

Technical Tips

Giant “Spider” Assists with Watershed Restoration

Donna Underhill

Walking excavators, known as “spiders,” are helping to improve watershed restoration practices in British Columbia. There are three models of walking excavator now available in this province for use in watershed restoration.

The “spider” is a trackless machine that differs from a conventional excavator in its four independently adjustable legs; two spider-like legs and two with tires. Its four stabilizers reduce compaction of the soil and keep the excavator in level operation. The spider-type excavator is operable on slopes up to 100% (Figure 1) and its upper structure is mounted on a turn-table with a 360° rotation.



Figure 1. Spyder™ is operable on steep slopes.

These machines are excellent for use in instream restoration (Figures 2, 3). As the machine’s undercarriage is not vulnerable, there is no risk of oil spills and leaks. These excavators are able to move over structures such as boulders up to 1.5 m high instream, and are capable of working in water 2 m deep. Walking excavators have a minimal impact on the riparian zone as they eliminate the need for access roads.

Kaiser is the original manufacturer of the Spyder™ and this model boasts a twister wrist so that its bucket can move left, right, forward, and backward. This feature means that it can, for example, fit boulders or rootwads into contours. The Kaiser Spyder has moon or swamp pads to minimize siltation.

Schaeff builds two other models of walking excavator, the HSM 41 and the HS40D Walking Excavator or Superhoe™ (Long, 1997). The Schaeff Superhoe has a



Figure 2. Spyder™ is capable of moving large objects.

hydraulic thumb to allow for exact placement of objects. It can, for example, manipulate a moss-covered boulder to place it moss-side up. It has a winch with 85 m of line for hauling objects such as logs or boulders from a distance. The Schaeff excavator minimizes siltation in part because of the low impact of its flotation (special low-pressure) tires.

Marc Gaboury, Ministry of Environment, Lands and Parks has used the “spider” in a number of projects on Vancouver Island. He notes, “The best thing is that you can get the ‘spider’ into areas without developing access roads, and that instream its dexterity and ‘softness’ causes minimal environmental damage.”

As operators become more familiar with the intent of watershed restoration structures and with the use of this specialized piece of equipment, the walking excavator offers opportunities for constructing improved, complex and asymmetrical structures in streams that would otherwise be impossible to access.



Figure 3. Superhoe™ is excellent for instream work.

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Reference

Long, Nini. 1997. Schaeff HSM 41 and HS 40 D walking excavators: observations. Article No. 4 Watershed Restoration Operations and Research Activities. Forest Engineering Research Institute of Canada, Western Division, Vancouver, B.C.

For further information, contact:

Brad Berry, J.W. Berry Trucking Ltd., 4586 Glenwood Drive, Port Alberni, B.C., V9Y 4P8; Tel: 250-724-4912

Lenard Masson, Nu Creek Developments, RR#2, Box 58 Summerset, Nanoose Bay, B.C., V0R 2R0; Cell: 250-741-7790, Tel/Fax: 250-468-9928

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Lou Davidson, distributor, Horizon Equipment and Construction Inc., 49970 N.W. Pongratz Road, Buxton, OR 97109; Tel: 503-324-1333

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Update

Conferences

International Erosion Control Association Conference (IECA). The 29th annual International Erosion Control Association Conference and Trade Exposition will be held in Reno, Nevada from February 16-20, 1998. The conference itself will run from Feb. 18 - 20, and will be preceded by two days of professional development courses on February 16 and 17. For further information, contact the Vice President of the Pacific Northwest Chapter of the Association: David Sahlstrom, of Terrasol Environmental Consulting, Tel. 604-852-3782 Fax 604-852-9376.

Cooperative Lake and Watershed Management: Linking Communities, Industry and Government. November 10 - 13, 1998. NALMS 98 International Symposium at Banff, Alberta. Potential sessions may include restoring endemic aquatic communities, restoration and management of mountain lakes, managing watersheds in National Parks, and fish habitat restoration in streams. The first call for papers will be mailed in February, 1998 and will also be available on-line at the website: www.biology.ualberta.ca/alms/home.htm. Abstracts will be due May 1, 1998. For further information, contact the Symposium Chair:

Brian Kotak, Alberta-Pacific Forest Industries Inc. Tel: 403-525-8431, or E-mail: kotak@compusmart.ab.ca.

Challenges for the New Millennium: Shaping the Future of Fisheries Science and the Fisheries Profession. Aug. 23 - 27, 1998. The 128th AFS Annual Meeting will take place in Hartford, Connecticut. For further information, contact Paul Brouha AFS Suite 110-5410 Grosvenor Lane, Bethesda, MD 20814-2199. Tel: 301-897-8616, ext.209 E-mail: pbrouha@fisheries.org.

Training Courses and Seminars

The Interior Forest Site Rehabilitation Workshop. The 1998 Interior Forest Site Rehabilitation Workshop will be held in Kelowna, BC at the Grand Okanagan Hotel, April 6-8, 1998. The emphasis will be on site-specific, leading edge techniques with examples and case studies, with specific emphasis on soil bioengineering issues. April 6 activities will include registration, commercial displays, and a wine and cheese reception. Papers will be presented on April 7 and 8, along with continued access to commercial displays. Participants will receive a binder with abstracts of presentations as well as lunch on April 7 and 8.

Persons interested in presenting a paper, reserving space for a commercial exhibit, or requiring a registration form are asked to contact: Heather Hamilton at the BC Forestry Continuing Studies Network, University College of the Cariboo, Box 3010, Kamloops, BC, V2C 5N3; Tel: 250-371-5540 Fax 250-371-5574.

Soil Bioengineering. This newly developed two-day course will familiarize participants with the principles of slope stabilization using soil bioengineering techniques. One session will be offered at Mesachie Lake, March 25-26, 1998. Further courses will be offered in the summer of 1998 after training sites have been identified and developed. For further information, contact: Dwayne Geiger at the Cariboo College, Kamloops, B.C.; Tel: 250-371-5547 E-mail: dgeiger@cariboo.bc.ca.

GPS for Contract Administrators. This one-day course, sponsored by the BC Forestry Continuing Studies Network, is aimed at those who administer GPS contracts. Topics covered include an introduction to the technology and equipment used and contract planning and administration. Courses are scheduled at the following locations: Kamloops - January 29, 1998
Campbell River - February 3, 1998
Burnaby - February 5, 1998