

Fish Swimming in Turbulent Waters

Hydraulic Engineering Guidelines to assist Upstream Passage of Small-Bodied Fish Species in Standard Box Culverts



Hubert Chanson and Xinqian Leng

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Low-level river crossings, including culverts, are important for delivering a range of valuable socioeconomic services, including transportation and hydrological control. These structures are also known to have negative impacts on freshwater river system morphology and ecology, including the blockage of upstream fish passage, particularly small-body-mass fish species. Given the enormous environmental problems created by road crossings, new hydraulic engineering guidelines are proposed for fish-friendly multi-cell box culvert designs. This reference work is authored for civil and environmental engineers, as well as biology and ecology scientists interested in culvert design.

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