

Okanagan Timber Supply Area

Vegetation Resources Inventory

**Project Implementation Plan
Photo Interpretation
Amendment August 2008**

PREPARED BY:

OKANAGAN INNOVATIVE FORESTRY SOCIETY

VRI PHASE 1 AMENDMENT - AUGUST 2008

The 2001/ 02, 1:30,000 Colour photography that covers the Okanagan TSA has past the preferred 5 year limit for these photos use for Phase 1 VRI. In the Okanagan TSA, through the MPB Initiative and Licensee FIA funding the entire TSA has been re-flown at 1:20K, Colour photography. Both digital photography and conventional photography, using a 6” lens were used to fly the TSA and digital preset model data is being produced. It is anticipated that this new photography will improve the quality of the VRI for the remaining areas.

The Ministry of Forests and Range has released a protocol memo authored by Tim Salkeld on February 2, 2008 which provides specific guidance on merging VRI Phase 1 and its RESULTS connection May 2,2008 2:52:00 PM (See Appendix 2)

In addition, the 2008 Schedule Work plan (Table 4) and Cost tables (Table 5) have been revised to current status as of March 2008 and projected forward to 2009/10. . There are other clarifications required, as indicated below.

2.3: Initial Delineation: Bioterrain polygon delineation will continue to provide the base for VRI delineation, **in the 82L and 82M mapsheets** , VRI Standards will be maintained and any areas where excessive numbers of polygons are occurring will be reviewed and the bio-terrain will be rationalized to the VRI. Some areas already re-inventoried had excessive (2000 +) numbers of polygons, which will be addressed for any future delineation in this project.

In 2008-2010 , VRI Phase 1 polygons in the 82E mapsheets will be based on the VRI polygons created by the Certified VRI Phase 1 Interpreter. (The use of the Bioterrain layer previously created for the PEM is not suitable for use in the 82E mapsheets as the average polygon size of the Bioterrain is only 5 – 7 ha)

2.4: MoFR VRI: Requirements for VRI data collection for Silviculture Openings.

- 1) **The VRI is photo based and as such any external opening boundaries that exist on the current imagery will be maintained.**

- The first order of resolution will be to use all external opening boundaries that exist on the current document imagery. VRI Proponents (Licensee) should indicate and document (VPIP) otherwise, if this doesn't meet their needs.
- The latest (newest) version of RESULTS external boundaries will be used to assess the accuracy and acceptability of the RESULTS external boundary against the interpreted boundary. ***The Ministry of Forest & Range will provide a copy of the RESULTS cut block shapes at the start of the contract.***
- RESULTS opening external boundaries that meet the MoFR VRI \pm 20 meter rule may be maintained or replaced by the photo interpreter at their discretion. . If no cut block shape exists in the RESULTS file, the external boundary from the photo will be used. The contractor should contact the Licensee to obtain the opening ID for this opening.
- Any RESULTS external boundary lines that exceed the \pm 20 rules will be corrected.
- Licensees will be notified when their RESULTS external boundary was NOT used and will be provided with a spatial file of the external boundaries that will be used in the VRI.
- The spatial file format will be determined by the contractor and Licensee. The Licensee may use the VRI external block boundary to update their files and re-submit the revised boundary to RESULTS.

2) RESULTS opening data that is newer than the document photos will be added to the corporate data base by the MoFR Forest Inventory Update Section. (See Appendix 2)

- The Forest Inventory Update Section will instruct any VRI contractor at the start of a VRI Project (preferable at the VPIP stage) of any additional requirements associated with RESULTS.
- The Forest Inventory Update Section will load all subsequent RESULTS data past the most recent date of photography and after completion of a new VRI into the corporate data base.
- VRI re-inventory contractors will not be required to load RESULTS data that occurs after the date of photography, unless otherwise instructed.

3) New silviculture openings that are not declared Free Growing (FG) will have minimum attributes assigned. The process is described in the memo contained within APPENDIX 2

VRI Phase 1 and its RESULTS Connection. Created on 05/02/2008 2:52:00 PM

While Appendix 2 is the direction provided by MOFR for the results interface with VRI, the interpreter should review and implement the:

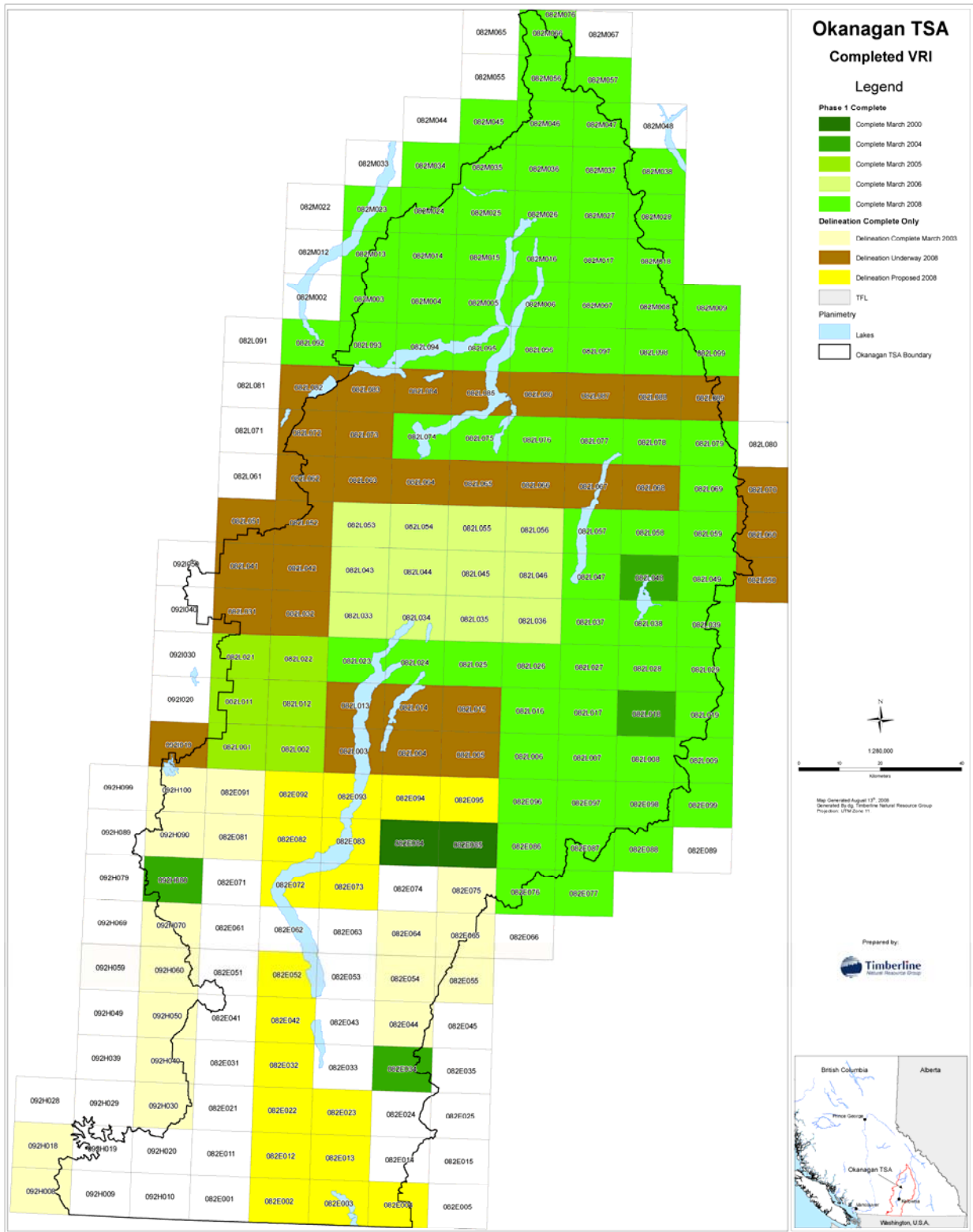
NEW VRI Photo Interpretation Standards and Quality Assurance Procedures (version 3.1, May 2008)

- the minimum attributes will be taken from RESULTS and will include:
 - estimated site index
 - estimated site index species
 - estimated site index source
 - BCLCS
 - **opening Id**
 - Disturbance type and date
 - Inventory Standard will be “I” for an incomplete record
 - Wildlife Tree Patches or Reserves larger than 1 ha will be stratified and assigned full VRI attributes.
 - New areas (openings) that are partially disturbed (selectively logged, seismic lines, etc) will require full VRI attributes estimated by the VRI contractor. Results may be inconsistent in providing sufficient data for partially disturbed areas for VRI.
- 4) When a silviculture opening is declared Free Growing, the opening is stratified and attributed to VRI standards.**
- RESULTS free growing attributes and polygons should be used as a reference for the VRI interpretation
 - Each free growing polygon must have the code "FTG" entered in the Project Name field
 - External boundaries can be modified unless they are shared with a non-Free Growing opening
- 5) Additional points:**
- Openings can be split by mapsheet boundaries as per previous standards
 - Opening ID's must be provided for each silviculture opening polygon including WTP's
 - For areas identified as large openings (i.e. historic fires) with a number of diverse vegetation types, provide full VRI attributes
 - For VRI/Terrain projects, you can divide the openings by terrain lines. However, the internal stratification of opening is governed by the RESULTS guidelines and at this point that means these lines will disappear with the first new RESULTS submission to the VRI Update section.
 - There is an anomaly within the VRI Data Base for polygons that have a crown closure of 5 – 9%. Until this can be corrected within the VRI data base, use a CC = 10% for these polygons. When or if a VRI contractor encounters a Results or other silviculture issue; they can contact the VRI Update Section in Kamloops. Provide a screen capture and / or description of the issue for resolution.

2.5: Field Calibration: Field Work: The same number of field calibration points per map as is indicated in the 2005 version of this VPIP will be maintained.

2.9: Additional Products to Deliver to MoF: There is now a Project Completion Report (Preparing a VRI Project Implementation Plan for Photo Interpretation (June 2007) Appendix F: Project Completion Report) required as a deliverable.

2.10: Quality Assurance: In addition to what was originally stated in the 2005 VPIP document; Copies of all 3rd party Q&A documentation will be submitted to the MoF – SIR, VRI staff for review, once completed. There will be no time delays for this process. Quality assurance will start as soon as each phase of the VRI is started and throughout each phase of the VRI to ensure continued consistency in the quality of the work by all persons involved with the VRI.



3.1: Scheduling: Revised Work Plan Scheduling

The 2005 VPIP only covered activities to 2007. As of March 2008, 100 maps sheets have been completed to VRI Standards at a cost of \$2,226,952 or \$22,269 per map or \$1.43 per ha. This cost does not include the cost of 2007 airphotos, DIAPs and orthophotos captured at a cost of \$547393. In 2008/09 an additional 48 map sheets are scheduled for completion. Another 42 maps are schedule to complete the project by 2009. Two (2) mapsheets , 92H010 (all within Anarchist Park) and 92E014 (all within TFL35) , will not be updated as new photos were not secured in 2007. The plan for the rest of the TSA to be completed is outlined in the table below.

Table 4: Revised Work plan Schedule

Fiscal Year	Photo Preparation	Polygon Delineation	Data Source Transfer.	Field Data Collection	Polygon Descriptions	Final Digital Mapping and Deliverables	Quality Control
2007/8					Nov – Mar09 39 map tile	Nov – Mar08 39 map tile	Continuous
2008/9	Apr-Jun08	Apr-Jun08	Apr - May	Jun–Sep 08 48	Nov–Mar 09 48	Jan–Mar 09 48	Continuous
2009/10		Apr-Jun10	Apr - May	Jun–Sep 09 42	Sept-Nov 09 42	Oct–Dec 09 42	Continuous

4.0: Estimate of Funding Requirements. Table 5 in the 2005 VPIP only covers costs to 2008.

Table 5: Revised Cost Estimates for Completing the Okanagan VRI

Year	# Maps	Data Source / Delineation	Field Work	Final Attr. Estimation	Digital Products.	Total
pre 2006	24					\$ 474,000
2006/07	35					\$ 937,683
2007/08	39	65000	0	400000	82000	\$ 547,000
2008/09	48	65000	35000	450000	85000	\$ 635,000
2009/10	42	40000	75000	350000	25000	\$ 490,000
TOTAL	188					\$ 3,083,683

Note: Revised estimates do not include 2007 photo acquisition costs of \$517,393

5.0 Reference Material

Photo Interpretation Procedures (version 2.4, March 2002)

NEW VRI Photo Interpretation Standards and Quality Assurance Procedures (version 3.1, May 2008)

Air Call (Air Calibration) Data Collection Procedures and Standards (version 2.1, June 2007)

Ground Call (Ground Calibration) Data Collection Procedures and Standards (version 3.1, June 2007)

VRI the BC Land Cover Classification Scheme (version 1.3, March 2002)

Vegetation Resources Inventory Photo Interpretation Standards and Quality Assurance Procedures Version 3.0 April 2006 [[download](#)]

Inventory Localization Procedure (version 2.0, March 2005)

BC Ministry of Forests' Inventory Manual;

BC Ministry of Forests' Biodiversity Guidebook;

BC Ministry of Forests' Color Stereogram Handbook;

BC Ministry of Forests' Black and White Stereogram Handbook;

Several tree and plant identification field guides

Okanagan TSA Vegetation Resource Inventory

6. PLAN SIGN OFF

I have read and concur with the Amendment to the Okanagan TSA VPIP (Project Implementation Plan) dated February 6, 2008. It is understood that this is an agreement in principle and does not commit the signatories to completing the inventory activities outlined within the plan.

All works undertaken will be to current MOFR approved standards and/or procedures Any new VRI Standards or processes, that may evolve as a result of the MPB Inventory Strategy or other VRI Standard changes, will also be incorporated.



14 August 2008

Okanagan Innovative Forestry Society
IFPA Representative.

Date

John Vivian *RPF*
Manager Vegetation Resources Inventory
Forest Analysis and Inventory Branch
Ministry of Forests and Range

Date

APPENDIX 1

The Okanagan TSA is comprised of 192 maps or 136.6 MSE's (map sheet equivalents)

Maps in bold text indicate wet belt / fir leading priority areas complete as of 31 March 2008

82E001	82E073	82L013	*82L049	82L086	*82M036
82E002	82E074	82L014	82L050	82L087	*82M037
82E003	82E075	82L015	82L051	82L088	*82M038
82E004	82E076	*82L016	82L052	82L089	*82M045
82E011	82E077	*82L017	*82L053	*82L092	*82M046
82E012	82E081	*82L018	*82L054	*82L093	*82M047
82E013	82E082	*82L019	*82L055	*82L094	*82M048
82E014	82E083	*82L021	*82L056	*82L095	*82M056
82E021	*82E084	*82L022	*82L057	*82L096	*82M057
82E022	*82E085	*82L023	*82L058	*82L097	*82M065
82E023	82E086	*82L024	*82L059	*82L098	*82M066
82E024	82E087	*82L025	82L060	*82L099	92H008
82E025	82E088	*82L026	82L062	*82M003	92H009
82E031	82E091	*82L027	82L063	*82M004	92H010
82E032	82E092	*82L028	82L064	*82M005	92H018
82E033	82E093	*82L029	82L065	*82M006	92H019
*82E034	82E094	82L031	82L066	*82M007	92H020
82E041	82E095	82L032	82L067	*82M008	92H029
82E042	82E096	*82L033	82L068	*82M009	92H029
82E043	83E097	*82L034	*82L069	*82M013	92H030
82E044	82E098	*82L035	82L070	*82M014	92H040
82E051	82E099	*82L036	82L072	*82M015	92H050
82E052	*82L001	*82L037	82L073	*82M016	92H060
82E053	*82L002	*82L038	82L074	*82M017	92H070
82E054	82L003	*82L039	82L075	*82M018	92H079
82E055	82L004	82L041	82L076	*82M023	*92H080
82E061	82L005	82L042	82L077	*82M024	92H089
82E062	82L006	*82L043	82L078	*82M025	92H090
82E063	82L007	*82L044	82L079	*82M026	92H100
82E064	82L008	*82L045	82L082	*82M027	92I010
82E065	82L009	*82L046	82L083	*82M028	92I040
82E071	*82L011	*82L047	82L084	*82M034	92I050
82E072	*82L012	*82L048	82L085	*82M035	

* Maps already completed to VRI Standards as of March 2008

Appendix 1 : The 100 maps indicated with ' « ' as **completed** to March 2008

APPENDIX 2

VRI Phase 1 and its RESULTS Connection.

Created on 05/02/2008 2:52:00 PM

VRI Data is the property of the Province and the process to create this data has a set of Standards that must be maintained.

With regard to silvicultural data (RESULTS) being added to a new VRI; the following is intended as an **Interim Guideline:**

1) The VRI is photo based and as such any external opening boundaries that exist on the current imagery will be maintained.

- The first order of resolution will be to use all external opening boundaries that exist on the current document imagery. VRI Proponents (Licensee) should indicate and document (VPIP) otherwise, if this doesn't meet their needs.
- The latest (newest) version of RESULTS external boundaries will be used to assess the accuracy and acceptability of the RESULTS external boundary against the interpreted boundary. ***The Ministry of Forest & Range will provide a copy of the RESULTS cut block shapes at the start of the contract.***
- RESULTS opening external boundaries that meet the MoFR VRI \pm 20 meter rule may be maintained or replaced by the photo interpreter at their discretion. . If no cut block shape exists in the RESULTS file, the external boundary from the photo will be used. The contractor should contact the Licensee to obtain the opening ID for this opening.
- Any RESULTS external boundary lines that exceed the \pm 20 rules will be corrected.
- Licensees will be notified when their RESULTS external boundary was NOT used and will be provided with a spatial file of the external boundaries that will be used in the VRI.
- The spatial file format will be determined by the contractor and Licensee. The Licensee may use the VRI external block boundary to update their files and re-submit the revised boundary to RESULTS.

2) RESULTS opening data that is newer than the document photos will be added to the corporate data base by the MoFR Forest Inventory Update Section.

- The Forest Inventory Update Section will instruct any VRI contractor at the start of a VRI Project (preferable at the VPIP stage) of any additional requirements associated with RESULTS.
- The Forest Inventory Update Section will load all subsequent RESULTS data past the most recent date of photography and after completion of a new VRI into the corporate data base.
- VRI re-inventory contractors will not be required to load RESULTS data that occurs after the date of photography, unless otherwise instructed.

3) New silviculture openings that are not declared Free Growing (FG) will have minimum attributes assigned. A process is being worked on to extract attribute data from Results, but at this point there is no time line,.

- the minimum attributes will be taken from RESULTS and will include:
 - estimated site index
 - estimated site index species
 - estimated site index source
 - BCLCS
 - **opening Id**
 - Disturbance type and date
 - Inventory Standard will be "I" for an incomplete record
- Wildlife Tree Patches or Reserves larger than 1 ha will be stratified and assigned full VRI attributes.
- New areas (openings) that are partially disturbed (selectively logged, seismic lines, etc) will require full VRI attributes estimated by the VRI contractor. Results may be inconsistent in providing sufficient data for partially disturbed areas for VRI.

4) When a silviculture opening is declared Free Growing, the opening is stratified and attributed to VRI standards.

- RESULTS free growing attributes and polygons should be used as a reference for the VRI interpretation
- Each free growing polygon must have the code "FTG" entered in the Project Name field
- External boundaries can be modified unless they are shared with a non-Free Growing opening

5) Additional points:

- Openings can be split by mapsheet boundaries as per previous standards
- Opening ID's must be provided for each silviculture opening polygon including WTP's
- For areas identified as large openings (i.e. historic fires) with a number of diverse vegetation types, provide full VRI attributes
- For VRI/Terrain projects, you can divide the openings by terrain lines. However, the internal stratification of opening is governed by the RESULTS guidelines and at this point that means these lines will disappear with the first new RESULTS submission to the VRI Update section.
- There is an anomaly within the VRI Data Base for polygons that have a crown closure of 5 – 9%. Until this can be corrected within the VRI data base, use a CC = 10% for these polygons. This is being reviewed to look at the impact of changing the land class scheme where vegetated starts at 10% instead of 5%." There is no time line.
- When or if a VRI contractor encounters a Results or other silviculture issue; they can contact the VRI Update Section in Kamloops. Provide a screen capture and / or description of the issue for resolution.

Also refer to Tim's Salkeld Decision Tree for Integration of Silv. Data.