WHAT YOU NEED TO KNOW ABOUT:

GRAVEL REMOVAL

The role of gravel removal in flood management is often debated after flood events. The primary aim of removing gravel is to clear buildup that could contribute to increased flood risk. However, evaluating the effectiveness of gravel removal in reducing flood risk can be complex, as it depends on factors such as the specific river system, local hydrology, and ecological conditions. Balancing flood risk reduction with ecological impacts remains a challenging aspect of gravel management in flood-prone areas.

What is gravel removal?

The main goal of gravel removal is to clear silt (a fine sand-like material), clay, and small rock particles from gravel bars that form on the riverbed or around in-stream structures, such as bridge supports.

This process removes buildup at critical pinch points, allowing waterways to flow freely. Gravel removal can also help prevent blockages caused by debris like trees, shrubs and weeds, which can accumulate under bridges and impede water flow.


Image by Mario Ohibsky from Pixabay

The material is typically removed by an excavator stationed in the stream or on the riverbank, and how it is disposed of will depend on the local area and the condition of the material.

Can gravel removal reduce flooding?

Gravel removal may not be a sufficient solution for addressing flooding in localized areas, especially during extreme flood events when the river channel may be inadequate to handle such conditions, even after gravel has been cleared. However, in certain circumstances, gravel removal can play a crucial role in flood risk management at key locations. For instance, in pinch points like culverts and bridges, removing gravel can enhance the natural flow of the river, thereby improving overall water movement and reducing the likelihood of blockages.

Who is responsible?

The Environment Agency is responsible for managing all main rivers, with the authority and obligation to undertake works aimed at reducing flood risk, including dredging operations and the disposal of related materials. While landowners may conduct small-scale projects on main rivers, they must first obtain an environmental permit before proceeding. If the work involves any other watercourse, it is important to check with your local flood authority or internal drainage board to determine whether additional permissions or licenses are required.

Advantages

- Increases channel conveyance.
- Reduces water levels and small floods.
- Shortens the duration that water remains on the land.
- Removes blockages at pinch points, allowing water to flow freely.

Disadvantages

- Dredging can increase the flow of the river, potentially raising flood risk downstream.
- It requires long-term maintenance and can be costly.
- Increased erosion may occur as a result of dredging activities.
- There are environmental impacts to consider.
- There is a potential risk of contamination from disturbed sediments.

Gravel removal can be effective and play an important role in flood risk management strategies. However, it can have significant consequences such as altering the rivers flow resulting in increased erosion and damaging habitats. Therefore, gravel removal should be considered alongside a range of other flood risk management measures and on a case by case basis.

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