APPENDIX 1-3. Simazine Scenario Development for Aquatic Modeling

The purpose of this Appendix is to provide supporting information for the aquatic modeling work.

The use sites simulated for simazine are documented in **APPENDIX 3-1**. Agricultural modeling simulations are also summarized in Table 2. In Table 2, the use data layer (UDL) was obtained from information provided in **APPENDIX 3-1**. The PWC scenario simulated was determined based on the UDLs used in mapping. Unless otherwise noted, aquatic modeling for a HUC2 was simulated when the 2012 National Agricultural Statistics Service (NASS) Census Data indicated that a crop was grown in that region. See **Chapter 3** for additional details on the aquatic modeling.

In selecting application dates for aquatic modeling, EPA considered many factors. Label directions are considered, such as treatment timing (e.g., preemergence, postemergence, post-harvest). Selection of application dates included an analysis of weather files to determine the time of year most likely to produce the greatest off-site transport. The meteorological information is considered as pesticide loading to surface water may be directly affected by precipitation events. The wettest month (i.e., the month with the highest average daily precipitation) within each HUC2 was identified (Table 1), and a random date (i.e., the 15th of each month) was considered in an effort to maintain the probability of the distribution of environmental exposure concentrations generated. In cases when the application window is narrowed to a certain time of year (e.g., fall to late winter), the application date is the 15th day of the wettest month within a reasonable application window. In cases when uses are lumped to one representative modeling scenario (e.g., tree nuts), the application window is broadened to encompass the resulting uncertainty of application timing. The 15th of the given application month was arbitrarily selected and consistently used as the random date selection. Preharvest intervals and other restrictions specified on labels were also considered, so that applications were not modeled to occur within restricted timeframes.

In HUC2 regions with differing amounts of rainfall across the region, an additional location was selected with substantially different meteorological conditions to represent the range of conditions across the HUC2 region Table 1**.** These HUC2 regions with differing conditions are 10, 11, 12, 15, 16, 17, and 18.

Table 1. Month with highest total precipitation in each 30-year weather file in each HUC2.

| **HUC2** | **City, State** | **Meteorological File** | **Average Wettest Month**  **in 30 Years of Data** |
| --- | --- | --- | --- |
| 1 | Hartford, CT | w14740 | May |
| 2 | Lynchburg, VA | w13733 | July |
| 3 | Atlanta, GA | w13874 | March |
| 4 | Milwaukee, WI | w14839 | August |
| 5 | Covington, KY | w93814 | May |
| 6 | Knoxville, TN | w13891 | March |
| 7 | Des Moines, IA | w14933 | June |
| 8 | Fort Smith, AR | w13970 | July |
| 9 | Fargo, ND | w14914 | June |
| 10a | Grand Island, NE | w14935 | June |
| 10b | Sheridan, WY | w24029 | May |
| 11a | Fort Smith, AR | w13964 | May |
| 11b | Amarillo, TX | w23047 | June |
| 12a | Fort Worth, TX | w03927 | May |
| 12b | Abilene, TX | w13962 | September |
| 13 | El Paso, TX | w23044 | September |
| 14 | Rock Springs, WY | w24027 | May |
| 15a | Flagstaff, AZ | w03103 | July |
| 15b | Phoenix, AZ | w23183 | December |
| 16a | Salt Lake City, UT | w24127 | April |
| 16b | Winnemucca, NV | w24128 | November |
| 17a | Eugene, OR | w24221 | December |
| 17b | Pocatello, ID | w24156 | May |
| 18a | Sacramento, CA | w23232 | January |
| 18b | San Diego, CA | w23188 | January |

# Use Scenarios

Table 2 provides a listing of the simazine uses that were modeled in this BE, along with the maximum single application rate, number of applications, and retreatment interval. More information on the assumptions used in aquatic modeling and which HUC2 regions were modeled for each use pattern is available in **APPENDIX 3-2**.

Table 2. Modeled Crop Groups with Maximum Single Application Rate, Application Types, and Application Timing and/or Target.

| Use | Specific Crops Included | Use Data Layer | PWC Scenario | HUC2 | App. Rate  (lb a.i./A), # Apps., RTI1 | Run Name | App. Type | App. Timing |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Almond | Almond | Other Orchards | Orchard | 2-8, 10-18 | 2, 1, N/A | almond | ground | spring or fall |
| Pome fruit | Apple, pear, azarole, Chinese quince, Japanese quince, loquat, mayhaw, medlar, quince, tejocote, and cultivars /hybrids /varieties of these | Other Orchards | Orchard | 1-18 | 4, 1, N/A | pome | ground | year-round |
| Avocado | Avocado | Other Orchards | Orchard | 3, 15, 16, 18 | 4, 1, N/A | avocados | ground | after final preparation of grove |
| Berries | Blueberries, caneberries | Vegetables and Ground Fruit | Vegetable | 1-18 | 4, 1,2 N/A | berries | ground | spring or fall |
| Stone fruit | Sweet cherries, tart cherries, peach, plum, apricot, plumcot, fresh prunes | Other Orchards | Orchard | 1-18 | 4, 1, N/A | stone | ground | year-round |
| Peach (CA) | 15, 16, 18 | 2, 1, N/A | peachesca | ground | fall to spring |
| Nectarines | 15, 16, 18 | 2, 1, N/A | nectarines | ground | late fall to early winter or spring |
| Christmas tree | Christmas tree | Xmas Tree | XmasTree | 1-18 | 4, 1,2 N/A | xmastree | ground | fall |
| Corn | Field corn | Corn | Corn | 1-18 | 2/0.5, 2, NS | corn | ground | preemergence to weeds and corn, preplant (best within 2 weeks of planting) |
| Sweet corn | Vegetables and Ground Fruit | Vegetable | 1-18 | 2/0.5, 2, NS | swcorn | ground | preemergence to weeds and corn, preplant |
| Tree nuts | Filbert, macadamia nut, pecan, beech nut, brazil nut, butternut, cashew, chestnut, chinquapin, hickory nut, walnut | Other Orchards | Orchard | 1-18 | 4, 1,2 N/A | treenut | ground | year-round outside of harvest |
| Citrus | grapefruit, lemon, orange, kumquat, lime, mandarin, pummelo, satsuma, tangerine, calamondin, citron, tangelo, tangerine, tangor, cultivars/ varieties/ hybrids of these | Citrus | Citrus | 11-16, 18 | 4, 1, N/A | PRIAcitrus | ground | NS |
| 11-16, 18 | 2/2, 2, 40 | PRIAcitrus split |
| 3 | 4/4, 2, 40 | PRIAcitrus splitFL |
| Citrus | 18 | 4, 1, N/A | citrusmicro | irr.3 | preemergence |
| Grapes | Grapes | Grapes | Grapes | 1-18 | 4, 1, N/A | grapes | ground | between harvest and early spring |
| Olives | Olives | Other Orchards | Orchard | 3, 12, 13, 15-18 | 4, 1, N/A | olives | ground | after grove preparation in fall and repeat annually midwinter |
| Strawberry | Strawberry | Vegetables and Ground Fruit | Vegetable | 1-18 | 1, 1, N/A | strawberries | ground | fall to spring |
| Turf | Turf, sod | Sim Other Crops | OtherCrop | 1-8, 10-18 | 2/1, 2, NS | turfsod | ground | NS |
| FL Sim Other Crops | 3 | 4/2, 2, NS | turfsod flmuck |
| Turf, lawns | Sim Developed | Residential, Impervious | 1-8, 10-18 | 2/1, 2, 30 | turflawn | ground | Sept. 1 to June 1 |
| Turf, fairways | Sim Open Space Developed | Golf | 1-8, 10-18 | 2/1, 2, 30 | turfgolf | ground | Sept. 1 to June 1 |
| Turf, commercial areas | Sim Open Space Developed | DevelopedOS | 1-8, 10-18 | 2/1, 2, 30 | turfOS | ground | Sept. 1 to June 1 |
| Alfalfa | Alfalfa grown for seed | ORWA Sim Other Crops | OtherCrop | 17 | 1.6, 1, N/A | alfalfa | ground | fall to early spring |
| Mixed Greens | Broccoli, Brussels sprouts, cabbage, Chinese cabbage, Chinese mustard, kale, kohlrabi, radish, rutabaga, turnip grown for seed | ORWA Sim Other Crops | OtherCrop | 17, 18 | 1/1, 2, NS | greens5 | ground | late fall and spring |
| Brussels sprouts, cabbage grown for seed | 17 | 0.8/0.8, 2, NS4 | WAgreens | ground | late fall and spring |
| Cranberry | Cranberry | Vegetables and Ground Fruit | MA\_Cranberry\_ Winter Flood | NA | 4, 1, NA | MA cranberry | ground | fall after harvest or spring before growth begins |
| OR\_Cranberry\_ No Flood | 2, 1, NA | cranberryOR | ground | spring before growth begins |
| OR\_Cranberry\_ Winter Flood | 2, 1, NA | cranberryOR\_nf | ground | spring before growth begins |
| WI\_Cranberry\_ Winter Flood | 2, 1, NA | cranberryWI | ground | spring before growth begins |

1 The first application is the max. single application rate. RTI=retreatment interval. NS=not specified on label, but modeled RTI is in parentheses.

2 The number of applications at max. rate does not match the total applications possible per year (2 applications at lower rates).

3 Microsprinkler irrigation

4 The labels specify the timing of each application (fall and spring) but do not explicitly state an MRI.

5 Greens and WAgreens also represent SLN label with 2 applications of 0.8/1.25 lb a.i./A.