**11/07/2025 Workflow for ArcGIS Borneo Seed Sourcing - e.g. R. leprosula**

**Step 0: Load rasters**

Load in Borneo extent raster, Natural Forest raster layer, and your habitat suitability raster

**Step 1: Resample Maxent Suitability Raster**

Bring Maxent raster to 30m resolution and match the natural forest raster.

Tool: Resample

Input raster: Rubroshorea\_leprosula\_Maxent3\_TandH.tif

Output cell size: 0.00025 (or match from Borneo\_SBTN\_NaturalForest.tif)

Resampling technique: BILINEAR

Snap raster: Borneo\_SBTN\_NaturalForest.tif

Output: Rleprosula\_Suitability\_30m.tif

**Step 2: Reclassify Suitability Map (Sensitivity Analysis)**

For each threshold (e.g. 0.5, 0.6, 0.7, 0.8, 0.9):

Tool: Reclassify (or use Raster Calculator)

E.g. for 0.6 threshold:

python

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Con("Rleprosula\_Suitability\_30m" >= 0.6, 1, 0)

Output: Suitability\_0.6

Repeat for other thresholds:Omission, EqSS, DanumPlot, High08

**Step 3: Mask to Natural Forest Only**

Keep only natural forest (value = 2). If it's already binary (just value 2), skip reclassification and go straight to masking.

Tool: Raster Calculator

python

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Con(("Borneo\_SBTN\_NaturalForest.tif" == 2) & ("Rlep\_High08\_Suitability" == 1), 1)

Output: Rlep\_NatForest\_High08

Repeat for each threshold.

**Step 4: Region Group to Identify Patches**

Assign unique ID to each contiguous forest patch.

Tool: Region Group

Input raster: NatForest\_Suitability\_0.6

Connectivity: 8 neighbors

Output: Patches\_0.6

**Step 5: Two options: Option B) If I want to continue with raster - keep following steps; Option A) If I want to work with polygons**

Option A) convert raster to polygons - skip ahead to step 7

Option B) Reclassify All Patches to 1

For pixel counting.

Tool: Raster Calculator

python

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Con("Patches\_0.6" > 0, 1)

Output: Binary\_Patches\_0.6

**Step 6:** **Zonal Statistics to Count Pixels per Patch**

Count how many pixels are in each patch.

Tool: Zonal Statistics as Table

Zone raster: Patches\_0.6

Zone field: Value

Input value raster: Binary\_Patches\_0.6

Statistics type: SUM

Output table: PatchAreaTable\_0.6

**Step 7: Join Patch Sizes to Raster or Convert to Polygon**

(Optional: for mapping and filtering in attribute table)

Option A (Polygon): Raster to Polygon

Tool: Raster to Polygon (for visual filtering, map production)

Input: Patches\_0.6

In each threshold, add a new field Area\_Ha, double. Save.

Then calculate geometry of said field, Area hectares.

Use select by attribute in attribute table. Select by “equal to or greater than” the value ha that you have calculated as the minimum patch size for species of interest.

Finished with polygons.

Option B (Raster): Calculate Patch Area

Multiply SUM by 0.09 (30m x 30m = 0.09 ha)

Tool: Calculate Field in joined attribute table:

python

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Patch\_Ha = SUM \* 0.09 # approximate arc value of a 30m resolution

**Step 8: Filter by MVP Area**

Using MVP for R. leprosula (e.g. 77 ha):

Tool: Select by Attributes or Extract by Attributes

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"Patch\_Ha" >= 77

Output: final candidate seed sourcing patches for R. leprosula

Finished with Raster.