Kootenay-Boundary Higher Level Plan Order Reporting Suite – Arrow, Boundary and Kootenay Lake Resource Management Zones

Guidance Document for Monitoring Report Table: Biodiversity Seral Stage Targets

Important: This guidance document is to be used with the example monitoring report tables found in Appendix 1.

Authors: **Higher Level Plan Reporting Suite Steering Committee Biodiversity Sub-committee**
Ian Dennis, Research Assistant, SGRC, Selkirk College
Loreen Hodgkinson, Stewardship Forester, FLNRORD
Tyler Hodgkinson, Forest Asset Manager, Kalesnikoff Lumber Co. Ltd.
Kathy Howard, Planning Officer, BC Timber Sales
Adam Rodgers, Planning Forester, Atco Wood Products Ltd.
Randy Waterous, Forestry Planner, Interfor Corporation
Ian Wiles, Stewardship Officer, FLNRORD

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1. Purpose

The purpose of this document is to explain how to use the reporting suite biodiversity tables to evaluate compliance with the legal requirements for managing biodiversity, as outlined in the Kootenay-Boundary Higher Level Plan Order (KBHLPO).

2. Background

Objectives 2 and 5 of the KBHLPO sets objectives to manage for biodiversity in the Boundary, Arrow, Cascadia, Cranbrook, Golden, Invermere and Kootenay Lake TSAs, TFLs and community forests. Seral stage distribution targets for 'Old' and 'Mature + Old' (M+O) forest retention are specified in the KBHLPO to meet these objectives. The targets are defined using the percentage of crown forest within Natural Disturbance Type (NDT), Biogeoclimatic Ecosystem Classification (BEC) zone, and Landscape Unit (LU) and are applied at the BEC subzone/variant level. Seral stages are defined by stand age in the KBHLPO (see Table 2.6).

Definition of Mature and Old forests by NDT and Biogeoclimatic Ecosystem Classification (BEC) Unit is outlined in Table 2.6.

Table 2.6. "Mature" and "Old" forests by NDT and BEC Unit

Natural Disturbance Type	BEC unit	Mature (yrs) [k]	Old (yrs) [k]
NDT 1	ICH	>100	>250
	ESSF	>120	>250
NDT 2	ICH	>100	>250
	ESSF	>120	>250
NDT3	ICH	>100	>140
	ESSF	>120	>140
	MS	>100	>140
NDT4	ICH	>100	>250
	IDF	>100	>250
	PP	>100	>250

[k] Where a registered professional forester determines that a forest stand has sufficient biological value to be a mature or old considering the stand age, successional status, presence of old growth attributes, size of stand (ha), the amount of human impact, dispersion/connectivity of the stand and rarity of the stand; that stand may be used in meeting the targets as opposed to solely using age.

Figure 1: Table 2.6, Kootenay – Boundary Higher Level Plan Order (see Reference 1.)

The Provincial government, in cooperation with major tenure holders and community forests, developed a network of draft, non-legal, mapped Old Growth Management Areas. OGMAs are used by many tenure holders as part of their Results and Strategies in Forest Stewardship Plans.

In general, the biodiversity suite tables report:

- Biodiversity Emphasis Options (BEO) and NDT per LU/BEC combo[1]
- a summary of the seral stage distribution of Crown Forested Land Base (CFLB) area by BEC and LU[2] (Part 1)
- surpluses and deficits of Old and M+O, both inside and outside of connectivity corridors, in relation to legislated targets in the KBHLPO, using both Method 1 and Method 2 (Part 2)
- all values in the tables show area of CFLB only (non-CFLB area within and outside of OGMAs is not calculated in the tables).

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[1] **BEO** is defined as per the BC Geographic Warehouse Landscape Unit coverage https://catalogue.data.gov.bc.ca/dataset/landscape-units-of-british-columbia-current and the **NDT** is defined as per the BEC coverage that was in place when the HLPO was amended in 2002, see Section 2.c. BEC Version.

[2] **CFLB** area is defined as per Biodiversity Step-down procedure available on the Help page of the reporting suite (see Appendix 2) http://www.kootenayspatial.ca/pg_hlpo/help/Biodiversitynetdownlogic.html

It is important to note that these tables report mature and/or old forest surplus or deficit within the CFLB area relative to targets which is then used to forecast timber available for harvest after the targets have been met. A surplus relative to the target does not necessarily mean that timber is available to harvest due to other license holder commitments, such as the protection of OGMA, ungulate winter ranges, equivalent clearcut area in watersheds, etc.

Currently, the suite is managed by a steering committee with representatives from major forest tenure holders, community forests, provincial government and the Selkirk Geospatial Research Centre (SGRC) at Selkirk College. The SGRC has been directed by the steering committee to update the biodiversity report format, which was originally designed by Ron Fretwell. These monitoring report tables are available by subscription only. The report tables are available on the website: http://www.kootenayspatial.ca/pg_hlpo/login.jsp.

2.a Approaches to Meeting 'Old' and 'Mature + Old' Forest Targets

Strategies to manage for Old and M+O targets are identified in the license holder's Forest Stewardship Plan (FSP), where a license holder either commits to using the CFLB within OGMAs as a strategy to meet the Old targets (Method 1), or they commit to using VRI mapping of old forest within the CFLB to manage Old targets aspatially[3] (Method 2).

Where OGMAs are used as a strategy for meeting Old targets (Method 1), the full age range within the OGMA can be used to meet the target, i.e., the full area of CFLB within mapped OGMAs contributes to the target (all age classes and not just old forest in OGMA). In the case of Method 1, the old forest outside the OGMA does not contribute to meeting the old target. Where an aspatial approach is used in an FSP (Method 2), all areas mapped as old forest in VRI contribute to the meeting the targets.

The M+O target will exceed the Old target only when mature forest is being managed in a LU/BEC as per Table 2.5 (amended in KBHLPO- Variance #8, November 2, 2008). Where M+O targets apply, the Old portion of the target must be met first; the mature portion of the target can include old and mature forest, but the old portion is only meant to include old seral forest (unless recruitment is required to meet deficits). Within the "mature" seral stage, there are no requirements to select oldest first; all stands within the age ranges of "mature" specified in the KBHLPO contribute equally to this target.

If there is not enough OGMA to meet old targets using Method 1, a recruitment strategy should be done as per Objective 2.5. If there is not enough old forest to meet old targets using Method 2 or there is not enough mature plus old forest to meet M+O targets, using either method, a recruitment strategy is required (as per Objective 2.5). Recruitment must be done in the shortest time frame, which generally includes using the oldest stands first to meet targets, unless an alternate strategy maintains or improves benefits for old growth conservation or better meets objectives 5, 8, 9 or caribou habitat (see Objective 2.5).

See Sections 4.b and 5.b for more information on recruitment strategies.

District Guidance

A recruitment strategy must be well-documented and filed and must clearly indicate the steps and calculations that were made along with a dated copy of the biodiversity table used. Ideally, this recruitment strategy should be developed collaboratively by license holders who share LUs, or at minimum, the recruitment strategy should be shared with other license holders who share the same LU.

A caution about fire-impacted stands - Stand age and volume may not be accurately reflected in the VRI for stands impacted by fires. Therefore, caution should be used when recruiting from or replacing OGMA in fire-impacted stands as the VRI may still show these stands as mature or old age stands. Field confirmation of fire intensity is required to

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[3] **Aspatial analysis** is defined as using the ages assigned to each VRI polygon to estimate the area in each seral stage to meet the targets, as show in column series 'D' and 'E'. In contrast, **OGMA analysis** includes using the entire area of CFLB within the mapped OGMA boundaries to meet the targets, as shown in column series 'B' and 'C'.

validate whether the stand will continue to contribute mature or old qualities after the fire. As such, extra diligence must be shown when recruiting from or replacing OGMA in stands within fire boundaries.

In meeting the M+O targets, KBHLPO objectives 5(5) and 5(6) specify that target areas must come from within connectivity corridors (as mapped in the KBHLPO) first, before looking to meet the target in areas outside of the connectivity corridor. Where old seral forest (Objective 5(5)) or mature seral forest (Objective 5(4)) occurs in protected areas (Parks), it must first be used to reduce the relevant targets within the BEC unit. In addition, forests on slopes >80% do not contribute to meeting connectivity objectives (Objective 5(4)). If the slope is > 80% and located inside the connectivity corridor, the area is considered to be outside of the connectivity corridor.

The sequence of priority deployment to meet Old and M+O targets is shown in Figure 1 below:

1. CFLB in protected areas including Parks[4], inside and outside of connectivity

Within each step below, consider identifying constrained areas first such as OGMA's, riparian reserves, Caribou GAR Order areas and WHA's. Note that the tables do not show information regarding riparian reserves, caribou and WHA's so other information will need to be used to describe and track these areas, if using.

2. CFLB in inoperable forest, inside connectivity, excluding slopes >80%
3. CFLB in operable forest, inside connectivity, excluding slopes >80%
4. CFLB in inoperable forest, outside connectivity
5. CFLB in operable forest, outside connectivity
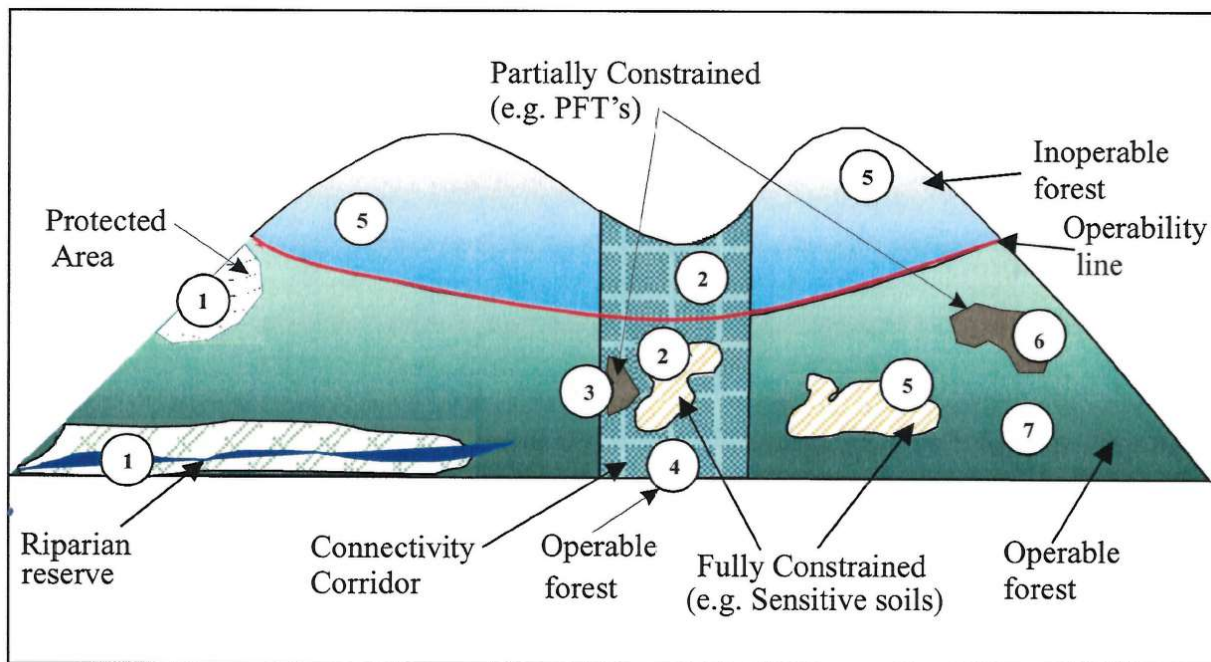
Figure 2. Sequence of priority deployment of O+M targets to address connectivity (Strategies for the Kootenay Boundary Higher Level Plan Order, May 14, 2001). See Appendix 5.

District Guidance

A recruitment strategy for M+O is required when harvesting is being proposed in areas where the target is not met in the appropriate age class following the above sequence. As per Objective 2.5, M+O targets should be met in the shortest time frame unless an alternate strategy maintains or improves old growth conservation or better meets objectives 5, 8, 9 or caribou habitat. A recruitment strategy must be well-documented and filed and must clearly indicate the steps and

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[4] See notes regarding Parks in Section 3.a

calculations that were made along with a dated copy of the biodiversity table used. Ideally, this recruitment strategy should be developed collaboratively by license holders who share LUs, or at minimum, the recruitment strategy should be shared with other license holders who share the same LU. See Sections 4.b and 5.b for more information on recruitment strategies.

2.b Old Growth Management Areas (OGMAs)

OGMAs (https://catalogue.data.gov.bc.ca/dataset/f063bff2-d8dd-4cc3-b3a4-00165aba58e1) have been identified for most of the Selkirk Resource District during landscape unit planning or operational planning processes. These are non-legal, spatially defined areas of forest that contribute to biodiversity by having old growth characteristics or suitable old growth recruitment characteristics. See Appendix 6, Stu Clow, 2007.

When OGMAs are used towards meeting Old targets (Method 1) or contribute to the M+O target (Method 1), then all CFLB inside the spatially-defined OGMAs, regardless of age class, is considered to be old forest.

District Guidance

The Ministry is concerned about old growth in LU/BEC where the CFLB area in OGMA does not meet the Old target (Method 1) and where old forest is also in deficit aspatially (Method 2). The District Manager requests that you contact the District Stewardship Officer when planning to harvest old forest in these areas. See Appendix 3, Selkirk District Manager email, 2019-05-13.

Where the OGMA exceeds the Old targets, these surpluses can contribute to M+O targets and the licences holder must still follow their FSP regarding harvesting and replacing OGMA.

See also Appendix 4 for OGMA-related resources.

2.c BEC version

Currently, the BEC version used for determining the targets is the BEC version that was in place during the last KBHLPO amendment (2002):

- Boundary – BEC version 4
- Arrow/Cascadia – BEC version 4
- Kootenay Lake – BEC version 3

3. Description of the Biodiversity Report Table Layout

The report table is composed of two sections:

- Part 1 – Seral age class CFLB area distribution
- Part 2 – Summaries of Old and M+O CFLB area with surplus or deficit to targets
  - Method 1 – Using OGMAs to manage for Old targets (columns BA[5] – CB)
  - Method 2 – Using VRI mapping of seral stages to manage for targets (columns DA – FG)

Areas are represented in hectares (ha).

3.a Part 1 Biodiversity Report Table (Columns AA to AW)

Part 1 represents age class distribution by LU/BEC. Each age class is broken down to show area inside and outside of the connectivity corridor.

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[5] All row and column references shown in this guidance document are the same printed cell and column references in the example report tables found in Appendix 1.

There are four rows representing the sum of the CFLB area for each LU/BEC combination:

1. OGMA
2. Parks*^{see notes below}
3. Inoperable
4. Operable

*Parks include Provincial parks, National parks, ecological reserves, and approved Goal 2 protected areas.

*Where Parks overlaps with OGMA, the overlapping area is reported in the OGMA cell. The Park cell reports only Park area that is outside of OGMA. Therefore, the actual Park area will be larger than what is shown if it is overlapped by an OGMA.

*Riparian reserves, Caribou GAR order areas and Wildlife Habitat Area (WHA) no-harvest areas can be treated the same as Parks, i.e. the entire mature plus old forest within Parks, both inside and outside of connectivity, goes toward meeting the M+O targets before other areas inside of connectivity are counted towards aspatial targets. Note that Parks have been modeled and are included in the tables generated by the SGRC, but, these other areas (riparian reserves, Caribou GAR order areas and WHA) have not been modeled or included in the tables generated by the SGRC. The license holder can model these separately and count these towards meeting the targets so long as the areas meet the seral age requirement.

3.b Part 2 Biodiversity Report Table (Columns BA to FG)

Row 9 illustrates the LU/BEC combination of Old and M+O "Surplus/Deficit to Target (ha)." A green positive number indicates a surplus and a red negative number indicates a Deficit relative to targets. If there is a Deficit, a recruitment strategy may be required to meet the Old and/or M+O targets (as per Objective 2(5) in the KBHLPO). A documented recruitment strategy must be designed to meet the target in the shortest time possible, i.e. the next oldest age class must be recruited first (or an alternate strategy developed as per Objective 2.5). Refer to See Sections 4.b and 5.b for more information on recruitment strategies.

Column series 'B': Old – When FSP commits to use OGMA to meet Old target

- OGMA used to meet Old targets (spatial analysis)
- Connectivity is not prioritized to achieve the Old target, thereforeBA8 shows only forest which is truly in the connectivity corridor
- See Section 4.a.1 and 4.b.1

Column series 'C': 'Mature + Old' (M+O) – When FSP commits to use OGMA to meet Old target

- OGMA used to meet the M+O target (spatial analysis)
- The entire M+O target can be met by using OGMA, regardless of forest age within mapped OGMAs (spatial analysis)
- Where the OGMA exceeds the Old target, the additional area can contribute to meeting the M+O target
- Parks and connectivity rules apply. This means that forest within Parks and the connectivity corridor are prioritized to meet the target, so long as they meet minimum ages by seral stage in Table 2.6. CA8 shows these priority areas.
- If the LU/BEC is not being managed for mature forests as per the amended KBHLPO-08 Table 2.5, the report will identify the M+O target as not applicable (n/a) and only Old targets apply
- See Section 5.a.1 and 5.b.1

Column series 'D': Old - When FSP commits to use VRI mapped old forest to meet Old target (OGMA are not used)

- Aspatial analysis

- See Section 4.a.2 and 4.b.2

Column series 'E': 'Mature + Old' (M+O) - When FSP commits to use <u>VRI mapped</u> mature and old forest to meet M+O target (OGMA are not used)

- Aspatial analysis
- Connectivity rules apply in areas managed for mature forest as per the amended KBHLPO-08 Table 2.5. If the LU/BEC is not being managed for mature forests as per the amended KBHLPO-08 Table 2.5, the report table will identify the M+O target as not applicable (**n/a**).
- The entire M+O target can be met by using old forest
- See Section 5.a.2 and 5.b.2

Column series 'F': Mature

- This table is here for information purposes only
- This table separates mature forest on its own so the user can observe seral distribution for recruitment purposes and/or rationales for harvesting
- There is no legal requirement to manage for mature targets on its own

4. Managing to Old Targets

4.a. How to Calculate Surplus/Deficit to Old Target

4.a.1 Method 1 - when the FSP uses OGMA

Look in cell (BA9) to see the **Surplus**/**Deficit** of OGMA relative to the Old target. This is calculated as the OGMA area (BA6) minus the Old target (BA4).

BA9 = BA6-BA4[6]

District Guidance

Where the OGMA exceeds the Old targets, these surpluses can contribute to M+O targets and the licences holder must still follow their FSP regarding harvesting and replacing OGMA.

Where OGMA does not meet targets, the OGMA deficit should be managed aspatially. This means DC6 must exceed BA9. If it does not, a recruitment strategy should exist.

4.a.2 Method 2 - when the FSP does not use OGMA (aspatial analysis)

Look in cell (**DF9**) to see the **Surplus**/**Deficit** of Old forest relative to the target. This is calculated as the total Old forest area (**DF6**) minus the Old target (**DA4**).

DF9 = DF6-DA4[5]

District Guidance

A recruitment strategy is required if harvesting is being proposed in an area where the target is not being met. This recruitment strategy must be well-documented and filed and must clearly indicate the steps and calculations that were made along with a dated copy of the biodiversity table used. Ideally, this recruitment strategy should be developed collaboratively by license holders who share LUs, or at minimum, this recruitment strategy should be shared with other license holders who share the same LU. See Sections 4.b.2 for more information on old recruitment strategies.

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[6] The formulas, as shown in this guidance document, use the printed row and column references and will not exactly match the formulas in the Excel workbook version of the example report tables shown in Appendix 1.

4.b Old Recruitment

Look at cell **BA9** (Method 1) or **DF9** (Method 2)**.**

4.b.1 Method 1 Old Recruitment - when the FSP uses OGMA

Look in cell (**BA9**) to determine if there is a **Deficit** or **Surplus** relative to target. If there is a **Deficit**, consider the District guidance below.

District Guidance

*If cell (**BA9**) shows a **Deficit**, additional old seral forest should be recruited from outside the OGMA (DC6) to meet the old target. If the area in (**DC6**) is not sufficient to meet the **Deficit**, a documented recruitment strategy should be done using forest in (**FC6**).*

Harvesting in OGMA is still permitted under certain circumstances as outlined in a license holders' FSP providing a replacement is done and the commitments in the FSP are followed. Harvesting of old forest outside of OGMA when there is a deficit in OGMA (Method 1) and a deficit of <u>VRI mapped</u> old forest relative to the Old target (Method 2) should be discussed with the Ministry during planning, see Appendix 3.

4.b.2 Method 2 Old Recruitment - when the FSP does not use OGMA (aspatial analysis)

Look at cell (**DF9**). If this cell shows a **Deficit**, harvesting old is prohibited and a recruitment strategy is required to meet the Old target. Use the left-hand section of the report (Part 1) to determine where to retain/recruit area, in order of sequence, as follows:

1. Next oldest age class, areas both **inside and outside** of connectivity corridor in **Parks**

Within each step below, consider identifying constrained areas first such as OGMA's, Caribou GAR order areas and WHA's. Note that the tables do not show information regarding caribou and WHA's so other information will need to be used to describe and track these areas, if using for recruitment purposes.

2. Next oldest age class, **Inoperable**, **inside** connectivity (using forest inside connectivity is a suggestion, not a requirement when recruiting old forest)
3. Next oldest age class, **Operable**, **inside** connectivity (using forest inside connectivity is a suggestion, not a requirement when recruiting old forest)
4. Next oldest age class, **Inoperable**, **outside** connectivity corridors
5. Next oldest age class, **Operable**, **outside** connectivity corridors
6. Repeat steps 1 – 6 using next oldest age class until the full target is achieved.

See Example #2, p.12

District Guidance

A recruitment strategy must be well-documented and filed and must clearly indicate the steps and calculations that were made along with a dated copy of the biodiversity table used. Ideally, this recruitment strategy should be developed collaboratively by license holders who share LUs, or at minimum, the recruitment strategy should be shared with other license holders who share the same LU. See Sections 4.b and 5.b for more information on recruitment strategies.

Stand age and volume may not be accurately reflected in VRI for stands impacted by fires. Therefore, caution should be used when recruiting from or replacing OGMA in fire-impacted stands as they may still show in the VRI as mature or old age stands. Field confirmation of fire intensity is required to validate whether the stand will continue to contribute mature or old qualities after the fire. As such, extra diligence must be shown when recruiting from or replacing OGMA in stands within fire boundaries.

5. Managing to 'Mature + Old' Targets

5.a How to Calculate Surplus/Deficit to M+O Target

5.a.1 Method 1 - when the FSP uses OGMA

If the LU/BEC is not being managed for mature forest as per the amended KBHLPO-08 Table 2.5, then **n/a** is found in the Target % (**CA3**) cell. In this case, the only target to meet is the Old target.

If a LU/BEC is being managed for mature forest as per the amended KBHLPO-08 Table 2.5, the target area for M+O in (**CA4**) must come from the forest in OGMA, Parks and the connectivity corridors as a priority (all included in (**CA8**)). Look in cell (**CA9**) to see the **Surplus**/**Deficit** of M+O in connectivity relative to the target (**CA4**). If the M+O target is met inside the OGMA, Park and connectivity corridor, (**CA9**) will show a **Surplus**, green positive number and (**CB9**), the **Surplus**/**Deficit** outside connectivity will also show a **Surplus**, green positive number because when the target is met inside connectivity corridor, you always have a **Surplus** outside of connectivity. If the target area cannot be met using only forest from OGMAs, Parks and the connectivity corridor, M+O inside connectivity (**CA9**) will show a **Deficit**, red negative number and the target must be met using forest from outside the connectivity corridor.

> **CA8= BA6+EC8+EE8**

> **CA9 = CA8-CA4**

The **Surplus**/**Deficit** of M+O outside the connectivity corridor (**CB9**) is calculated as the M+O area outside connectivity (**CB8**) plus the **Deficit** to target from the inside connectivity (**CA9**). If there is a still a **Deficit** outside connectivity, a recruitment strategy is required. See Sections 5.b.1 for more information on Method 1 M+O recruitment strategies.

> **CB9=IF(CA9>0,CB8,(CB8+CA9))**

In English, the above formula reads …

The calculation for **Surplus**/**Deficit** to target of M+O outside of the connectivity corridor (**CB9**) depends on whether the target is being met inside the connectivity corridor (**CA9**) or not. If there is a **Surplus** to target inside the connectivity corridor (**CA9**), the target is met and none of the area outside the connectivity corridor (**CB8**) is needed. In this case, all the forest located outside the corridor is **Surplus** to the target and may be available to harvest. However, if the target is not being met inside the corridor and (**CA9**) shows a **Deficit,** all the forest inside the connectivity corridor (**CA8**), as well as some (or all) of the forest from outside the corridor (**CB8**) is required to make up this **Deficit** to meet the target.

District Guidance

A well-documented and properly filed recruitment strategy is required if harvesting is being proposed in an area where the target is not being met as shown as a Deficit in CB9. See Section 5.b for more information on O+M recruitment strategies.

The area surplus to target may be available to harvest if not constrained in some other way, such as the protection of OGMA in an FSP pertinent to that LU/BEC, ungulate winter ranges, equivalent clearcut areas in watersheds, etc.

5.a.2 Method 2 - when the FSP does not use OGMA (aspatial analysis)

If the LU/BEC is not being managed for mature forest as per the amended KBHLPO-08 Table 2.5, then **n/a** is found in the Target % (**EA3**) cell. In this case, the only target to meet is the Old target.

If a LU/BEC is being managed for mature as per the amended KBHLPO-08 Table 2.5 forest, the target area in (**EA4**) must come from Parks, OGMAs and connectivity corridors as priority deployment. Look in cell (**EF9**) to see the **Surplus**/**Deficit** of M+O in connectivity relative to the target (**EA4**). If the target area cannot be met using only forest from Parks and the connectivity corridor (all included in (**EF8**)), M+O inside connectivity (**EF9**) will show a **Deficit**, red negative number.

EF8= EA8+EC8+EE8

EF9 = EF8-EA4

If the M+O target is met inside the connectivity corridor, (**EF9**) will show a **Surplus**, green positive number and (**EG9**), **Surplus**/**Deficit** outside connectivity will also show a **Surplus**, green positive number because when the target is met inside connectivity corridor, you always have a **Surplus** outside of connectivity. If the M+O target is not met inside the connectivity corridor, (**EF9**) will also show as a red **Deficit.** The **Surplus**/**Deficit** of M+O outside connectivity (**EG9**) is calculated by the M+O area outside connectivity (**EG8**) plus the **Deficit** to target from inside connectivity (**EF8**).

EG9 = IF(EF9>0,EG8,(EG8+EF9))

In English, the above formula reads …

The calculation for **Surplus**/**Deficit** to target of VRI mapped M+O outside of the connectivity corridor (**EG9**) depends on whether the target is being met inside the connectivity corridor (**EF9**) or not. If there is a **Surplus** to target inside the connectivity corridor (**EF9**), the target is met and none of the area outside the connectivity corridor (**EG8**) is needed. In this case, all of the forest located outside the corridor is **Surplus** to the target and may be available to harvest. However, if the target is not being met inside the corridor and (**EF9**) shows a **Deficit**, all of the forest inside the connectivity corridor (**EF8**), as well as some (or all) of the forest from outside the corridor (**CB8**) is required to make up this **Deficit** to meet the target.

District Guidance

A well-documented and properly filed recruitment strategy is required if harvesting is being proposed in an area where the target is not being met. See Section 5.b.2 for more information on Method 2 O+M recruitment strategies.

5.b O+M Recruitment

5.b.1 Method 1 O+M Recruitment- when the FSP uses OGMA

Look at cells (**CA9**) and (**CB9**). If either of these cells shows a **Deficit**, harvesting mature or old is prohibited where there is a **Deficit** and a step-down recruitment strategy is required. Use the left-hand section of the report (Part 1) to determine where to retain/recruit area, in order of sequence, as follows:

Within each step below, consider identifying constrained areas first such as Caribou UWR and WHA's. Note that the tables do not show information regarding caribou and WHA's so other information will need to be used to describe and track these areas, if using.

1. Next oldest age class, areas both **inside and outside** of connectivity corridor in **Parks** (not OGMAs, as OGMA have already been fully accounted for)
2. Next oldest age class, **Inoperable**, **inside** connectivity (using forest inside connectivity is a suggestion, not a requirement when recruiting old forest, however it is a requirement when managing the mature portion of the M+O target)
3. Next oldest age class, **Operable**, **inside** connectivity (using forest inside connectivity is a suggestion, not a requirement when recruiting old forest, however it is a requirement when managing the mature portion of the M+O target)
4. Next oldest age class, **Inoperable**, **outside** connectivity corridors
5. Next oldest age class, **Operable**, **outside** connectivity corridors
6. Repeat steps 1 – 6 using next oldest age class until the full target is achieved.

Example #1– Method 1 recruitment (OGMAs used to meet old targets): LU N530 ICHmw2

Cell (**CB9**) shows a deficit of 11.3 ha for 'Mature + Old' - AC 5 is the next oldest age class.

1. Cells (**AI6**) & (**AJ6**) shows zero area in Parks
2. Cell (**AI7**) shows 3.2 ha of inoperable area inside connectivity
3. Cell (**AI8**) shows 16.0 ha of operable area inside connectivity

Calculation:

Deficit area	-11.3 ha
Parks	+ 0
Inside connectivity - inoperable	+ 3.2
Inside connectivity - operable	+16
Deficit met and available area in the above category (Inside connectivity – operable)	**8.2 ha**

Resulting recommendation:

- No old and/or mature stands may be harvested in this LU/BEC
- There are 8.2 ha of AC 5 within connectivity available and all of the AC 5 outside of the connectivity is available (143.1 ha operable). All stands younger than AC 5 are also available.

5.b.2 Method 2 O+M Recruitment - when the FSP does not use OGMA (aspatial analysis)

Look at cells (**EF9**) and (**EG9**). If either of these cells shows a **Deficit**, harvesting old is prohibited where there is a **Deficit** and a recruitment strategy is required. Use the left-hand section of the report (Part 1) to determine where to retain/recruit area, in order of sequence, as follows:

1. Next oldest age class, areas both **inside and outside** of connectivity corridor in **Parks**, and **OGMAs**
2. Next oldest age class, **Inoperable**, **inside** connectivity (using forest inside connectivity is a suggestion, not a requirement when recruiting old forest)
3. Next oldest age class, **Operable**, **inside** connectivity (using forest inside connectivity is a suggestion, not a requirement when recruiting old forest)
4. Next oldest age class, **Inoperable**, **outside** connectivity corridors
5. Next oldest age class, **Operable**, **outside** connectivity corridors
6. Repeat steps 1 – 6 using next oldest age class until the full target is achieved.

Example #2 – Method 2 recruitment (aspatial analysis): LU N530 ICHmw2

Cell (**EG9**) shows a deficit of 42.0 ha for 'Mature + Old' - AC 5 is the next oldest age class.

1. OGMAs and Park area in AC 5
   a. Cells (**AI5**) & (**AJ5**) shows 4.9 ha (2.6 + 1.9) of OGMA
   b. Cells (**AI6**) & (**AJ6**) shows zero area in Parks
2. Cell (**AI7**) shows 3.2 ha of inoperable area inside connectivity
3. Cell (**AI8**) shows 16.0 ha of operable area inside connectivity
4. Cell (**AJ7**) shows 4.9 ha of inoperable area outside connectivity
5. Cell (**AJ8**) shows 143.1 ha of operable area outside connectivity

Calculation:

Deficit area	-42.0 ha
OGMA	+4.5
Parks	+ 0
Inside connectivity - inoperable	+ 3.2
Inside connectivity - operable	+16
Outside connectivity - inoperable	+4.9
Outside connectivity - operable	+143.1
Deficit met and available area in the above category (outside connectivity – operable)	**129.7 ha**

Resulting recommendation:

- No old and/or mature stands may be harvested in this LU/BEC
- There is no AC 5 within connectivity available
- There are 129.7 ha of AC 5 available outside the connectivity. All stands younger than AC 5 are also available.

6. Exceptions to calculated values – legal variances in the KBHLPO

The KBHLPO was last amended on October 26, 2002. Since that time, eight legal variances have been enacted.

Variance 1 reduces the M+O targets in the ICHmw2, outside of mapped caribou habitat areas, by 608 ha in N525 Wilson and increases the area of old plus mature forest required in the ICHmw2, inside of mapped caribou habitat areas, by 608 ha in N528 Kuskanax. This variance only applies to N525 and N528 in the Arrow RMZ.

Resulting recommendation:

- License holders operating in N525 or N528 will need to manually calculate new targets and compliance with targets for the ICHmw2 to meet this variance.

Variance 2 changes the M+O targets in the ESSF in B11 in the Boundary RMZ by adding 50 ha to the required amount of M+O within the connectivity corridor in the ESSFwc4 and removing 50 ha from the ESSFdc1 in the connectivity corridor in the ESSFdc1.

Resulting recommendation:

- License holders operating in B11 will need to manually calculate new targets and compliance with targets for the ESSFdc1 and ESSFwc4 to meet this variance.

The remaining variances do not affect Old or M+O targets in the area in which this guidance applies.

Variance 3 addressed temporary measures required to salvage areas burned in the 2003 fire season in LU/BEC units with a deficit in Old or M+O and expired on December 31, 2004. This variance only allowed for harvest in areas with deficits and did not alter targets.

Variance 4 and **Variance 5** have been canceled and replaced by GAR orders related to caribou management.

Variance 6 allows for harvesting areas infested with mountain pine beetle, while ensuring old and mature forests are protected. This variance allows for harvesting but does not change targets; where a deficit is created, a recruitment strategy is required as per Objective 2(5) of the KBHLPO.

Variance 7 updates BEC and BEO mapping in the Invermere and Cranbrook RMZs and does not apply to the areas in this guidance.

Variance 8 only applies in the Golden RMZ where it updates BEO mapping, updates BEC units where M+O targets apply (Table 2.5) and shifts requirements for old forest in the ICH by adding 116 ha in G01 and reducing targets by 116 ha in G02.

Note: Variances 3 - 8 do not affect the biodiversity tables.

Variance 9

Cancels Objective 3 (Caribou habitat) in the KBHLPO and replaces it with a new GAR order.

7. References

1. KBHLPO, October 26, 2002 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/kootenayboundary-region/kootenayboundary-rlup/kootenayboundary_rlup_fpc_26oct2002.pdf
2. KBHLPO- Variance #1, May 7, 2003 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/kootenayboundary-region/kootenayboundary-rlup/kootenayboundary_rlup_kbhlp-01_fpc_7may2003amend.pdf
3. KBHLPO- Variance #2, May 30, 2003 https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/kootenay-boundary/kootenay-boundary-rlup
4. KBHLPO- Variance #8, November 2, 2008 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/kootenayboundary-region/kootenayboundary-rlup/kootenayboundary_rlup_kbhlp-08_luor_2nov2006amend.pdf
5. Landscape Unit Planning Guidebook https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/policies-guides/lup_guide.pdf

8. Appendices

Appendix 1.a Example table as embedded pdf (double-click to open in Adobe)

2 Appendix 1.a
Selkirk_Biodiversity_T

Appendix 1.b Example table as embedded xls (double-click to open in Microsoft Excel)

3 Appendix 1.b
Selkirk_Biodiversity_T

Appendix 1.c Example table as embedded xls with N530 showing formulas (double-click to open in Microsoft Excel, then choose Formulas, then Show Formulas)

4 Appendix 1.c
Draft_Selkirk_Biodiver

Appendix 2 Biodiversity net-down (double-click to open in Adobe)

Used to create CFLB for biodiversity calculations. Modelled after ILMB Landbase Netdown Document: Netdown #7, Peter J Lewis authored. Last modified 17/03/2019 by Ian Dennis.

Biodiversitynetdownl
ogic.pdf

See also netDown.py

Source: http://www.kootenayspatial.ca/pg_hlpo/help/Biodiversitynetdownlogic.html

Appendix 3 Selkirk District Manager email (2019-05-13) (double-click to open in Adobe)

6 Appendix 3 DM
email.pdf

From: DeCourcy, Tara D FLNR:EX
Sent: May 13, 2019 4:10 PM
To: FLNR Selkirk District Licensees Major Licences and CFA <DSEMAJORS@Victoria1.gov.bc.ca>
Cc: Morello, Ray FLNR:EX <Ray.Morello@gov.bc.ca>; Knapik, Mike B FLNR:EX <Mike.Knapik@gov.bc.ca>
Subject: FW: Old direction email to licensees

Good afternoon,

To follow up on discussion in the last SFA meeting, below is a list of landscape units and BEC combinations where we have concerns about old growth. These units currently do not have enough OGMA area identified to meet the old targets and are also showing an aspatial deficit of old. If you are planning to harvest old, even outside of OGMA, in these units, I request that you contact Ian Wiles at 250-825-1170. In all LU/BEC units, when planning to harvest age class 8 or 9, the prescribing forester should be cognizant of the impacts of the plans on the seral distribution in the landscape unit.

These tables are for Kootenay Lake and Arrow only, as that is the currently available information. As information becomes available for Boundary, Revelstoke and Golden further tables may be shared.

Thank you for your help on this everyone.

Arrow TSA

LU	BGC Unit	BEO	NDT
N501	ICHdw	I	NDT3
N503	ICHmw2	L	NDT2
N503	ICHxw	L	NDT4
N504	ESSFwc1	I	NDT2

LU	BGC Unit	BEO	NDT
N504	ICHdw	I	NDT3
N505	ESSFwc1	I	NDT2
N505	ICHdw	I	NDT3
N505	ICHxw	I	NDT4
N506	ESSFwc1	L	NDT2
N506	ESSFwc4	L	NDT2
N508	ESSFwc1	L	NDT2
N509	ESSFwc1	I	NDT2
N509	ESSFdc1	I	NDT3
N509	ICHmw2	I	NDT2
N509	ICHdw	I	NDT3
N510	ESSFwc4	I	NDT2
N510	ESSFwc1	I	NDT2
N510	ICHmw2	I	NDT2
N514	ESSFwc1	I	NDT1
N514	ESSFwc4	I	NDT1
N514	ICHmw2	I	NDT2
N519	ESSFwc1	I	NDT2
N518	ESSFwc1	L	NDT1
N520	ESSFwc4	I	NDT1
N520	ESSFwc1	I	NDT1
N522	ICHwk1	I	NDT1
N523	ESSFwc4	I	NDT1
N523	ICHdw	I	NDT3
N525	ESSFwc4	H	NDT1
N527	ESSFwc1	I	NDT1
N527	ESSFwc4	I	NDT1
N530	ICHmw2	H	NDT2

Kootenay Lake

LU	BGC Unit	BEO	NDT
K01	ICHxw	L	NDT4
K04	ICHxw	L	NDT4

LU	BGC Unit	BEO	NDT
K05	ICHdw	I	NDT3
K06	ICHxw	I	NDT4
K10	ICHdw	I	NDT3

Tara DeCourcy, RPF
District Manager
Selkirk Resource District

Appendix 4 Old growth documents reference list-2018.docx (double-click to open in Adobe)

7 Appendix 4 Old
growth documents re

Appendix 5 Strategies for the Kootenay Boundary Higher Level Plan Order May 14, 2001 (double-click to open in Adobe)

8 Appendix 5
Strategies for the KBH

Appendix 6 Arrow Timber Supply Area and Tree Farm Licence #3 and #23 Old Growth Management Areas Report, Stu Clow, 2007. (double-click to open in Adobe)

9 Appendix 6 Arrow
Old Growth_july 24_0

Appendix 7 SGRC Biodiversity Lookup table. (double-click to open in Microsoft Excel)

10 Appendix 7
Biodiversity_lookup_r