Offsite planting project description

Objective

Objective is to compile historical and current planting of tree species outside their “natural” ranges in British Columbia.

Methods

Data sources for this project include:

1. Silviculture information in the Ministry’s RESULTS database;
2. Offsite trial information compiled by Socha (2019); and
3. Ad hoc information collected by District staff, licensees, woodlot owners, etc.

For this project, a tree’s natural range will be defined by the Chief Forester’s Reference Guide for Forest Development Stocking Standards (CFRG). In other words, for a given species, BGC units and site series where it is not listed as preferred or acceptable will be considered ‘offsite’.

Proposed workflow:

1. Download planting data from RESULTS;
   1. If external to government, a BCeID will be required (or Hardy can provide entire dataset HUGE).
2. Perform a spatial join with latest version of BEC;
   1. Can be done in R using bcdata() package.
3. Filter for tree species planted outside their range:
   1. Either in climatic units not listed in the CFRG, and
   2. Where site series is recorded in RESULTS, on sites not listed in the CFRG.
4. Join the resultant dataset with additional RESULTS datasets, including silviculture cover dataset;

|  |  |
| --- | --- |
| **Variable** | **Comment** |
| Tree species |  |
| Number planted |  |
| Date planted | To calculate tree age |
| Seedlot | May not be present in older RESULTS data, however, important to determine climatic distance between provenance and site. |
| BGC unit | Based on most recent BEC version |
| Site series or other site data | May not be present; these data have proven unreliable as well. |
| Inventory labels | For all regen/free growing surveys. If species has survived and achieved co-dom status, it may be recorded in the inventory label. This can provide information on the species survival and growth. |
| Silviculture labels | For all regen/free growing surveys. In most cases, the species will not be recorded in this label. In cases where it is present, however, it might be worth following up with District staff or licensee to see why this species was considered acceptable. |
| Site climate normal | Use same reference period and climate variables as CCISS and CBST. |
| Provenance climate normal | Only possible where seedlot information is provided, and provenance information contained in SPAR (or other). Use same reference period and climate variables as CCISS and CBST. |
| Provenance BGC unit | Only possible where seedlot information is provided, and provenance information contained in SPAR (or other). Use same reference period and climate variables as CCISS and CBST. |
|  |  |

1. For each polygon, use ClimateWNA to compute *site* climate normals (same variables/reference period as CCISS and CBST);
2. For each seedlot, extract geographic coordinates and BGC unit.
   1. Use geographic coordinates and ClimateWNA to compute *provenance* climate normals;
3. Output will include the following spatial and tabular information

|  |  |  |
| --- | --- | --- |
| Category | Product | Comments |
| Spatial | Themed maps showing locations where tree species have been planted outside their range. | Maps will be colored by species. |
|  | Themed maps at the species level showing climatic distance between site and provenance. | This will be used to identify sites where a given species has been planted at greater climatic distance outside its range. |
| Tabular |  |  |