APPENDIX 1-6. Use Site Footprints for Propazine

1. Agriculture Uses

Use site footprint layers represent the application sites for agricultural and non-agricultural label uses. The best available data to spatially characterize specific agricultural crops in the continuous United States (ConUS) is the Cropland Data Layer (CDL), produced by the U.S. Department of Agriculture. Several methods have been employed to minimize data errors within the CDL. The CDL is a landcover dataset that has over 100 cultivated classes that were grouped into 13 general classes (see **APPENDIX 1-5**). Lumping classes reduces the likelihood of errors of omission and commission between similar crop categories. In selecting how to group crops from the CDL, EPA referred to the grouping used by the U.S. Geological Survey (Baker and Capel, 2011[[1]](#footnote-2)) and the Generic Endangered Species Task Force (Amos et al, 2010[[2]](#footnote-3)). This information considers environmental factors that influence the location of crops and the error matrices provided by USDA with the original CDL data. By considering these agronomic factors in addition to the error matrices it is possible to improve the accuracy and year-to-year matches for these UDLs while retaining agronomic similarities. This categorical aggregation into the UDL crop groups does not account for changes in agricultural practices but the temporal aggregation does. The UDLs used in this assessment include 5 years of the CDL, 2013-2017, aggregated to account for changes year to year such as crop rotations. Anywhere a class occurs within those 5 years would be represented in the footprint layer. These temporally aggregated and categorially grouped layers generated from the CDL are referred to as Use Data Layers or UDLs.

The agricultural classes were further refined by comparing county level National Agricultural Statistics Service (NASS) 2012 Census of Agriculture (CoA) acreage reports to county level UDL acreages (additional detail can be found in the tool documentation, section “**Processing the Census of Agriculture Data”** section). The UDL acreages represent the temporally aggregated and categorically grouped processing steps previously described, summarized at the county level. If a county’s UDL acreage for a given class was lower than the NASS acreage, the UDL extent was expanded within cultivated areas until the UDL acreage matched or exceeded the NASS CoA. Using the temporally and categorially aggregated UDL as an input, a script was developed that compares each UDL in each county to the corresponding NASS CoA acreage report. If the UDL acreage was less than NASS, the raster was expanded in 1 pixel iterations until the NASS acreage value was reached, exceeded, or the area within the cultivated mask was built out. Region growing was restricted using the UDL Cultivated Layer from the last year of the CDL as a mask (2017). This avoids buffering into any non-agricultural landcover types. This method reduced landcover mapping errors by adjusting the extent of each category to the CoA values, in this case, 2012. Additional details and the python scripts for this process can be found in with the tool documentation, **Generating Use Data Layers**, “**CDL to UDL Processing and Action Area Python Scripts**” section.

Every assessment begins with cross-walking registered uses into a landcover category. Chemicals are often not represented by all 13 UDL. Some chemicals specify geographic restrictions for a given use (i.e., application on wheat is limited to the state of Idaho). Geographic limitations for registered uses are imposed on the dataset downstream in the data processing workflow. The geographic restriction should be extracted from the use layer before it is aggregated with all other chemical uses to generate the action area for the chemical. Propazine’s agricultural uses are crossed to 1 of the UDLs classes with a geographic restriction to Texas, Oklahoma and Kansas. A complete crosswalk for the propazine agricultural uses is provided in **Table 1** generated from **ATTACHMENT 1-4.** This crosswalk includes the label use name, the name(s) from the Census of Agriculture, SUUM use site (**APPENDIX 1-4**), and the UDL.

In addition to the potential use site each UDL is buffered in all directions using ESRI ArcGIS the Euclidean distance tool. This buffered area represents the potential exposure area associated with drift.

After incorporating the commitment letters received from the registrants, propazine is not registered outside of the contiguous United States (ConUS) and is limited to Texas, Kansas and Oklahoma. (**APPENDIX 1-2**).

1. Action Area

To create the action area for propazine all pertinent agricultural UDLs are combined. This is completed by placing of UDL on top of each other and combining them into one footprint. The resulting layer includes all locations found in each of the UDLs and buffered areas represented as minimum distance to a potential use across UDLs. This sets the exposure area for propazine related to drift. For additional detail on how the action area is generated see the tool documentation, “**CDL to UDL Processing and Action Area Python Scripts**” section.

1. UDL Data Sources
   1. Agricultural UDL Data Sources

ConUS

* + Other Grains UDL generated from USDA’s Cropland Data Layer, see **APPENDIX 1-5** for details on the specific crops found in the UDL.

Table 1. Crosswalk of propazine agricultural uses across crop sources

| **Label Use** | **Census Of Ag** | **SUUM** | **UDL- CONUS** | **Notes - UDLs** |
| --- | --- | --- | --- | --- |
| SORGHUM (GRAIN) (SOIL TREATMENT) | SORGHUM, GRAIN | Sorghum (Milo) | Other Grains | Prohibited outside OK, KS, TX |
| SORGHUM (SOIL TREATMENT) | SORGHUM, SILAGE; SORGHUM, SYRUP | Sorghum (Milo) | Other Grains | Prohibited outside OK, KS, TX |

1. References

* **United States Department of Agriculture Cropland Data Layer (CDL) 2013-2017**
  + United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS), Research and Development Division (RDD), Geospatial Information Branch (GIB), Spatial Analysis Research Section (SARS), Cropland Data Layer for the United States, <https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php>

1. Baker, N.T., and Capel, P.D., 2011, Environmental factors that influence the location of crop agriculture in the conterminous United States: U.S. Geological Survey Scientific Investigations Report 2011–5108, 72 p. [↑](#footnote-ref-2)
2. Amos, J.J., C.M. Holmes, C.G. Hoogeweg, and S.A. Kay. 2010. Development of Datasets to Meet USEPA Threatened and Endangered Species Proximity to Potential Use Sites Data Requirements. Report Number: 437.01-Overview. Prepared by Waterborne Environmental, Inc. for the Generic Endangered Species Task Force. [↑](#footnote-ref-3)