



ARTICLE

Environmental conditions in river segments intercepted by culverts

Appendix I. Rapid assessment protocol and morphometry in segments of second-order streams intercepted by culverts, modified from the protocol proposed by Callisto *et al.* (2002) and Minatti-Ferreira & Beaumord (2004, 2006). The attributes were quantified (%) and measured (cm).

Rapid assessment protocol (RAP) of vegetation and morphogeometric data				
Description of the environment				
Location/ Coordinates:				
Date and time of sampling: ____/____/____ : ____				
Climatic conditions:				
Name of the collector:				
Type of habitat: Pool () Riffle () Run ()				
Section: Upstream () Downstream ()				
Number of the plot: N° P: _____				
Morphometric data				
	Value 1(cm)	Value 2(cm)	Value 3(cm)	Average(cm)
Width				
Depth of the left margin				
Depth in the middle				
Depth of the right margin				
Range of variation in the hydrological level of the left margin				
Range of variation in the hydrological level of the right margin				
Riparian vegetation data				
	Left margin (%)	Right margin (%)	Total (%)	
Native species				
Exotic species				
Native species + exotic species = 100%				
Riparian vegetation data				
	Left margin (%)	Right margin (%)	Total (%)	
Tree species				
Shrub cover				
Herb species				
Tree species + shrub species + herb species = 100%				
Substrate data (riverbed)				
	Left margin (%)	Right margin (%)		
Organic matter (plant remains, leaf litter, leaves, and trunks)				
Silt (soft mud) (< 0.06 mm)				
Sand (highly particulate, light color) (0.06 - 0.4 mm)				
Small pebbles (4.0 - 16.0 mm)				
Medium pebbles (partially particulate) (16.0 - 65.0 mm)				
Large pebbles (65.0 - 90.0 mm)				
Cobble (>90.0 mm)				
organic matter + silt + sand + Small pebbles + medium pebbles + large pebbles + rocks + = 100%				