## APPENDIX 3-3: Spray Drift Considerations for Diazinon

Some diazinon labels include the following language related to spray drift buffers on labels.

* Do not apply within 100 feet upslope of “sensitive aquatic sites” such as any irrigation ditch, drainage canal or body of water that may drain into a river or tributary unless a suitable method is used to contain or divert runoff waters. Waters that are contained or diverted must be held for a minimum of 72 hours before release into a sensitive aquatic site.
* Maintain a vegetative buffer strip a minimum of 10 feet wide from edge of a field that is adjacent to and within 100 feet of sensitive aquatic sites.
* Do not apply this product to orchards when soil moisture is at field capacity and/or when a storm event likely to produce runoff from the treated orchard is forecasted by NOAA/NWS to occur within 48 hours following application. Do not apply within 100 ft. upslope of “sensitive aquatic sites” unless a suitable method is used to contain or divert runoff waters. Waters must be contained or diverted for 72 hours.
* Maintain a vegetative buffer strip a minimum of 10 feet wide from the edge of a field that is adjacent to and within 100 feet of sensitive aquatic sites.

These spray drift buffers only apply to ‘sensitive aquatic areas’ and some only apply when the application is upslope of the aquatic area. In this case, the buffer was designed to minimize runoff rather than spray drift. It is subjective as to what ‘sensitive’ means. Therefore, these buffer restrictions do not protect and limit spray drift to all aquatic areas adjacent to an application. Nevertheless, the impact of these spray drift buffers on calculated EECs is simulated to determine the impact these buffers on aquatic EECs. This is discussed further in the sensitivity analysis of aquatic modeling [See **Chapter 3**].

Spray drift estimates were updated to reflect the most recent offsite deposition guidance[[1]](#footnote-1),[[2]](#footnote-2) and the currently labeled buffer restrictions of 10 feet and 100 feet from aerial or ground applications.

Using Tier 1 AgDRIFT (version 2.1.1) drift fractions were calculated for each aquatic bin for each application method, corresponding buffer distance, and droplet size distribution. The results of this analysis are presented in **Table B 3-3.1**. These results are used in deriving aquatic estimate environmental concentrations (EECs).

**Table B 3-3.1. Spray drift estimates for aquatic bins and various aquatic buffer combinations**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Bin** | | | **Spray drift fraction (unitless)**  **Application Method and Buffer** | | | |
| **Generic Habitat** | **Depth (m, ft)** | **Width (m, ft)** | **Grounda** | | **Aerialb** | |
| **10 ft** | **100 ft** | **10 ft** | **100 ft** |
| 2 Low-flow | 0.1, 0.33 | 2, 6.6 | 0.21 | 0.02 | 0.30 | 0.09 |
| 3 Moderate-flow | 1, 3.3 | 8, 26.2 | 0.13 | 0.02 | 0.24 | 0.08 |
| 4 High-flow | 2, 6.6 | 40, 131.2 | 0.05 | 0.02 | 0.14 | 0.06 |
| 5 Low-volume | 0.1, 0.33 | 1, 3.3 | 0.22 | 0.02 | 0.32 | 0.10 |
| 6 Moderate-volume | 1, 3.3 | 10, 32.8 | 0.12 | 0.02 | 0.23 | 0.08 |
| 7 High-volume | 2, 6.6 | 100, 328.1 | 0.03 | 0.01 | 0.08 | 0.04 |

1. Ground: ASAE Very Fine to Fine ; high-boom; 90th percentile
2. Aerial: ASAE fine to medium

Court ordered buffers for salmon bearing streams in California, Oregon, and Washington have been issued. More information on these buffers is available at: <http://www2.epa.gov/endangered-species/endangered-species-litigation-and-associated-pesticide-limitations>

1. U.S. Environmental Protection Agency, Brady, D. *Guidance on Modeling Offsite Deposition of Pesticides via Spray Drift for Ecological and Drinking Water Assessments*, December 20, 2013 [↑](#footnote-ref-1)
2. U.S. Environmental Protection Agency, White, K., Khan, F., Peck, C., Corbin, M. *Guidance on Modeling Offsite Deposition of Pesticides via Spray Drift for Ecological and Drinking Water Assessments*, December 19, 2013 [↑](#footnote-ref-2)