

Shapefile Standards and Tips for Aerial Reforestation Applications

Participants in DNR-Forestry's Aerial Herbicide and Aerial Seeding Contracts are required to provide the Aerial Forest Management Coordinator (AFMC) with shapefiles for each treatment area. The AFMC will compile the shape files and forward them to Forest Management Helicopter Coordinator (FMHC).

All shapefiles should be submitted at the same time as the project proposal.

Keep the following items in mind when creating your shapefiles:

- The shapefile you provide should be of the treatment area.
- Provide a shape file that is "clean." Eliminate "bird nests" and crossings that may occur when using a GPS and gathering track log points while the operator is stationary, or if the GPS's track log is on and the GPS is acquiring satellites.
- The shapefile should be projected, utilizing the **DNR standard NAD 83 UTM zone 15N**.
- For seeding project round acres to the nearest whole number, for herbicide projects round acreages to the nearest tenth of an acre.
- Make sure to exclude buffer zones, reserve areas or other exclusions from the treatment shapefile.
- Check the acreages of your shapefiles and confirm they match the acres on the project proposal.
- The shape file acres must be accurate and will be considered the treatment (and payment) acres for these reasons:
 - The proper amount of material can be obtained to treat the site.
 - The helicopter GPS map is based on the shapefile.
 - These are the acres that are provided to the vendor.
 - Calibration depends on set amount of material applied over a defined area.
 - Aerial seeding only — using the correct amount of seed/carrier at contract volume (one or two lbs/acre) allows helicopter operations staff to effectively load multiple sites in the hopper and increase efficiency.
- If possible, combine aerial projects that are within one mile of each other, but not more than two miles apart, and give it one project number. Do not combine all the treatment areas for your Area/Agency in one shape file. Please provide a separate shape file for each project.
- Check your polygons for inverted vertices (will show negative acres)
- Compare the ArcPro acres to the acres listed on the project proposal
- Watch for unnecessary or duplicate shapefiles or polygons
- If you have multiple blocks in the same project, combine them into one shapefile

- Each shapefile is to include an attribute table. Keep the attribute table clean and simple; only include Project name and Acres:
 - “Project”
 - Field type: Text
 - Field Length: 10
 - “Acres”
 - Field type: Long
 - Precision of 5
 - Scale of 0
 - Calculate geometry, acres
- Ensure that the shapefile is a single-part (separate line in the attribute table for each polygon)
- Use standard polygons, no ZM polygons
- Ensure your project has the full proper name (see File Naming Conventions below).

File Naming Convention:

- Ensure shapefile, project proposal, and attribute table use the same name.
- For **Aerial Seed projects** use the following format and lead the filename with an **S**. Example: **S245_00**, where 245 is the DNR Area RAN number or County Org number as given in the table below.
- For **Aerial Herbicide projects** use the following format and lead the filename with an **X**. Example: **X245_00**, where 245 is the DNR Area RAN number or County Org number as given in the table below:

Non-DNR Organization	Org. No.
Beltrami	405
Clearwater	415
Itasca	431
Aitkin	432
Koochiching	436
Carlton	451
St. Louis	469
Blandin	521