Flooded Pitches?

Advice on sediment removal

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Have you experienced flooding?

As floodwater recedes any deposited sediment may damage your turf and reduce playability. It may also be a health & safety risk to your staff, members and the wider public.

What does this sheet tell you?

This advice sheet is intended to raise awareness of potential risks to both humans and the environment, it is not meant to be a comprehensive guide to waste handling. Whilst it suggests some 'best practice' strategies and points out some of your responsibilities and obligations, it is not intended to be comprehensive, and you should seek appropriate professional advice from your waste contractor, the Environment Agency or your Local Authority, where appropriate. This advice sheet is not written to scaremonger, at what is a difficult time for many organisations dealing with floods , rather it is there to inform and point you in the direction of help if required.

What are the potential hazards?

Hazards include potentially toxic elements (such as heavy metals), organic chemicals (such as diesel and oil) and pathogens (such as *E. coli*, *Salmonella* etc.). These pollutants are not present in all sediments – it depends upon the source of the floodwater. If the flooding is from rivers, the potential risks are dependent upon the location of industry and waste water treatment plants. Direct flooding from sewers or septic tanks is also common in extreme flooding events and the risks will then be from human pathogens in particular.

Potentially toxic chemicals are present in the natural environment, or come from industrial sources. The risk to human health is dependent upon the chemical, the pathway, (i.e. the way in which the element could get into a person or the environment), and the dosage (or level) of the contaminant. Typically these chemicals take a very long time to break down. Under certain conditions, human pathogens can survive for many weeks in the soil, presenting a potential on-going health risk after the flood water recedes.

What should you do?

One of your primary concerns will be to get your pitches back into play as soon as possible – this will inevitably mean removing the sediment from the surface. When you do this you are required under both Health & Safety and Environmental law to consider the potential harm to both humans and the wider environment and you should act to prevent both. The most appropriate strategy for sediment removal will depend on your situation and the extent of your flood, but two common techniques are either to break up and mix the sediment with your soil (typically using a harrow) or complete removal and replacement using a machine such as the *Koro*. Consult your advisor on the best strategy to do this as it requires assessment on a case-by-case basis.

Once you have your sediment managed, then you can look at re-establishing your turf. The STRI provide some very useful guidelines on how to do this (see www.stri.co.uk for more details). You should bear in mind the following, however:

1. Your sediment could be contaminated (see above) and could result in either contaminating your pitches if worked in, or creating a contaminated waste that will need to be disposed of correctly.
2. Silts and fine sediments can cap your surfaces leading to reduced infiltration rates, particularly on sandy soils or sand-constructions.

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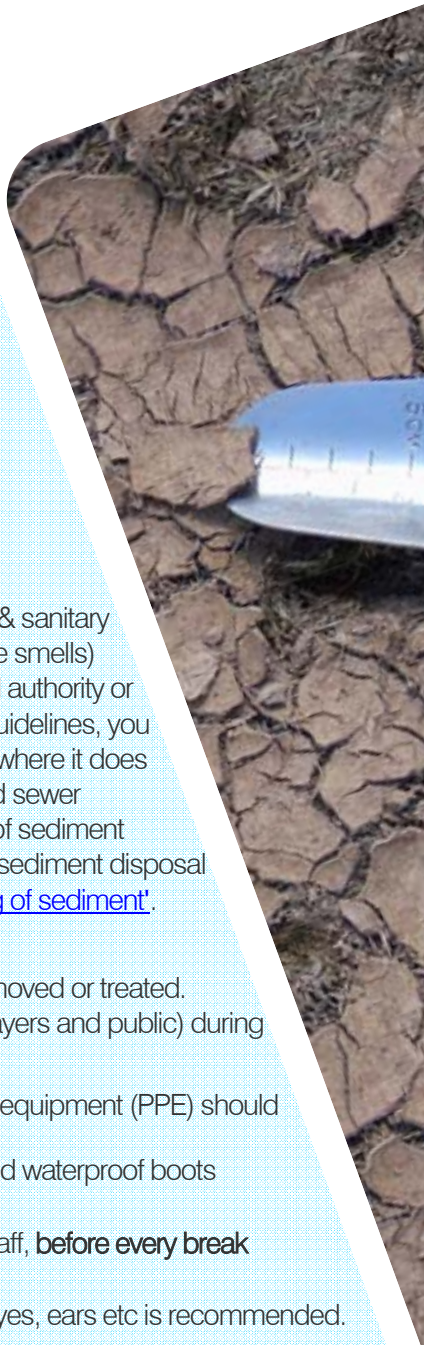

Is the sediment contaminated?

Please note that if you suspect contamination (e.g. you have been removing human excrement & sanitary waste; there are industrial sediment deposits or oil-like sheens; or there are persistent sewer-type smells) then you should have your soils tested appropriately – consult your waste services handler, local authority or recommended advisor on how to get this done correctly. Under current Environment Agency guidelines, you may store removed sediment on site until it has been assessed, but this should be in a location where it does not pose a further risk to the environment (i.e. away from watercourses, slopes, water supply and sewer networks, and not causing a nuisance – smell is a common concern for neighbours). Removal of sediment waste is regulated by the Environment Agency whose guidelines on how to manage post-flood sediment disposal can be found on their website, see www.environment-agency.gov.uk and 'Storing and disposing of sediment'.

How you should minimise potential harm?

To minimise risk to human health, the source (potentially contaminated sediment) should be removed or treated. Risks can be reduced further by removing the pathway from the source to the receptor (staff, players and public) during clean up, maintenance and play.

To ground staff (and volunteers): During clean up and routine maintenance, personal protective equipment (PPE) should be **worn by all staff and volunteers** who are involved. Minimum requirements include:

- Wearing suitable gloves, dust masks, cover clothing (particularly cuts/abrasions *etc.*) and waterproof boots
- No eating or drinking during this work
- Thorough hand washing with soap and hot water should be made compulsory for all staff, **before every break** (including before toilet breaks) and at the end of the day.
- Staff should shower to remove dust from hair and skin, and clearing the nose, mouth, eyes, ears etc is recommended.

To players: The players should be notified of the potential risks to their personal safety. Risks to players can be reduced by:

- Covering all cuts before playing and **strictly enforcing** hand washing before tea time, toilet breaks and after the game.
- **Prohibiting** players from using soil to dry their hands and **prohibiting** players licking the ball, or their hands.
- Players should not ingest soil.

To the public: Inform the public about the potential risk

- Where possible prevent access to the general public and use signs to alert people to keep themselves and their pets away from potentially contaminated land and stockpiles

Where can you get more advice?

Contaminated land: Sampling and analysis **must be carried out by a qualified professional**, this can be arranged through your waste management contractor, your consultant, your usual soil testing supplier or by Cranfield University.

Playability: Remedial maintenance options include chain harrowing, power brushing and in extreme cases removal by machines such as the *Koro Field Top-maker*. For further advice contact your pitch maintenance consultant.

Turfgrass: Contact your agronomist to discuss your options for pitch reinstatement or see the advice from the STRI (reference above).

If you are in any doubt about the risks to you, your staff, or the environment **seek advice before acting**