

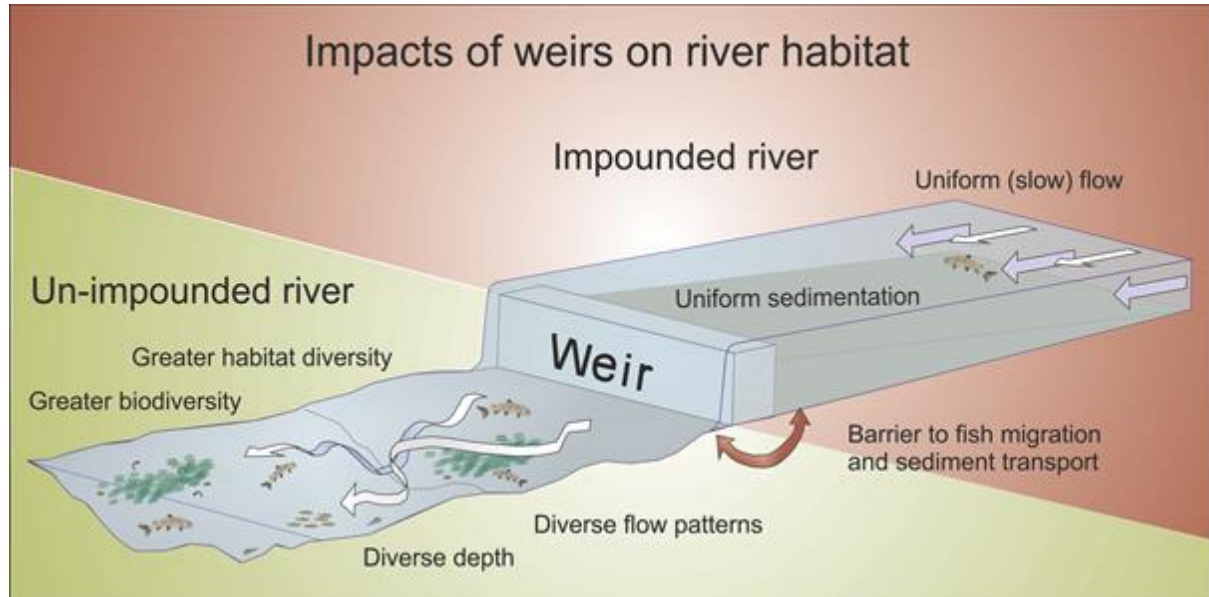


Weirs and their impacts

Weirs create a range of detrimental impacts upon the form and function of a river, degrading habitat quality and connectivity. They impound flow, creating extended stretches of uniform water. Weirs of all sizes also create obstacles – often barriers – to fish and sediment movement.

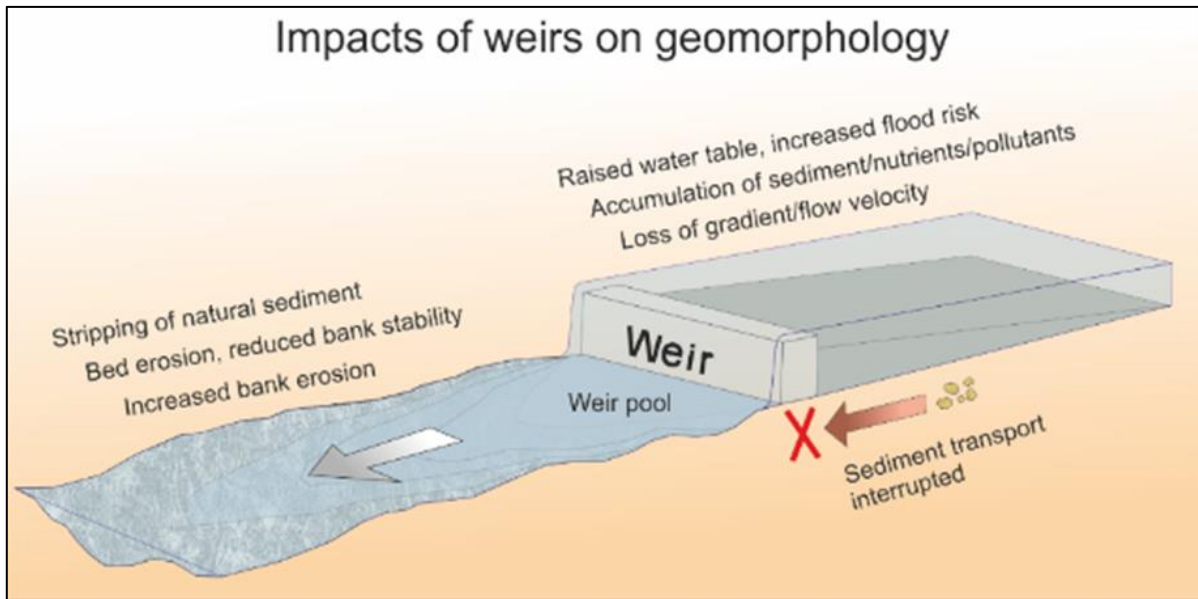
It is vital that fish of all sizes are able to move freely around a catchment. This allows them to fulfil their habitat requirements at different life stages, and to avoid crowding and excess competition that can greatly increase mortality rates. Weirs prevent this, even if they are only behavioural barriers at certain flows.

Despite temporarily providing deeper water, impounded areas generally support reduced numbers and diversity of fish and are unsuitable for many of the beneficial invertebrates that would be found in a free-flowing reach. The de-energised flow upstream of a weir causes uniform deposition of sediments (cobbles, gravel and finer particles) which simplifies the bed profile and shallows the depth over time. The absence of natural scouring and sorting processes leads to a loss of clean, well-sorted gravels, degrading habitat for fish spawning and most river invertebrates.

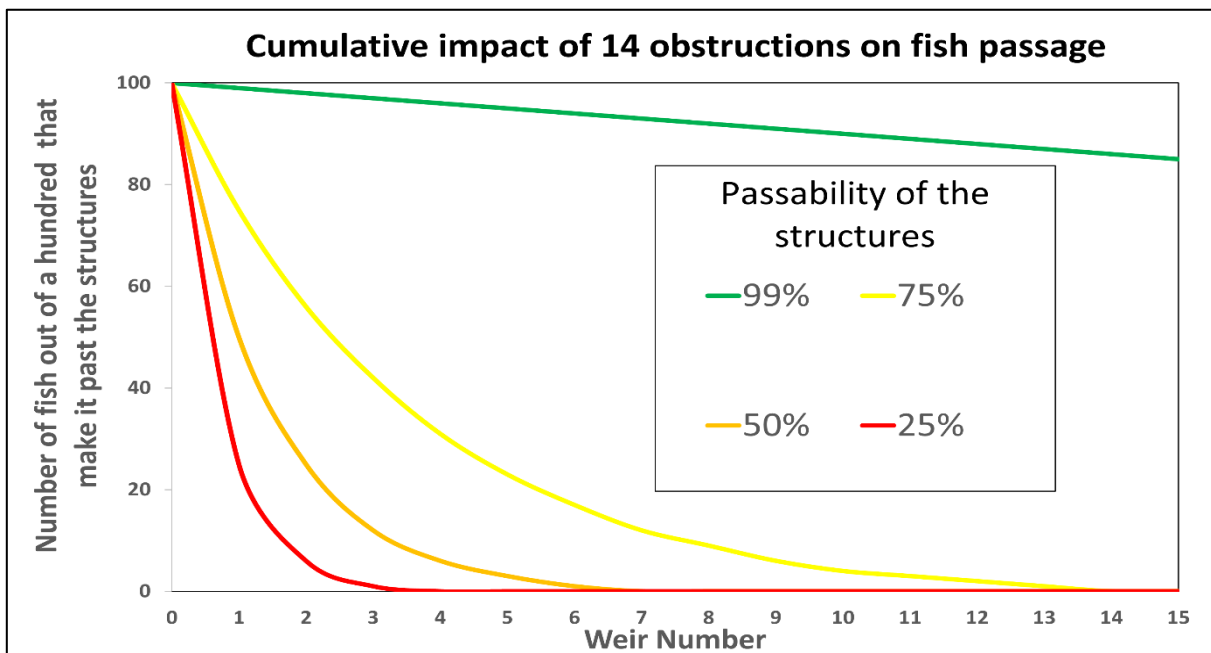


Interruption of natural sediment transport is also detrimental to habitat downstream as it starves the channel of coarse substrate, with the larger gravel and cobble sized material often only making it past a weir in the highest flows – in many cases, not at all. This often leaves just large boulders downstream of the weir as finer material is transported downstream and not replaced.





The impact of weirs is cumulative, with the habitat degradation and fragmentation issues amplified as the number of structures increases. This is true both for habitat degradation and fish passage (as shown below).



More useful information about weirs, and the benefits of removing them, can be found on the following links:

www.wildtrout.org/content/weirs-culverts-and-barriers

<http://urbantrout.blogspot.com/2018/02/why-presume-to-remove-weirs-with-river.html>

www.americanrivers.org/threats-solutions/restoring-damaged-rivers/how-dams-damage-rivers

