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SESSION

ALIGNING LAND USE PLANNING AND AGRICULTURAL PRACTICES WITH **RIVER RESTORATION**

HOW TO DEFINE THE MINIMUM WIDTH REQUIREMENTS FOR A MULTIPURPOSE RIVER CORRIDOR? **A PLANNING APPROACH FROM ITALY**



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The autonomous Province of 2006 the Trento issued in General plan for public water uses.



This Plan foresees 3 different types of riparian ecological protection areas. These areas determined applying the are Functioning Fluvial Index (FFI) which aims to assess the important ecological most aspects of the whole course of a river such as riparian areas, morphological characteristics, and biological features.

low value Low restoration opportunity





medium value 30 m width

high value To protect













high value river stretches?

must maintain the river ecological functionality (corridor, buffer, hydro-morphological dynamic...etc).

Assumptions:

Edge effect: functionality loss of the riparian formation in contact with an impacted area (i.e. cultivated fields)

-The width must > (30 m for an effective buffer function





The algorithm for calculating the minimum width (m) requirements is composed by the following addends:



3W	Bankfull section width		
	0-5 m	5 m	
	5-10 m	10 m	
	> 10 m	20 m	

Normal Level 5

FP	Flood possibility		
	High	20 m	
	Medium	10 m	
	Low	0 m	

MinWidth: 30 + EE + BW + SD +FP **+ BS**

This calculation leads to a width from 45 m (small understubed stream) to 145 m (large river). According to variuos scietific pubblications, this result can be considered satisfactory as it aim to comprise the key ecological elements of a river corridor.

SD	Source	Source distance		
	0-5 km	10 m		
	5-25 km	15 m		
	25-75 km	20 m		
	75-150 km	25 m		
	> 150 km	30 m		

Bank Slope	
1 meter of each	-
percentage point	
increase, maximum 25%	
	Bank Slope 1 meter of each percentage point increase, maximum 25%