News from the Inventory Section, Forest Analysis and Inventory Branch, Ministry of Forests Lands and Natural Resource Operations

April 14, 2014

The 2014/15 Program

The Inventory Section delivers the ministry's forest inventory and growth and yield program. Activities in 2014/15 include i) acquiring air photos in parts of the Fort St James district, Williams Lake TSA, southern Vancouver Island, and Cassiar TSA; ii) photo-interpretation in Quesnel, Lakes, and Morice TSAs, Vanderhoof district, and TFL 23; iii) tree volume and decay (NVAF) sampling in Williams Lake TSA; iv) integrated VRI ground sampling (CMI/YSM and VRI phase 2) in Prince George and Kamloops TSAs; v) re-measurement of PSPs and EPs; vi) improving site productivity information; vii) initiating an LVI inventory of Cassiar TSA; viii) stand modelling research and development; ix) inventory data analyses; x) inventory update, projection, and VRIMS maintenance; and xi) many other projects and activities. For more information on the section's 2014/15 program, contact Gary Johansen (Gary.Johansen@gov.bc.ca; 250-356-0633).

Haida Gwaii

In 2011, in partnership with the Haida Nation, we initiated a re-inventory of Haida Gwaii. VRI photo-interpretation was completed on schedule by December 31, 2013. The mapsheets completed in 2011 and 2012 (Graham Island and the northern portion of Moresby Island) are included in the provincial forest inventory data set that is currently posted. The mapsheets that cover the remainder of the project area (the central portion of Moresby Island and Gwaii Haanas National Park Reserve/Haid Heritage Site) have been integrated into our internal operational database (VRIMS) and will be publicly available in the next scheduled release of the provincial inventory (January, 2015). For more information on this project, contact Roman Bilek (Roman.Bilek@gov.bc.ca; 250-387-6043).

Lakes TSA

A large re-inventory project (VRI photo-interpretation) is underway in Lakes TSA. In 2013, work was completed on approximately 25% of the project area. The completed maps are currently being integrated into our internal, operational database (VRIMS) and will be available when the next version of the provincial forest inventory data set is released in January, 2015. The remaining project area is scheduled to be completed over the next two years. False color (infra-red) imagery, in conjunction with natural color imagery, is being successfully utilized for photo-estimation of the dead and the residual live trees in the main canopy of MPB impacted

stands. However, photo-interpreters report very little success in describing the understory as it is obscured by the overtopping residual live and dead trees. For more information on this project, contact Roman Bilek (Roman.Bilek@gov.bc.ca; 250-387-6043).

VRI Ground Sampling in Prince George TSA

This summer VRI ground sampling will be conducted in the Prince George TSA. The sampling program includes several components and is designed to satisfy multiple objectives. In the first component, long-term monitoring plots will be established on a 20-km grid across the full extent of the TSA. At non-forested and very remote locations, observations will be obtained by photo-interpretation. At all other locations, a CMI/YSM ground sample plot will be established. In the second component, to intensify the sampling of young stands, additional CMI/YSM plots will be established on a grid over the TSA. In the third component, to increase the sample size in the THLB, VRI phase 2 five-point clusters will be established in the THLB. The plot totals are 64 photo samples, 202 CMI/YSM samples, and 100 VRI Phase 2 samples. These ground samples will provide information on timber characteristics and forest condition, and support the next TSR. In the future they will provide estimates of forest growth and recovery from MPB attack. For more information, contact Chris Mulvihill (Chris.Mulvihill@gov.bc.ca; 250-354-6222) or Gary Johansen (Gary.Johansen@gov.bc.ca; 250-356-0633).

20-km Grid Filling in Through the Central Interior

This field season, sampling on the provincial 20-km grid is planned in the Prince George and Kamloops TSAs. After this field season, the establishment of samples on the grid will be complete across the entire Prince George, Quesnel, Williams Lake, 100 Mile House, Kamloops, and Merritt TSAs.

Feds and Province Partner to Re-measure NFI Ground Samples

As ground sampling on the 20-km grid progresses, samples established as part of the National Forest Inventory (NFI) are being re-measured. In 2013, 31 NFI ground samples were re-measured and in 2014, 35 NFI ground samples are planned for re-measurement. The ministry and the Canadian Forest Service work co-operatively to fund re-measurement and manage the data. For more information, contact John Wakelin (John.Wakelin@gov.bc.ca; 250-387-5262) or Graham Stinson (Graham.Stinson@NRCan-RNCan.gc.ca; 250-298-2314).

Morice TSA

A re-inventory (VRI photo-interpretation) of the Morice TSA is starting now. The work has been divided into a northern and a southern project. In the north this year, 40 full map sheet

equivalents (FMEs) will be completed with the remaining 17 FMEs due to be completed next year. High resolution false color imagery will be used in conjunction with natural color imagery to support photo-estimation of both live and dead components in MPB-impacted stands. Tender documents for the Morice South project have been posted. Pending a successful tendering process, this year 20 full map sheet equivalents will be completed with the remaining 71 FMEs due to be completed in the subsequent 2 years. For more information on these projects contact Mathias Hulten (Mathias.Hulten@gov.bc.ca; 250-387-8389).

Estimates Debate

In the 2014 spring session of the Legislature, MLAs have discussed several issues of forest inventory and growth & yield. Hansard provides a complete record of these debates. Within the Section we closely follow these discussions – and you can too - through transcripts and video posted at: http://www.leg.bc.ca/hansard/index.htm

From Cathy Taylor's Very Busy Desk

The Clearwater portion of the VRI photo-interpretation of Kamloops TSA is now completed. The data should be available on the LRDW in early 2015. The Vanderhoof VRI was started this past fall and is currently in full swing. Over an area of 60 FMEs, photo-interpreters will undertake field calibration this summer, and 48 FMEs will be attributed by March, 2015 with the project wrapping up late fall 2015. The Quesnel west VRI will begin this summer with the completion of 30 FMEs and is expected to take 3 years to complete. For more information, please contact the very productive Cathy Taylor at Cathy.Taylor@gov.bc.ca; 250-286-9414.

Tree Volume and Decay

Retirement looms for our Volume and Decay Sampling Officer, Will Smith. Will is transferring knowledge on the various tasks that make up the tree volume and decay program. Chris Mulvihill is brushing up on NVAF sample planning, sample selection, field measurements, data processing and analysis (Chris.Mulvihill@gov.bc.ca, 250-354-6222). Rene de Jong is getting more familiar with the loss factors (Rene.DeJong@gov.bc.ca, 250-356-1064) and Gord Nigh is working with our taper equations (Gordon.Nigh@gov.bc.ca, 250-387-3093). NVAF sampling is planned for the Cariboo region this summer (69 trees). In addition, we plan to generate options for improving the BEC-based loss factors using the NVAF data. Also, we are discussing ways to enhance TIPSY with a new stand level DWB model. For more information, contact Will Smith while you still can (Will.Smith@gov.bc.ca; 250-356-6853).

VRI Ground Sampling Analysis and Reporting

Right after they are collected, VRI ground samples are run through a standard compilation and analysis and one or more standardized reports are produced. Broadly speaking, these reports contain tables, figures, analyses and discussion that i) characterize current stand condition, ii) assess the accuracy of forest inventory polygon attributes and other GIS coverages (such as the provincial site index layer), iii) check yield predictions from the ministry's stand growth models, and iv) provide forecasts of future yields. The latest report to be posted is the Kootenay Lake YSM report available at: http://www.for.gov.bc.ca/hts/vri/monitoring/dowloads/KootenyLakeEstablishmentReport_26Feb2014_ver2.1.pdf. A YSM analysis of the Quesnel TSA is almost complete and will be available on the web in May, 2014. Analyses of both young stands and older stands in the Williams Lake TSA are currently underway. Final reports should be available May 30, 2014. Please contact Graham Hawkins for more information (Graham.Hawkins@gov.bc.ca; 250-387-8893).

Provincial Site Productivity Layer

The latest version of the provincial site productivity layer (ver. 3.1) is now loaded to the corporate data warehouse. This version of the data will also be included in the next release of HectaresBC, scheduled for June 30, 2014. Revisions to the provincial site productivity layer web pages (http://www.for.gov.bc.ca/hts/siteprod/provlayer.html) are underway to reflect the most recent data updates and to add an interactive map catalogue of site index by species and management unit. Look for a detailed notice that will be distributed with the release of these updates. Work planned for 2014/15 includes loading additional PEM data and undertaking a comprehensive validation of the site index estimates in the layer. For more information, please contact Graham Hawkins (Graham.Hawkins@gov.bc.ca; 250-387-8893).

Derek Challenger Retires

After joining the ministry's inventory program 23 years ago, Derek Challenger has retired. Derek's articulate voice, deep commitment to public service, and extensive knowledge of coastal inventories will be greatly missed. After hosting a traditional buy-out, Derek finished up on February 21st. Friends and colleagues can stay connected with Derek at derekchallenger@shaw.ca.

Welcome Dan Turner

The inventory section is pleased to welcome Dan Turner to the team. A graduate of the forestry program at the University of Northern BC, Dan is no stranger to forest inventory. Before joining our group, Dan worked for 14 years with JS Thrower and Associates, Timberline, and CTQ. With Dan's strong background in silviculture reporting, resource analysis and GIS, we are very

fortunate to have him aboard. Dan joins our inventory update unit, located in Kamloops, and can be contacted at Dan.Turner@gov.bc.ca; 250-828-4425.

Welcome Back Tamara Brierley

After a year's absence on maternity leave, the Section is pleased to welcome Tamara back to work. Tamara joins the team responsible for the management, compilation and distribution of the ministry's ground sample data. Her current projects include the co-ordination of the PSP program and an analysis of ground sample data collected last year in the Cariboo. In addition to all this, Tamara is a busy mom to Maya, an active 1-year-old who is not always sleeping through the night! Tamara can be reached at Tamara.Brierley@gov.bc.ca; 250-356-0703.

Air Photos and Derived Products

Each summer we acquire air photos (with our partners at GeoBC) for those areas where we will initiate VRI photo-interpretation the following year. This year we plan to acquire photos for areas in the south of Fort St James, Cariboo-Chilcotin, and Skeena-Stikine districts as well as southern Vancouver Island. The photography will be a 4-band (red, green, blue, and near infrared) digital product. In addition to the three standard outputs (photos, softcopy sets, and orthophotos), a 2m DEM (digital elevation model) will be produced from the stereo photos as well as a DSM (digital surface model) for canopy height. All data should be available by April, 2015. For more information, contact Ann Morrison (ann.morrison@gov.bc.ca; 250-953-3625) or Harald Steiner at GeoBC (harald.steiner@gov.bc.ca; 250-952-6578). The orthophotos produced from the 2013 flying program in the Quesnel forest district are now available on GeoBC's image warehouse \\imagefiles.bcgov\imagery. The orthophotos for the Nadina forest district should be available shortly. For information and access to the imagery, contact Angus Christian (angus.christian@gov.bc.ca; 250-952-6579) at GeoBC.

Damage Agent Codes

The Damage Agent codes used for inventory ground sampling have been updated. The codes will be available on the VRI website shortly, in the appendices for the ground sampling procedures manuals. The Damage Agent Severity codes are being reviewed and revised by the ministry's Forest Health specialists to better meet the needs of both the inventory and forest health programs. Revised severity codes and rules should be available for the 2015 field season. For more information, contact Bob Krahn (bob.krahn@gov.bc.ca; 250-953-3867).

First, We Need a Good Name

In February, the section's stand development modellers met with forest health specialists from around the province. Recent work was presented on projecting existing stand survey data (including YSM plot data) using TIPSY and TASS. In addition, the potential for modelling the impacts of western gall rust using TASS were demonstrated. Jim Goudie recommended the establishment of a working group consisting of health specialists, silviculture practitioners and modellers to construct a new TASS module whose proposed name is Gall Rust Impact Model. GRIM could prove useful for timber supply projections, the evaluation of silviculture regimes, and other decisions. For more information, contact Jim Goudie (Jim.Goudie@gov.bc.ca; 250-387-6535).