



Dr. Ana Maria da Silva, P.Eng.

Professor, Department of Civil Engineering

Dr. da Silva is a leading researcher on fluvial hydraulics, sediment transport and river morphodynamics. Her present research efforts focus on the mechanics of turbulent river flows, river bed forms such as ripples, dunes and bars, and large-scale river morphodynamics including meandering and braiding. She is also conducting studies on the effect of oil spill in rivers, and in particular on their impact on fish and fish habitat; on the detection of fluvial and deltaic petroleum reservoirs through the combined use of advanced imaging technologies, river geomorphology principles and computational fluid dynamics; and on coastal shoreline erosion. In her research, she makes use of both numerical models and large-scale physical models.

Dr. da Silva's ultimate goal is to contribute to the development of an improved river engineering practice, ensuring the preservation of the natural form and function of the river. Throughout much of the 20th century, the practice of river engineering was guided mainly by human needs for water supply, improved navigation, flood control, etc. As a result, rivers were often straightened and impounded, their banks being covered by hard revetments such as concrete, rip-rap and rock-lining – which led to a severe degradation of the river environment. Dr. da Silva's research addresses the critical need to understand river behaviour with the goal of developing guidelines for new engineering practices that will ensure that human needs are met while minimizing the impact on the natural river environment.