

Technical Tip



Figure 4. The boulders were placed on the rubber and the straps of the hand sling were pulled.

with a piece of rubber belting bolted to the straps. A boulder could be placed on the rubber and two workers could pull the straps, while one worker helped lift on the back by grabbing the strap behind the boulder (Figure 4). This method was used to move 90 percent of the large material. The smaller material was all moved by hand.

It is apparent that these methods are most effective when there is water flowing in the stream. The presence of water is also helpful in checking the flow behaviour over the constructed riffle and checking that the height of the riffle is correct.

For further information, contact:

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Update

Conferences

64th North American Wildlife and Natural Resources Conference. March 26 - 30, 1999. Hyatt Regency San Francisco Airport. Burlingame, California. Contact Richard McCabe: Tel (202) 371-1808.

AFS Annual Meeting. Aug 29 - Sep 2, 1999. Adams Mark Hotel, Charlotte, N.C. Contact Betsy Fritz: Tel (301) 897-8616, ext.212; e-mail: bfritz@fisheries.org

Canadian Water Resources Association, *Confronting Uncertainty: Managing Change in Water Resources and the Environment.* October 27 -29, 1999. Vancouver, B.C. This conference will offer sessions on watershed management, fish stocks and habitat, forestry hydrology, groundwater, regulatory issues, recreation, water supply and quality, among other topics. For information, contact Dr. Yassine Djebbar: Tel: (604) 451-6053, Fax: (604) 463-6714 e-mail: Ydjebbar@gvrd.bc.ca

Workshops

Interior Forest Site Rehabilitation Workshop, April 7 - 8, 1999. Kamloops, BC. The Best Western Towne Lodge Conference Centre. The theme is: "*Building on Experience, Searching for Innovation, Striving for Excellence.*" The emphasis this year will be on the integration of the many factors needed for successful restoration. On the evening of April 6, there will be participant registration, a reception and commercial displays. April 7 & 8 will feature informative and comprehensive presentations under six topic areas. Registration also includes access to the commercial displays, luncheons and a participant binder. Last year, the Interior Forest Site Rehabilitation Workshop filled up quickly and we expect the same for the 1999 session. For further information, contact Tom Rankin at the Forestry Continuing Studies Network, Unit 240, 230 - 1210 Summit Drive, Kamloops, B.C. V2C 6M1. Tel: (250) 573-3092

Fax: (250) 573-2882 e-mail: trankin@cariboo.bc.ca

"Watershed Stewardship" May 14 - 16 1999. Little Campbell River Hatchery Site, Surrey, B.C. Community workshop '99 hosted by the Nicomekl Enhancement Society and Semiahmoo Fish and Game Club. For further information contact Drew Waska. Tel: 604-888-4998 Register before April 1.

Publications

WATERSHED RESTORATION PUBLICATION SERIES

Staff of the Ministry of Environment, Lands and Parks and the Ministry of Forests act as editors for publications in the British Columbia Watershed Restoration Program (WRP) Publications Series, under the auspices of the Forest Renewal Plan. A guide for authors has been designed to assist and standardize publications for WRP. Ministry of Environment, Lands and Parks, Ministry of Forests, and Department of Fisheries and

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Oceans staff, as well as forest companies and consultants, who desire to have results of workshops, procedural guides and monitoring projects published in the British Columbia Watershed Restoration Program Publications Series, may submit articles according to the instructions provided in the Guide For Authors (Zaldokas 1997). Some procedural guides and results of monitoring studies will also be published within other publication series of the two ministries, particularly where there is an overlap with the Forest Practices Code.

Draft reports are encouraged which present new information in fisheries, forestry sciences, and watershed management related to watershed restoration; i.e., watershed assessment and prescription procedures, as well as hillslope, riparian, stream channel and fish habitat rehabilitation, and evaluations of restoration projects. Manuals and procedural guidelines will be published, as will innovations and new approaches to assessment, restoration and mitigation. Parts or aspects of the results of studies may be published later or simultaneously in a primary journal, the latter being encouraged. Reports are selected for the type of publication in the series according to the extent and significance of new knowledge or ideas presented in reference to watershed restoration in British Columbia, including the intent as training or reference material.

It is crucial that there is a formal mechanism to provide for technical transfer in the Watershed Restoration Program in both the short- and long-term. Our ancillary goal is to assist with the resolution of a professional dilemma, i.e., "grey literature." Also, publication within the Watershed Restoration Program Series can be important as evidence of scientific or technical accreditation because of peer review within and external to the Program. Peer review is a requirement in the WRP Publications Series.

In the WRP Publications Series, there are three types of publications: Watershed Restoration Management Reports, Watershed Restoration Technical Circulars, and Watershed Restoration Project Reports.

Watershed Restoration Management Reports
Manuscripts submitted and accepted as Watershed Restoration Management Reports (MR) have significant province-wide watershed management implications and include results from long-term studies, rigorous evaluations, technical workshops or conferences and literature reviews. Management reports provide conclusions or recommendations of significance to the overall program, usually on a provincial scope, which may alter management of WRP and B.C.'s natural resources.

Watershed Restoration Technical Circulars

Watershed Restoration Technical Circulars (TC) present significant technical information, as manuals or guides to be used for training, education and field references.

Watershed Restoration Project Reports

Watershed Restoration Project Reports (PR) present results of studies, compilations of progress reports, bibliographic surveys, and planning documents.

ORDERING WRP PUBLICATIONS

Publications and videos may be ordered from:

Queen's Printer

PO. Box 9452 Stn Prov Govt

Victoria, BC V8W 9V7

Contact: Les Johnson

Tel: 1-800-663-6105 or (250) 387-6409

Fax: (250) 387-0388

British Columbia Publications Website:

www.publications.gov.bc.ca

Ministry Listing: Ministry of Environment, Lands & Parks - Forest Renewal Program (FRP)

Publications may be downloaded from the Forest Renewal Program website: www.env.gov.bc.ca/frco

Watershed Restoration Management Reports (MR)

- No. 1 Keeley, E.R., and C.J. Walters. 1994. The British Columbia Watershed Restoration Program: Summary of the Experimental Design, Monitoring, and Restoration Techniques Workshop. 34p.
- No. 2 Ward, B.R., and P. Plackett. 1995. Skills and Knowledge Requirements for the British Columbia Watershed Restoration Program. 36 p. + appendices.
- No. 3 Larkin, G.A., and P.A. Slaney. 1996. Trends in Marine-derived Nutrient Sources to South Coastal British Columbia Streams: Impending Implications to Salmonid Production. 42p.
- No. 4 Keeley, E.R., P.A. Slaney, and D. Zaldokas. 1996. Estimates of Production Benefits for Salmonid Fishes from Stream Restoration Initiatives. 22p.
- No. 5 Larkin, G.A., and P.A. Slaney. 1996. Calibration of a Habitat Sedimentation Indicator for Use in Measuring the Effectiveness of Watershed Restoration Treatments. 14p.
- No. 6 Bates, D., H. Deal, and S. Inglis. 1997. Watershed Restoration Program Skills and Training Development Five (5) Year Plan. 50p. *In prep.*
- No. 7 Larkin, G.A., P.A. Slaney, P. Warburton, and A.S. Wilson. 1998. Suspended Sediment and Fish Habitat Sedimentation in Central Interior Watersheds of British Columbia. 31p.

- No. 8 D'Aoust, S.G., and R.G. Millar. 1999. Large Woody Debris Fish Habitat Structure Performance and Ballasting Requirements. 119p.

Watershed Restoration Technical Circulars (TC)

- No. 1 Johnston, N.T., and G.D. Moore. 1995. Guidelines for Planning Watershed Restoration Projects. 52p.
- No. 2 Anonymous. 1994. Watershed Assessment Procedure (Interim Methods). 63p. *Out of print.*
- No. 3 Moore, G.D. 1994. Resource Road Rehabilitation Handbook: Planning and Implementation Guidelines (Interim Methods). 115p. *Under revision.*
- No. 4 Beese, W.J., T.P. Rollerson, and R.N. Green. 1994. Forest Site Rehabilitation for Coastal British Columbia (Interim Methods). 51p. *Out of print.*
- No. 5 Hogan, D.L., T.P. Rollerson, and S.C. Chatwin. 1994. Gully Assessment Procedure for British Columbia Forests (Interim Methods). 46p. *Out of print.*
- No. 6 Koning, C.W. [Editor]. 1999. Riparian Assessment and Prescription Procedures.
- No. 7 Hogan, D.L., S.A. Bird, and D.J. Wilford. 1996. Channel Conditions and Prescriptions Assessment (Interim Methods). Draft #1. 42p.
- No. 8 Johnston, N.T., and P.A. Slaney. 1996. Fish Habitat Assessment Procedures. 97p.
- No. 9 Slaney, P.A., and D. Zaldokas [Editors]. 1997. Fish Habitat Rehabilitation Procedures. 341p.
- No. 10 Southam, T., and R.S. Silver. 1994. Committing to Stewardship: A Community Affair. A Plan to Achieve Community-Based Goals of the Watershed Restoration Program, Forest Renewal BC 17p. *Out of print.*
- No. 5 Larkin, G.A., P.R.B. Ward, K.I. Ashley, P.A. Slaney, C.W. Koning, and S.E. Mouldey. 1997. Recent Advances in Liquid Fertilizer Injection Technology for Stream and River Restoration. 28p.
- No. 6 McCubbing, D.J.F., and B.R. Ward. 1997. The Keogh and Waukwaas Rivers Paired Watershed Study for B.C.'s Watershed Restoration Program: Juvenile Salmonid Enumeration and Growth 1997. 35p.
- No. 7 Zaldokas, D.O., P.A. Slaney, and D. Duff. 1998. Restorative Treatments and Smolt Yield in a Small Tributary to a Large and Glacial Coastal River. *In prep.*
- No. 8 Zaldokas, D.O. [Editor]. 1998. Annual Compendium of Aquatic Rehabilitation Projects for the Watershed Restoration Program 1997-1998. 138p.
- No. 9 Mouldey Ewing, S.E., and K.I. Ashley. 1998. Development and Testing of Slow Release Fertilizer for Restoring Salmonid Habitat—1996 Progress Report. 162p.
- No. 10 Mouldey Ewing, S.E., K.I. Ashley, and G. Wilson. 1998. Development and Testing of Slow Release Fertilizer for Restoring Salmonid Habitat—1997 Progress Report. 152p.
- No. 11 Zaldokas, D.O. 1997. Guide for Authors for the Publication Series of the British Columbia Watershed Restoration Program for Watershed Restoration Management Reports, Watershed Restoration Technical Circulars and Watershed Restoration Project Reports. 16p.
- No. 12 McCubbing, D.J.F., and B.R. Ward. 1998. The Keogh and Waukwaas Rivers Paired Watershed Study for B.C.'s Watershed Restoration Program: Juvenile Salmonid Enumeration and Growth 1998. *In prep.*
- No. 13 Zaldokas, D.O. [Editor]. 1999. Annual Compendium of Aquatic Rehabilitation Projects for the Watershed Restoration Program 1998-1999. *In prep.*

Watershed Restoration Project Reports (PR)

- No. 1 Mellina, E., and S.G. Hinch. 1995. Overview of Large-scale Ecological Experimental Designs and Recommendations for the British Columbia Watershed Restoration Program. 31p.
- No. 2 Donat, M. 1995. Bioengineering Techniques for Streambank Restoration. A Review of Central European Practices. 86p.
- No. 3 Anonymous. 1994. An Overview of the Watershed Restoration Program (a Program Funded by Forest Renewal BC). 16p + appendix. *Out of print.*
- No. 4 Keeley, E.R., and P.A. Slaney. 1996. Quantitative Measures of Rearing and Spawning Habitat Characteristics for Stream Dwelling Salmonids: Guidelines for Habitat Restoration. 31p.

Videos

- British Columbia's Watershed Restoration Program for Forest Renewal BC. 1994. Length 16:15.
- A Guide to B.C. Salmonids. 1998. Length 25:22.
- The Four Seasons: Habitat Requirements for B.C. Salmonids. 1998. Length 23:43.
- Epoxy-Cable Method of Anchoring Large Woody Debris/Boulder Complexes. 1998. Length 52:00.

Update

Conference Review

Ecological Restoration Conference a Success

*Jodi Klippenstine,
Brian Egan and Kathi Cooperman*

In early November, over 400 people from across British Columbia converged on Victoria for the first provincial conference on ecological restoration. The primary purpose of the "Helping the Land Heal" conference was to bring people together to share ideas and information on the state of ecological restoration in British Columbia. Designed to attract a broad cross-section of citizens interested in restoration, the "Helping the Land Heal" conference drew a large and diverse group of delegates from conservation organizations, community groups, First Nations, government, and industry, as well as students and consultants. Interest in the conference was so high that the event was completely sold out before the end of October and many people were turned away.

The conference offered four days of workshops, talks, poster sessions and field trips that focused on a wide range of restoration issues – including watershed and forest restoration, restoration in urban areas, and community participation in restoration – and featured many of British Columbia's leading experts in ecological restoration. With seven high-profile keynote speakers and over seventy other presenters in workshops, the conference offered something for everyone.

After the keynote and plenary addresses, the conference broke up into five concurrent sessions focused on the conference's major topic areas: perspectives on ecological restoration, watershed restoration, forest restoration, restoration in urban areas, and community involvement in restoration.

During these sessions, speakers from a wide range of backgrounds addressed topical restoration issues and discussed various restoration techniques. Some of the topics addressed included: restoration of forest soils, restoration and environmental education, restoration and community economic development, restoration and global climate change, the use of fire in restoration, restoration of grasslands, the use of traditional ecological knowledge in restoration, and restoration of riparian and wetland systems.

Just prior to the closing plenary, Shuswap Elder Mary Thomas, recipient of the Seacology Foundation's "Indigenous Conservationist of the Year" award for 1997, recovered her strength to speak to the gathering about her concerns about land degradation. She described herself as one of the elders who experienced the beautiful times, when rivers ran clean and full of fish and traditional food plants and animals were plentiful. Now, she observed, the birds, fish, and plants are almost all gone and the rivers are reduced to a trickle. She expressed deep concerns also for the young people who are inheriting this reduced natural heritage and wondered what kind of future they will find.

Full conference proceedings are now being assembled. For more information or to receive a copy of the proceedings from the conference, contact:

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website: <http://islandnet.com~restore>



1999 Goals for WRP

- Restore and protect fisheries and aquatic resources in key watersheds throughout the province.
- Increase knowledge, information and tools for restoration and management of watersheds.
- Provide opportunities for community-based employment, training and stewardship.

Streamline

Published and Produced by:
Watershed Restoration Program

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2204 Main Mall, Vancouver, B.C.
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Streamline's goals are to communicate information on practical approaches to watershed restoration including the rehabilitation of stream channels, riparian zones and hillslopes, and to act as a link between geographically separated WRP proponents and their contractors by facilitating the sharing of information and ideas between the regions of B.C. We rely on our readers' participation. Please send articles and project descriptions (with relevant photos and drawings), as well as information for our "Update" section. We reserve the right to edit submissions for appropriate content, style, and relevance to the Technical Bulletin.

Funding provided by
Forest Renewal BC

