

The Do's and Don'ts of Natural Channel Realignment

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The practice of Natural Channel Design and Construction has been rapidly evolving since the Rosgen stream classification system was first introduced to Ontario in the early 1990's. Most of the past channel work in Ontario has been related to new infrastructure development or urbanization under the authority of the *Canada Fisheries Act*, and less on the restoration of pollution-impacted watersheds. Where habitats and ecological functionality has been integrated, in and around the fluvial systems, the results have been long term stability, biological complexity and greater sustainability. Through the development of the objectives of need, concepts, design, construction, post-construction monitoring and longer-term follow up observations, several lessons have been learned of what works really well, what does not work, and how long term restoration success can best be achieved. Based on a review of a series of 12 watercourse realignments located around the Greater Toronto Area, some dating back over 20 years, we investigate how they have evolved and whether they have achieved their objectives of no net loss of function. The vision of channel design, goals, objectives, the techniques to do, and the errors not to repeat, are presented in order to pass on the knowledge of an early practitioner, to the new generation of fluvial geomorphologists, hydrologists, restoration ecologists, designers and constructors.