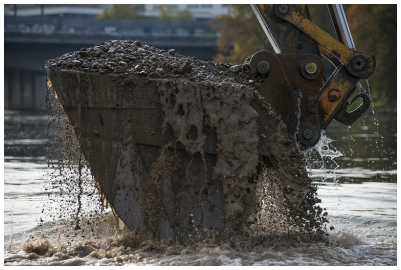
WHAT YOU NEED TO KNOW ABOUT :
GRAVEL REMOVAL

Following flood events, gravel removal is always a hotly debated topic. The overall aim of gravel removal as a flood management tool is to remove build up that could increase the chances of flooding. However, understanding the impacts of gravel removal when it comes to reducing flood risk and flood events can be difficult due to the location and river system hydrology and ecology.

What is gravel removal?

The basic aim of gravel removal is to remove silt (a material made of fine sand), clay, and small particles of rock from gravel bars that form on the river bed or around in stream structures such as bridge supports.



The process can clear material that has built up at these pinch points and enable the waterways to flow freely, and can also be used to prevent blockages caused by trees, shrubs and weeds which can get stuck and pile up under bridges.

The material would be removed by an excavator stationed in stream or on the river bank. How it is disposed of would depend on the area or the state of the material.

Can gravel removal reduce flooding?

Gravel removal alone may not be the answer when trying to alleviate flooding in a localised area. Particularly for extreme flood events as the river channel may not be large enough to contain extreme flooding even after gravel removal.

In some circumstances gravel removal could be critical to flood risk management in key locations. For example in pinch point areas (such as culverts and bridges) gravel removal can improve the natural movement of the river.

Who is responsible?

The Environment Agency are responsible for all main rivers and have the powers and duty to conduct works to manage their associated flood risk, including dredging rivers and the disposal of associated materials. Small scale projects on main rivers may be undertaken by landowners but an environmental permit must be obtained before any work is carried out. If your work is in or around any other watercourse, find out if you need permissions and licences from your lead local flood authority or internal drainage board.

Advantages

- Dredging can increase channel conveyance.
- It can reduce water levels and small floods.
- It can reduce the length of time water stands on the land.
- It can be used to remove blockages at pinch point areas to enable water to flow freely.

Disadvantages

- Dredging can speed up the flow of the river increasing flood risk downstream.
- Dredging requires long term maintenance and is expensive.
- Increased erosion
- Environmental impacts
- Possible risk of contamination

Conclusion

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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This resource has been produced by Newground who work in partnership with the Environment Agency

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