

Applied fluvial geomorphology: Where have we come from, where do we go?

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The field of geomorphology has its origins in the disciplines of geography, geology, biology, and engineering, and it is fundamentally an interdisciplinary science. Together with water resource engineering and biology, fluvial geomorphology is now considered an essential contribution to watershed planning and to the design of stream restoration works. Specifically in southern Ontario, the inclusion of geomorphologists in the environmental consulting industry gained traction in the 1990s and is now common place. As geomorphological terms and concepts are more widely understood and incorporated by other disciplines, and as short courses on river restoration are taken, it is important to reflect on what geomorphologists themselves contribute to watershed studies and stream restoration projects. As the blurred lines between disciplines can potentially fade further, we are asking what geomorphology shares with other disciplines and what geomorphology contributes (or can contribute) distinctly to science and practice.

Practitioners from all disciplines view a watercourse from the perspective of their own experience and training. This presentation will begin with a review of the origin of geomorphology as a science, from both the perspectives of geological history and of contemporary geomorphological processes. This will lead to a discussion of the overlap between applied fluvial geomorphology and river engineering, and also linkages to stream ecology and aquatic habitat. We suggest that those trained principally in geomorphology and geoscience tend to view science and practice as inherently interdisciplinary, and are particularly adept at integrating scientific problems across multiple scales in space and time. But this is one viewpoint and it is important to engage the broader community about the perceived role of geomorphology in environmental consulting. To explore this issue, we will review results of a survey submitted to representatives from the municipal, regulatory, construction, engineering and environmental consulting industries. The question of professional regulation for geomorphologists will also be raised.