# Appendix D-2 Part 1 Area of Influence and HYSPLIT Graphics for VISTAS and Nearby Class I Areas

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# **Brigantine Wilderness Area**



Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Brigantine Wilderness Area



Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Brigantine Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Brigantine Wilderness Area

Hours by hexbin; Class I site: 06; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Brigantine Wilderness Area – Full View (top) and Class I Zoom (bottom)



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#### **Breton Wilderness Area**



Class1 site: 07 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Breton Wilderness Area



Class1 site: 07 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Breton Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Breton Wilderness Area



Hours by hexbin; Class I site: 07; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Breton Wilderness Area – Full View (top) and Class I Zoom (bottom)



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Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for Breton Wilderness Area - Full View (top) and Class I Zoom (bottom)





Figure 7: Nitrate Extinction Weighted Residence Time (Nitrate EWRT per 12-km Modeling Grid Cell) for Breton Wilderness Area - Full View (top) and Class I Zoom (bottom)



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# **Caney Creek Wilderness Area**



Class1 site: 08 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Caney Creek Wilderness Area



Class1 site: 08 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Caney Creek Wilderness Area



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Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for Caney Creek Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for Caney Creek Wilderness Area - Full View (top) and Class I Zoom (bottom)

0.011 - 0.050

0.051 - 0.100

0.151 - 0.200

> 0.200

0.101 - 0.150

EWRT SO4

< 0.005

0.005 - 0.010



Figure 7: Nitrate Extinction Weighted Residence Time (Nitrate EWRT per 12-km Modeling Grid Cell) for Caney Creek Wilderness Area - Full View (top) and Class I Zoom (bottom)



Figure 8: Sulfate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Caney Creek Wilderness Area – Full View (top) and Class I Zoom (bottom)



EWRT"O/d for 2028 NO; as Percent of Total

Figure 9: Nitrate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Caney Creek Wilderness Area – Full View (top) and Class I Zoom (bottom)

## Chassahowitza Wilderness Area



Class1 site: 09 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Chassahowitza Wilderness Area



Class1 site: 09 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Chassahowitza Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Chassahowitza Wilderness Area

Hours by hexbin; Class I site: 09; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Chassahowitza Wilderness Area – Full View (top) and Class I Zoom (bottom)



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Figure 9: Nitrate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Chassahowitza Wilderness Area – Full View (top) and Class I Zoom (bottom)

## **Cohutta Wilderness Area**



### Class1 site: 10 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Cohutta Wilderness Area



Class1 site: 10 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Cohutta Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Cohutta Wilderness Area

Hours by hexbin; Class I site: 10; Year: 2011-2016; all heights



iours by hexbin; Class I site: 10; Year: 2011-2016; all heigh



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Cohutta Wilderness Area – Full View (top) and Class I Zoom (bottom)



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# **Dolly Sods Wilderness Area**



Class1 site: 11 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Dolly Sods Wilderness Area



Class1 site: 11 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Dolly Sods Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Dolly Sods Wilderness Area





#### Hours by hexbin; Class I site: 11; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Dolly Sods Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for Dolly Sods Wilderness Area – Full View (top) and Class I Zoom (bottom)



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Figure 9: Nitrate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Dolly Sods Wilderness Area – Full View (top) and Class I Zoom (bottom)

## Otter Creek Wilderness Area



Class1 site: 12 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Otter Creek Wilderness Area



Class1 site: 12 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Otter Creek Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Otter Creek Wilderness Area

Hours by hexbin; Class I site: 12; Year: 2011-2016; all heights



#### Hours by hexbin; Class I site: 12; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Otter Creek Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for Otter Creek Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for Otter Creek Wilderness Area - Full View (top) and Class I Zoom (bottom)



Figure 7: Nitrate Extinction Weighted Residence Time (Nitrate EWRT per 12-km Modeling Grid Cell) for Otter Creek Wilderness Area - Full View (top) and Class I Zoom (bottom)



Figure 8: Sulfate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Otter Creek Wilderness Area – Full View (top) and Class I Zoom (bottom)



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# **Everglades National Park**



### Class1 site: 13 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Everglades National Park



Class1 site: 13 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Everglades National Park



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Everglades National Park



Hours by hexbin; Class I site: 13; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Everglades National Park – Full View (top) and Class I Zoom (bottom)



Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for Everglades National Park – Full View (top) and Class I Zoom (bottom)



Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for Everglades National Park - Full View (top) and Class I Zoom (bottom)



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Figure 9: Nitrate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Everglades National Park – Full View (top) and Class I Zoom (bottom)

# **Great Smoky Mountains National Park**



Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Great Smoky Mountains National Park



Class1 site: 16 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Great Smoky Mountains National Park



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Great Smoky Mountains National Park



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Great Smoky Mountains National Park - Full View (top) and Class I Zoom (bottom)





Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for Great Smoky Mountains National Park – Full View (top) and Class I Zoom (bottom)



Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for Great Smoky Mountains National Park - Full View (top) and Class I Zoom (bottom)



Figure 7: Nitrate Extinction Weighted Residence Time (Nitrate EWRT per 12-km Modeling Grid Cell) for Great Smoky Mountains National Park - Full View (top) and Class I Zoom (bottom)



Figure 8: Sulfate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Great Smoky Mountains National Park – Full View (top) and Class I Zoom (bottom)



Figure 9: Nitrate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Great Smoky Mountains National Park – Full View (top) and Class I Zoom (bottom)

# Joyce Kilmer/Slickrock Wilderness Area



Class1 site: 17 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Joyce Kilmer/Slickrock Wilderness Area



Class1 site: 17 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Joyce Kilmer/Slickrock Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Joyce Kilmer/Slickrock Wilderness Area

Hours by hexbin; Class I site: 17; Year: 2011-2016; all heights



#### Hours by hexbin; Class I site: 17; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Joyce Kilmer/Slickrock Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for Joyce Kilmer/Slickrock Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for Joyce Kilmer/Slickrock Wilderness Area - Full View (top) and Class I Zoom (bottom)



Figure 7: Nitrate Extinction Weighted Residence Time (Nitrate EWRT per 12-km Modeling Grid Cell) for Joyce Kilmer/Slickrock Wilderness Area - Full View (top) and Class I Zoom (bottom)



Figure 8: Sulfate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Joyce Kilmer/Slickrock Wilderness Area – Full View (top) and Class I Zoom (bottom)



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### Hercules Glade Wilderness Area



Class1 site: 19 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from Hercules Glade Wilderness Area



Class1 site: 19 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from Hercules Glade Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from Hercules Glade Wilderness Area

Hours by hexbin; Class I site: 19; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for Hercules Glade Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for Hercules Glade Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for Hercules Glade Wilderness Area - Full View (top) and Class I Zoom (bottom)



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Figure 8: Sulfate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Hercules Glade Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 9: Nitrate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for Hercules Glade Wilderness Area– Full View (top) and Class I Zoom (bottom)

### James River Face Wilderness Area



Class1 site: 21 Year: 2011-2016 Height: 100.00

Figure 1: 100-Meter Back Trajectories for the 20% Most Impaired Visibility Days (2011-2016), from James River Face Wilderness Area



Class1 site: 21 Year: 2011-2016 Height: 100.00

Figure 2: 100-Meter Back Trajectories by Season for the 20% Most Impaired Visibility Days (2011-2016) from James River Face Wilderness Area



Figure 3: 100-Meter, 500-Meter, 1000-Meter, and 1500-Meter Back Trajectories for the 20% Most Impaired Days (2011-2016) from James River Face Wilderness Area





Hours by hexbin; Class I site: 21; Year: 2011-2016; all heights



Figure 4: Residence Time (Counts per 12km Modeling Grid Cell) for James River Face Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 5: Residence Time (% of Total Counts per 12km Modeling Grid Cell for James River Face Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 6: Sulfate Extinction Weighted Residence Time (Sulfate EWRT per 12km Modeling Grid Cell) for James River Face Wilderness Area - Full View (top) and Class I Zoom (bottom)



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Figure 8: Sulfate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for James River Face Wilderness Area – Full View (top) and Class I Zoom (bottom)



Figure 9: Nitrate Emissions/Distance Extinction Weighted Residence Time (% of Total Q/d\*EWRT per 12km Modeling Grid Cell) for James River Face Wilderness Area– Full View (top) and Class I Zoom (bottom)