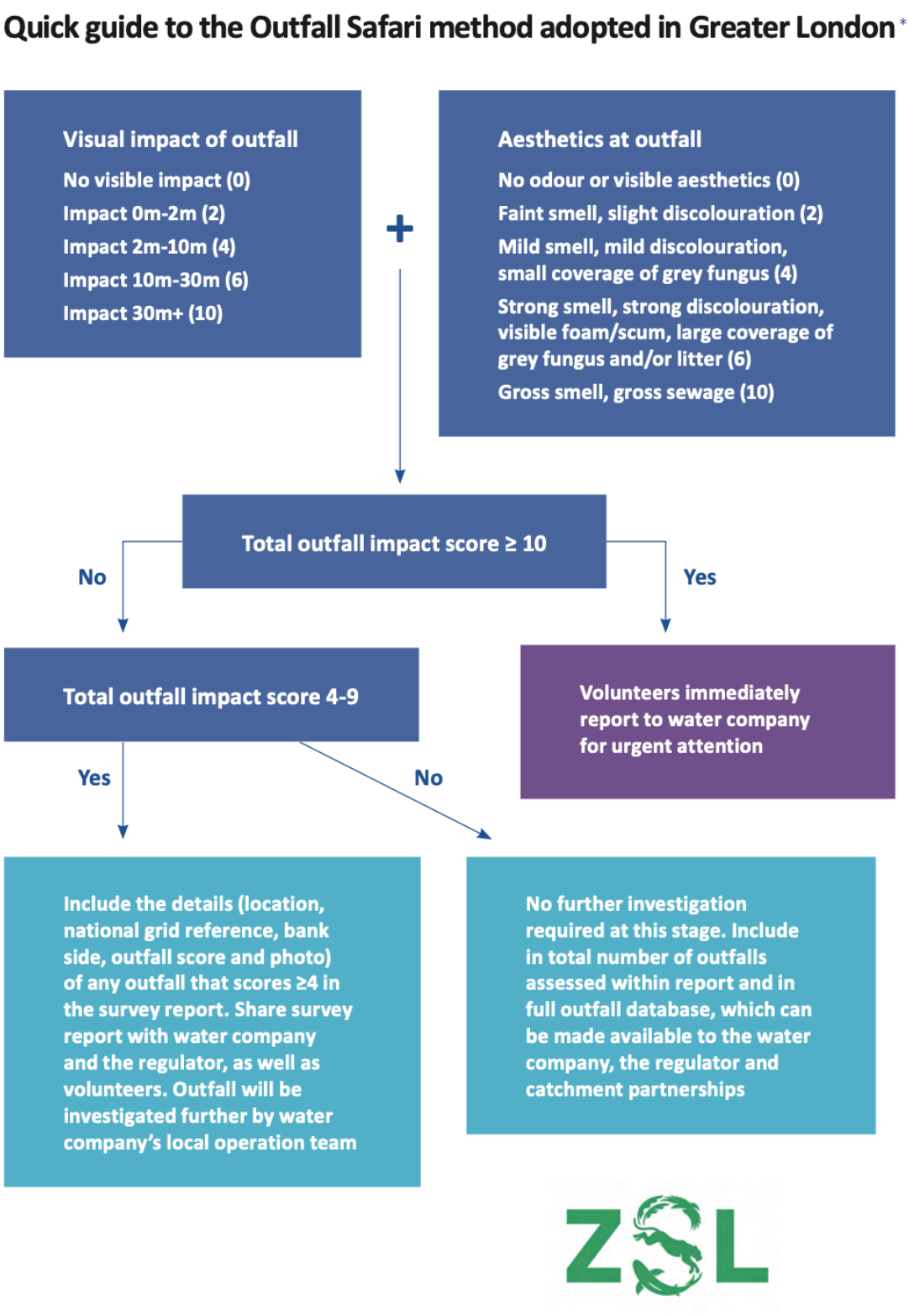
Summary.

- A Zoological Society of London (ZSL) citizen science outfall survey in spring 2024 identified seven polluting outfalls along a 1.5km stretch of Beverley Brook at Palewell Common & Fields (Figure 1 features 6 sites, with an additional location downstream in Barnes).
- These polluting outfalls are the result of sewage or utility waste pipes having been mis-connected to surface water drains, which then pour polluting waste water directly into Beverley Brook. The outfalls are scored using a guide developed by ZSL (Figure 2), which rates the visual and aesthetic impact of each outfall. Those scoring over 10 are reported for urgent attention to Thames Water, and if the outfall is connected to a private residence or Council estate, it is referred to the Environment Agency (see Figure 3a). Those outfalls scoring between 4 - 9 are recorded and may be investigated further (see Figure 3b).
- Water quality testing at five sites along the same stretch of Beverley Brook recorded very high levels of nitrates (Figure 1), impacting the entire length of the Brook from the boundary of Richmond Park downstream into Barnes. The Freshwater Habitats Trust categorise nitrate levels over 10 parts per million (ppm) as very high and the levels recorded along Beverley Brook will be toxic to many freshwater invertebrate species (Figure 4).
- SmartRivers, a program monitoring river health by the charity WildFish, identifies freshwater invertebrate species to infer water and habitat quality. As part of a Rewild London Fund grant to restore this same stretch of Beverley Brook, the conservation team at Barnes Common charity have surveyed freshwater invertebrates at five sample sites. Baseline survey data before restoration work took place, revealed a high abundance of pollution and stress tolerant freshwater species. Despite substantial in channel and bank restoration work having been completed to improve habitat diversity, there has been no significant change in diversity of freshwater invertebrate groups (Figure 5).

Figure 2. Outfall scoring system.



* Tackling pollutioni in urban rivers: A guide to running an outfall safari. (2019). ZSL & The Rivers Trust, London.

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Figure 1. Water quality. Nitrate levels at SmartRiver sample sites and surface water outfall scores.

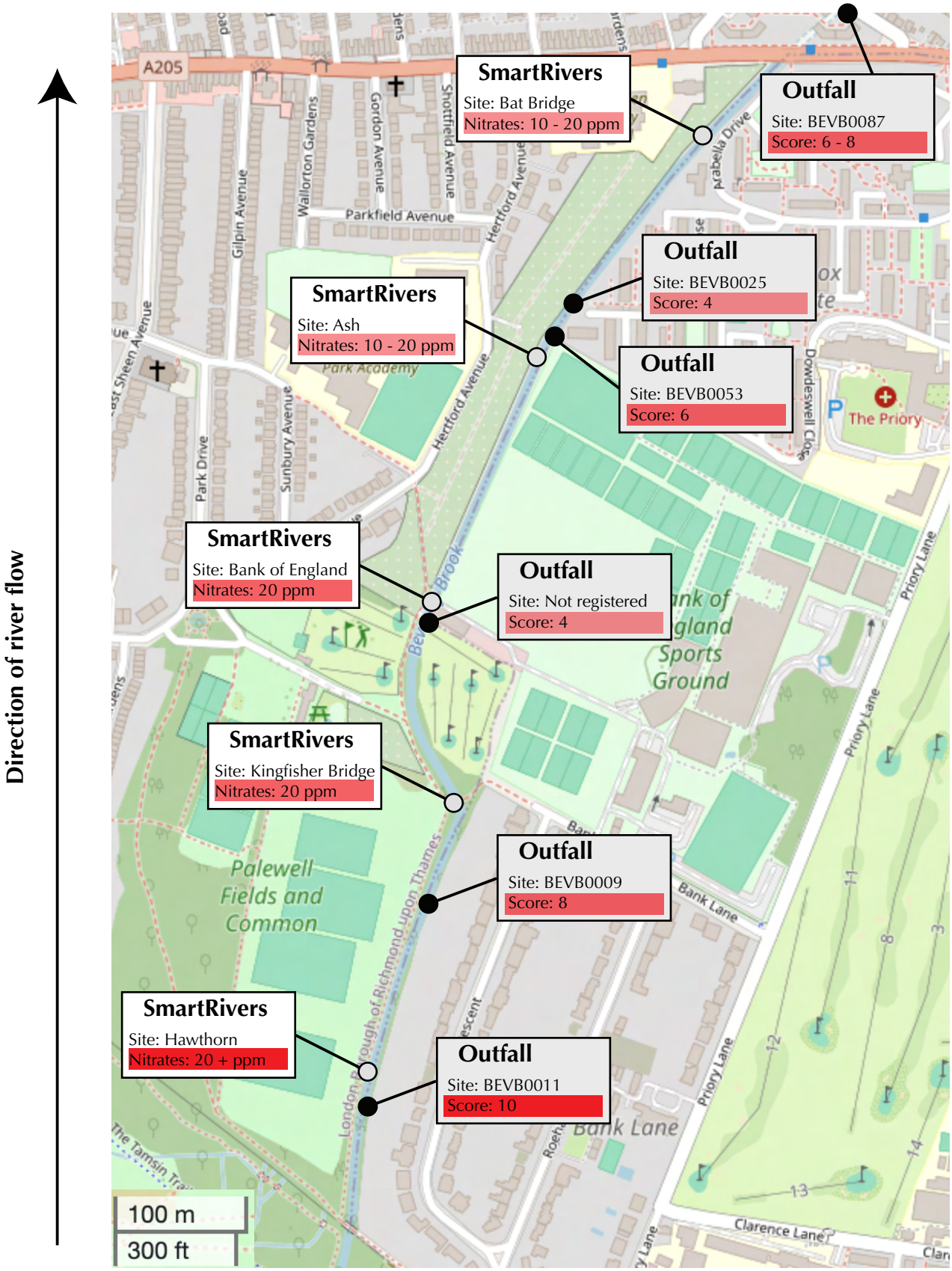

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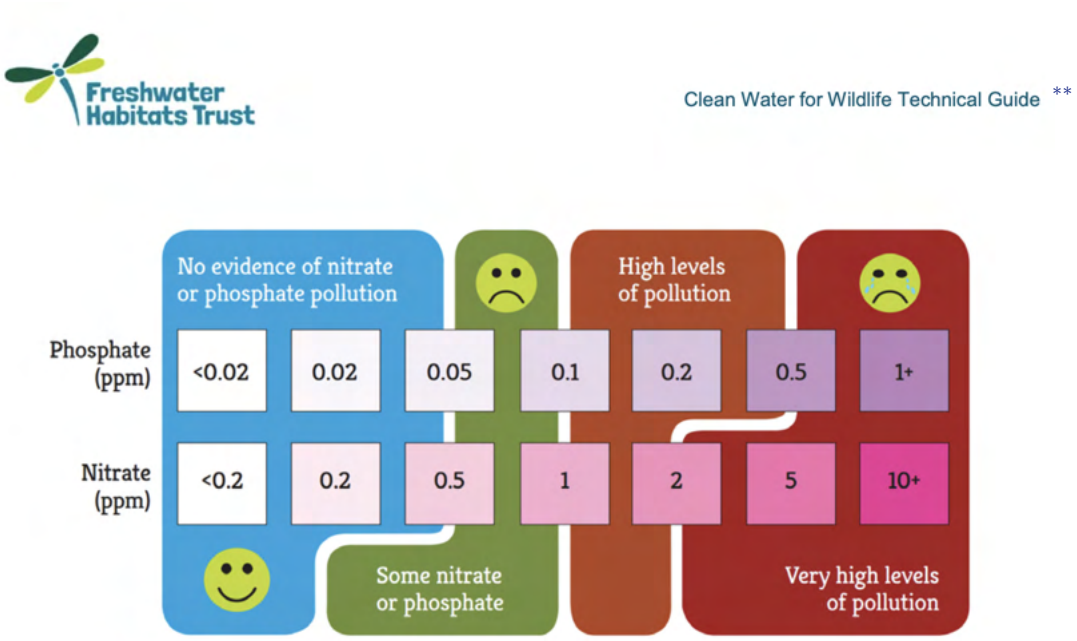
Figure 3a. Most polluting sewage outfall BEVB0011 (score = 10).

Figure 3b. Example of a utilities polluting outfall. Lennox Estate BEVB0025 (score = 4).

Figure 4. Freshwater Habitats Trust. Clean water for wildlife technical guide.



** Biggs et al. (2016). Clean water for wildlife technical manual. Freshwater Habitats Trust, Oxford.

Figure 5. SmartRivers freshwater invertebrate diversity. Pre- (2023) and post- (2024) restoration.