

Harvesting Systems and Equipment in British Columbia



BRITISH COLUMBIA Ministry of Forests
Forest Practices Branch



REFERENCE

SELECTED BIBLIOGRAPHY AND SUGGESTED READING LIST

The handbook does not attempt to define a single “best” system for any site. Instead, it presumes that readers need to be aware of the key factors that influence the probability of achieving success with any given combination of equipment and site characteristics. Readers will then use their own judgement to evaluate the merits of the various options. The information in the handbook should be considered only as part of an overall process for equipment selection which will vary from company to company.

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INTERVIEW SITES

The following table lists the sites where FERIC visited or telephoned during the interviews for the handbook. The comments summarize FERIC's impression of the operation — they should not be interpreted as complete descriptions of the operations. Instead, these comments highlight the features that FERIC felt distinguished the division.

Interviews were conducted via telephone (T) or on-site (O/S). The on-site interviews often included a field trip to view the operations in person.

Company	Location	Interview Type	Comment
Industrial			
Ainsworth Lumber Co. Ltd.	100 Mile House	O/S	Primarily feller-buncher and skidder systems working to roadside or landings. Decking at roadside with a loader improves skidder productivity. Small component of cable yarding.
Ainsworth Lumber Co. Ltd.	Lillooet	O/S	Primarily cable systems on steep ground on transition between coastal and interior conditions. Small skylines used in partial cutting prescriptions. Ground-based systems confined mainly to winter operations except for one cut-to-length operation. Minor component of helicopter and loader-forwarding.
Ainsworth Lumber Co. Ltd.	Savona	O/S	Using buncher, processor, and forwarder in a cut-to-length operation.
Babine Forest Products Ltd.	Burns Lake	T	Mainly roadside logging with conventional skidders. Substantial portion is processed at the stump. Also use small cable yarder, helicopter, and cut-to-length with forwarder.
Bell Pole Co. Ltd.	Salmon Arm	O/S	Skyline yarding with a small tower equipped with motorized carriage. Various partial cutting prescriptions to address the visual-quality objectives.
Bell Pole Co. Ltd.	Terrace	T	Primarily ground-based equipment operating from landings.
Canadian Forest Products Ltd.	Woss	O/S	Variety of equipment ranging from loader-forwarders to super snorkels to swing yarders and large skylines. Operate primarily on private land.
Crestbrook Forest Industries Ltd.	Cranbrook	O/S	Wide range of site conditions including substantial amount of steep ground results in large amount of cable yarding. Typically using small skyline towers with motorized carriages and intermediate supports. Ground-based skidding often uses return-trail layout. Hand-falling and bunching with loaders in some

Company	Location	Interview Type	Comment
			areas. Using feller-processor and forwarder in cut-to-length operations where terrain and stand conditions are suitable.
Federated Co-op Ltd.	Canoe	T	Primarily skidders in landing and roadside configurations. About 20% is cable logging with swing yarder and small skylines.
Gorman Brothers	Westbank	T	Mixture of grapple skidders, forwarder, and highlead tower. Primarily roadside processing.
Houston Forest Products Co.	Houston	O/S	Conventional, ground-based equipment, primarily used in roadside operations. Cutblocks with large tree sizes are designed for landing operations to accommodate hand-bucking. Large range of tree size requires range of equipment sizes.
International Forest Products Limited	Campbell River	T	Typical coastal highlead and swing yarders.
International Forest Products Limited	Hope	T	Highlead tower and swing yarder. Helicopter logging on alternate years to help reduce mobilization costs.
International Forest Products Limited	Squamish	O/S	Conventional coastal logging with towers and grapple yarders. Some helicopter logging.
International Forest Products Limited	Tofino	T	Swing yarders and highlead towers, with a minor amount of loader-forwarding. Helicopter logging on alternate years to help reduce mobilization costs.
JS Jones Timber Ltd.	Boston Bar	O/S	Transition between Interior and Coast. Have reduced ground-based systems from 30 to 5% of harvesting because of steep ground. Now primarily use large highlead towers.
JS Jones Timber Ltd.	Pitt Lake	T	Grapple yarder and highlead towers.
Lignum Ltd.	Williams Lake	O/S	Cut-to-length system in the western part of the operating areas allows for increased volume recovery from small trees. Using tree-length system to roadside or landings where the tree size is larger. Cannot switch completely to cut-to-length system because the mill must retain tree-length capability to accommodate wood purchased from independent sources.
MacMillan Bloedel Ltd.	Eve River	T	Mixture of swing yarders, large skyline, and highlead yarders. Considering a Wyssen skyline in specific situations.

Company	Location	Interview Type	Comment
MacMillan Bloedel Ltd.	Kelsey Bay	O/S	Variety of equipment ranging from loader-forwarders to swing yarders to large skylines.
MacMillan Bloedel Ltd.	Menzies Bay	O/S	Primarily loader-forwarders, super-snorkel, and swing yarder. Using highlead towers as required.
MacMillan Bloedel Ltd.	Powell River	T	Primarily swing yarders, although one large skyline is also used. Mechanized operations in second growth, using feller-processor and loader-forwarders. Occasional use of grapple skidders.
MacMillan Bloedel Ltd.	Shawnigan	O/S	Second-growth harvesting using a combination of conventional and mechanized equipment. Dryland sort includes a chipping plant. Operating primarily on private land.
Northwood Pulp and Timber Ltd.	Houston	T	Primarily conventional skidders, either skidding to landings or roadside. Small amount of cable yarding with small towers, and a minor amount of helicopter.
Northwood Pulp and Timber Ltd.	Prince George	O/S	Two distinct operating conditions (pine flats and steep, wetter areas) are suitable for summer and winter respectively with conventional, ground-based equipment. Also use highlead and swing yarders year-round in the steeper areas with larger timber.
Pacific Forest Products Ltd.	Cowichan	O/S	Combination of conventional equipment (swing yarders and skylines) and cut-to-length system (feller-processor and forwarder). About 10% by helicopter. All operations on private land.
Pacific Forest Products Ltd.	Zeballos	T	Typical coastal mixture of loader-forwarders and swing yarders. One large skyline is new to the operation.
Pacific Inland Resources Ltd.	Smithers	O/S	Transition zone between coastal and Interior conditions requires range of equipment. Wide range of tree size influences equipment selection. Cable and ground-based systems both important. Using clambunk skidders on steep ground, especially for the longer skidding distances. Require low ground pressure equipment to extend the summer operating season.
Pope and Talbot Ltd.	Castlegar	O/S	Substantial amount of cable yarding including highlead, swing yarders, and skylines. Mechanical bunching after falling increases the productivity of yarders.

Company	Location	Interview Type	Comment
Pope and Talbot Ltd.	Midway	O/S	Proportion of non-clearcut has increased substantially, requiring contractors to alter their equipment fleets and operating techniques to adapt to small openings. Forest floor displacement hazard is a major concern in typical cutblocks.
Pope and Talbot Ltd.	Nakusp	T	About half the volume is from cable systems: swing yarders and small skylines. Remainder is mechanically felled and skidded with tracked or rubber-tired skidders. Some helicopter logging, and a very minor component of horse logging and loader-forwarding.
Repap B.C. Inc	Smithers	T	Variety of conditions in transition zone between Coastal and Interior requires a variety of equipment. Cable equipment is primarily small highlead. Ground-based equipment includes clambunk skidder.
Riverside Forest Products Ltd.	Armstrong	T	Mainly grapple and line skidders, with about 80% operating from landings and 20% from roadside. Small amounts of cable and helicopter logging.
Riverside Forest Products Ltd.	Kelowna	O/S	Variety of equipment and systems used on different sites. Cut-to-length system using feller-processor and forwarder in partial cuts. Full-tree harvesting to centralized sortyard. Specialized contractor for all right-of-way timber. Extensively using temporary roads to reduce skidding distance.
Skeena Sawmills	Terrace	O/S	Mainly cable equipment except for one rubber-tired skidder used sporadically, and a large component of helicopter logging. Very little loader-forwarding because of limited opportunity.
Slocan Group (was Timberwest at time of interview)	Mackenzie	O/S	Complete conversion to cut-to-length system to address several concerns including the inability to log during the summer with conventional equipment. Various models including single-grip and double-grip feller-processors. Unique self-propelled barge used for lake-borne transport.
Slocan Group	Radium	O/S	Over half of the cut is based on a basal area cut silviculture prescription that requires very careful operations to protect the understorey. Hand-falling is often required. Combination of ground-based and cable equipment, including a long-distance Wyssen skyline. All skidding is on designated trails because of high soil-compaction hazard.

Company	Location	Interview Type	Comment
Slocan Group	Vanderhoof	O/S	Almost entirely roadside operations with conventional, ground-based equipment. Using dangle-head processors because of the small tree size.
Timberwest Forest Ltd.	Campbell River	O/S	Highly mechanized operations in second-growth timber. Extensive use of feller-bunchers and dangle-head processors. Operating primarily on private land.
Timberwest Forest Ltd.	Crofton	O/S	Second-growth harvesting near urban areas using small tractors. Also use loader-forwarders, long-line skylines, and helicopters. All operations on private land.
Timberwest Forest Ltd.	Gordon River	O/S	Typical mixture of swing yarders, loader-forwarders, and highlead. Innovative use of large and small skylines. Using small, dangle-head processor in second-growth timber. Small tractor operates in selective cutting in second growth.
Timberwest Forest Ltd.	Sandspit	T	Swing yarders and large skyline. Using loader-forwarders on suitable terrain.
Tolko Industries Ltd.	Louis Creek	O/S	Steep-slope harvesting using tracked or flex-track skidders. Wide range of timber sizes requires wide range of equipment.
Tolko Industries Ltd.	Merritt	O/S	Range of site conditions requires a range of capabilities. Primarily using skidders from landings, but also have component of cable logging using small highlead tower.
Weldwood of Canada Ltd.	100 Mile House	T	Primarily roadside logging with conventional skidders. Also use feller-processor and forwarder in a cut-to-length operation, as well as small tower and skyline.
Weldwood of Canada Ltd.	Quesnel	O/S	Combination of cable and ground-based equipment, including clambunk skidders. All operations are to the roadside. Using horses for selective logging in wildlife habitat areas.
Weldwood of Canada Ltd.	Williams Lake	T	Mainly skidders operating out of landings, with a smaller component in roadside configuration. Small amount of cable yarding.
West Fraser Mills Ltd.	Quesnel	O/S	Using tree-length to roadside system exclusively, including one with a grapple yarder. Two contractors use clambunk skidders to allow for more summertime operations.

Company	Location	Interview Type	Comment
West Fraser Mills Ltd.	Williams Lake	T	Conventional ground-based operations with about 25% as cable operations. Also have significant amount of volume harvested from selection cuts using conventional equipment.
Western Forest Products Ltd.	Holberg	T	Exclusively loader-forwarders, super snorkels, and swing yarders.
Western Forest Products Ltd.	Jordan River	T	Typical mixture of loader-forwarder, super snorkels, and swing yarders.
Western Forest Products Ltd.	Port McNeill	O/S	Extensive use of loader-forwarders and super snorkels, with cable systems relegated to cleanup functions. Hands-on style of supervision.
Weyerhaeuser Canada Ltd.	Kamloops	O/S	Conventional landing-based operations. Large portion of area in community watersheds, which affects road density and cutblock size.
Weyerhaeuser Canada Ltd.	Lumby	T	Combination of skidders operating from landings or from roadside, and small highlead tower.
Weyerhaeuser Canada Ltd.	Okanagan Falls	O/S	Primarily landing-based operations, with a component of roadside. One cable contractor with self-propelled carriage. Gradually changing from beetle-salvage to green-tree harvesting. Off-highway haul.
Zeidler Forest Industries	McBride	O/S	Combination of ground-based and cable systems, with the ground-based operations confined almost exclusively to winter.
Government			
BC Ministry of Forests	Campbell River	O/S	Small Business Forest Enterprise Program uses a variety of equipment, ranging from ground-based to cable to aerial. Risk-based analysis is used to specify the harvesting system for each site.
BC Ministry of Forests	Chilliwack	T	Many recent sales have been for skyline or helicopter systems.
BC Ministry of Forests	Clearwater	T	Rubber-tired skidders, flex-track skidders, and horse logging. Significant portion harvested with small highlead towers and skylines.
BC Ministry of Forests	Cranbrook	T	Mainly tractors with hand falling. Minor amount of horse logging.
BC Ministry of Forests	Duncan	T	Very little activity in the Small Business Forest Enterprise Program. Previously used some skidders, but now exclusively loader-forwarders and small cable yarders.

Ministry	Location	Interview Type	Comment
BC Ministry of Forests	Hazelton	T	Primarily skidders operating from landings. Some horse logging, and minor amounts of cable and helicopter operations.
BC Ministry of Forests	Houston	T	Primarily rubber-tired skidders in either landing or roadside configurations. Minor amount of horse logging, cable systems, and cut-to-length with forwarder.
BC Ministry of Forests	Kamloops	T	Primarily grapple skidders and small tractors. Minor amounts of helicopter, cable, and horse logging. Significant amount of selective cutting.
BC Ministry of Forests	Penticton	T	Small contractors with rubber-tired, tracked, or flex-track skidders. Lots of single tree selection.
BC Ministry of Forests	Port Alberni	T	Typical coastal mixture of highlead and swing yarder. Substantial portion of helicopter systems, and some loader-forwarding and horse logging.
BC Ministry of Forests	Port McNeill	T	Typical coastal highlead and grapple yarding. Minor amounts of loader-forwarding and helicopter operations.
BC Ministry of Forests	Prince Rupert	T	Typical coastal highlead and grapple-yarding equipment. Small component of hand-logging, A-frame, and helicopter.
BC Ministry of Forests	Revelstoke	T	Mainly highlead yarders and small tractor skidders. Minor amount of helicopter and skyline.

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