

# Dead Trees Detection Toolbox

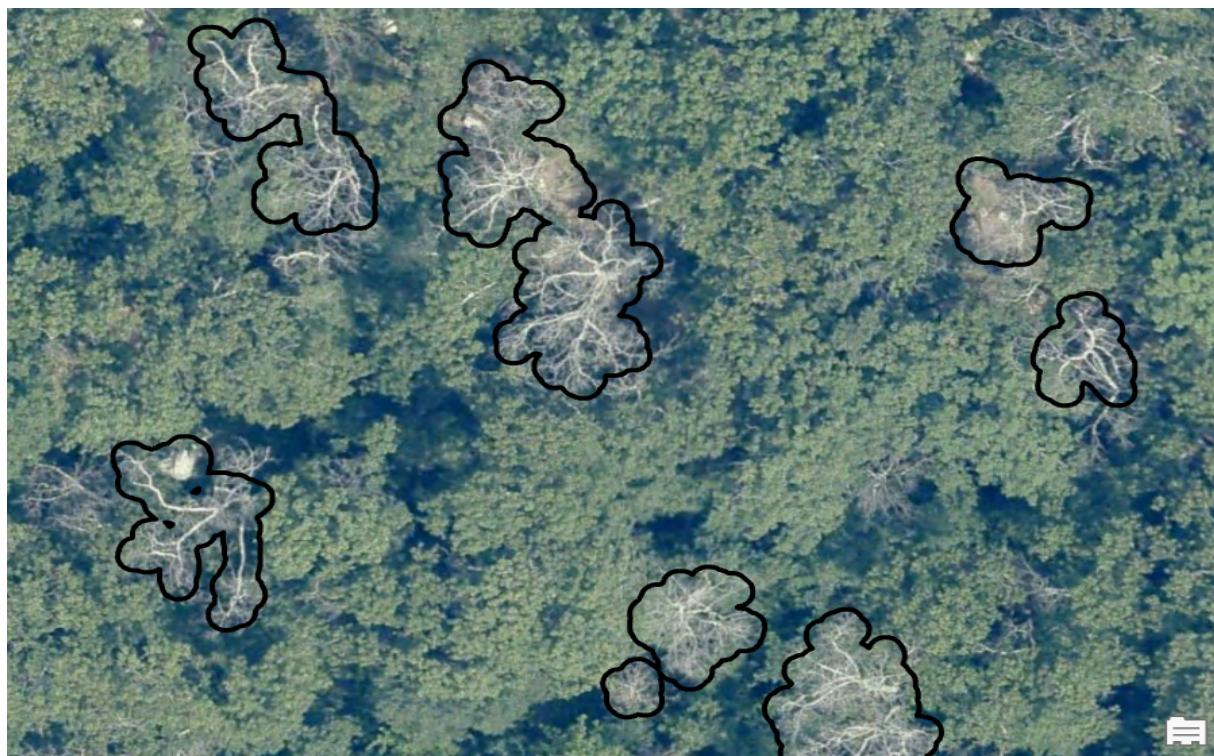
## Full User Manual

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## 1. Example Output

Screenshot showing detection results.



## 2. Workflow Summary

- Convert raster layer to TIFF if needed.
- Apply optional forest mask.
- Run IsoCluster to generate spectral signatures.
- Classify using Maximum Likelihood.
- Extract the class representing dead crowns.
- Extract and threshold the blue band.
- Combine spectral and reflectance masks.
- Run Majority Filter, Expand, Shrink.
- Convert raster regions to polygons.
- Remove small polygons, buffer, dissolve.
- Export final output polygons.

## 3. Parameter Settings and Best Practices

Number of Classes (IsoCluster):

- 10 — Best general-purpose value.
- 8–12 — Ideal for 10–30 cm RGB.
- 5–7 — Best for  $\geq 1$  ft imagery.

Minimum Tree Area:

- 3-inch imagery:  $\sim 1$  m<sup>2</sup>
- High-res imagery: 2–4 m<sup>2</sup>

Minimum Buffer Area:

- Individual crowns: 20–80 m<sup>2</sup>
- Clusters: 80–200+ m<sup>2</sup>

Blue Band Index:

Choose correct index for RGB dataset.

Parallel Processing:

Use when RAM  $\geq 16$  GB.

Temporary Folder Cleanup:

Removes intermediate files if enabled.

## 4. Full Detection Logic

Normalize raster input.

Apply mask.

Generate spectral signatures.

Perform ML classification.

Isolate dead vegetation class.

Extract blue band and threshold.

Combine masks.

Morphological cleanup.

Convert regions to polygons.

Remove noise polygons.

Buffer → dissolve → filter.

Write output feature class.