**Python to R spatial script conversion**

GitHub Repository: <https://github.com/bcgov/SSGBM-VRI-BEM>

**Note: For this Code-With-Us project, the data is provided and clipped to a sample area-of-interest.**

Appendix A: Methods Applied for the Spatial Product to Support the SSMM.

**Step 1a: Create Initial Spatial Product**

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| **Name** | **Data Type** | **Description** |
| **VRI** | **Input** | The VRI 2020 file was clipped to the study area to serve as the linework (polygons) layer of the habitat effectiveness spatial product. |
| **CCL** | **Input** | Consolidated cutblock layer (CCL) was used to enhance the representation of recent harvesting in VRI (i.e., where VRI indicated a forest was old, but the CCL indicated it had been harvested, the polygon age was updated to reflect the CCL data). |
| **Script** | Script4a was run to incorporate any changes in age class data based on the projected age and consolidated cut block information. The CCL harvest date took precedence over the VRI harvest date. |
| **DEM** | **Input** | Topographic information from a 25-m resolution Digital Elevation Model (DEM) was applied to each VRI polygon. The information provided included: Mean Slope, Aspect, and Elevation of the polygon. |
| **Script** | Script3a was run using a 25-m DEM dataset to populate the mean slope, mean aspect, and mean elevation for each polygon. This also resulted in the addition of the slope / aspect modifier field. QA was done at this stage to ensure that the slope modifiers (Slope\_Mod) were assigned correctly. |
| **BEM** | **Input** | The BEM3.2 product ecosystem label was assigned to each VRI polygon based on majority area of overlap. This resulted in rows of the same data assigned to multiple VRI polygons due to the 1:250,000 scale BEM being assigned to the 1:20,000 VRI. Extensive corrections of the BEM labels were necessary.  **Updates already incorporated during the BEM product creation process:**  **Lakes and Open Water:** A semi-automated process was used to include all water features contained in the VRI database that represented 100% of the polygon (DEC1 = 10) and were easily cross walked to BEM map codes.  **Wetlands (WL):** At the 1:250,000 scale of the BEM product; many polygons were assigned a minor wetland (WL) component (as indicated in the second or third decile label). These were all reviewed, and all Dec3 wetland labels indicating “10%” in the BEM product were deleted. Where WL was indicated as a secondary component of the original BEM polygon, it was removed where VRI indicated that the polygon is forested. |

**Step 1b: GIS Clean-up of Initial Spatial Product**

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| **Name** | **Description** |
| **Topo** | Multipart exploded to single-part features. Produces slivers to correct in the next step. |
| **Slivers** | The process of intersecting the BEM and VRI datasets resulted in the creation of several slivers where the line work was cut between polygon boundaries. These topology errors were alleviated using the Elimination, Integrate, and Topology tools. Any sliver with an area of less than 1 ha was merged with the next adjacent polygon. |
| **TEIS ID** | Unique TEIS\_ID [[1]](#footnote-1)values were applied to all polygons in preparation of running existing scripts in later steps that require a unique TEIS\_ID. |

1. TEIS\_ID is the unique polygon identifier as specified in Terrestrial Ecosystem Information System (TEIS) data standards. [↑](#footnote-ref-1)