

Public Abstract

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Title:A Stream Physical Habitat Assessment in an Urbanizing Watershed of the Central U.S.A.

Longitudinal variations in aquatic biological habitat in a watershed (frequently associated with land-use in mixed-land-use watersheds) can be quantified by means of a physical habitat assessment (PHA). PHA indices include but are not limited to width (channel, bankfull, and wetted), bank height and thalweg depth. Hinkson Creek (Boone County, Missouri) was placed on the Missouri Department of Natural Resources list of impaired waters (Section 303d) of the Clean Water Act in 1998. A PHA conducted in 2013-2014 provided quantitative data characterizing physical habitat characteristics every 100 m of the 56 km channel. Bankfull width ranged from a maximum of 74 m to a minimum of 1.8 m (mean = 24.2 m, SD = 9.4 m). Bank height ranged from 5.8 m to 0.3 m (mean = 2.8 m, SD = 1 m). Increases in bankfull width and bank height were variable with stream distance. Trench pools were the dominant channel unit at 70% of sample transects. Thalweg depth at low to median flow ranged from 330 cm to 0 cm (mean = 50.3 cm, SD = 38.7 cm). Streambed size classifications included 58.4% small (< 16 mm), 33.6% intermediate (16 mm to 1000 mm, vegetation, wood), 7.8% large (> 1000 mm, riprap, bedrock). Study results better inform land-use planners in Hinkson Creek watershed and similar multi-use watersheds of the central United States for future management decisions and development scenarios.