

Techniques

This chapter has been developed for the purpose of introducing you to the fundamental themes of stream rehabilitation and their recommended techniques. The techniques presented in this manual are based on the authors' assessment for application in stream rehabilitation projects within Ontario. There are a number of different techniques available in the literature and we have chosen those that represent the best solutions given the common causes of stream problems in our province. In selecting these techniques, we considered how well they integrated with our direction in the management of natural channels. We took into account whether the techniques had demonstrated applications in Ontario or not. We also carefully thought about the suitability of construction materials and their potential implications on the long-term health of our streams.

Each stream rehabilitation theme has a corresponding icon that is used to identify its uniqueness and meaning. They are as follows:



BARRIER MANAGEMENT

Barrier management is our first theme that is introduced to help you understand the pros and cons of dams, their impacts on watersheds and the rehabilitation techniques available for your *adopt-a-stream* project.



SOIL BIOENGINEERING

Soil bioengineering, listed as the second theme, describes in detail the various techniques available to deal with slope erosion problems.



HABITAT IMPROVEMENT

This theme describes the role of habitat improvement in stream rehabilitation. For habitat improvement, it is particularly important that you determine whether the technique is appropriate given the characteristics of the channel you are working with.



CHANNEL REHABILITATION

The channel rehabilitation theme focuses on techniques that improve or restore channel features and functions. Particular emphasis is placed on rehabilitating the stream corridor.

Each theme starts with a background description. Detailed information on the associated techniques follows the background. This information includes:

- a brief description and purpose
- application details
- construction guidelines
- a recommended materials list
- a short summary of cost and maintenance needs
- recommended integration with other techniques
- reference to demonstration projects listed in Appendix A
- suggested reading materials

It is very important that you first review the previous chapters that deal with project planning prior to implementing these techniques. A thorough understanding of your watershed, stream reach and site is recommended before implementing rehabilitation projects. Proper research, planning and consultation will eventually reward you with a successful project. Those that neglect to plan properly, only plan to fail.