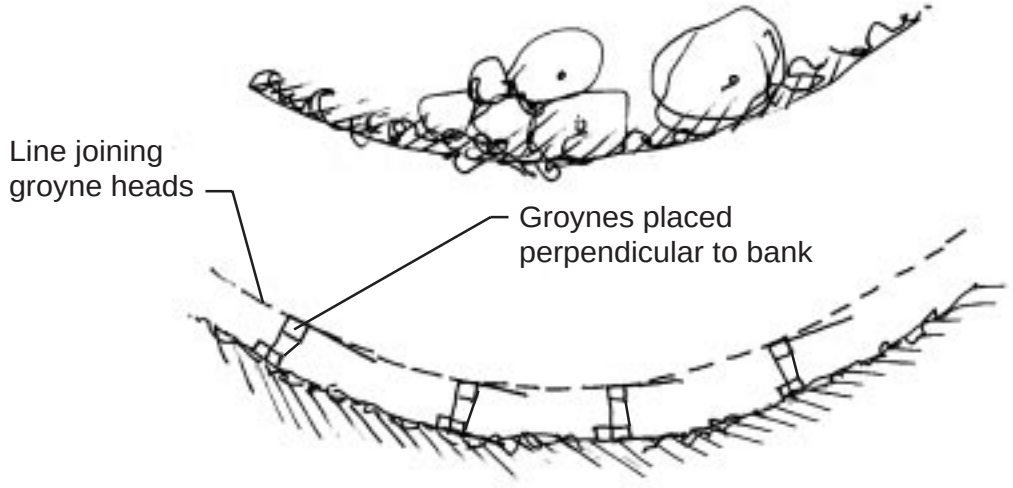
PRIMARY USE: Minimize bank erosion.
ADDITIONAL USES: Improve habitat for aquatic plants and animals.

GROYNES

What is it? Groynes, the most common method of countering lateral erosion in an outer bank, are structures jutting into the stream which are keyed into or supported by the bank. High velocity currents are diverted away from bank preventing or minimizing erosion. They also encourage sediment deposition in the gaps between them.

Purpose

Because they are comparatively inexpensive and simple to build, groynes are commonly installed during the initial phases of a region's development. Maintenance costs decrease with time.



Spacing of Groynes in a Circular Bend
Plan View

Limitations

Local scouring around groynes is a major problem during construction if loose materials are being used.

Materials

Groynes can be made from wood, trunks and branches, stone, prefabricated concrete steel and wire, or essentially any material that cannot be detached by the flow and is strong enough to withstand flow pressures and the impacts of any debris being transported by the river.

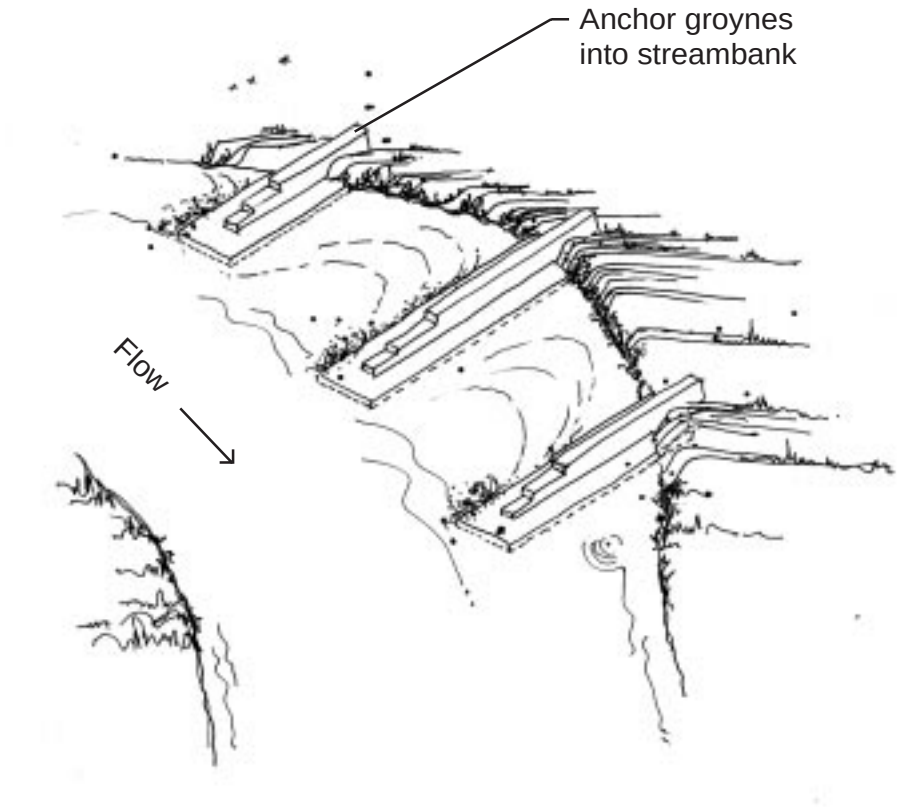
Installation

The line joining the groyne heads should be as uniform as possible, without necessarily keeping the same radius throughout. Whether it is a single bend or an entire reach that is being protected, the first three upstream groynes should always be of different lengths. The first groyne should be as short as possible (equal to water depth), with the length of the second and third groynes increasing uniformly until the design length is reached with the fourth groyne.

Source: Torrent Control & Streambed Stabilization, FAO.

GROYNES

Additional Drawings:



Gabion Groynes on a Gabion Base
Perspective View

Source: Torrent Control & Streambed Stabilization, FAO.