

VISTAS Regional Haze Project Update



Stakeholder Briefing
Jim Boylan
May 20, 2020

Outline

- Background Information
- 2028 Emissions Updates
- 2028 Model Projections
- Adjusted 2028 PSAT Stacked Bar Charts
- Reasonable Progress Screening Analysis
- Next Steps & Schedule

Regional Haze Background Information

- Initial round of regional haze SIPs were due December 17, 2007
- Regional haze SIPs for second planning period due July 31, 2021
- EPA revised regional haze regulations
 - 40 CFR Part 51 and 40 CFR Part 52
 - Revisions effective January 10, 2017
- Current EPA regional haze guidance
 - December 20, 2018 – Tracking Visibility Progress
 - August 20, 2019 – Regional Haze SIPs for the Second Planning Period

VISTAS Organization

- State and Tribal Air Directors (STAD)
 - Policy Decisions
 - Michelle Walker Owenby (TN), Chair
- Coordinating Committee (CC)
 - Planning Recommendations
 - Jim Boylan (GA), Chair
- Technical Analysis Work Group (TAWG)
 - Technical Recommendations
 - Randy Strait (NC), Chair
- Project Manager
 - John Hornback (SESARM)

Class I Areas of Interest to VISTAS States



VISTAS Class I Areas

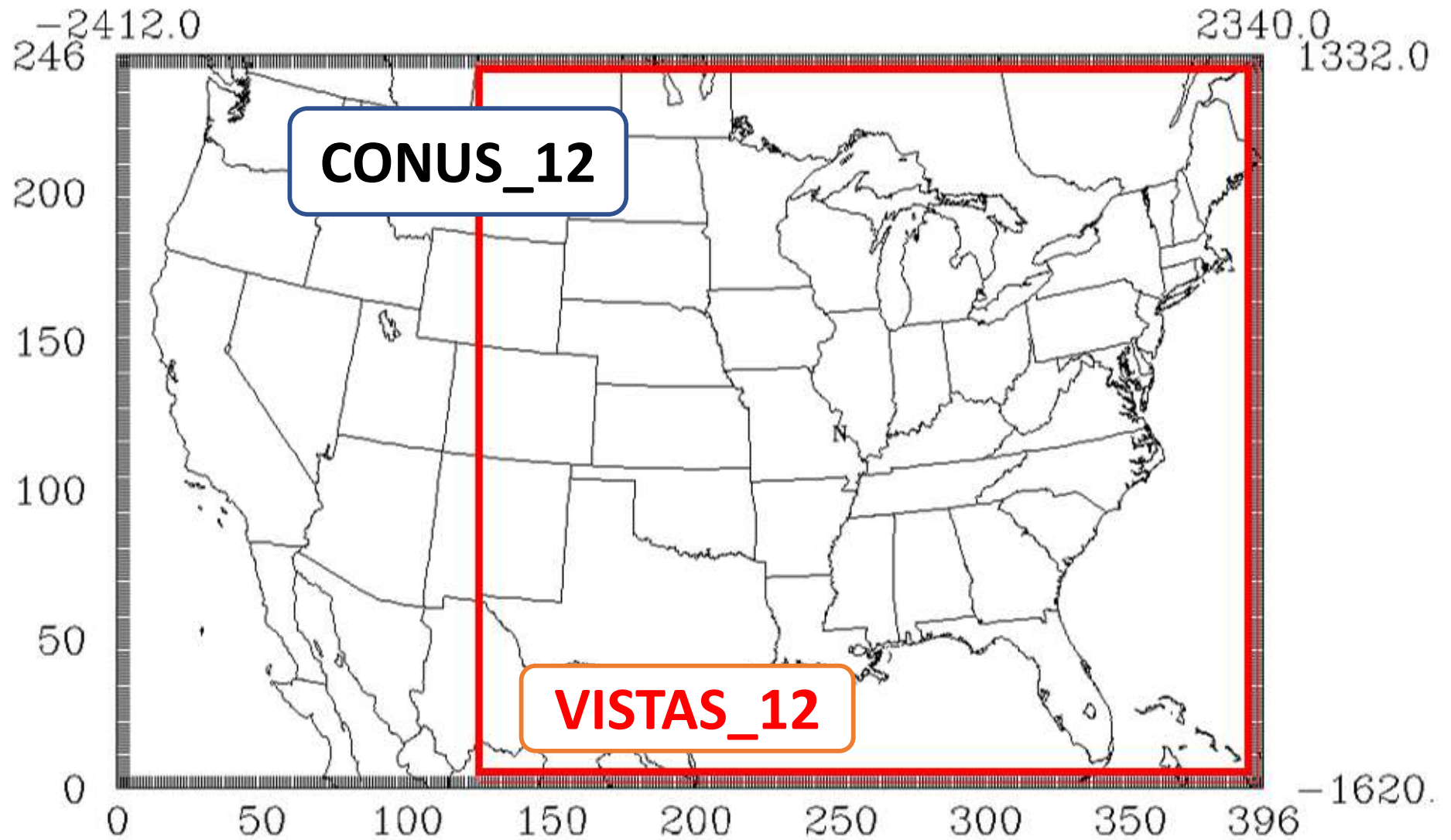
VISTAS FEDERAL CLASS I AREAS	
AL – Sipsey Wilderness Area (SIPS)	USDA Forest Service
FL – Chassahowitzka Wilderness Area (CHAS)	USDI Fish and Wildlife Service
FL – Everglades National Park (EVER)	USDI National Park Service
FL – Saint Marks Wilderness Area (SAMA)	USDI Fish and Wildlife Service
GA – Cohutta Wilderness Area (COHU)	USDA Forest Service
GA – Okefenokee Wilderness Area (OKEF)	USDI Fish and Wildlife Service
GA – Wolf Island Wilderness Area (WOLF)*	USDI Fish and Wildlife Service
KY – Mammoth Cave National Park (MACA)	USDI National Park Service
NC – Linville Gorge Wilderness Area (LIGO)	USDA Forest Service
NC – Shining Rock Wilderness Area (SHRO)	USDA Forest Service
NC – Swanquarter Wilderness Area (SWAN)	USDI Fish and Wildlife Service
SC – Cape Romain Wilderness Area (ROMA)	USDI Fish and Wildlife Service
TN/NC – Great Smoky Mountains National Park (GRSM)	USDI National Park Service
TN/NC – Joyce Kilmer-Slickrock Wilderness Area (JOYC)*	USDA Forest Service
VA – James River Face Wilderness Area (JARI)	USDA Forest Service
VA – Shenandoah National Park (SHEN)	USDI National Park Service
WV – Dolly Sods Wilderness Area (DOSO)	USDA Forest Service
WV – Otter Creek Wilderness Area (OTCR)*	USDA Forest Service

***This Class I Area does not have an IMPROVE monitor and will be represented by measurement data from a nearby Class I Area with an IMPROVE monitor.**

VISTAS Air Quality Model

- Started with EPA's 2011/2028 modeling platform
 - Version 6.3el
 - CAMx v6.32
- Replaced CAMx v6.32 with CAMx v6.40
- Used 2011 meteorology
- Reasons for using EPA platform
 - Time limited
 - Budget limited
 - Most source sectors acceptably represented in EPA platform

VISTAS Modeling Domains



Initial VISTAS Emissions Updates

- Used EPA's 2011 base year emissions without change
- Updated EPA's Initial 2028 projection year emissions
 - EGU and major non-EGU sources
 - Removed Clean Power Plan assumptions
 - VISTAS – Adjusted for changes in fuels and facility operating plans
 - Non-VISTAS – Used ERTAC 2.7opt

Initial VISTAS vs. Updated EPA 2028 Emissions

- The table below compares the 2028 point emissions used by VISTAS vs. the latest 2028fh emissions used by EPA (projected from 2016). The emissions below are extracted from the VISTAS 12 modeling domain which covers the Eastern U.S.

Pollutant	VISTAS 2028 (tpy)	New EPA 2028 (tpy)	Change (tpy)	Change (%)
NOx	2,641,463.83	2,108,115.50	-533,348.33	-20.19%
SO2	2,574,542.02	1,400,287.10	-1,174,254.92	-45.61%

Old ERTAC (2.7opt) vs. New ERTAC (16.0)

SO2	2.7opt_2028	16.0_2028	Δ SO2	Δ SO2
CENSARA	760,828.2	367,683.7	-393,144.5	-51.67%
LADCO	379,577.5	266,047.0	-113,530.5	-29.91%
MANE-VU	196,672.6	78,657.0	-118,015.6	-60.01%
VISTAS	273,582.1	161,502.5	-112,079.6	-40.97%
TOTAL	1,783,376.5	976,471.2	-806,905.3	-45.25%

NOx	2.7opt_2028	16.0_2028	Δ NOx	Δ NOx
CENSARA	354,795.1	244,499.3	-110,295.8	-31.09%
LADCO	198,966.9	166,429.4	-32,537.4	-16.35%
MANE-VU	83,432.5	56,315.3	-27,117.2	-32.50%
VISTAS	270,615.7	200,791.1	-69,824.6	-25.80%
TOTAL	1,166,663.1	840,973.6	-325,689.5	-27.92%

VISTAS CC/TAWG Conclusions (January 2020)

1. 2028 emission updates are necessary

- **VISTAS States** – States will:

- Update 2028 major source emissions projections (SO_2 , NO_x , $\text{PM}_{2.5}$, PM_{10} , NH_3 , CO) at the facility and unit level
- Add any new sources of significance

- **LADCO States** – SESARM will:

- Replace ERTAC_2.7 with ERTAC_16.1 based on LADCO input

- **All Other States** – SESARM will:

- Replace ERTAC_2.7 with ERTAC_16.0
- Verify accuracy of large SO_2 and NO_x source emissions projections via contact with surrounding states/RPOs and update emissions as needed

2. Additional 2028 air quality modeling is needed

Additional Modeling-Related Tasks

- Emissions processing
- Updated 2028 CAMx modeling (VISTAS_12)
- Updated 2028 visibility projections
- Documentation

Recent 2028 Emissions Updates

2028 EGU & NEGU SO₂ Comparison

State	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	87,111.28	59,056.98	-32.2%	15,480.96	8,365.96	-46.0%	71,630.32	50,691.02	-29.2%
FL	63,501.23	52,982.68	-16.6%	28,547.41	24,004.67	-15.9%	34,953.82	28,978.01	-17.1%
GA	37,065.83	36,166.09	-2.4%	18,473.28	17,573.54	-4.9%	18,592.55	18,592.55	0.0%
KY	75,140.26	65,636.83	-12.6%	56,262.06	49,585.95	-11.9%	18,878.20	16,050.88	-15.0%
MS	21,234.31	8,405.06	-60.4%	6,984.57	3,236.28	-53.7%	14,249.74	5,168.78	-63.7%
NC	35,232.88	24,347.18	-30.9%	19,734.80	9,571.47	-51.5%	15,498.08	14,775.71	-4.7%
SC	29,600.85	29,601.25	0.0%	10,693.79	10,695.34	0.0%	18,907.05	18,905.91	0.0%
TN	23,447.58	21,057.17	-10.2%	12,114.30	10,030.04	-17.2%	11,333.28	11,027.13	-2.7%
VA	19,839.18	18,551.32	-6.5%	3,264.09	1,976.23	-39.5%	16,575.09	16,575.09	0.0%
WV	63,404.07	53,715.79	-15.3%	57,828.67	47,744.49	-17.4%	5,575.41	5,971.30	7.1%
VISTAS	455,577.46	369,520.35	-18.9%	229,383.91	182,783.96	-20.3%	226,193.55	186,736.39	-17.4%

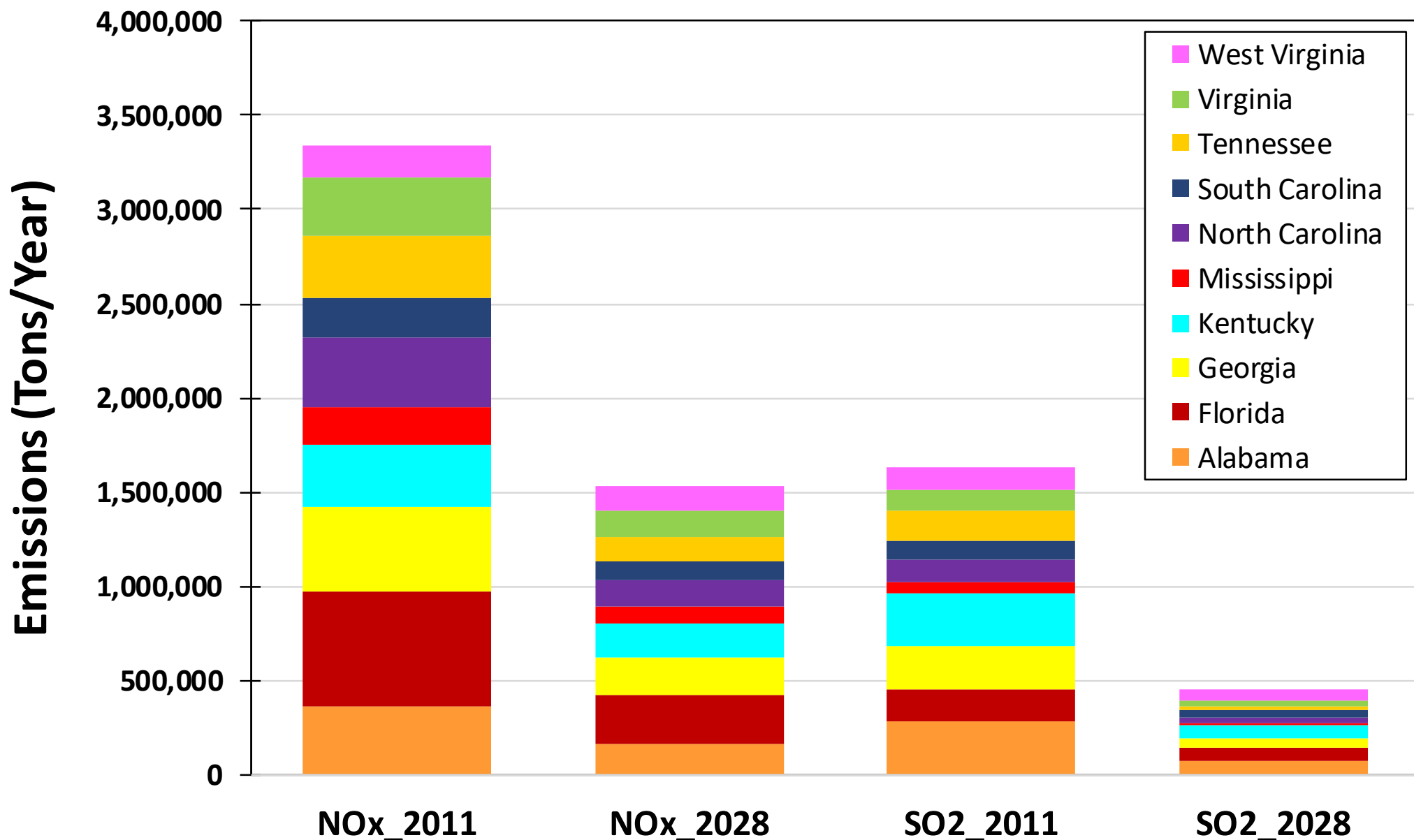
RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
VISTAS	455,577.46	369,520.35	-18.9%	229,383.91	182,783.96	-20.3%	226,193.55	186,736.39	-17.4%
CENSARA	1,012,946.59	621,321.29	-38.7%	773,625.13	382,000.54	-50.6%	239,321.46	239,320.75	0.0%
LADCO	660,186.42	498,171.62	-24.5%	444,506.99	282,492.18	-36.4%	215,679.44	215,679.44	0.0%
MANE-VU	270,810.83	149,439.76	-44.8%	203,661.43	95,074.20	-53.3%	67,149.39	54,365.55	-19.0%
WRAP	182,121.89	135,483.18	-25.6%	136,955.17	90,316.46	-34.1%	45,166.72	45,166.73	0.0%
TOTAL	2,581,643.20	1,773,936.20	-31.3%	1,788,132.63	1,032,667.35	-42.2%	793,510.56	741,268.85	-6.6%

2028 EGU & NEGU NOx Comparison

State	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
AL	80,389.97	70,824.72	-11.9%	26,895.35	20,008.14	-25.6%	53,494.61	50,816.58	-5.0%
FL	68,006.19	70,010.40	2.9%	26,250.73	25,049.90	-4.6%	41,755.45	44,960.50	7.7%
GA	67,197.50	65,885.55	-2.0%	25,899.67	24,587.73	-5.1%	41,297.83	41,297.83	0.0%
KY	66,240.03	62,130.83	-6.2%	36,781.72	32,695.94	-11.1%	29,458.31	29,434.89	-0.1%
MS	52,159.32	46,853.62	-10.2%	18,279.53	12,208.89	-33.2%	33,879.79	34,644.73	2.3%
NC	65,863.97	58,933.80	-10.5%	27,842.23	20,977.65	-24.7%	38,021.74	37,956.15	-0.2%
SC	36,051.31	36,170.87	0.3%	10,522.78	10,707.42	1.8%	25,528.53	25,463.44	-0.3%
TN	45,879.07	42,954.25	-6.4%	10,086.01	7,814.13	-22.5%	35,793.06	35,140.12	-1.8%
VA	43,210.19	41,671.99	-3.6%	11,973.97	10,435.77	-12.8%	31,236.22	31,236.22	0.0%
WV	65,054.07	68,200.77	4.8%	46,721.77	49,874.15	6.7%	18,332.30	18,326.62	0.0%
VISTAS	590,051.60	563,636.80	-4.5%	241,253.76	214,359.73	-11.1%	348,797.84	349,277.07	0.1%

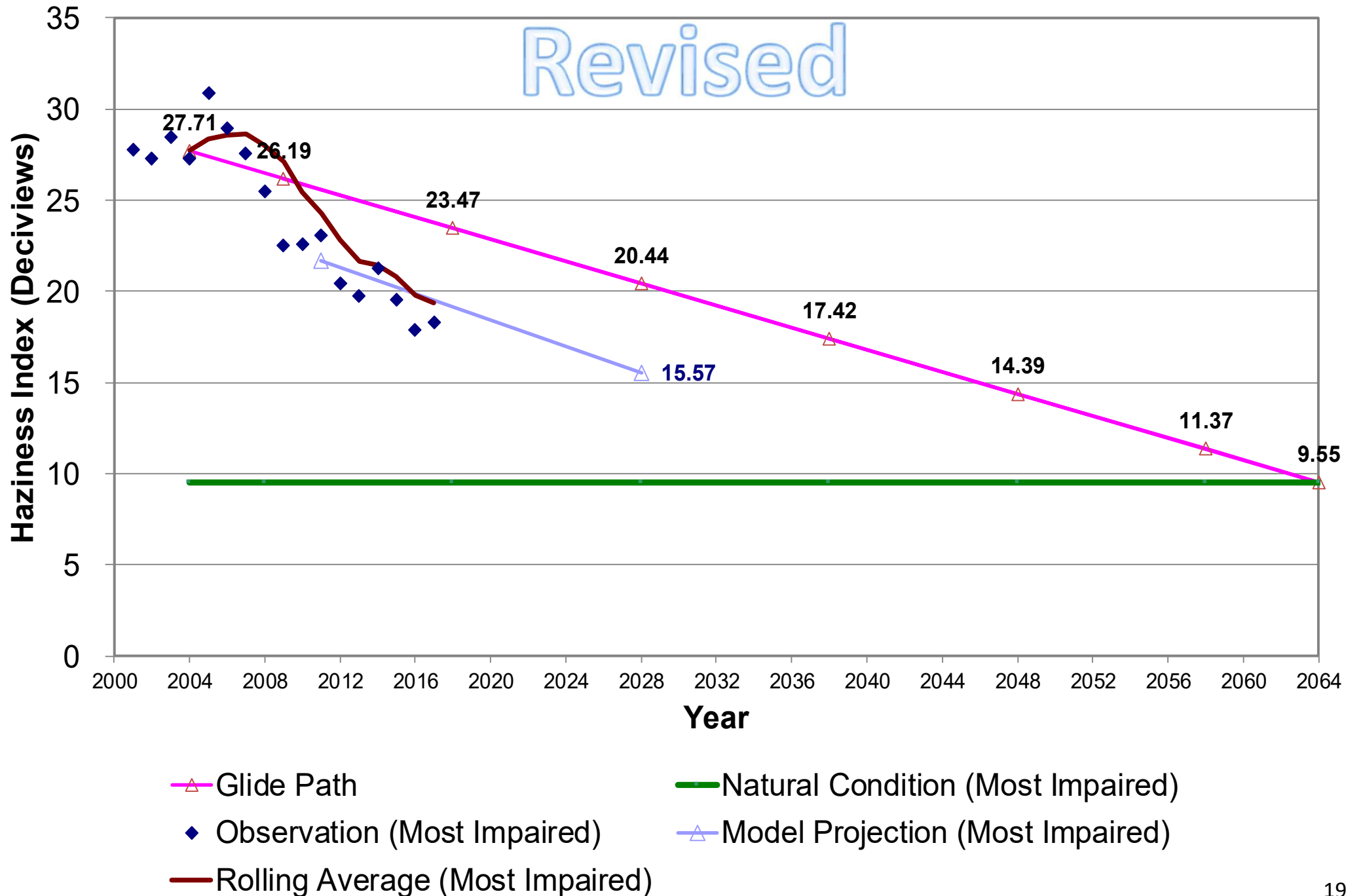
RPO	Point_OLD (tpy)	Point_NEW (tpy)	Delta (%)	EGU_OLD (tpy)	EGU_NEW (tpy)	Delta (%)	NEGU_OLD (tpy)	NEGU_NEW (tpy)	Delta (%)
VISTAS	590,051.60	563,636.80	-4.5%	241,253.76	214,359.73	-11.1%	348,797.84	349,277.07	0.1%
CENSARA	903,979.85	791,397.59	-12.5%	382,706.66	270,182.46	-29.4%	521,273.19	521,215.14	0.0%
LADCO	548,866.74	491,345.00	-10.5%	244,035.26	186,513.52	-23.6%	304,831.49	304,831.49	0.0%
MANE-VU	244,280.15	222,991.41	-8.7%	103,465.15	82,176.41	-20.6%	140,815.00	140,815.00	0.0%
WRAP	362,819.80	301,433.41	-16.9%	187,944.97	126,558.55	-32.7%	174,874.83	174,874.86	0.0%
TOTAL	2,649,998.14	2,370,804.22	-10.5%	1,159,405.80	879,790.66	-24.1%	1,490,592.35	1,491,013.55	0.0%

VISTAS States Emissions: 2011 vs. 2028

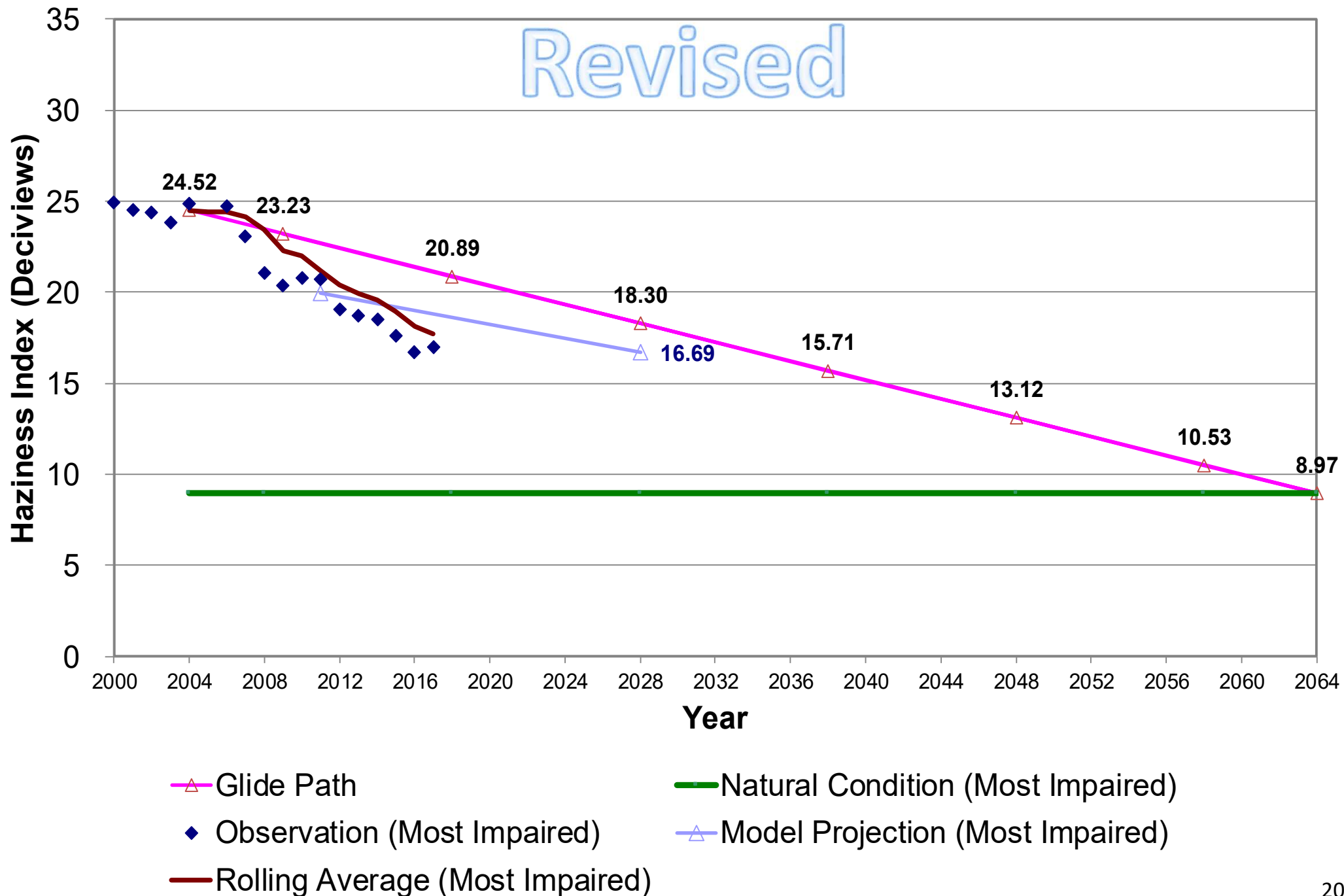


2028 Model Projections

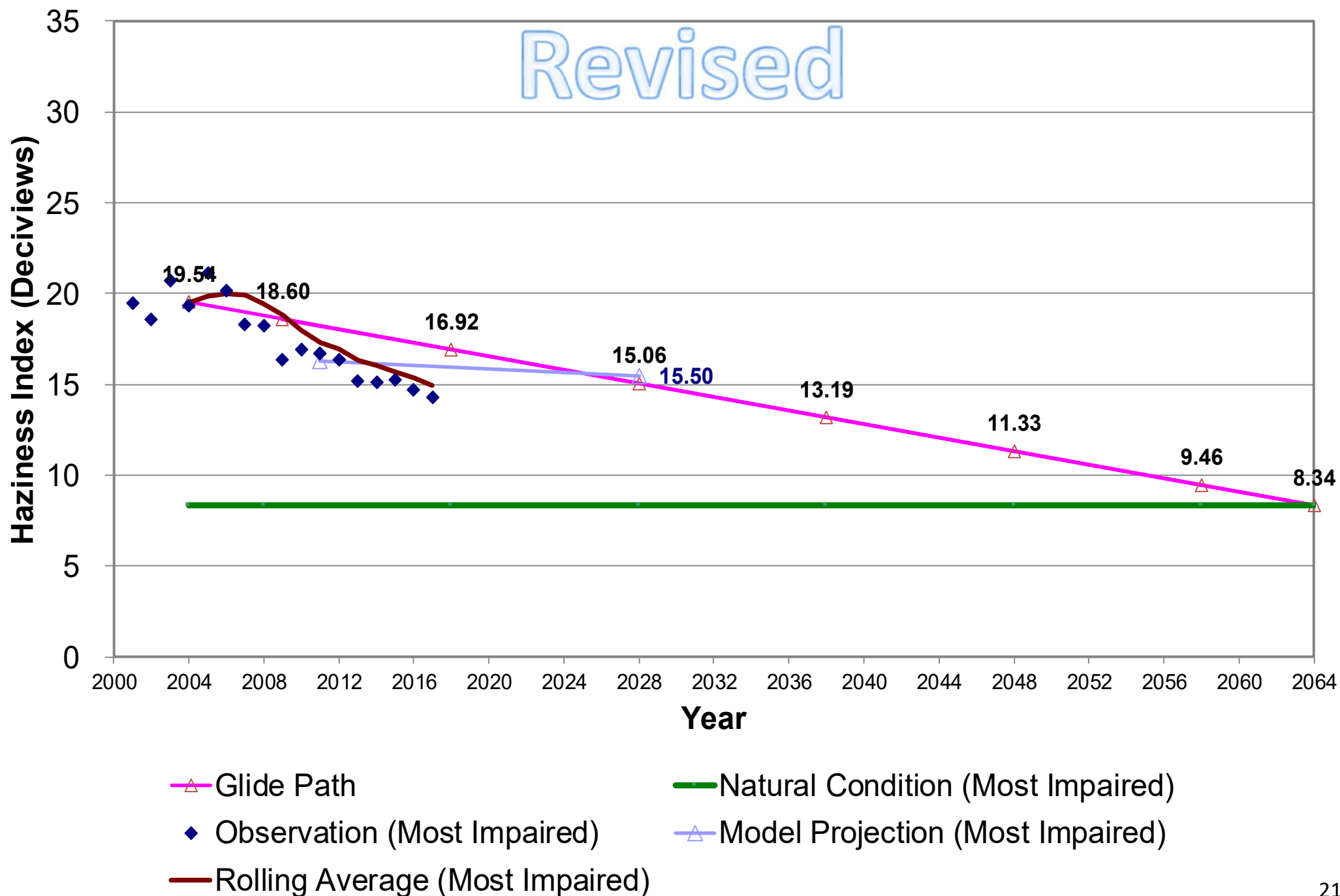
Uniform Rate of Progress Glide Path Sipsey - 20% Most Impaired Data Days



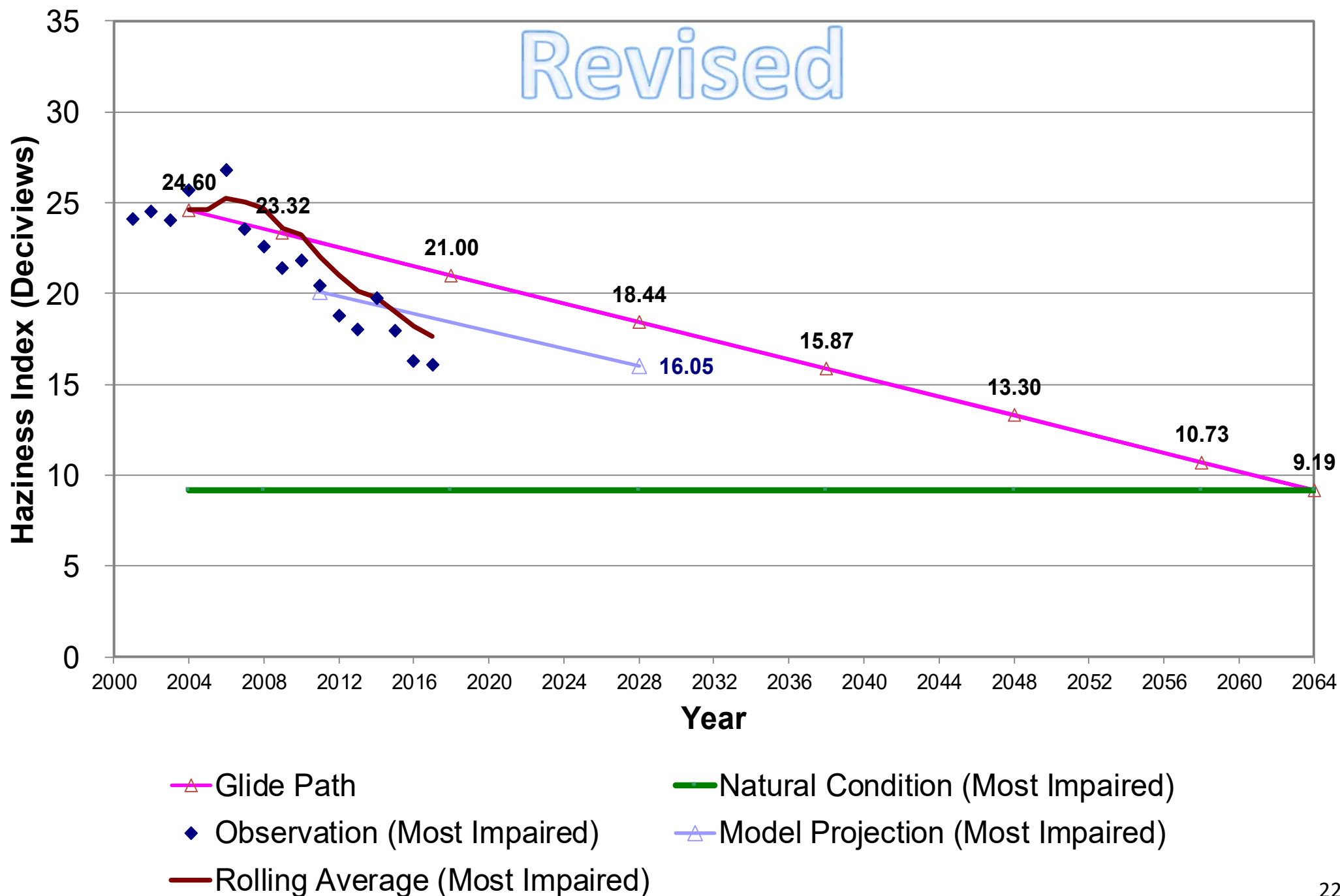
Uniform Rate of Progress Glide Path Chassahowitzka - 20% Most Impaired Data Days



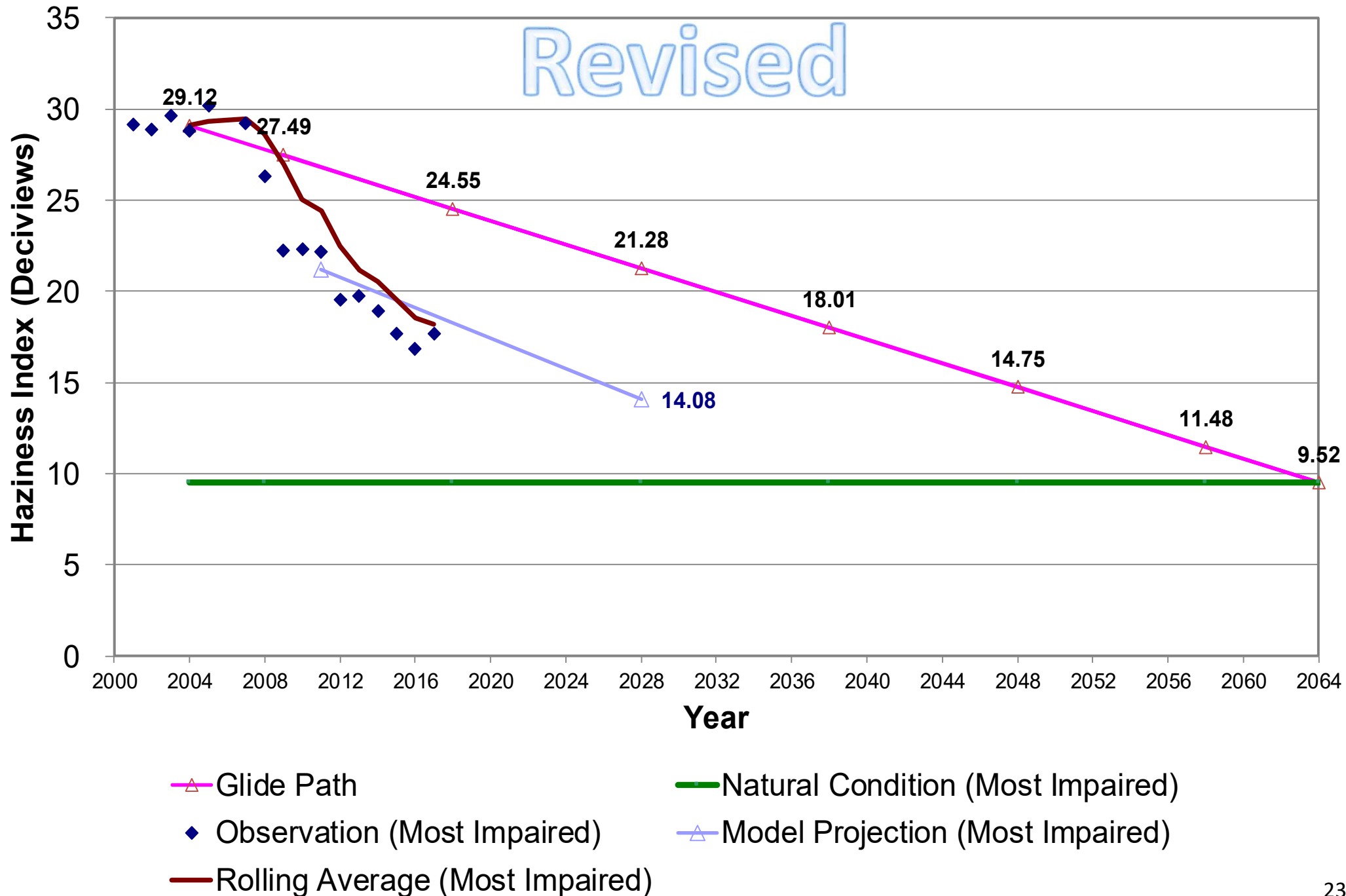
Uniform Rate of Progress Glide Path Everglades - 20% Most Impaired Data Days



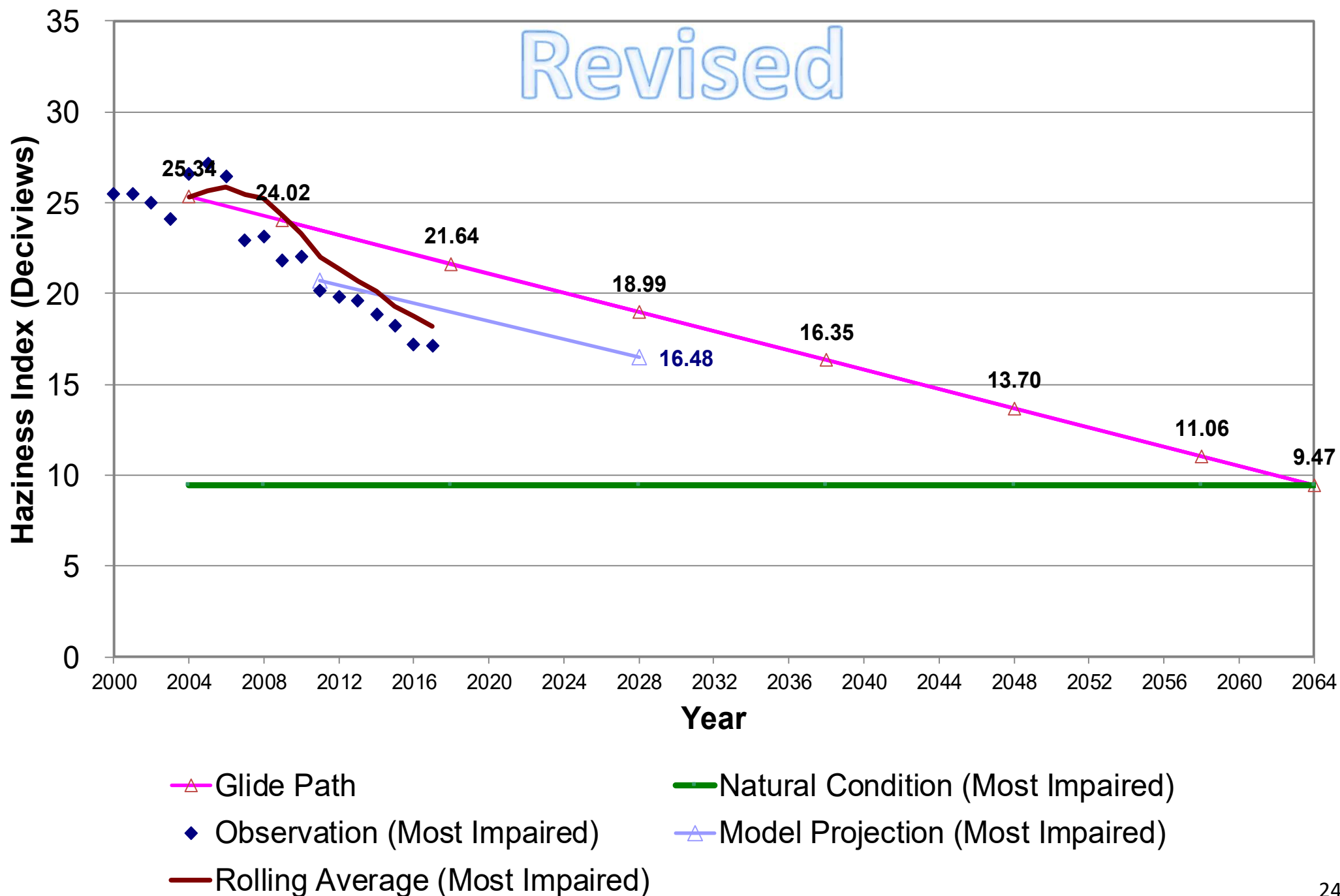
Uniform Rate of Progress Glide Path Saint Marks - 20% Most Impaired Data Days



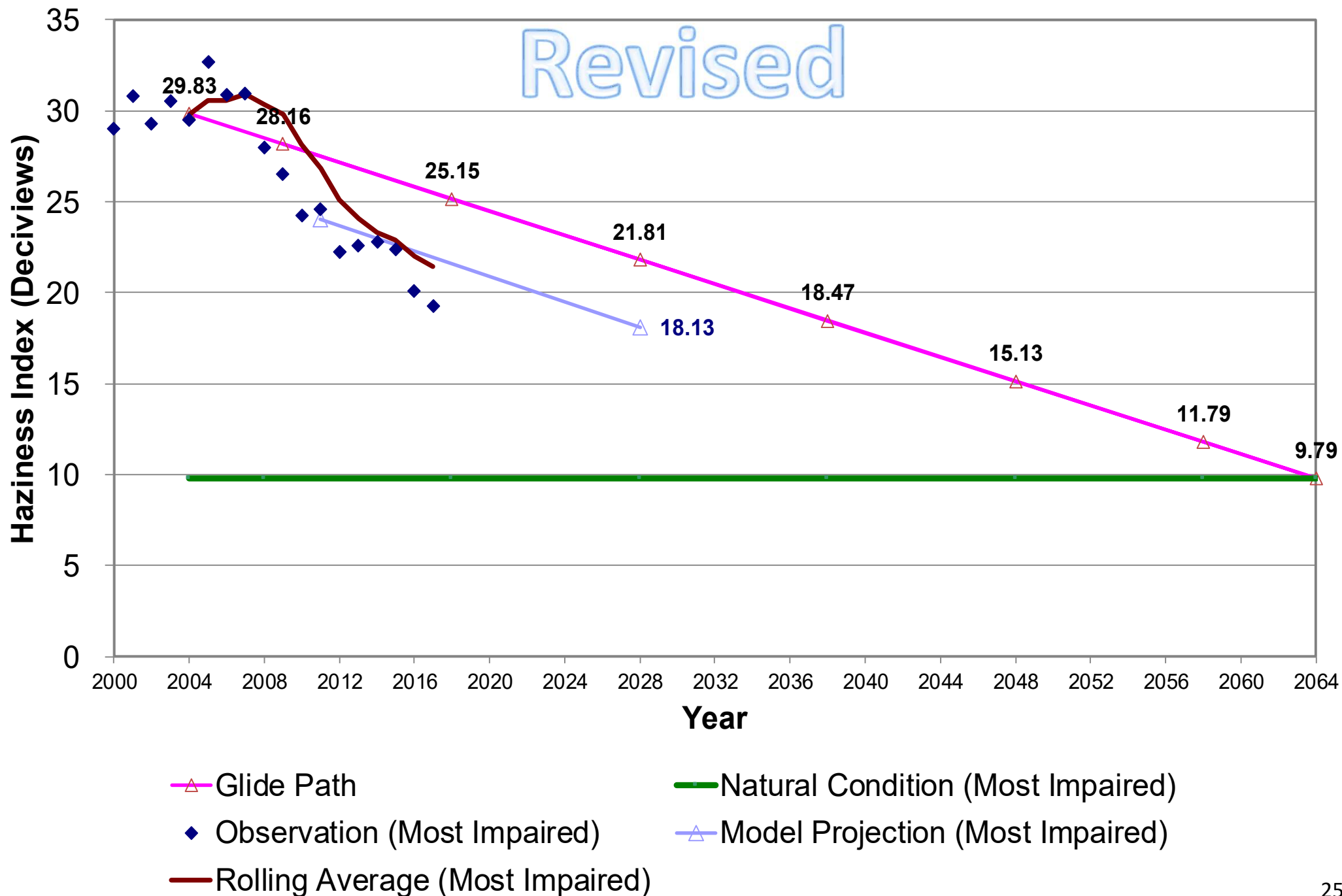
Uniform Rate of Progress Glide Path Cohutta - 20% Most Impaired Data Days



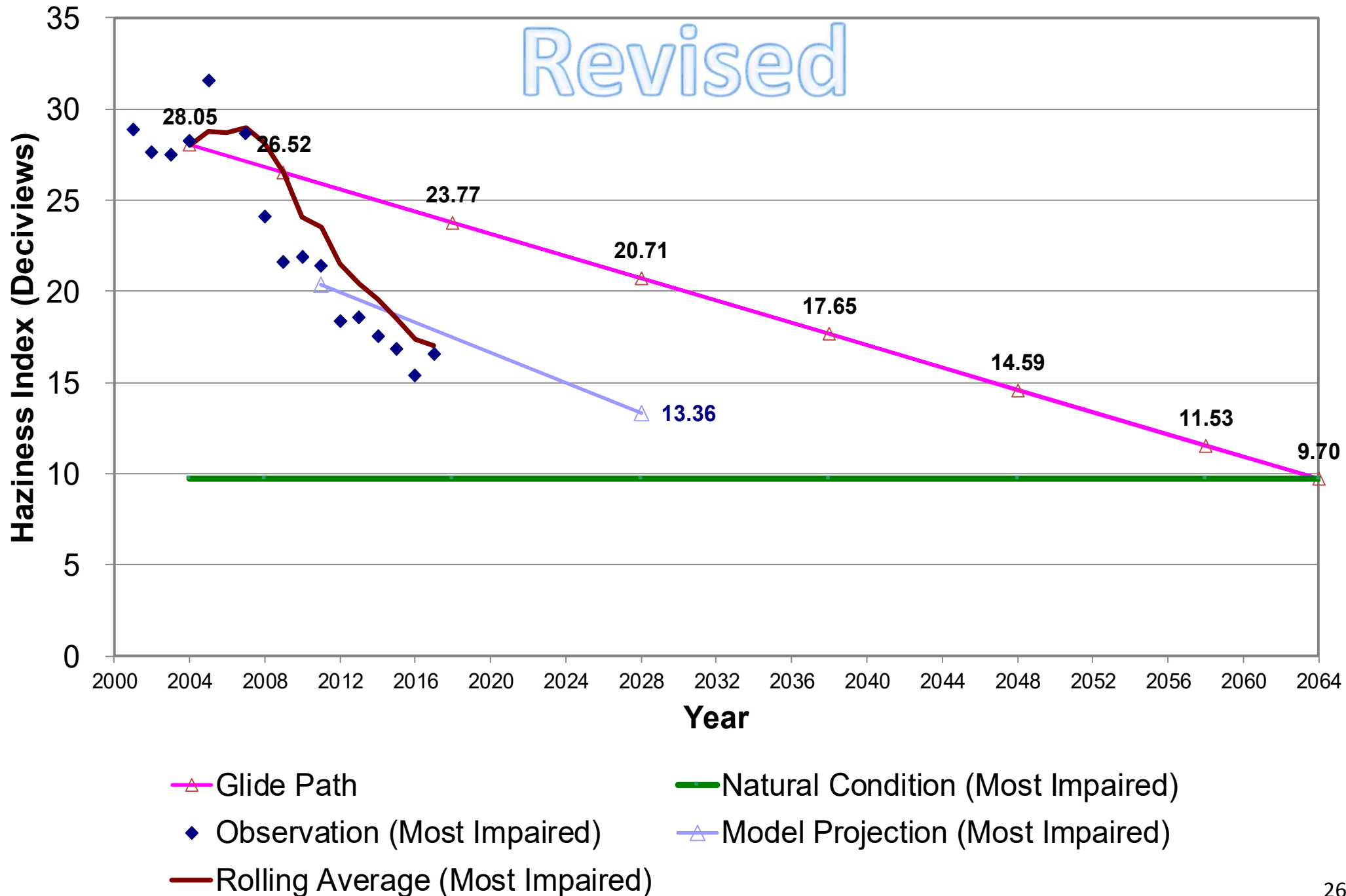
Uniform Rate of Progress Glide Path Okefenokee - 20% Most Impaired Data Days



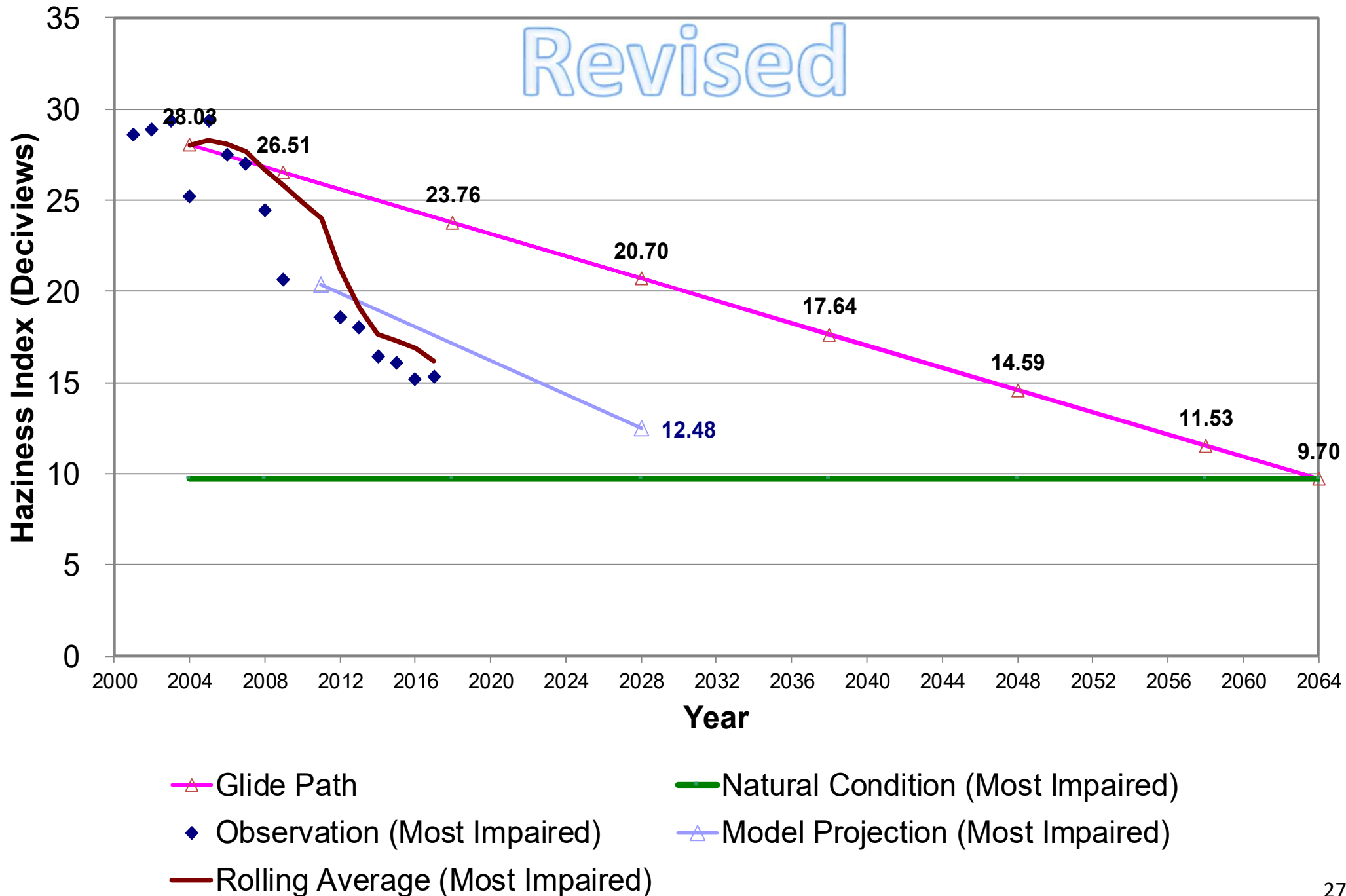
Uniform Rate of Progress Glide Path Mammoth Cave - 20% Most Impaired Data Days



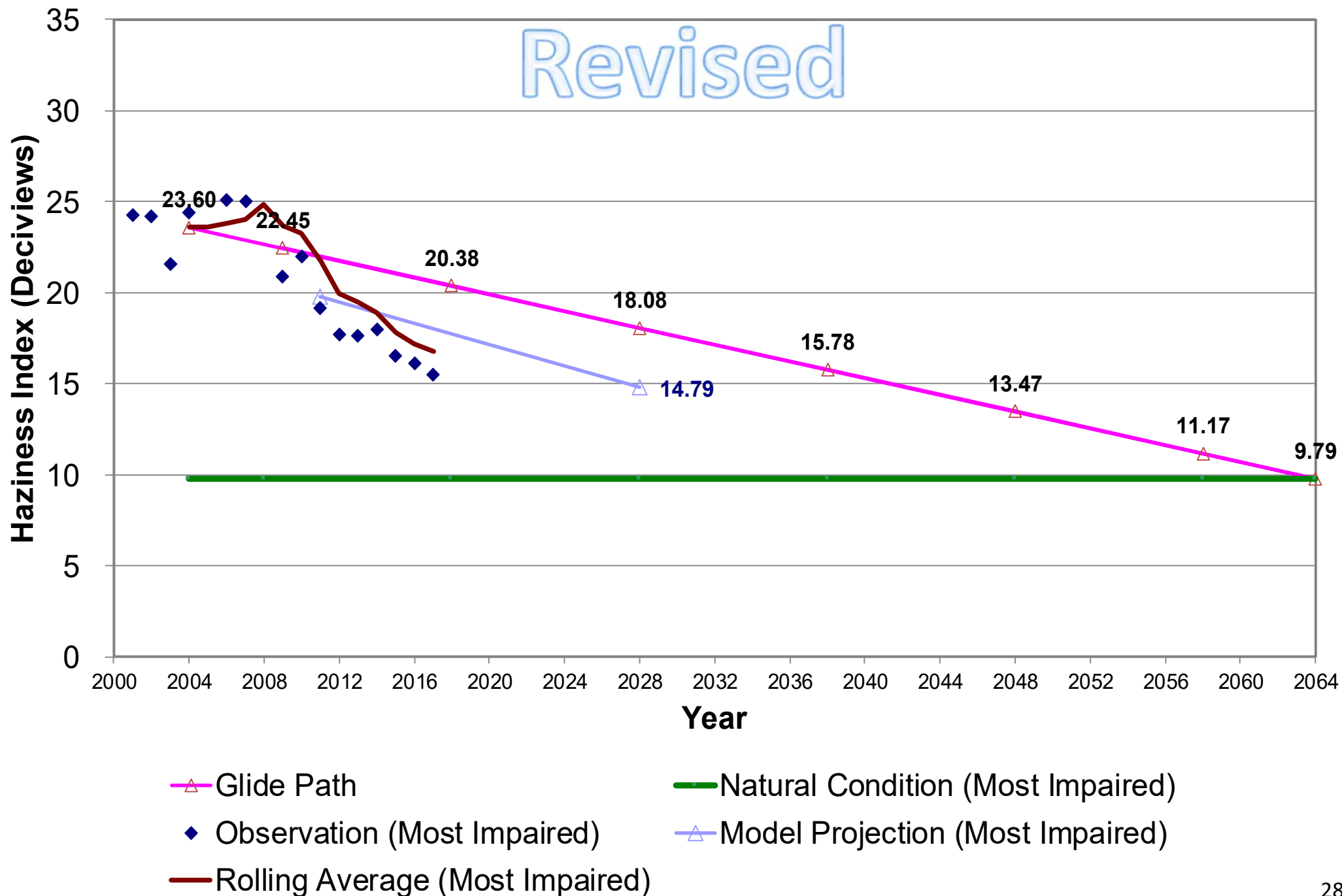
Uniform Rate of Progress Glide Path Linville Gorge - 20% Most Impaired Data Days



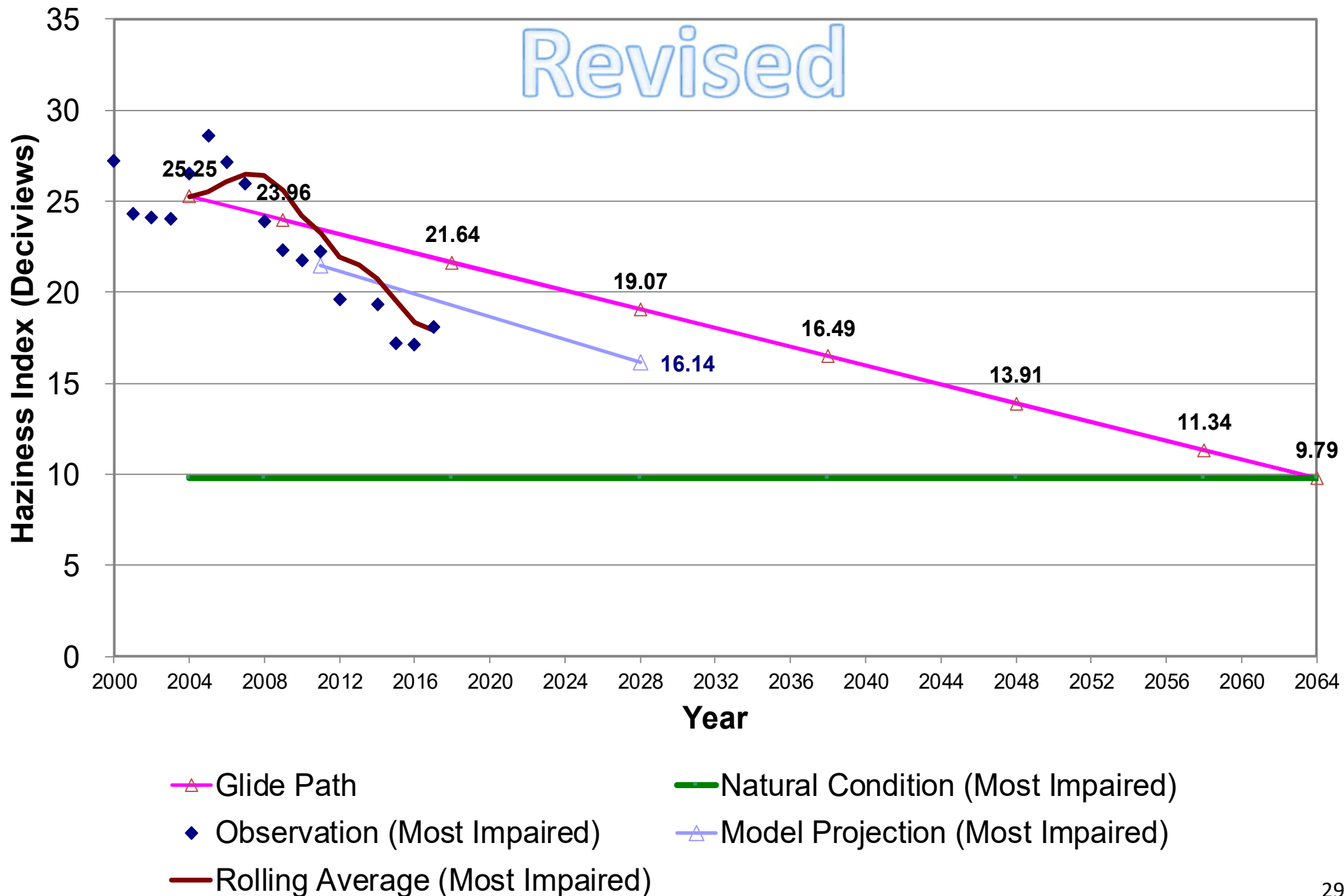
Uniform Rate of Progress Glide Path Shining Rock - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Swanquarter - 20% Most Impaired Data Days

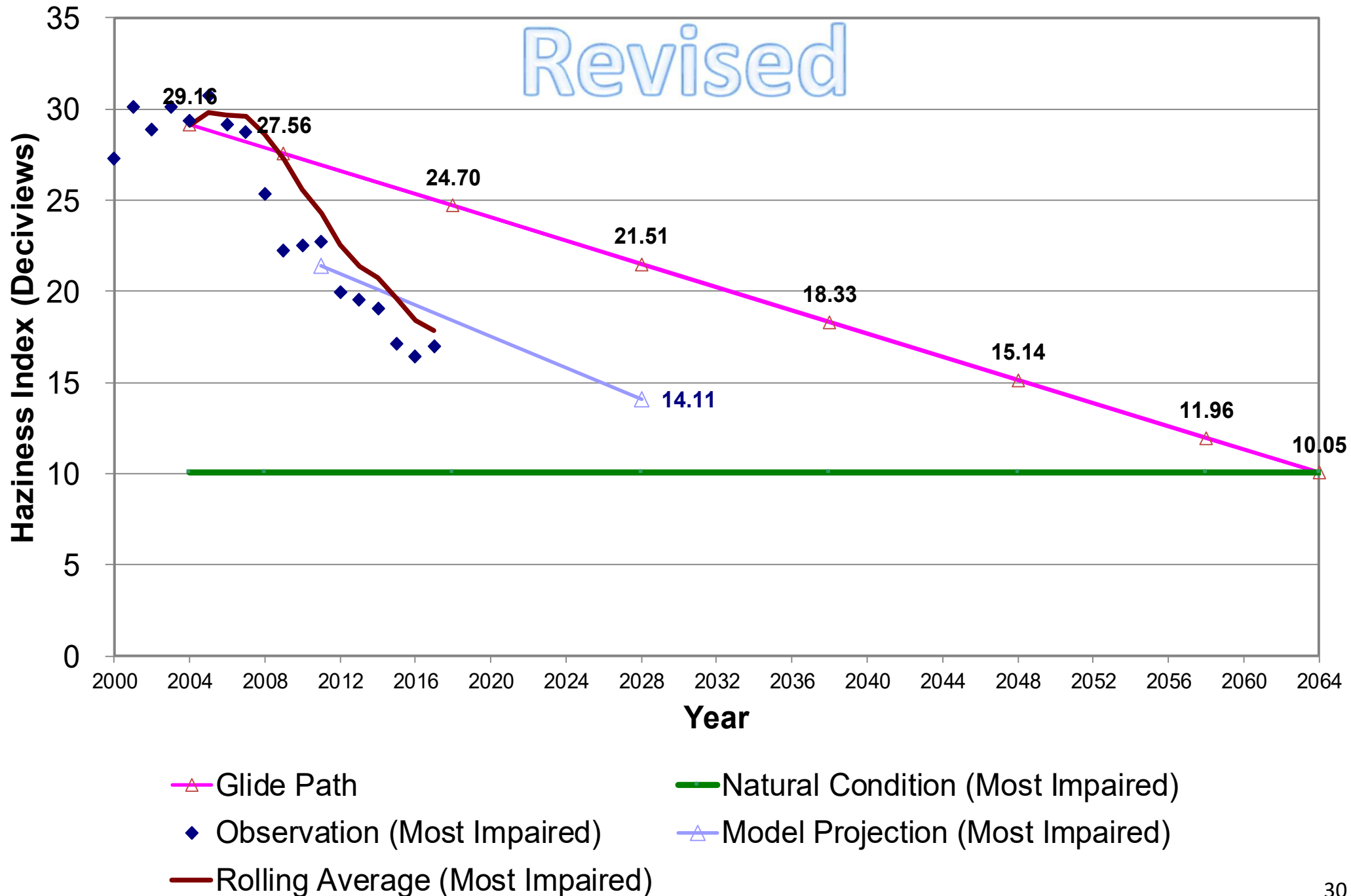


Uniform Rate of Progress Glide Path Cape Romain - 20% Most Impaired Data Days

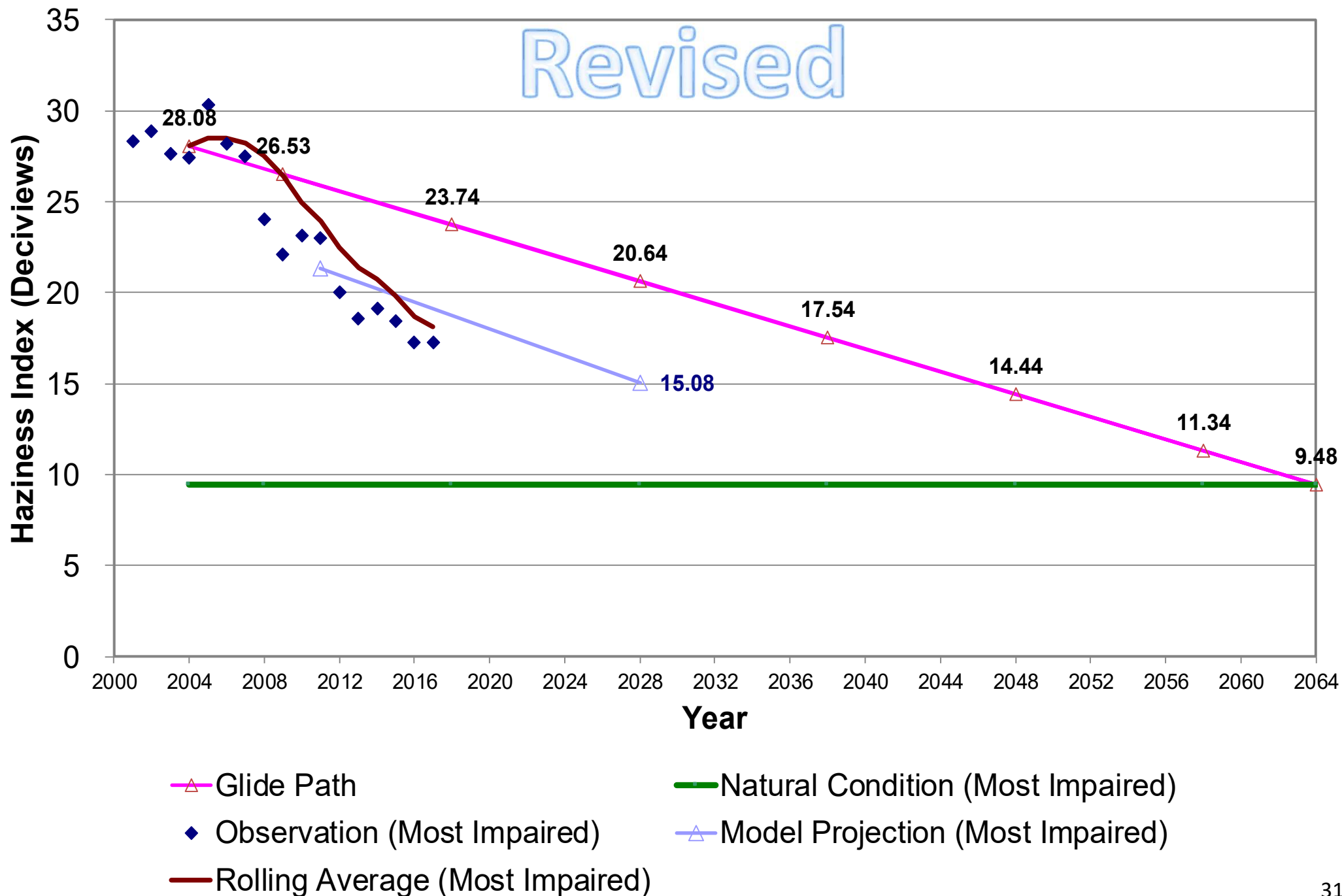


Uniform Rate of Progress Glide Path

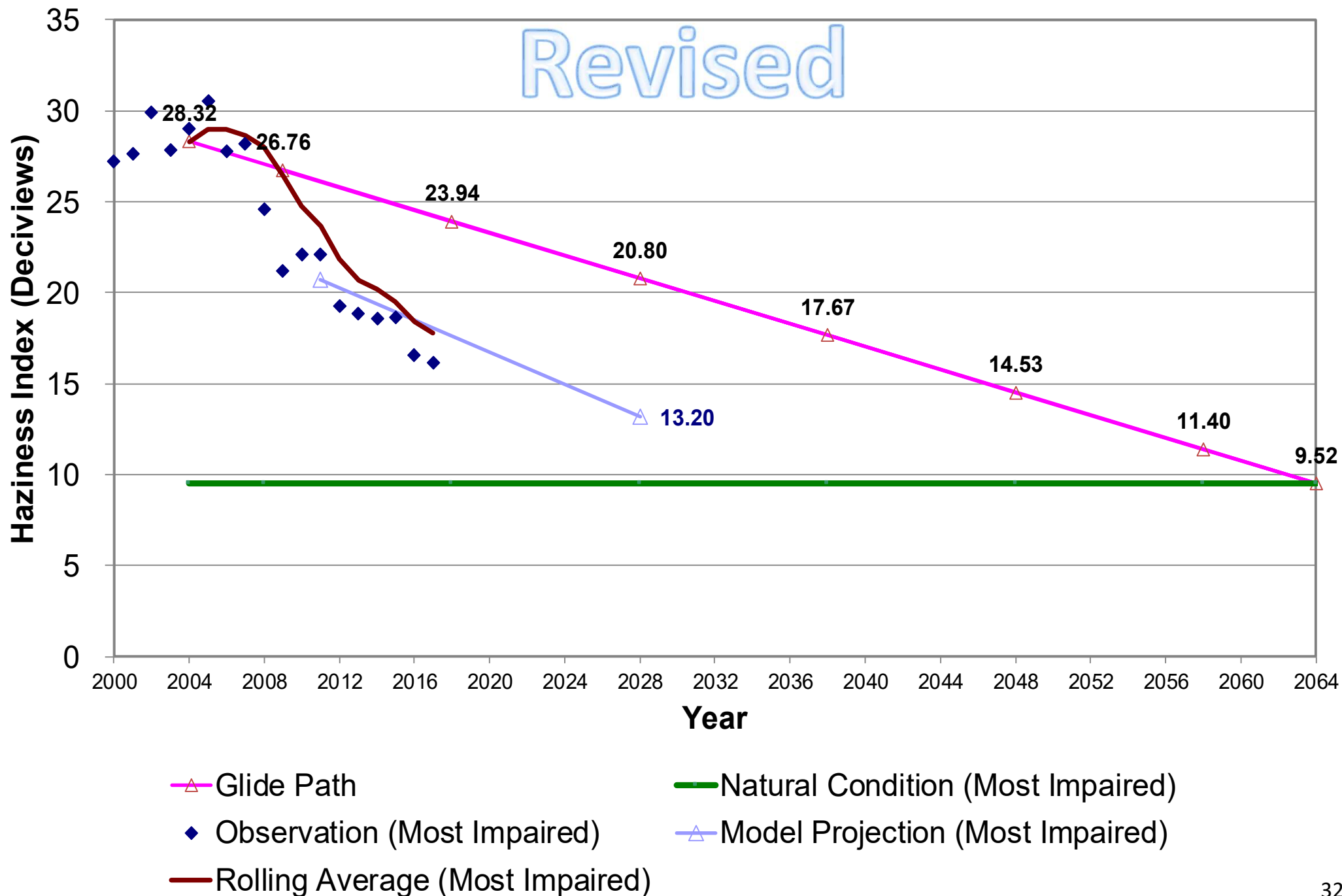
Great Smoky Mountains - 20% Most Impaired Data Days



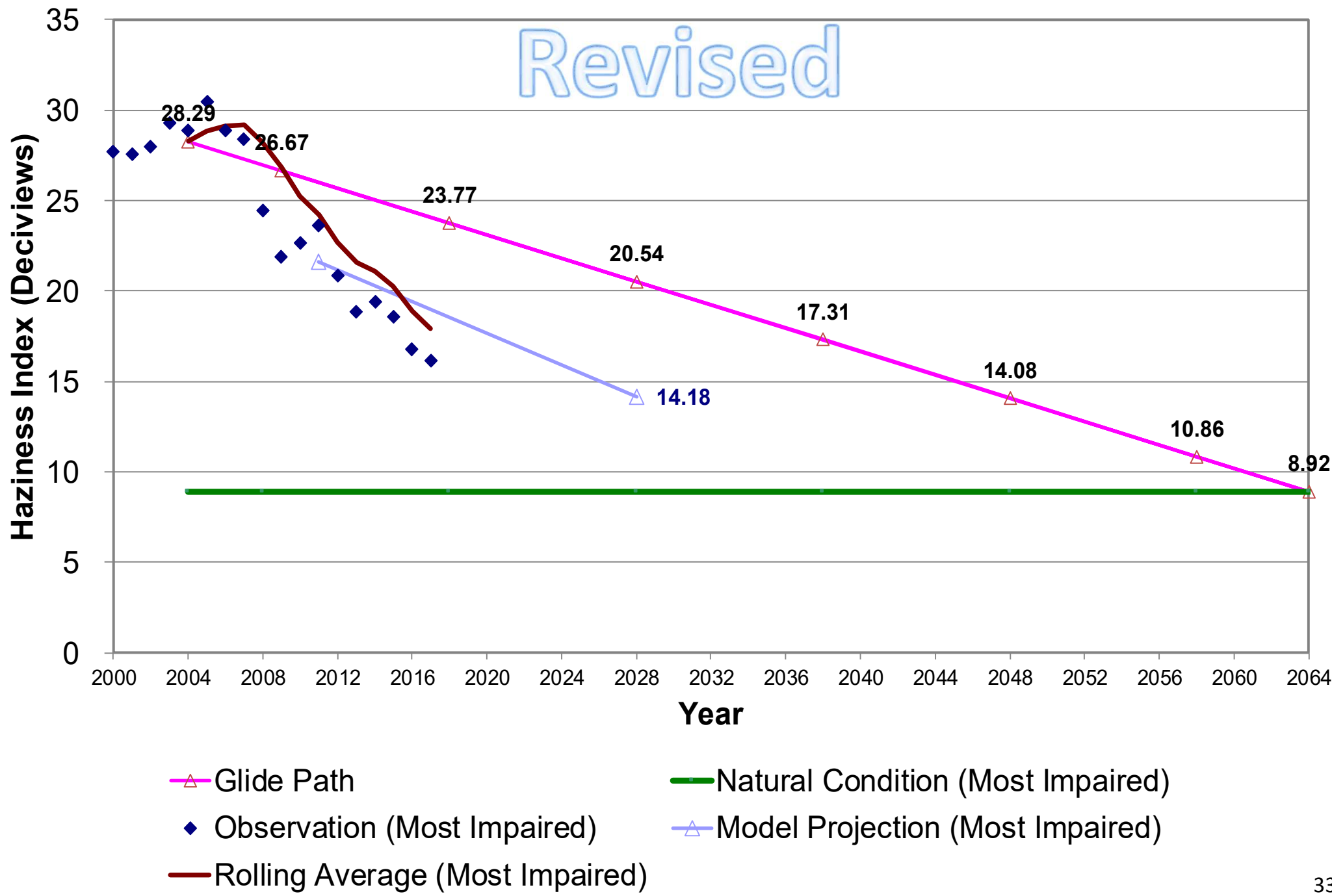
Uniform Rate of Progress Glide Path James River Face - 20% Most Impaired Data Days



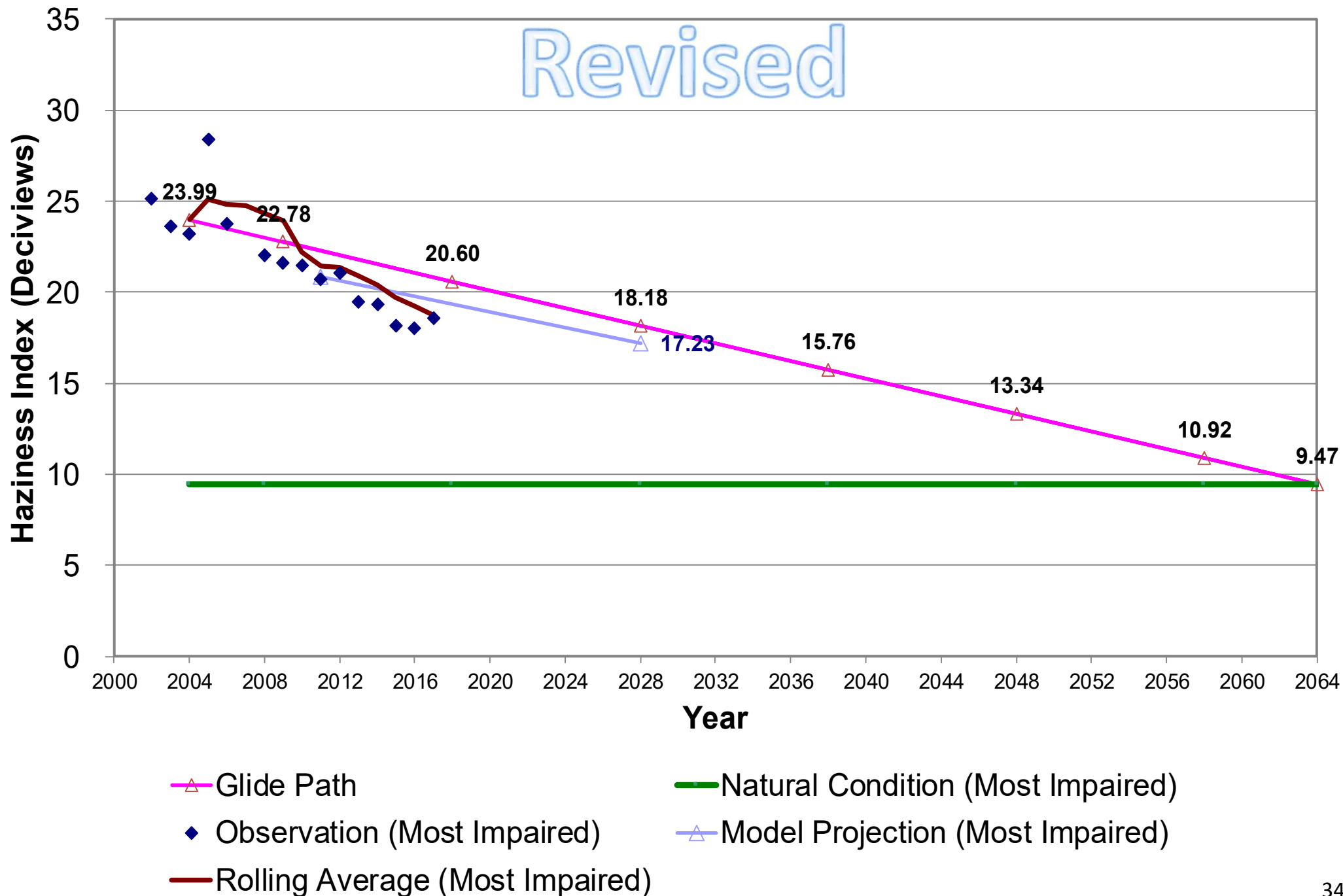
Uniform Rate of Progress Glide Path Shenandoah - 20% Most Impaired Data Days



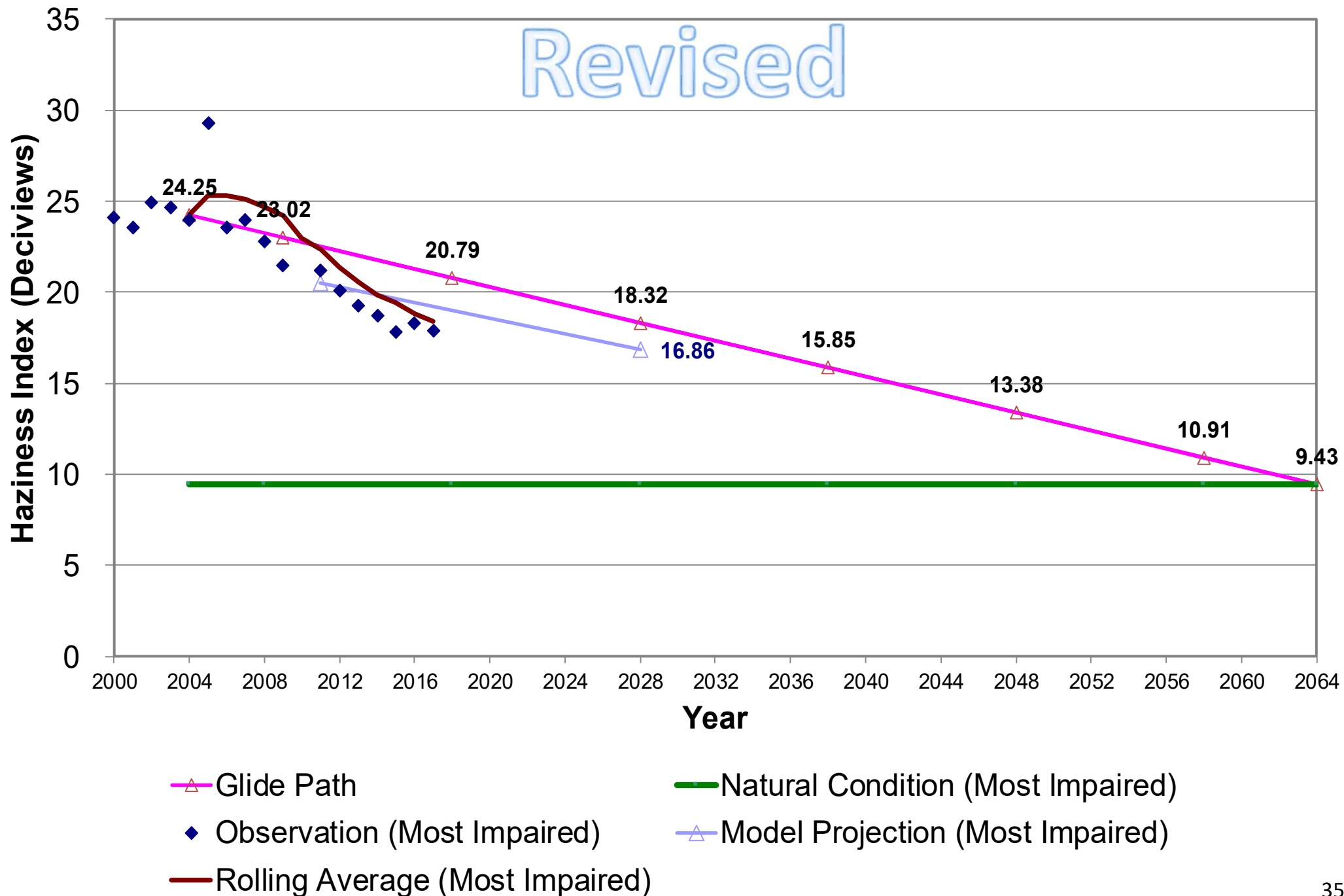
Uniform Rate of Progress Glide Path Dolly Sods - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Caney Creek - 20% Most Impaired Data Days

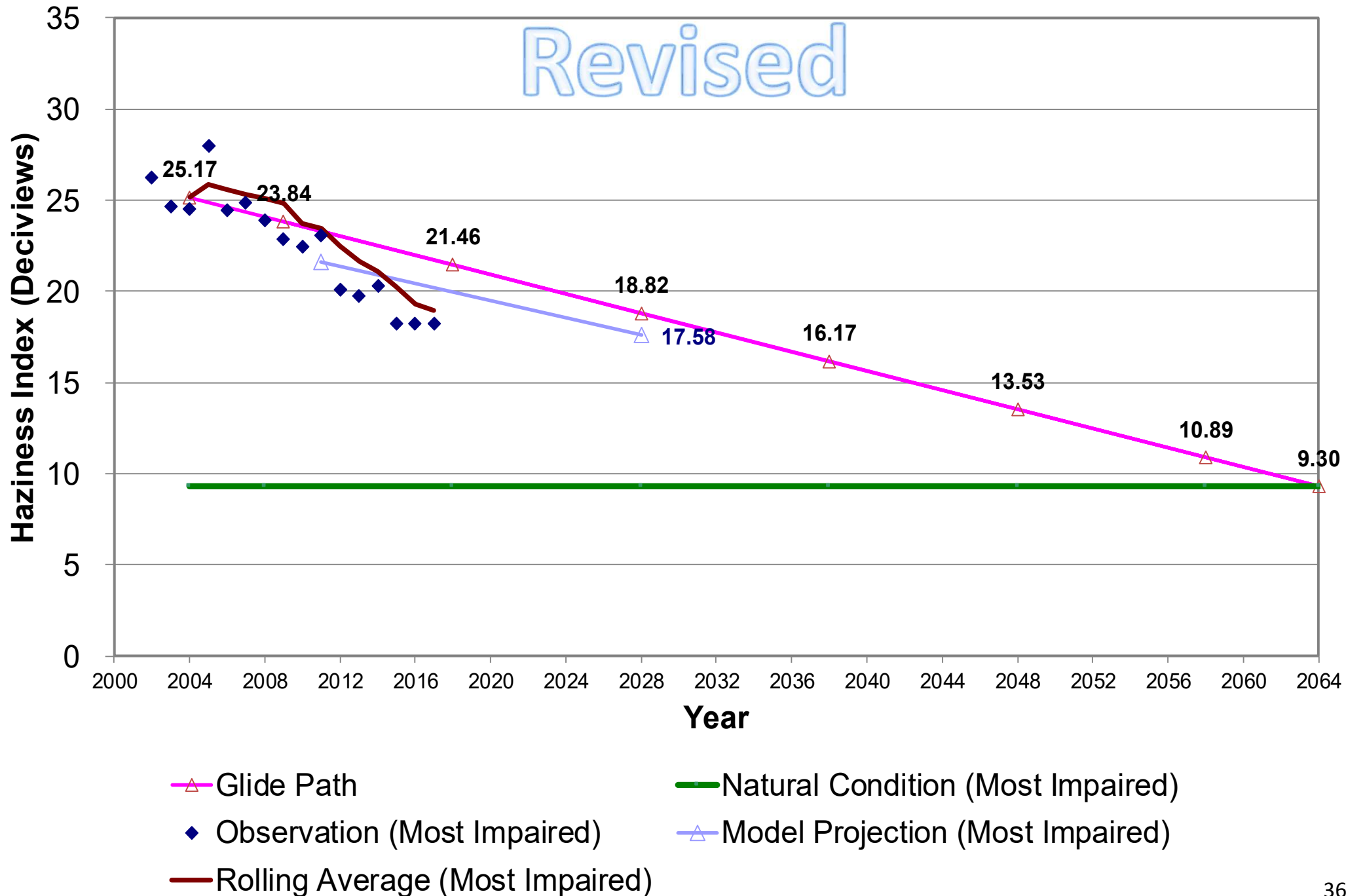


Uniform Rate of Progress Glide Path Upper Buffalo - 20% Most Impaired Data Days

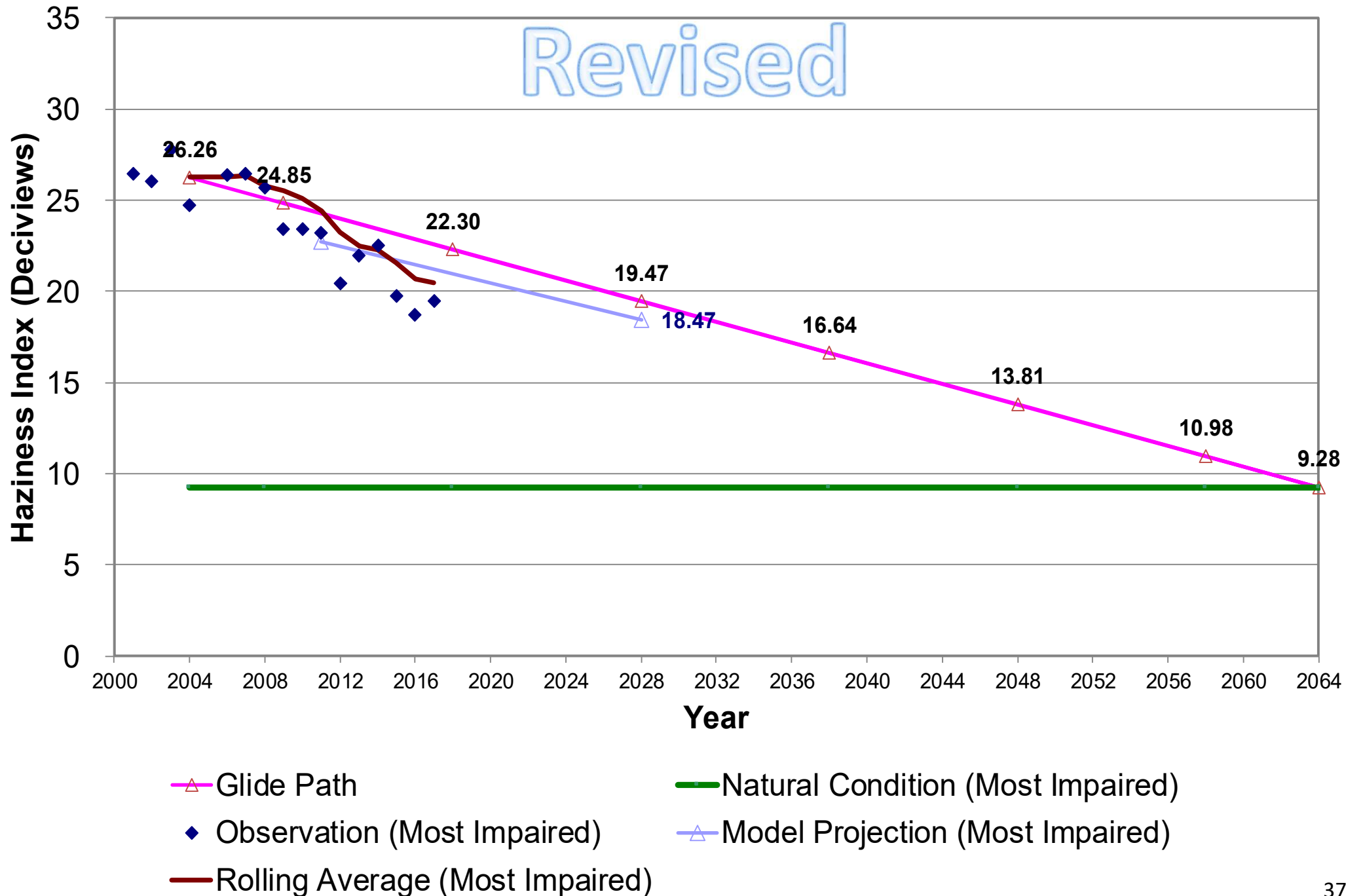


Uniform Rate of Progress Glide Path

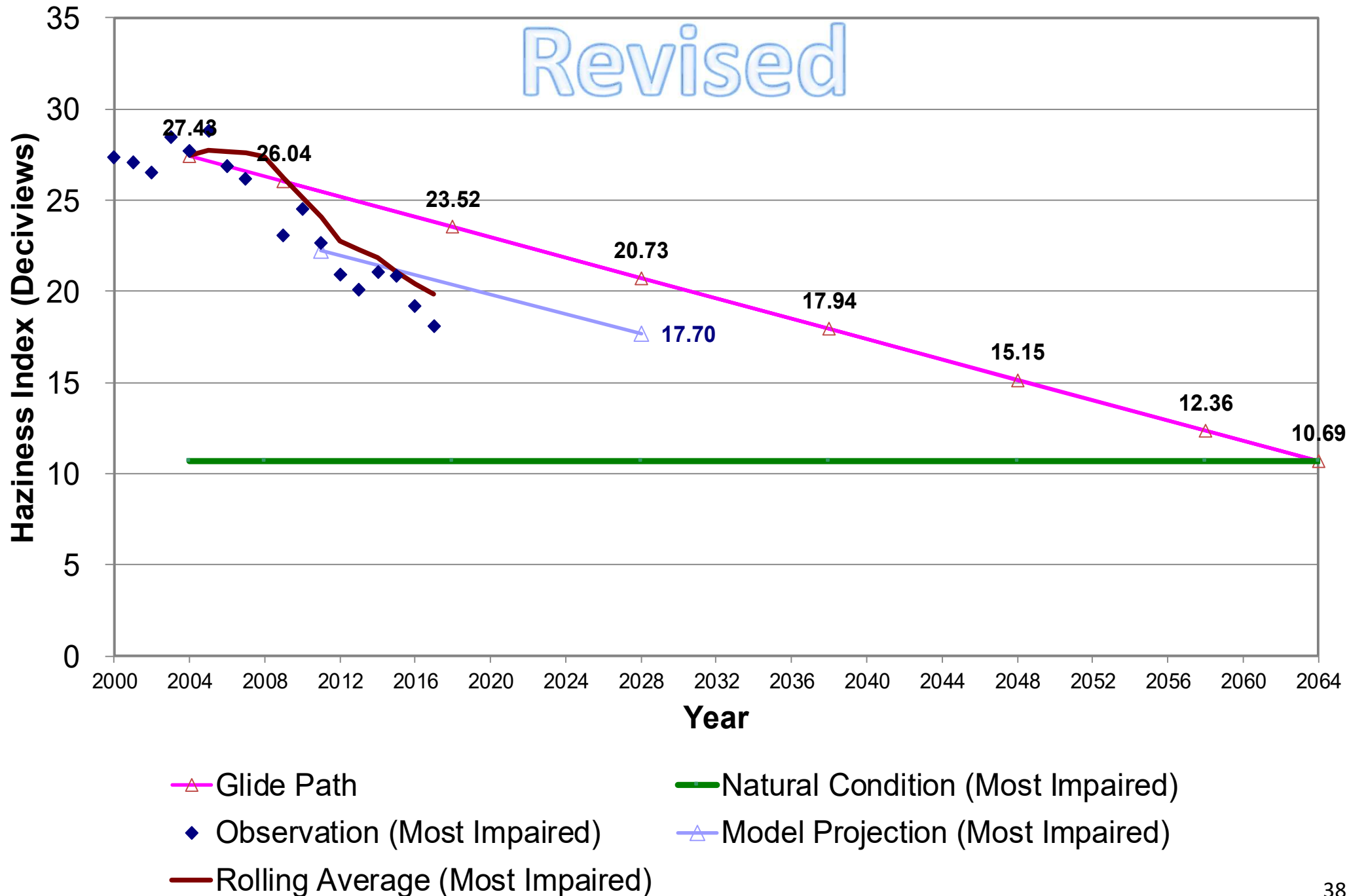
Hercules - Glade - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Mingo - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Brigantine - 20% Most Impaired Data Days



Adjusted 2028 PSAT Stacked Bar Charts

PSAT Source Apportionment Modeling

- PSAT = Particulate Matter Source Apportionment Technology
- Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
- NO_x and SO₂ tagging
- Used for further evaluation of AOI results
- Refines information on contributions to visibility impairment
- Can be used to adjust future year visibility projections to account for additional emission controls
- VISTAS contract with ERG allows for up to 250 tags

PSAT SO₂ and NO_x Tags (209)

Round 1 (122 tags)

- Total SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- Total NO_x tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- EGU point NO_x tags for 10 individual VISTAS states + 3 RPOs = 13 tags
- *SO₂ tags for individual VISTAS facilities = 50 tags*
- *NO_x tags for individual VISTAS facilities = 20 tags*

Round 2 (87 tags)

- Non-EGU point SO₂ for 10 individual VISTAS states + 3 RPOs = 13 tags
- Non-EGU point NO_x for 10 individual VISTAS states + 3 RPOs = 13 tags
- SO₂ and NO_x for N/S/W/E boundaries = 8 tags
- *SO₂ tags for individual VISTAS facilities = 10 tags*
- *NO_x tags for individual VISTAS facilities = 16 tags*
- *SO₂ tags for individual non-VISTAS facilities = 17 tags*
- *NO_x tags for individual non-VISTAS facilities = 10 tags*

Revised State/RPO PSAT Results

- **Revised EGU Sulfate PSAT Results**

= Original EGU Sulfate PSAT Results * SO₂ EGU Ratio

$$\text{where, SO}_2 \text{ EGU Ratio} = \frac{(\text{Revised EGU SO}_2 \text{ emissions})}{(\text{Original EGU SO}_2 \text{ emissions})}$$

- **Revised NEGU Sulfate PSAT Results**

= Original NEGU Sulfate PSAT Results * SO₂ NEGU Ratio

$$\text{where, SO}_2 \text{ NEGU Ratio} = \frac{(\text{Revised NEGU SO}_2 \text{ emissions})}{(\text{Original NEGU SO}_2 \text{ emissions})}$$

Revised State/RPO PSAT Results

- **Revised EGU Nitrate PSAT Results**

= Original EGU Nitrate PSAT Results * NO_x EGU Ratio

where, NO_x EGU Ratio = $\frac{(\text{Revised EGU NO}_x \text{ emissions})}{(\text{Original EGU NO}_x \text{ emissions})}$

- **Revised NEGU Nitrate PSAT Results**

= Original NEGU Nitrate PSAT Results * NO_x NEGU Ratio

where, NO_x NEGU Ratio = $\frac{(\text{Revised NEGU NO}_x \text{ emissions})}{(\text{Original NEGU NO}_x \text{ emissions})}$

PSAT Adjustment Ratios

State/RPO	SO ₂ EGU Ratio	SO ₂ NEGU Ratio	NOx EGU Ratio	NOx NEGU Ratio
AL	0.540	0.708	0.744	0.950
FL	0.841	0.829	0.954	1.077
GA	0.951	1.000	0.949	1.000
KY	0.881	0.850	0.889	0.999
MS	0.463	0.363	0.668	1.023
NC	0.485	0.953	0.753	0.998
SC	1.000	1.000	1.018	0.997
TN	0.828	0.973	0.775	0.982
VA	0.605	1.000	0.872	1.000
WV	0.826	1.071	1.067	1.000
CENSARA	0.494	1.000	0.706	1.000
LADCO	0.636	1.000	0.764	1.000
MANE-VU	0.467	0.810	0.794	1.000

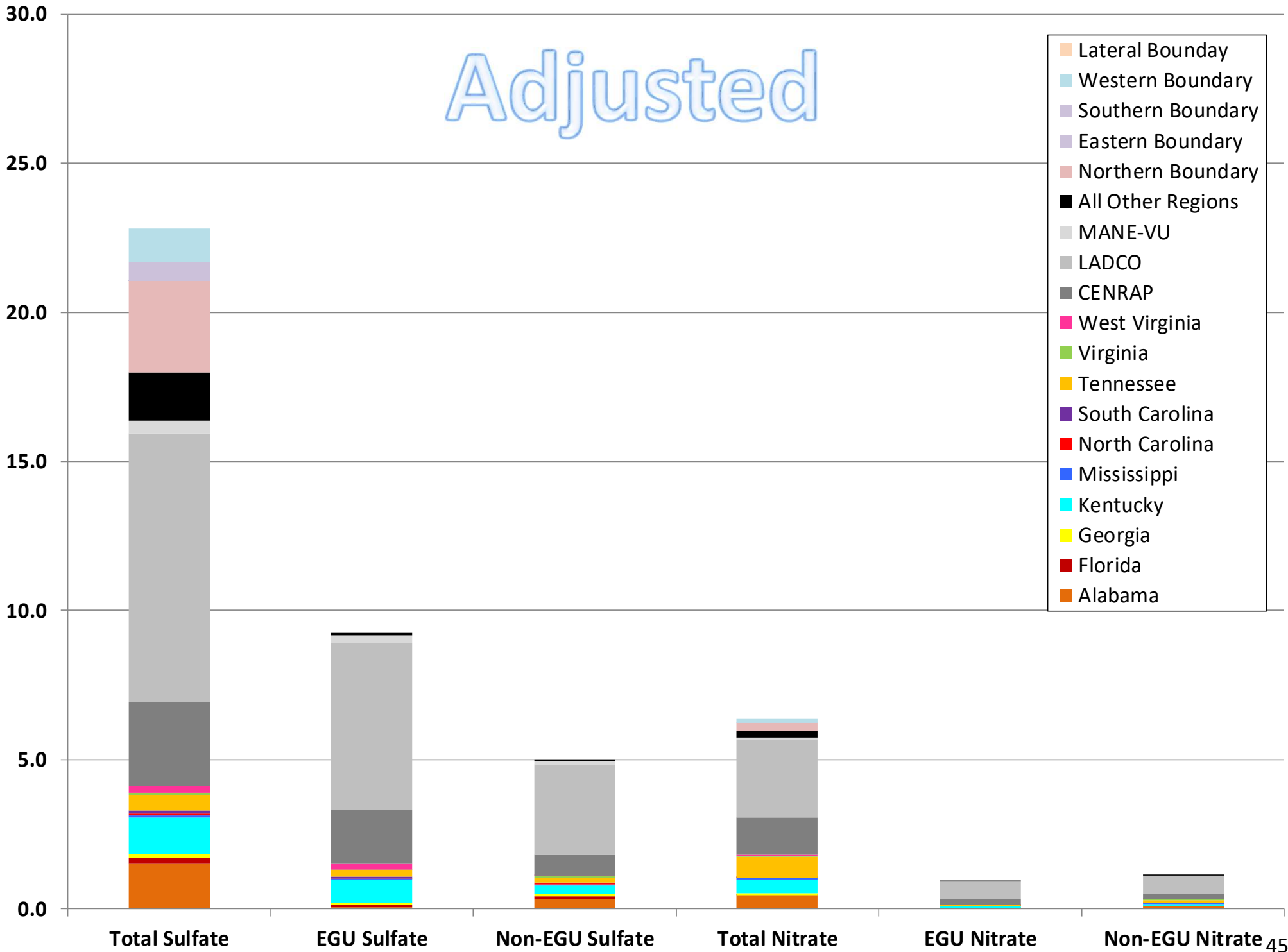
*For detailed calculations, see [Handout - Roadmap](https://www.metro4-sesarm.org/content/vistas-regional-haze-program) located at:
<https://www.metro4-sesarm.org/content/vistas-regional-haze-program>*

2028 Contribution to Light Extinction on 20% Most Impaired Days - Sipsey Wilderness (AL)

Adjusted

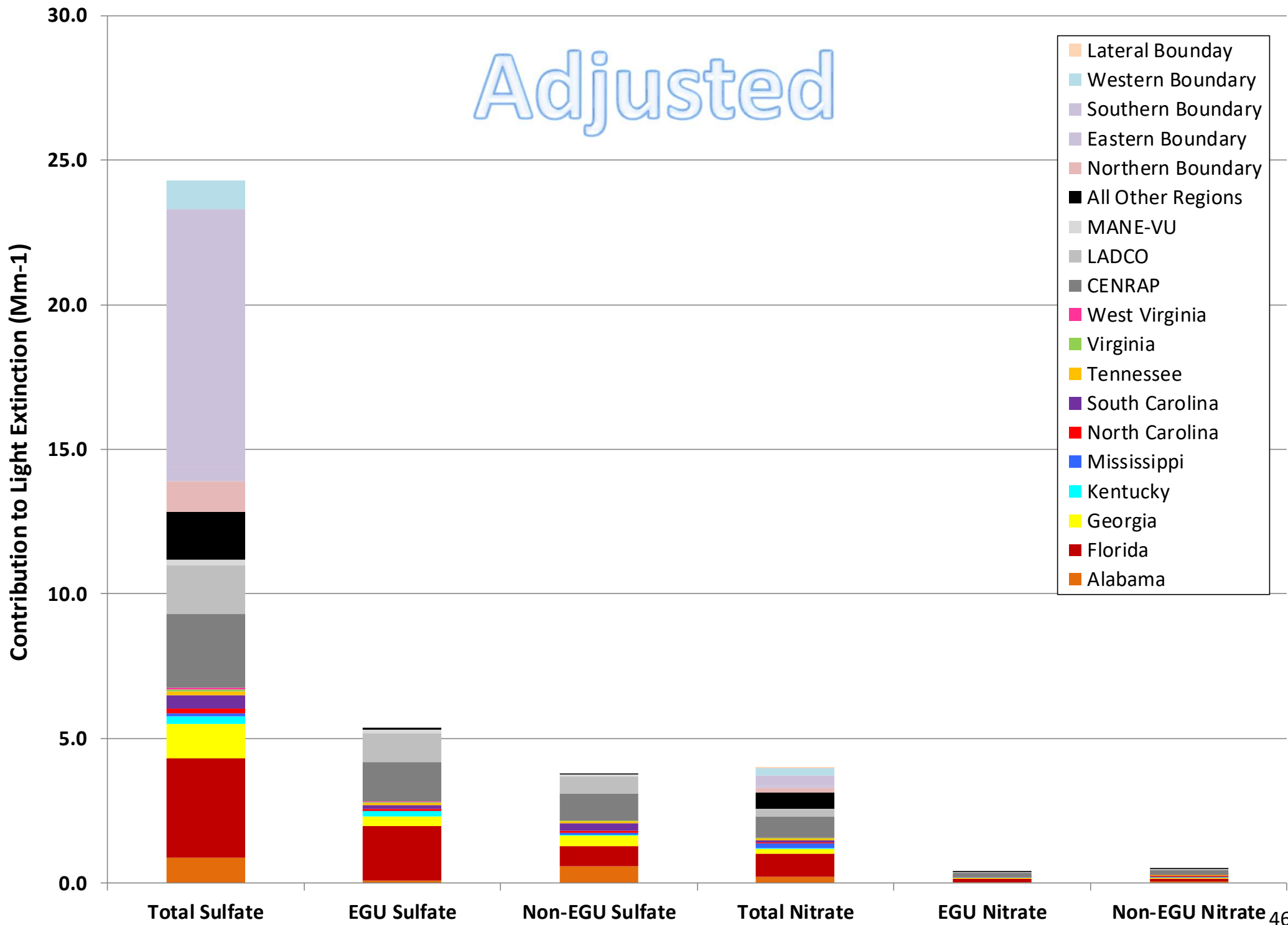
- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Contribution to Light Extinction (Mm-1)



2028 Contribution to Light Extinction on 20% Most Impaired Days - Chassahowitzka (FL)

Adjusted

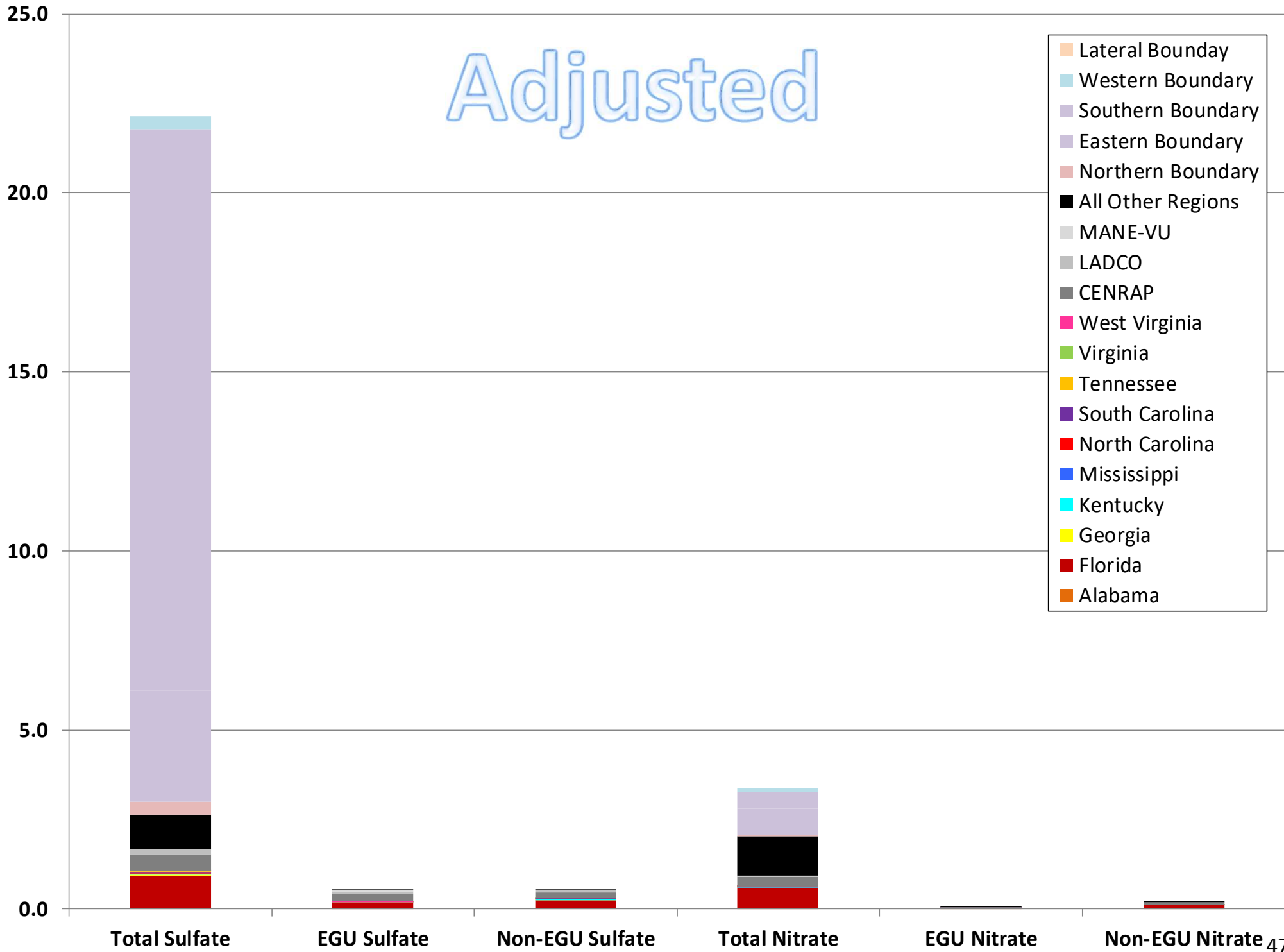


2028 Contribution to Light Extinction on 20% Most Impaired Days - Everglades NP (FL)

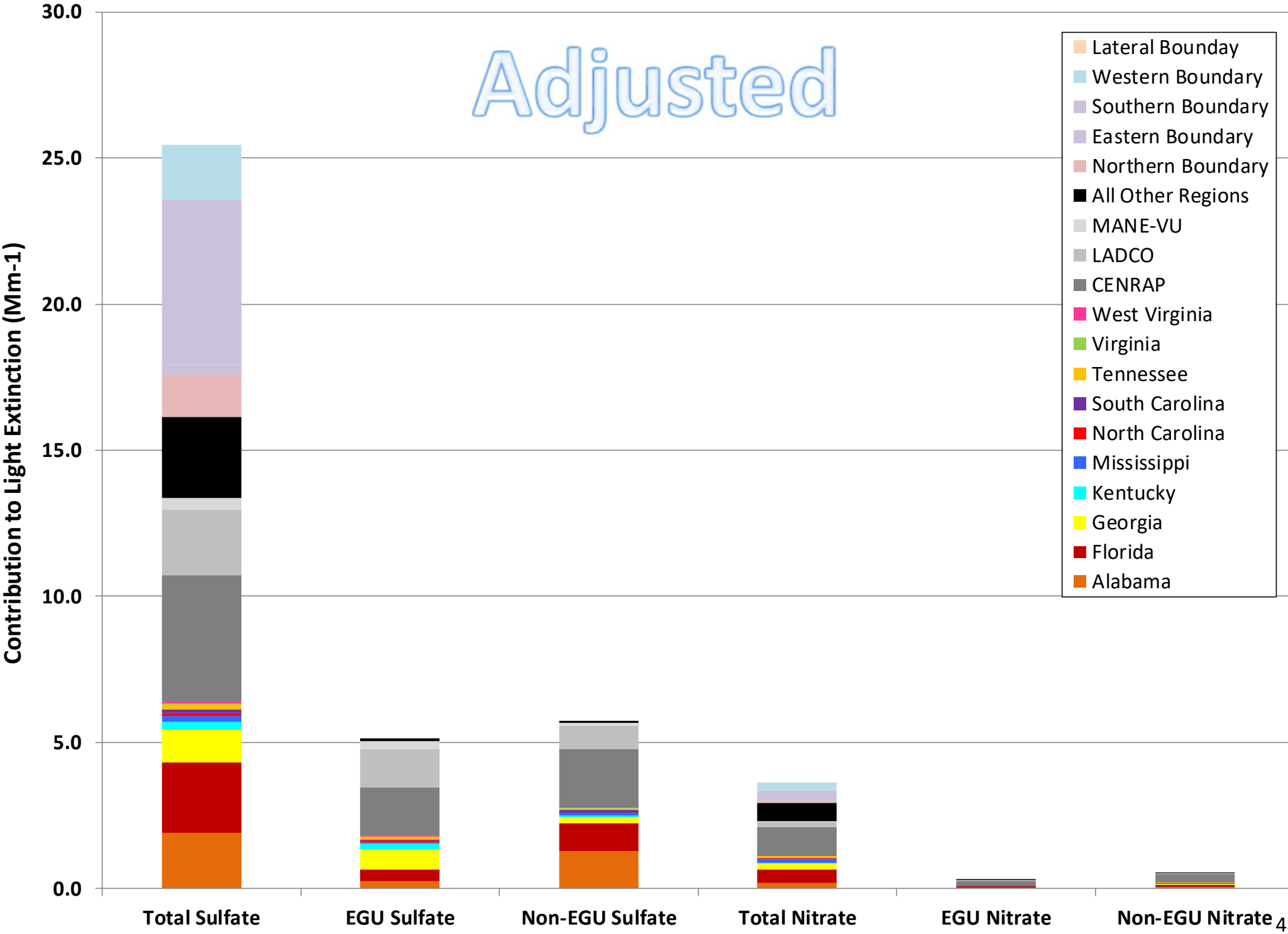
Adjusted

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

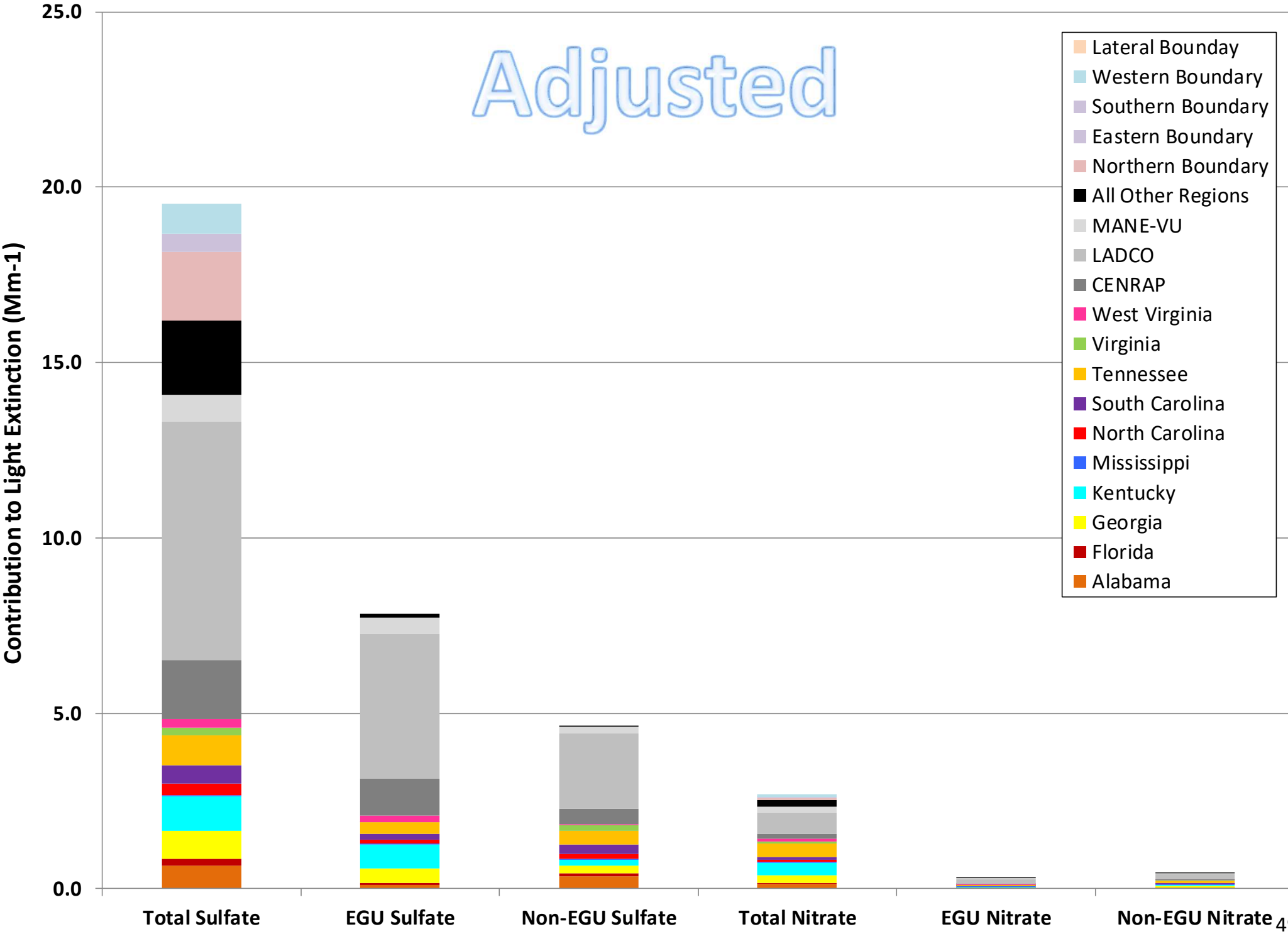
Contribution to Light Extinction (Mm⁻¹)



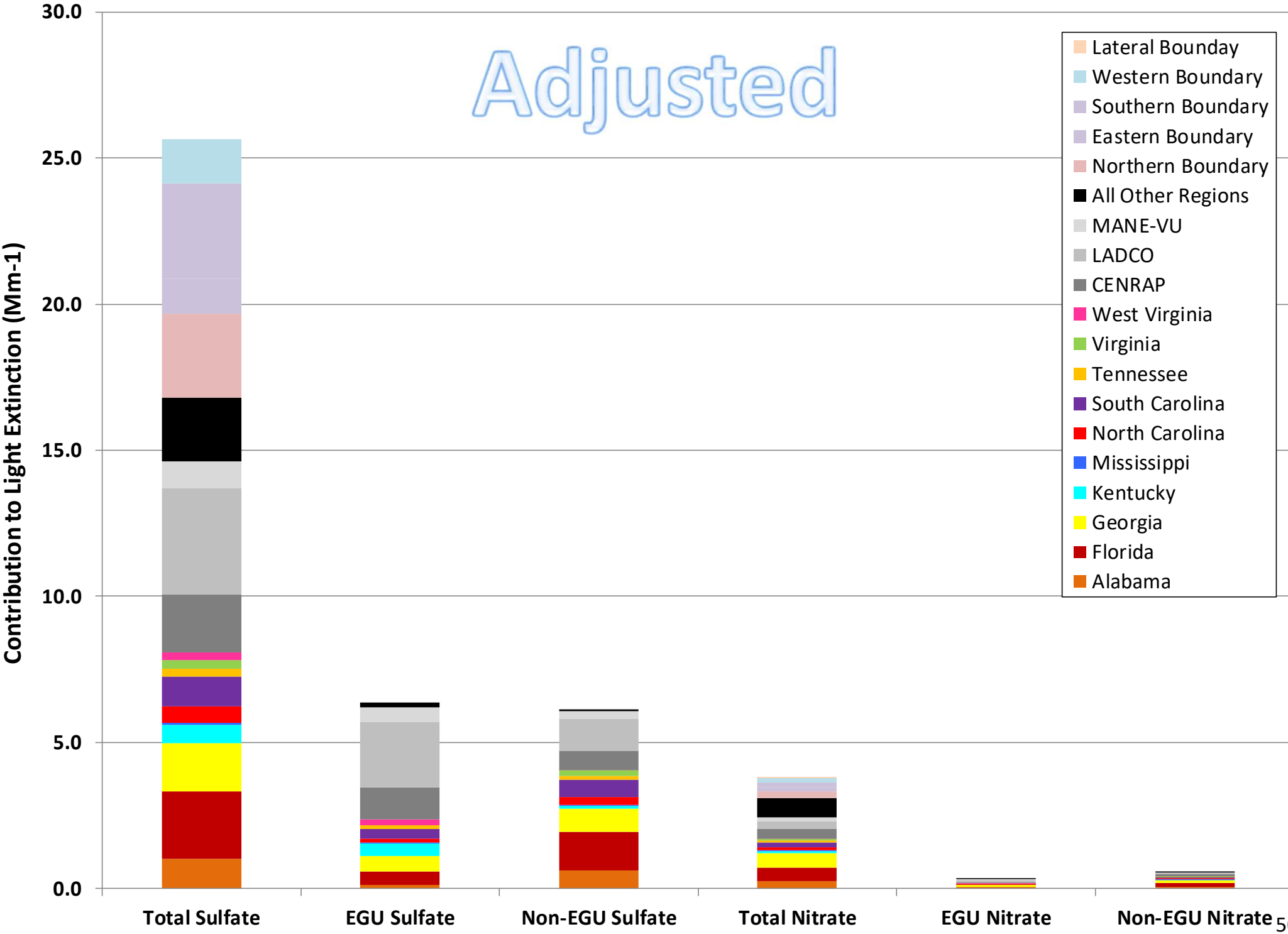
2028 Contribution to Light Extinction on 20% Most Impaired Days - St. Marks (FL)



2028 Contribution to Light Extinction on 20% Most Impaired Days - Cohutta Wilderness (GA)

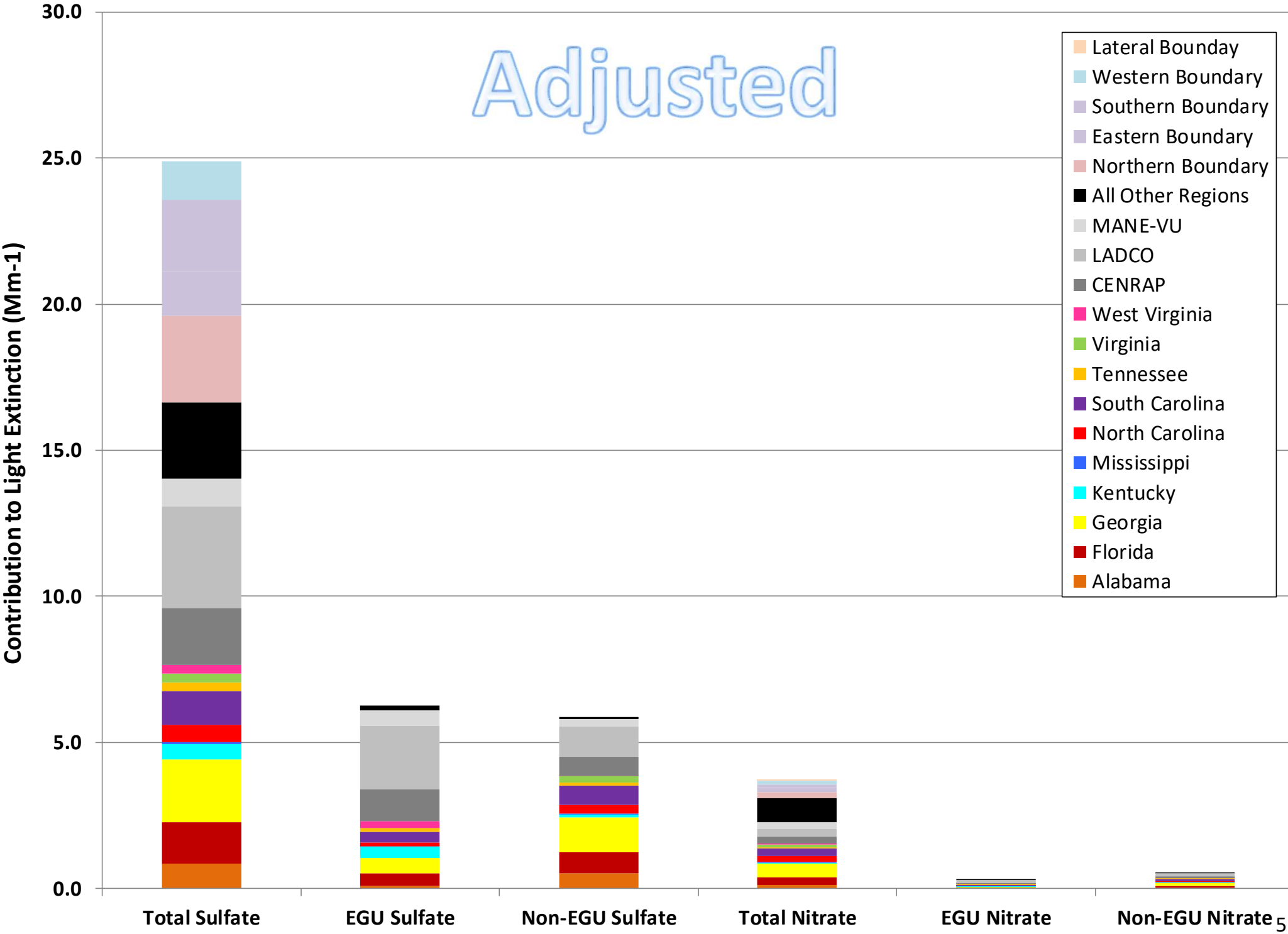


2028 Contribution to Light Extinction on 20% Most Impaired Days - Okefenokee (GA)



2028 Contribution to Light Extinction on 20% Most Impaired Days - Wolf Island (GA)

Adjusted



2028 Contribution to Light Extinction on 20% Most Impaired Days - Mammoth Cave NP (KY)

Adjusted

Contribution to Light Extinction (Mm⁻¹)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

EGU Sulfate

Non-EGU Sulfate

Total Nitrate

EGU Nitrate

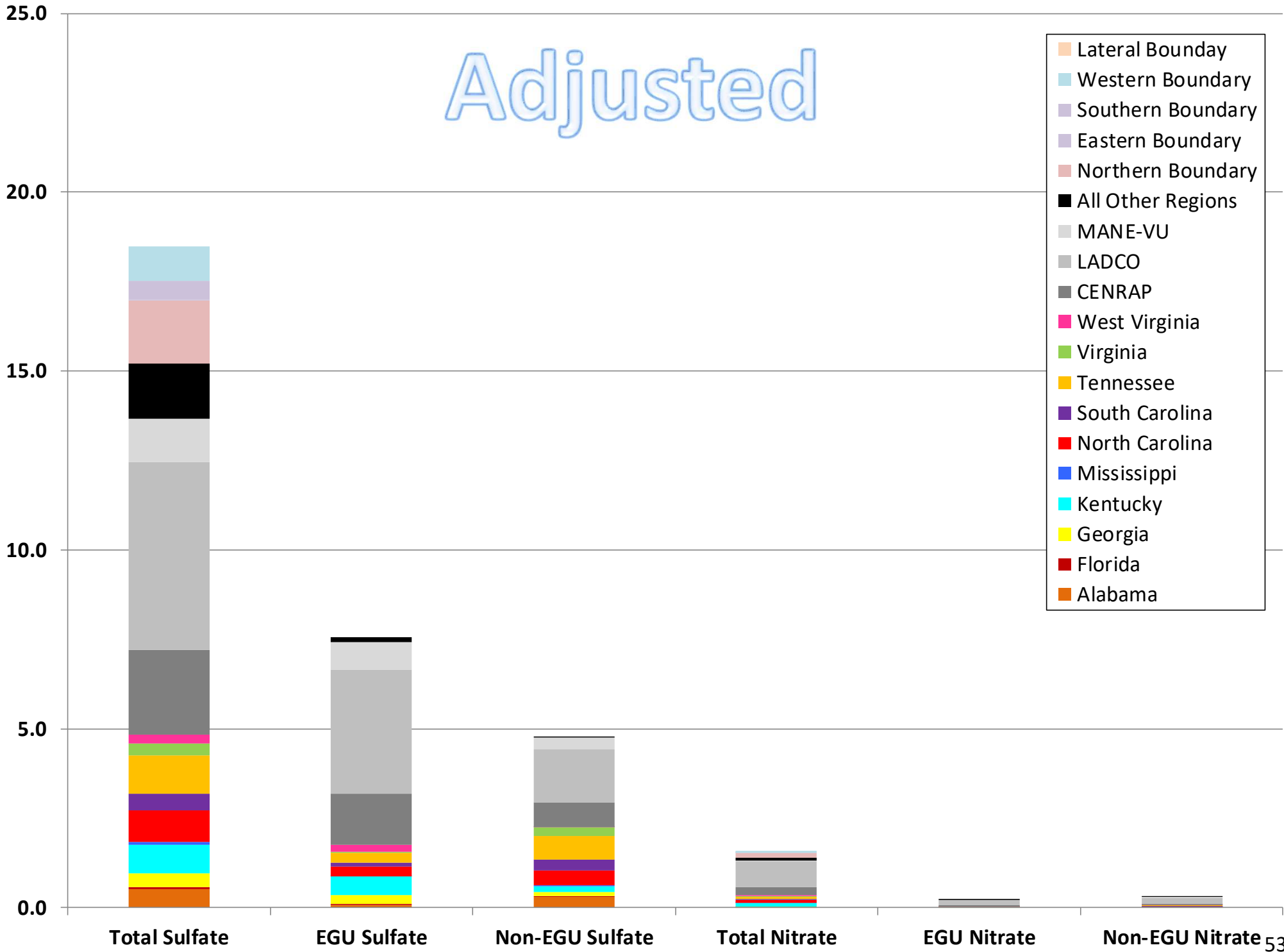
Non-EGU Nitrate 52

2028 Contribution to Light Extinction on 20% Most Impaired Days - Linville Gorge Wilderness (NC)

Adjusted

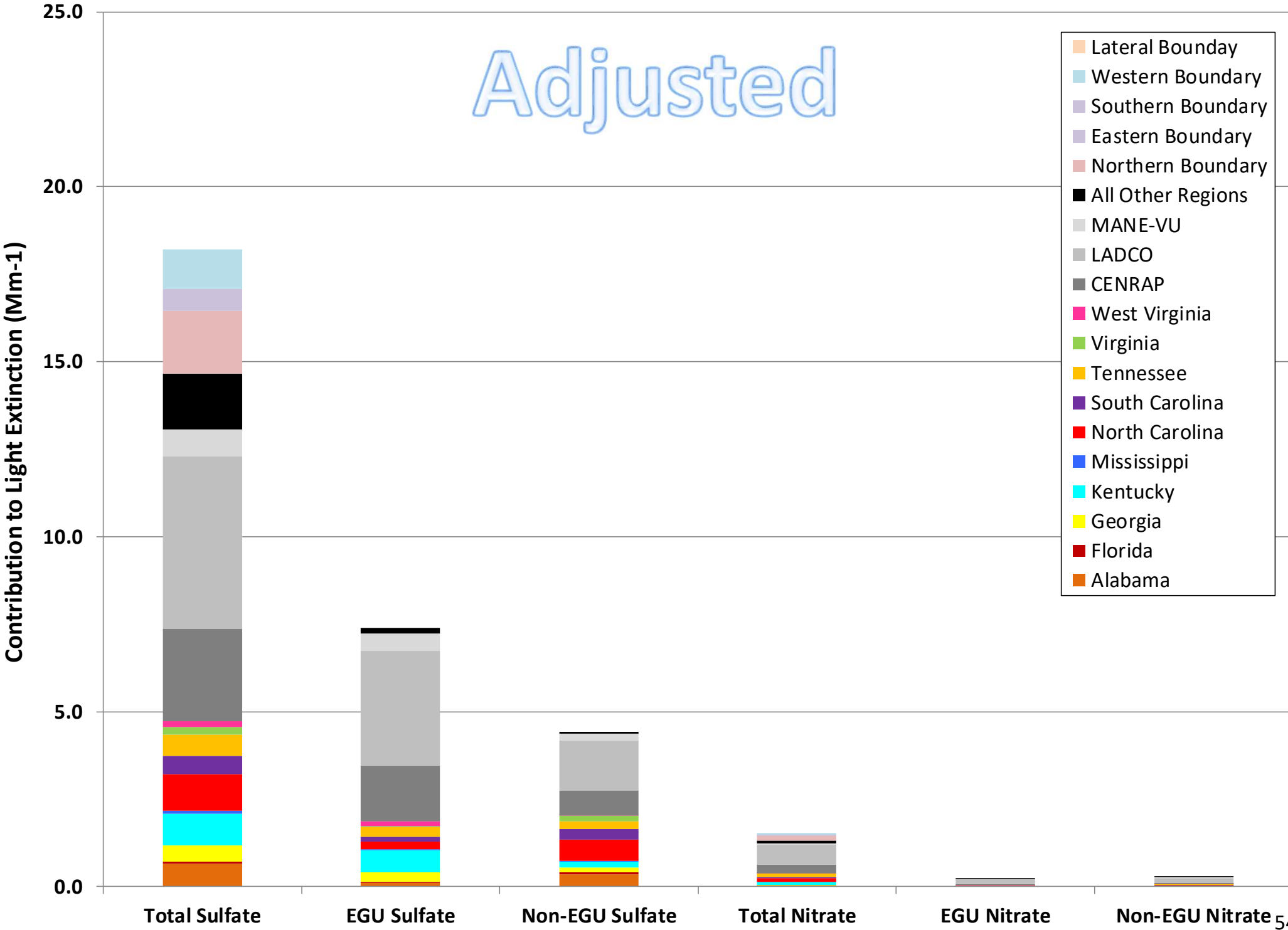
- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Contribution to Light Extinction (Mm⁻¹)



2028 Contribution to Light Extinction on 20% Most Impaired Days - Shining Rock Wilderness (NC)

Adjusted

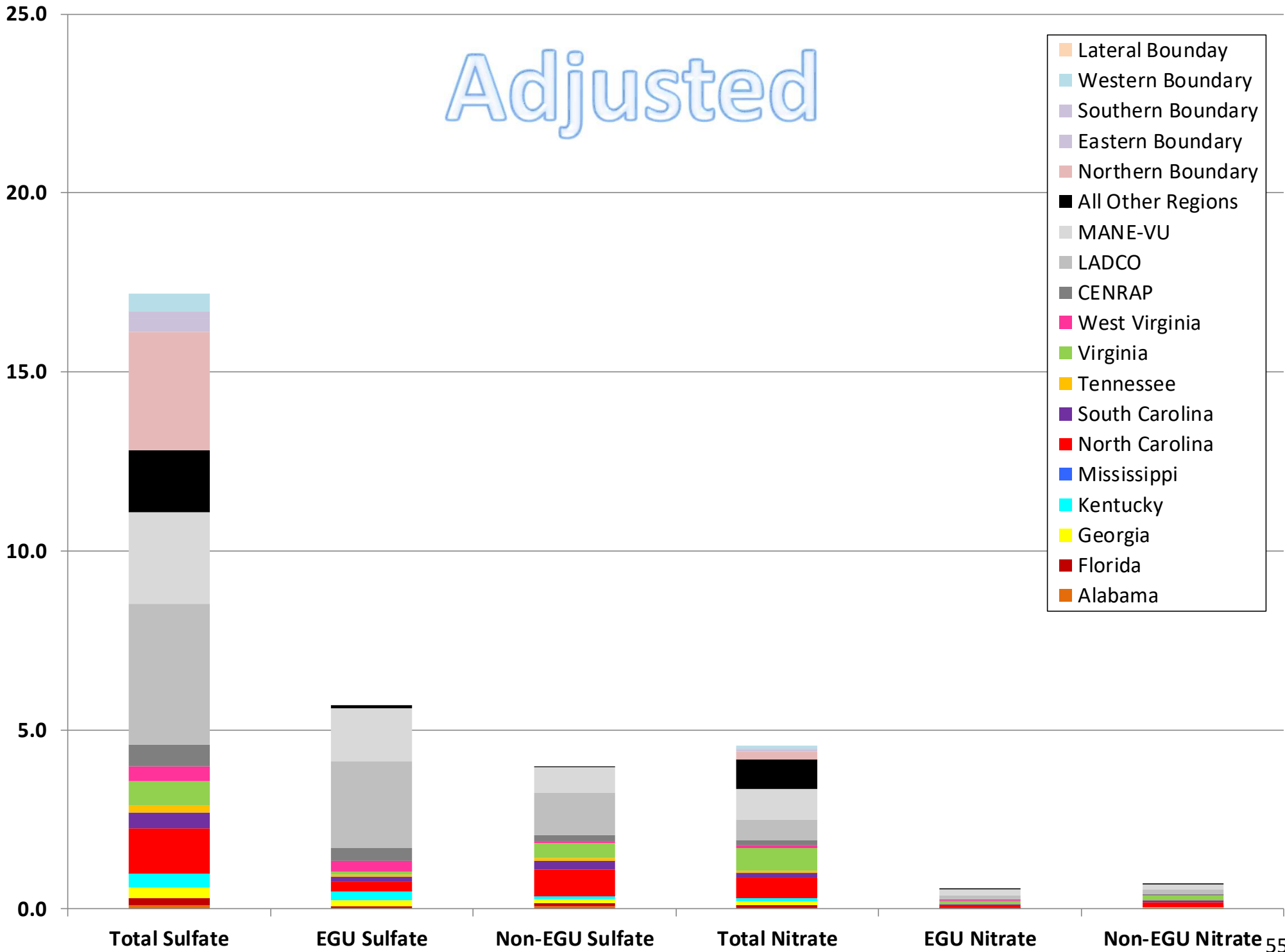


2028 Contribution to Light Extinction on 20% Most Impaired Days - Swanquarter (NC)

Adjusted

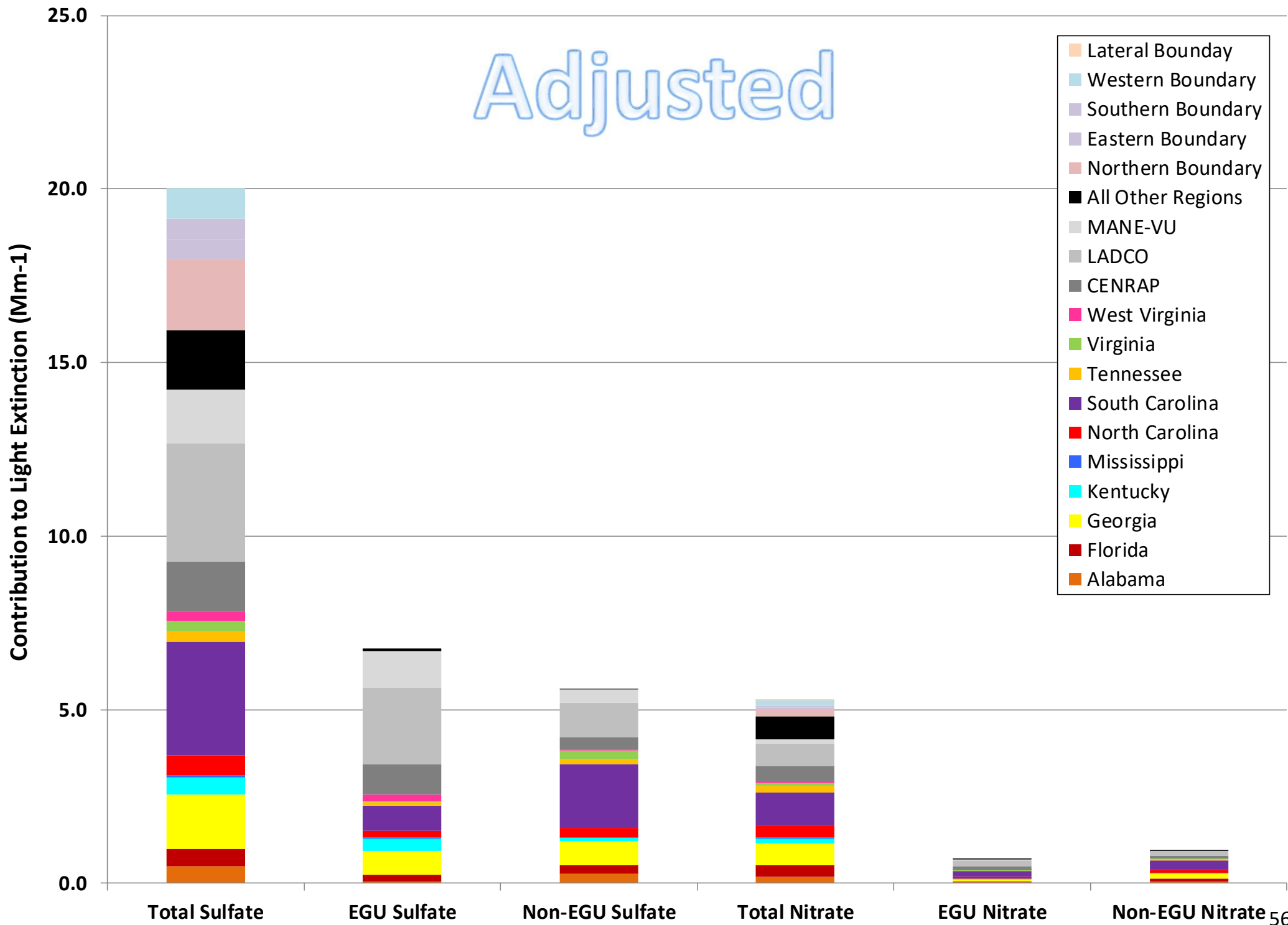
- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Contribution to Light Extinction (Mm-1)



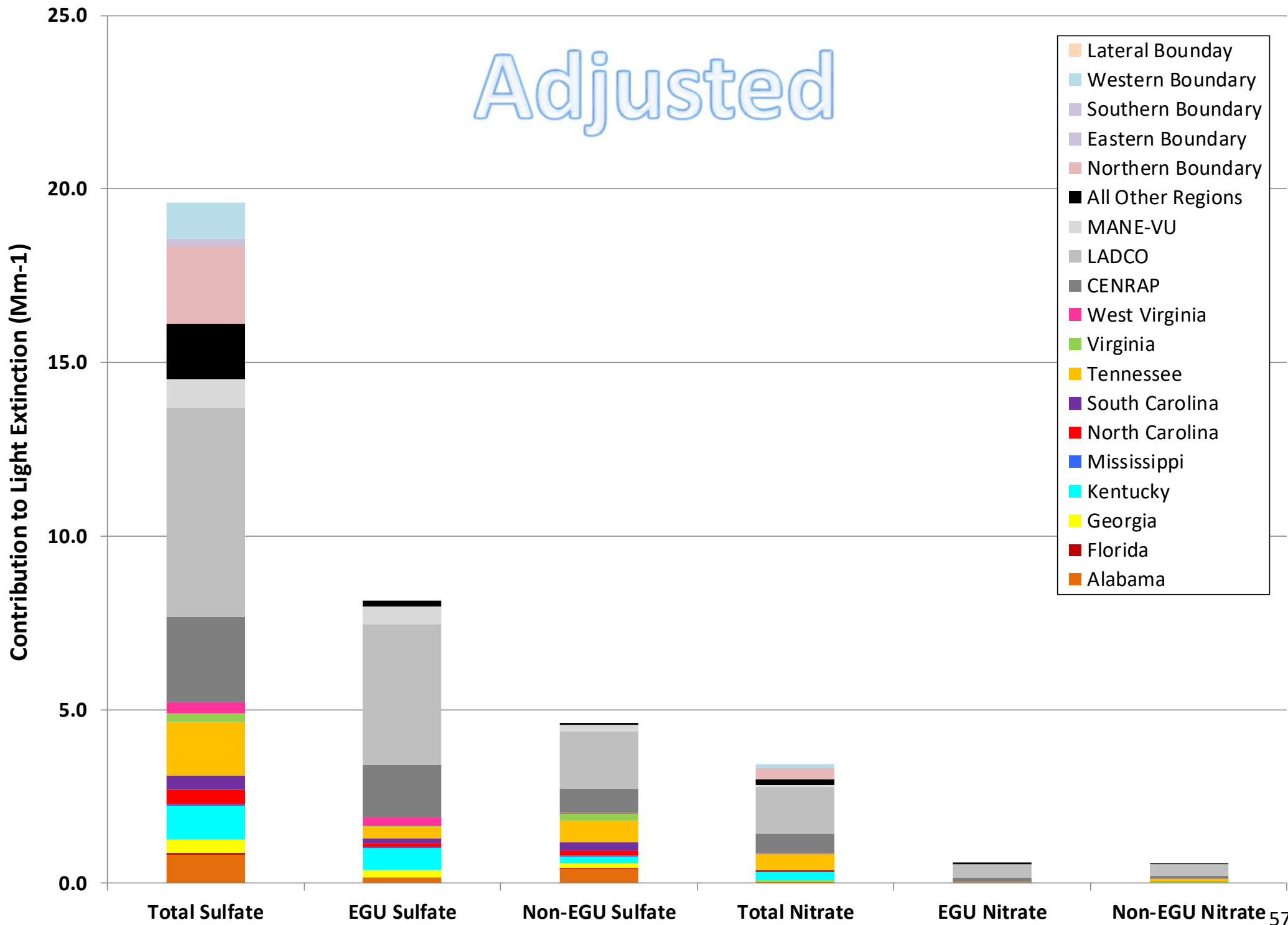
2028 Contribution to Light Extinction on 20% Most Impaired Days - Cape Romain (SC)

Adjusted



2028 Contribution to Light Extinction on 20% Most Impaired Days - Great Smoky Mountains NP (TN/NC)

Adjusted



2028 Contribution to Light Extinction on 20% Most Impaired Days - Joyce-Kilmer-Slickrock (TN/NC)

Wilderness

Adjusted

Contribution to Light Extinction (Mm-1)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

EGU Sulfate

Non-EGU Sulfate

Total Nitrate

EGU Nitrate

Non-EGU Nitrate 58

25.0
20.0
15.0
10.0
5.0
0.0

2028 Contribution to Light Extinction on 20% Most Impaired Days - James River Face Wilderness (VA)

Adjusted

Contribution to Light Extinction (Mm-1)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

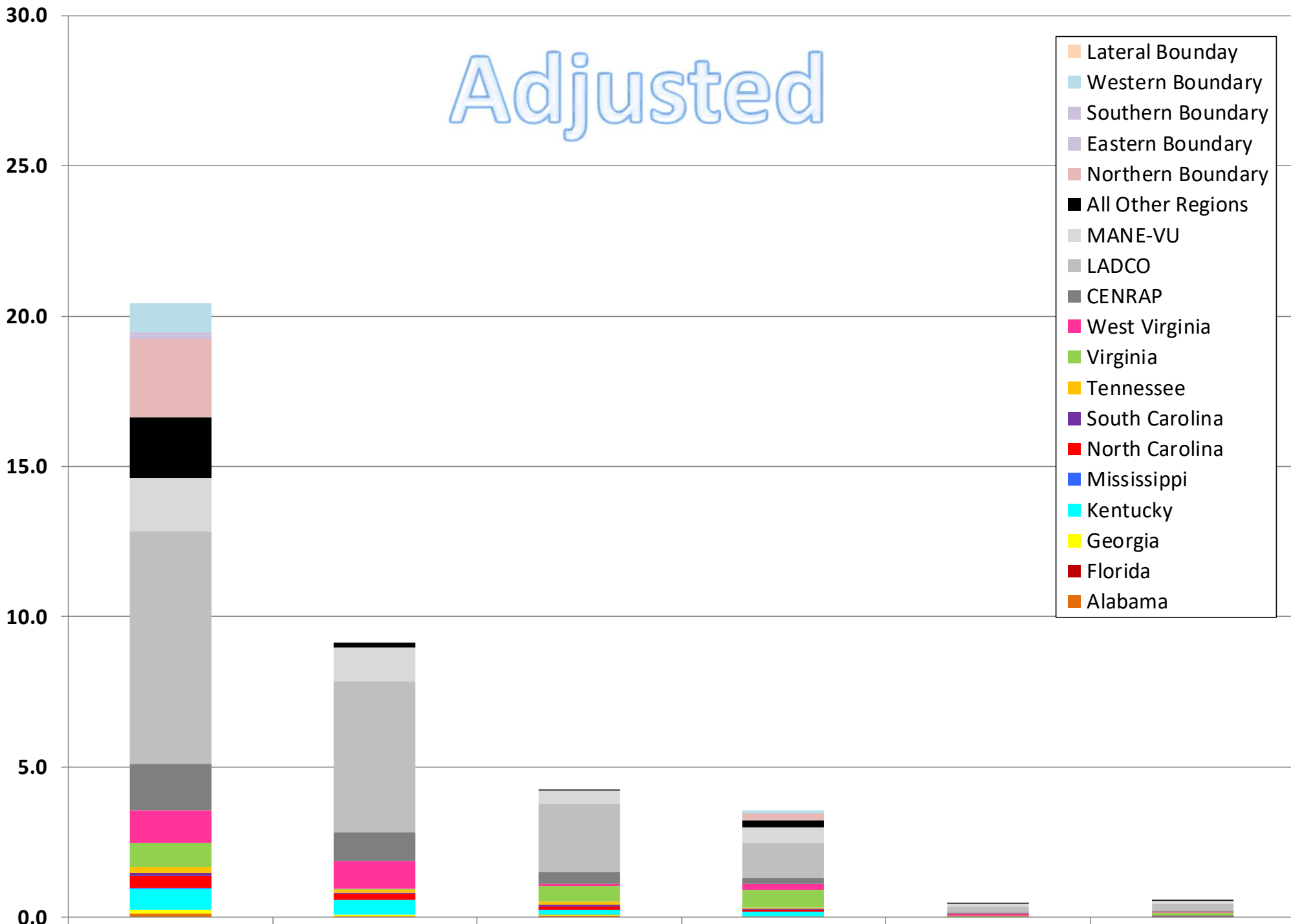
EGU Sulfate

Non-EGU Sulfate

Total Nitrate

EGU Nitrate

Non-EGU Nitrate 59



2028 Contribution to Light Extinction on 20% Most Impaired Days - Shenandoah NP (VA)

Adjusted

Contribution to Light Extinction (Mm⁻¹)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

EGU Sulfate

Non-EGU Sulfate

Total Nitrate

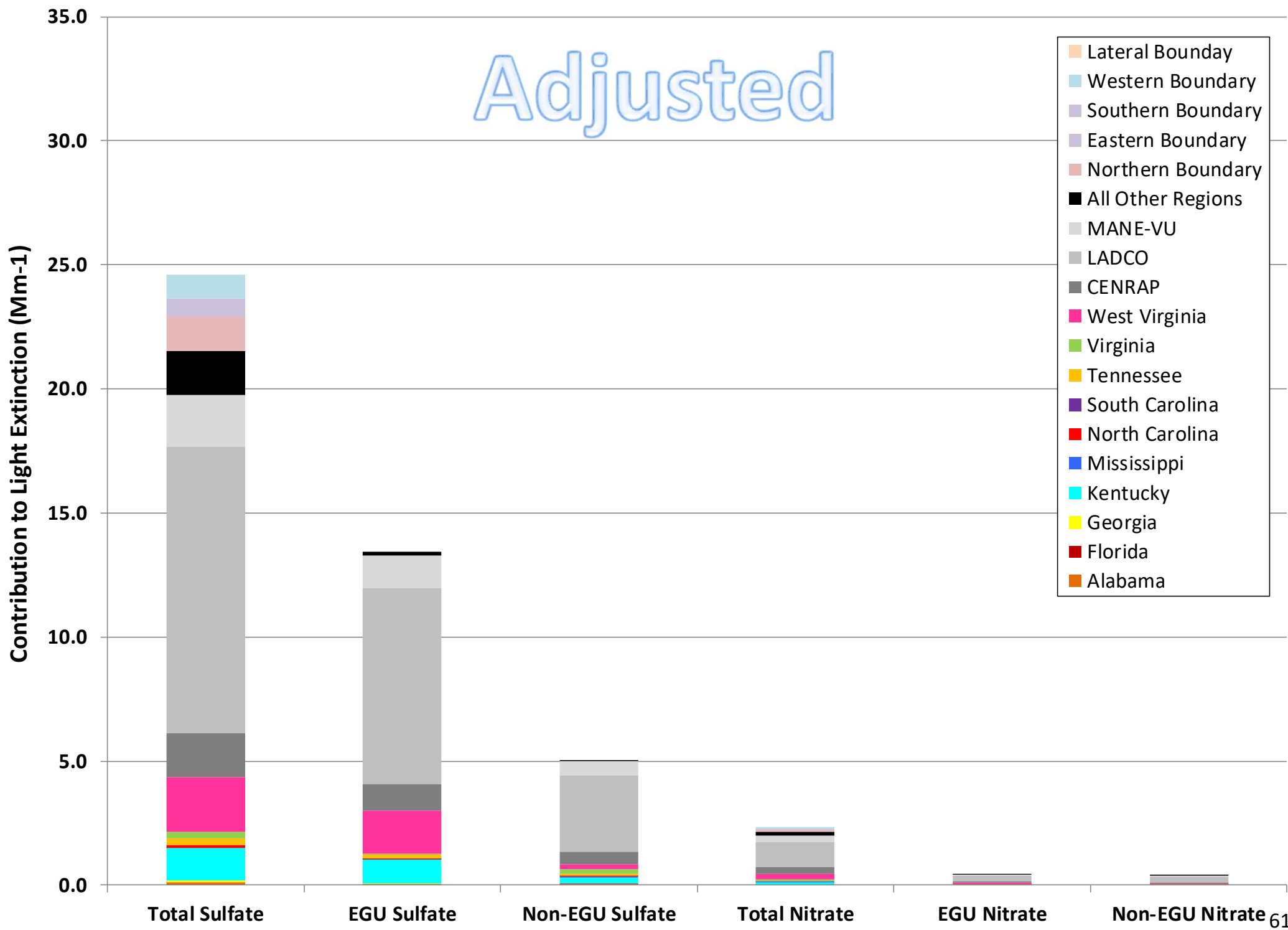
EGU Nitrate

Non-EGU Nitrate 60

30.0
25.0
20.0
15.0
10.0
5.0
0.0

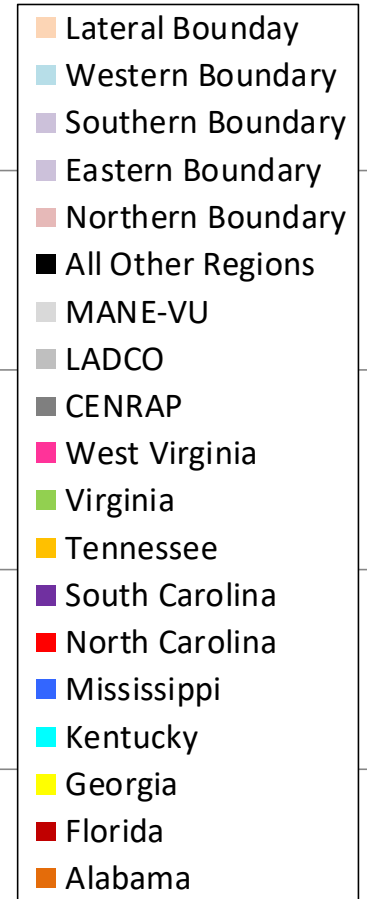
2028 Contribution to Light Extinction on 20% Most Impaired Days - Dolly Sods Wilderness (WV)

Adjusted

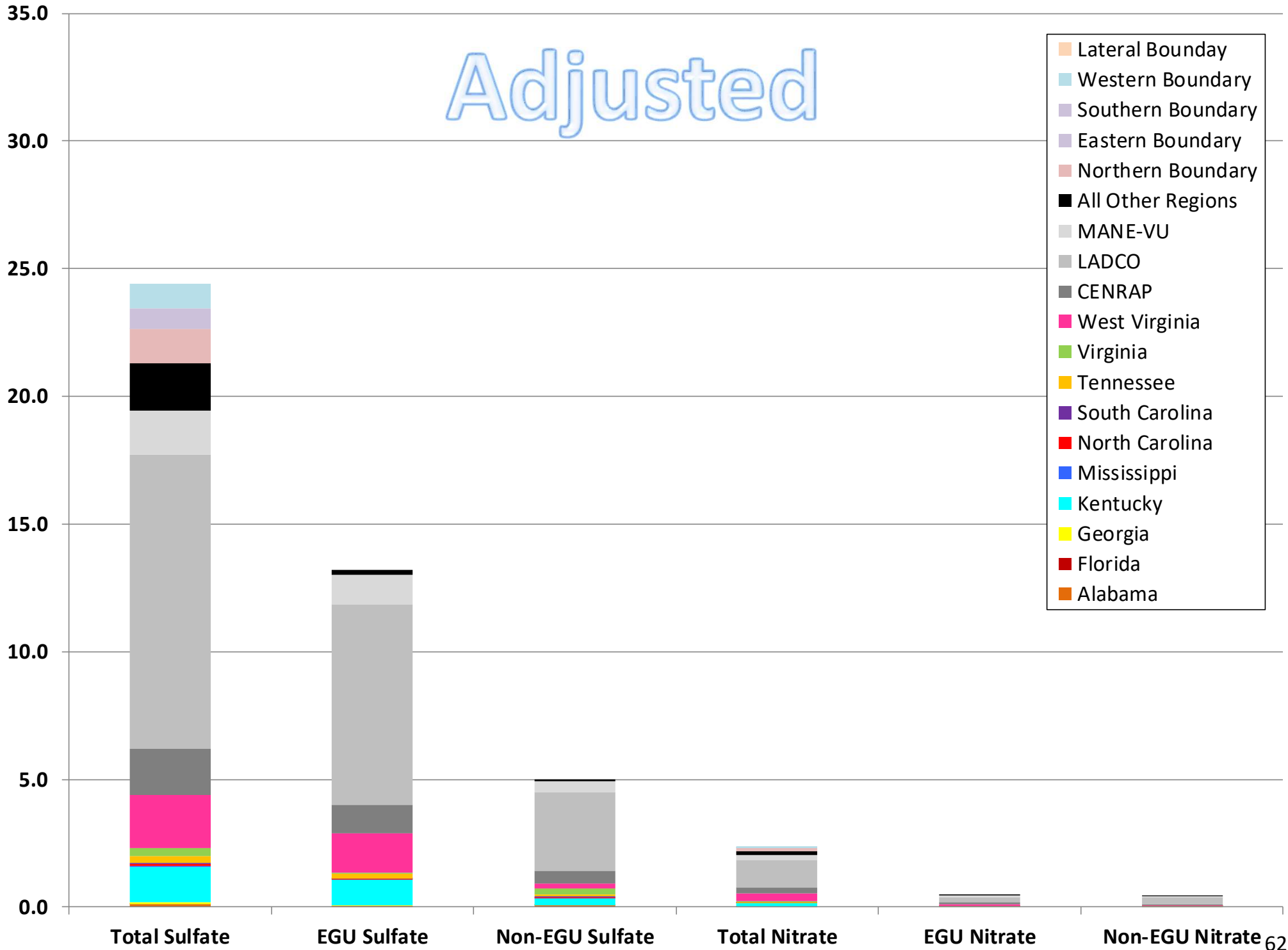


2028 Contribution to Light Extinction on 20% Most Impaired Days - Otter Creek Wilderness (WV)

Adjusted

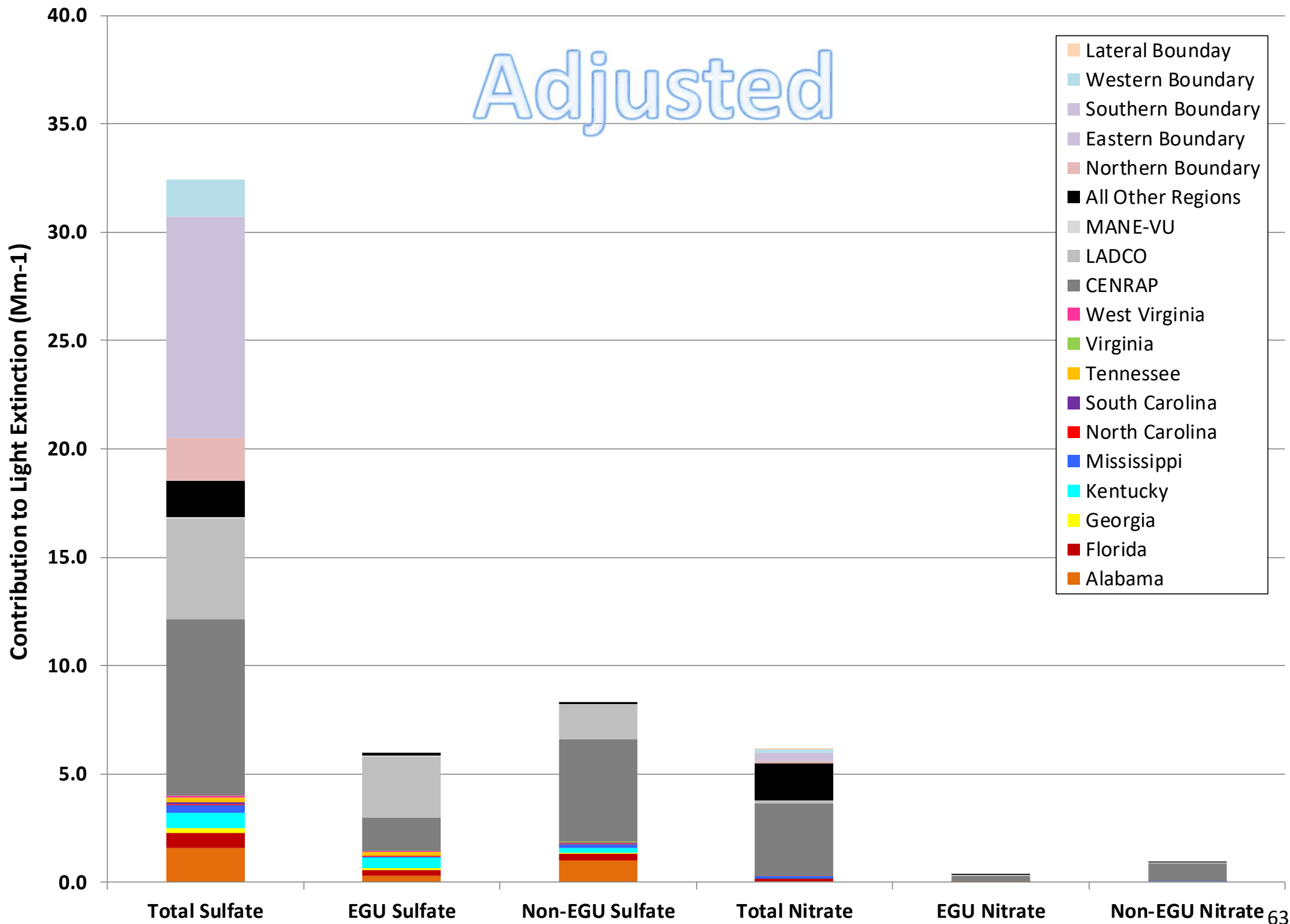


Contribution to Light Extinction (Mm⁻¹)



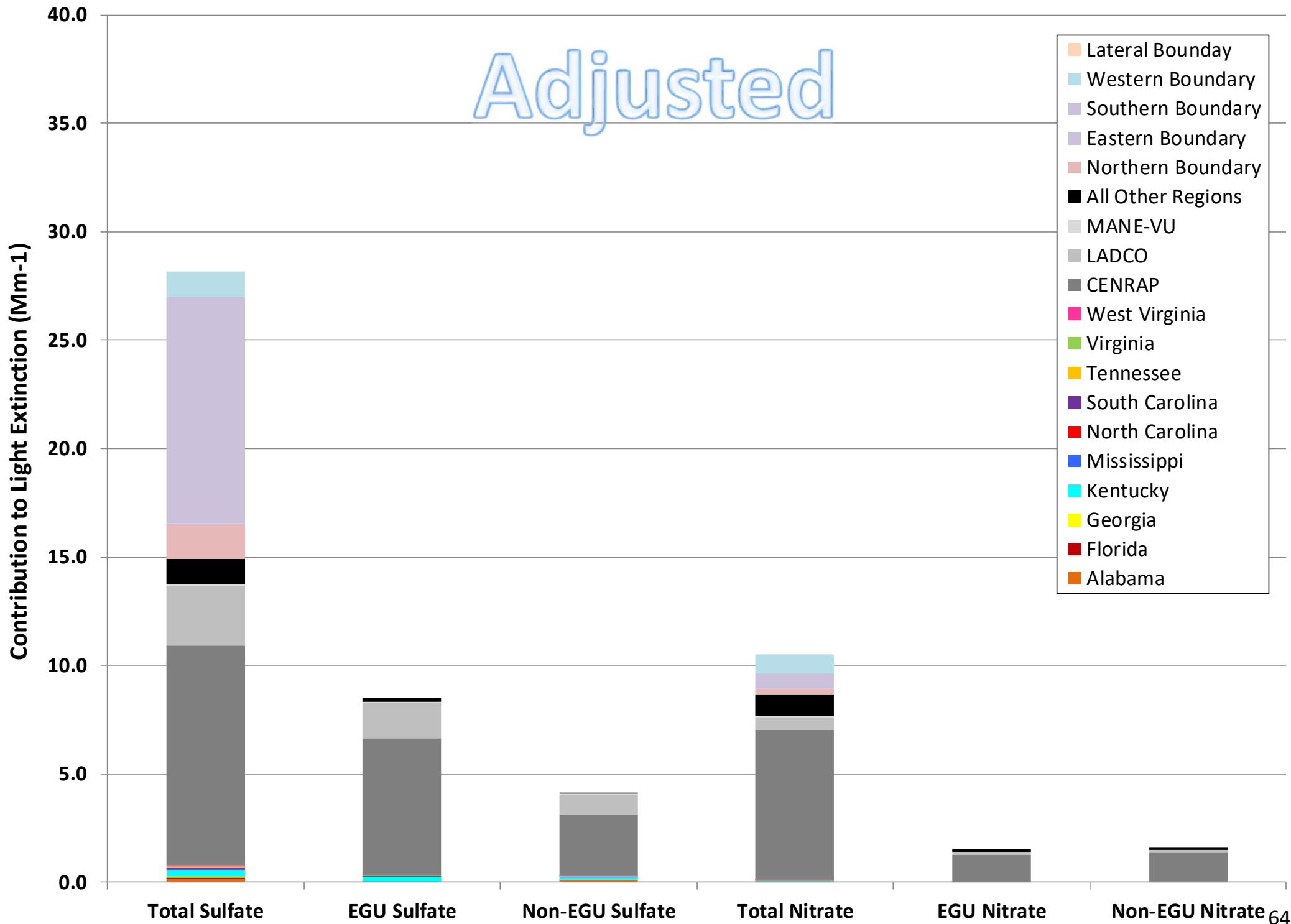
2028 Contribution to Light Extinction on 20% Most Impaired Days - Breton (LA)

Adjusted



2028 Contribution to Light Extinction on 20% Most Impaired Days - Caney Creek Wilderness (AR)

Adjusted



2028 Contribution to Light Extinction on 20% Most Impaired Days - Upper Buffalo Wilderness (AR)

Adjusted

Contribution to Light Extinction (Mm-1)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

EGU Sulfate

Non-EGU Sulfate

Total Nitrate

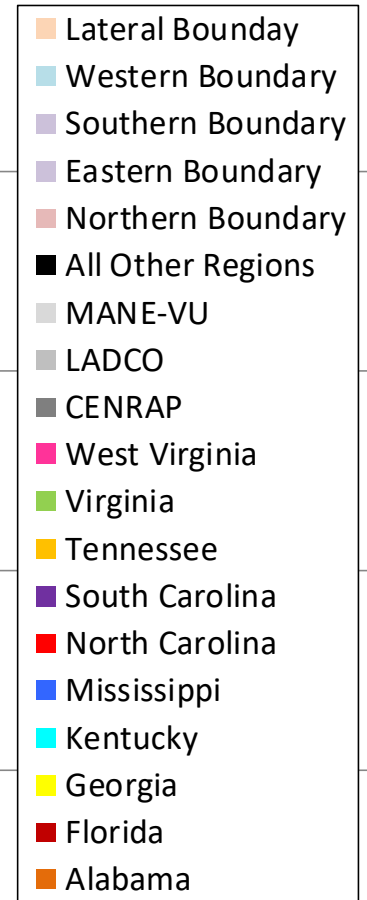
EGU Nitrate

Non-EGU Nitrate 65

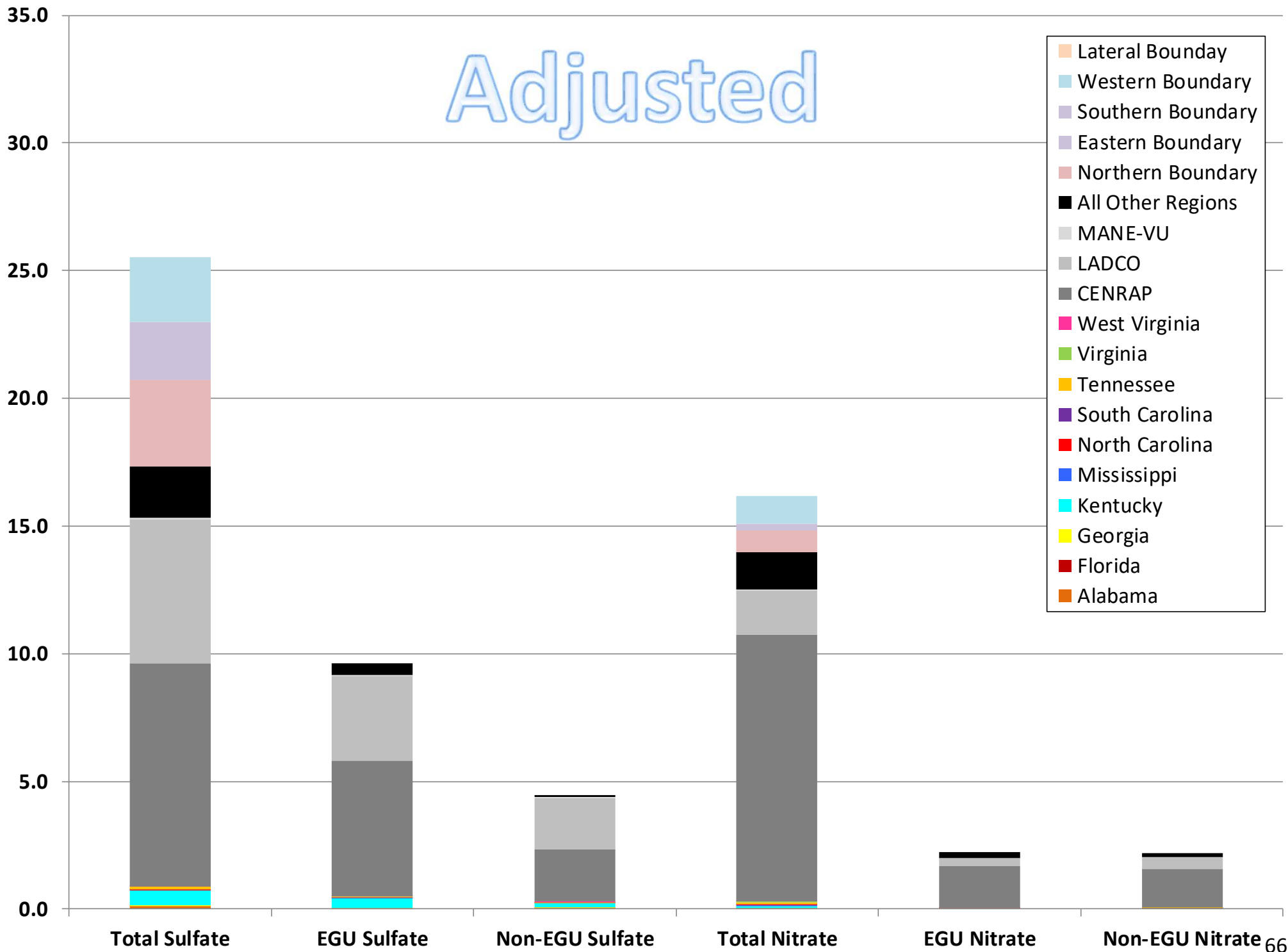
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0

2028 Contribution to Light Extinction on 20% Most Impaired Days - Hercules-Glades Wilderness (MO)

Adjusted

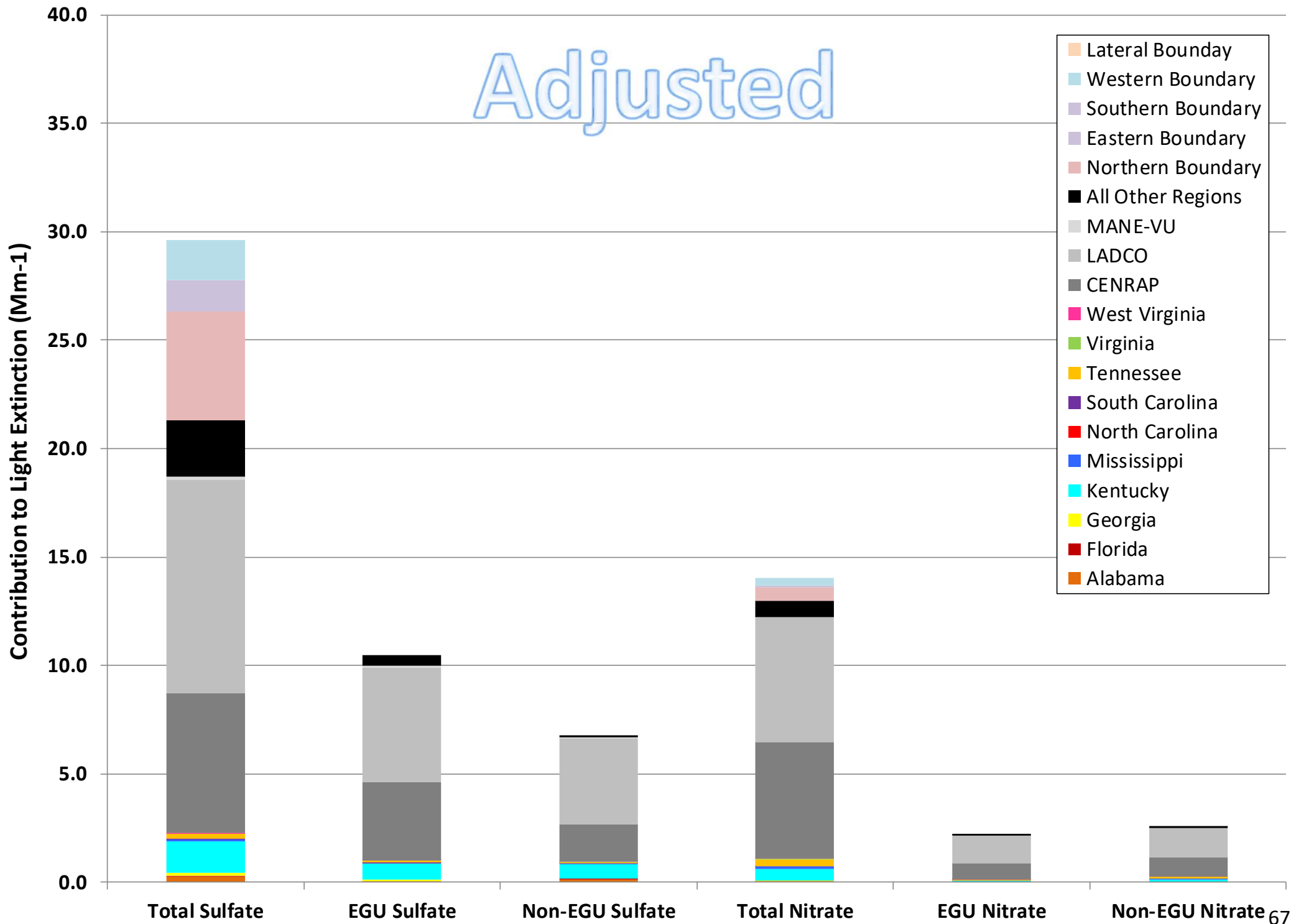


Contribution to Light Extinction (Mm-1)



2028 Contribution to Light Extinction on 20% Most Impaired Days - Mingo (MO)

Adjusted



2028 Contribution to Light Extinction on 20% Most Impaired Days - Brigantine (NJ)

Adjusted

Contribution to Light Extinction (Mm⁻¹)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

EGU Sulfate

Non-EGU Sulfate

Total Nitrate

EGU Nitrate

Non-EGU Nitrate 68

30.0
25.0
20.0
15.0
10.0
5.0
0.0

Reasonable Progress Screening Analysis

Reasonable Progress Screening Approach

1. The VISTAS reasonable progress work started with AOI screening ($Q/d * EWRT$) to rank facilities based on their sulfate and nitrate contributions at each Class I area.
2. These rankings were used to identify 87 individual facilities for PSAT tagging. PSAT tagging was used to determine the sulfate and nitrate contributions from each facility at each Class I area in the VISTAS_12 domain.
3. Each individual VISTAS state will apply a PSAT contribution threshold based on the facility sulfate and facility nitrate impacts (separately, not combined) divided by the total impact of sulfate + nitrate from all point sources to determine which sources may need to be considered for a four-factor analysis.
 - If sulfate contribution $\geq 1.00\%$ → SO_2 Four-Factor Analysis
 - If nitrate contribution $\geq 1.00\%$ → NO_x Four-Factor Analysis

Why 1% Threshold?

- In the Round 1 Regional Haze SIPs, many VISTAS states used the AOI approach and a 1% threshold on a Unit basis.
 - Round 2 uses the AOI/PSAT approach and a $\geq 1.00\%$ PSAT threshold based on a Facility basis.
 - This will pull in more facilities compared to a Unit basis.
 - Round 2 uses 2028 emissions (lower than 2018)
 - This will pull in facilities with smaller visibility impacts (in Mm^{-1}) compared to Round 1.
- This approach results in a reasonable number of sources that can be evaluated with limited state resources and focuses on the sources with the largest impacts.

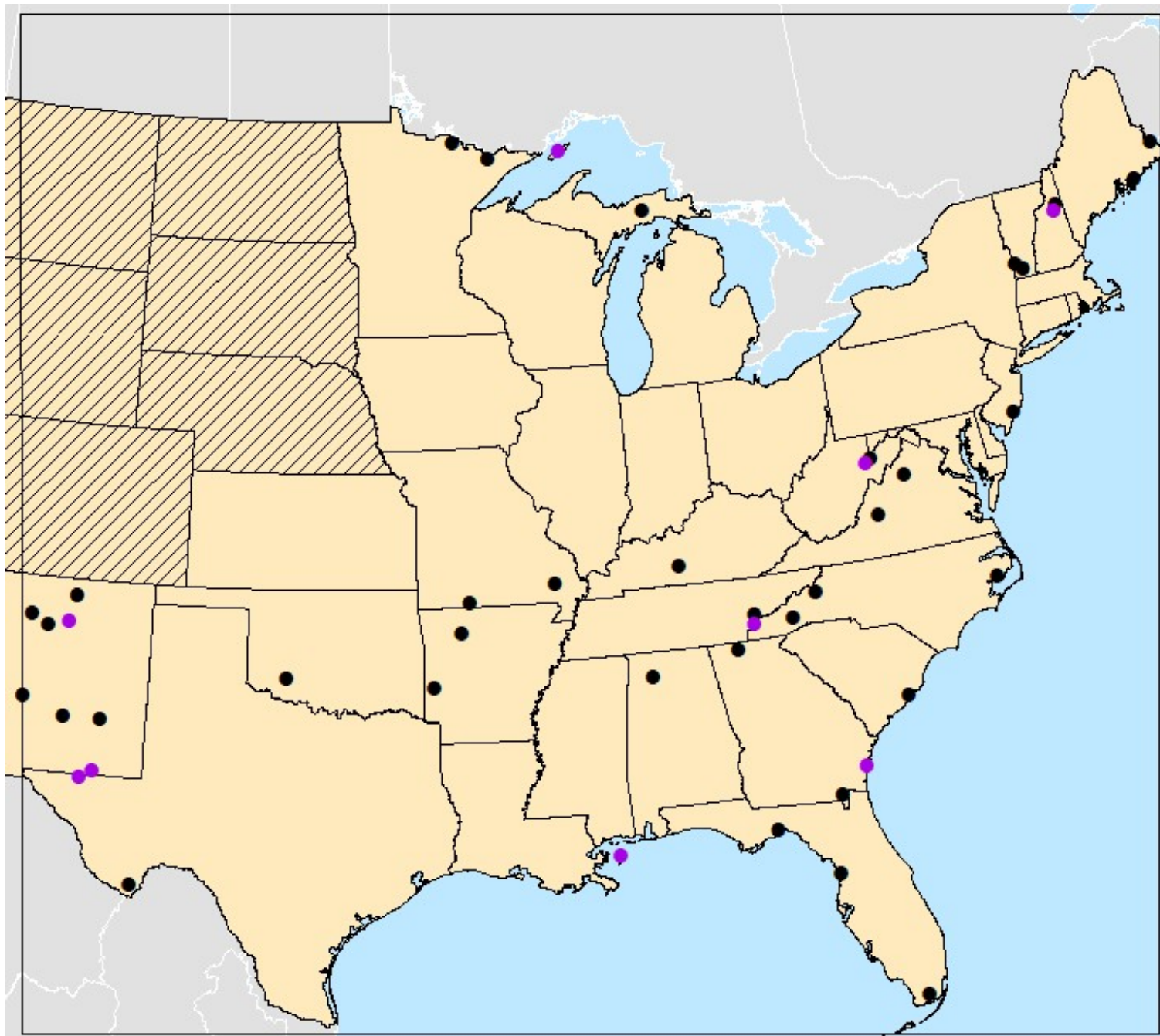
Area of Influence (AOI) Analysis

- Evaluates emissions (Q), distance to Class I area (d), and extinction weighted residence time (EWRT) in model grid cells (point) or counties (source categories)
- Formula: $(Q/d)*EWRT$
- Establishes each county's and each facility's contribution to light extinction at each Class I area on the 20% most impaired days
- Can use contributions to rank and screen facilities for the four-factor analysis

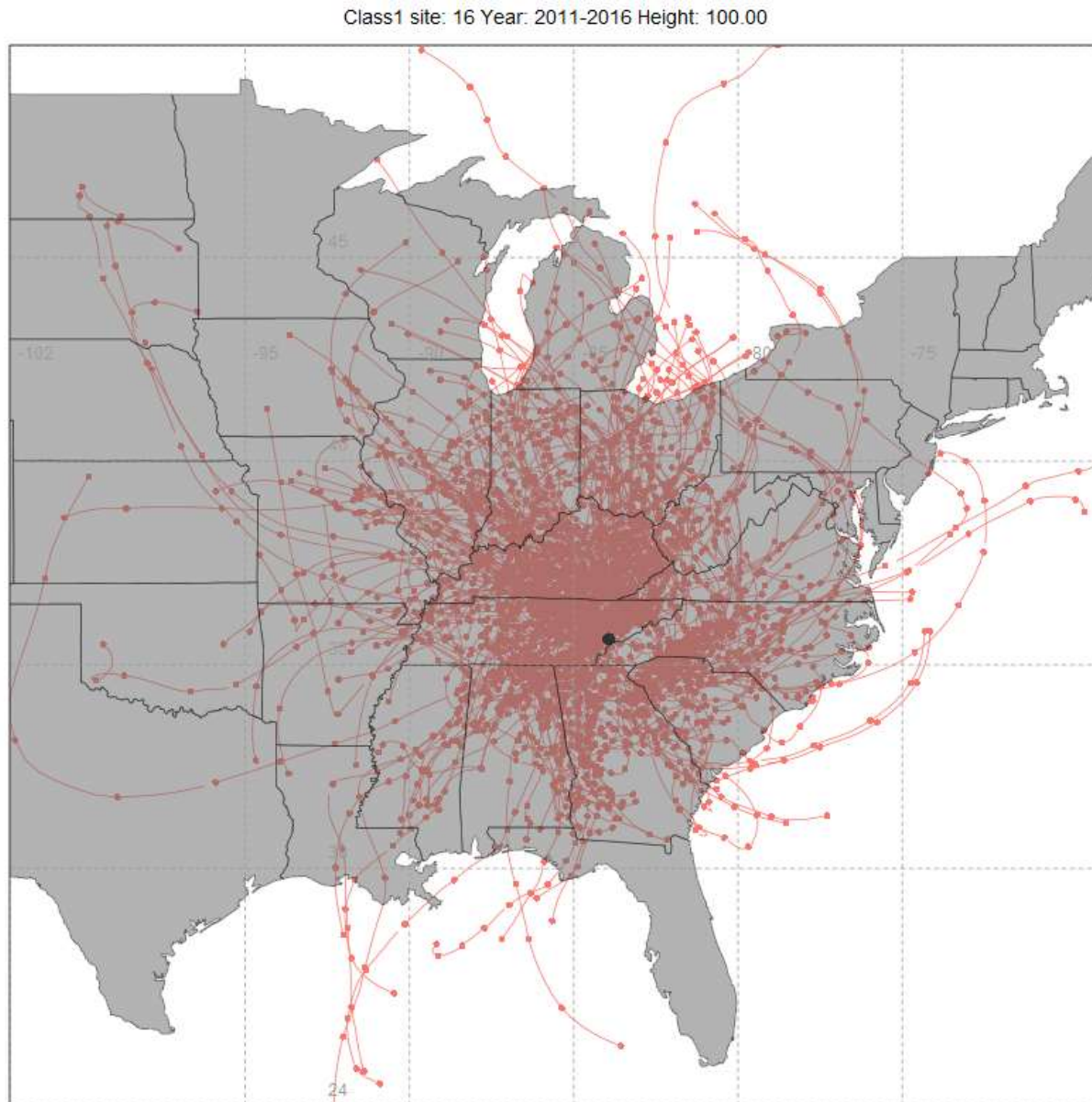
HYSPLIT Trajectories

- Trajectories were run using NAM-12 meteorology for the 20% most impaired days in 2011-2016 at 44 Class I areas.
 - Trajectories were run with starting heights of 100, 500, 1,000, and 1,500 meters.
 - Trajectories were run 72 hours backwards in time for each height at each location.
 - Trajectories were run with start times of 12AM (midnight of the start of the day), 6AM, 12PM, 6PM, and 12AM (midnight at the end of the day) local time.
- **44 Class I areas x 6 years x 24 days/year x 4 heights x 5 start times = 126,720 trajectories**

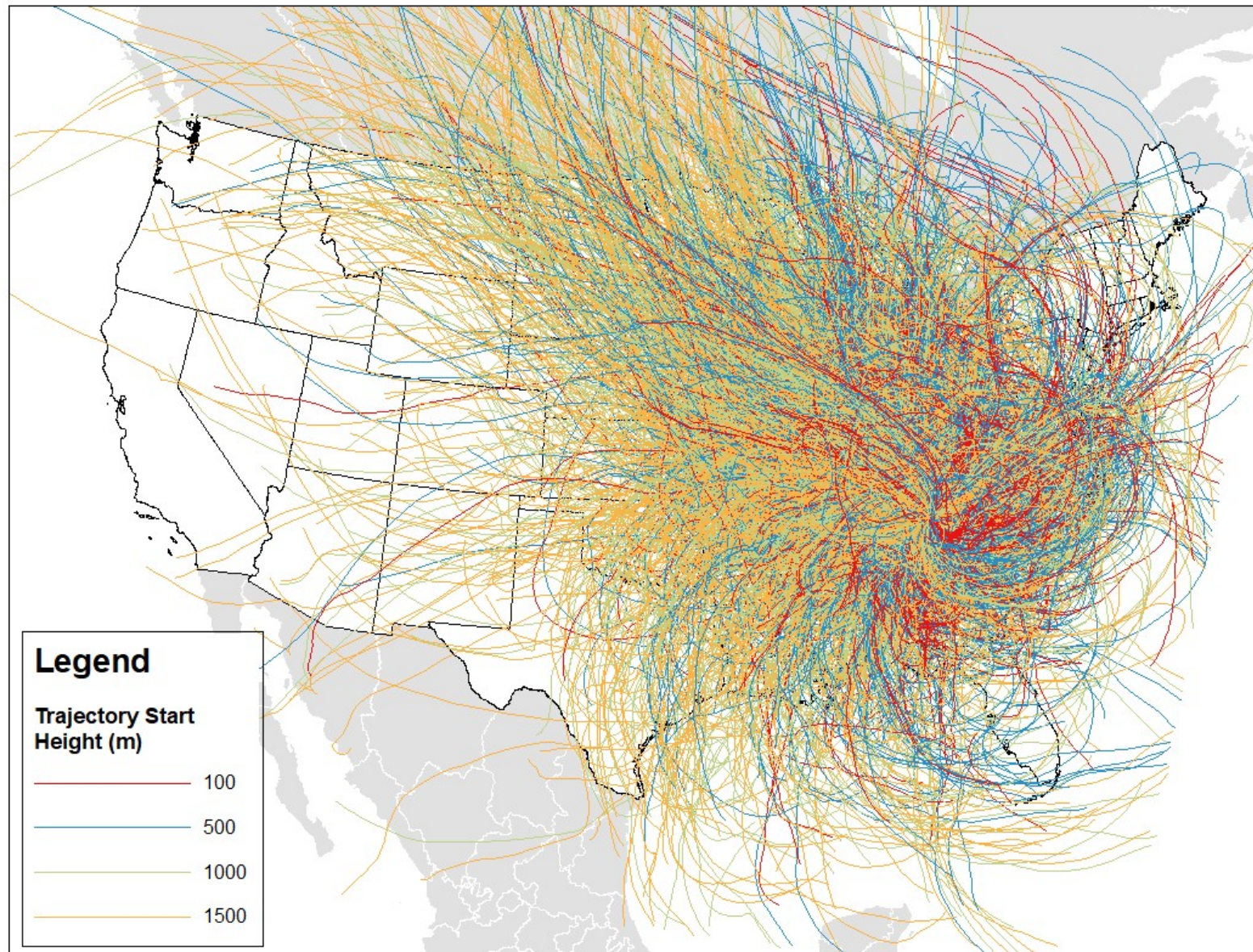
Class I Areas Analyzed



100 Meter Trajectories at GRSM

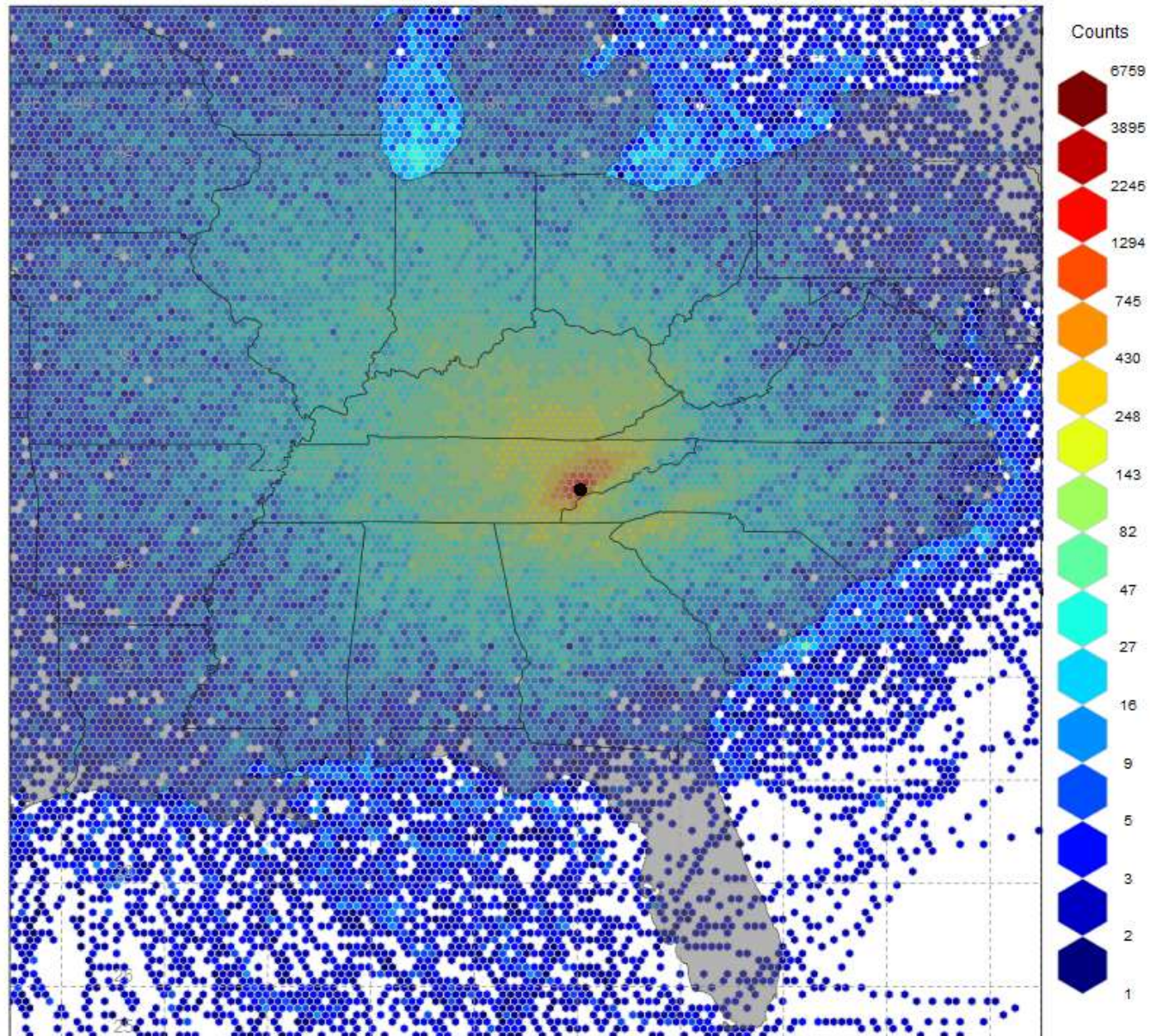


All Trajectories at GRSM

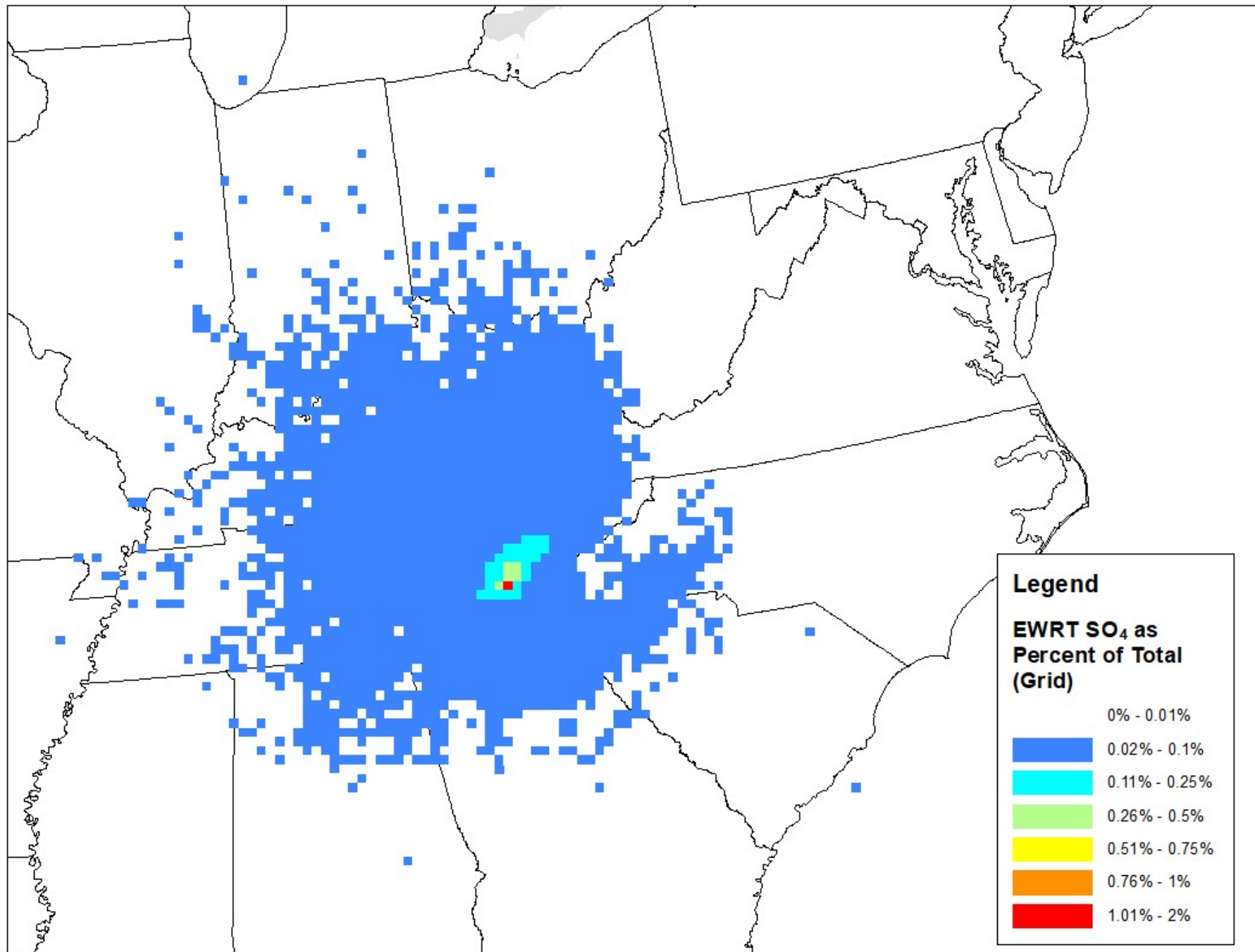


Residence Time for GRSM

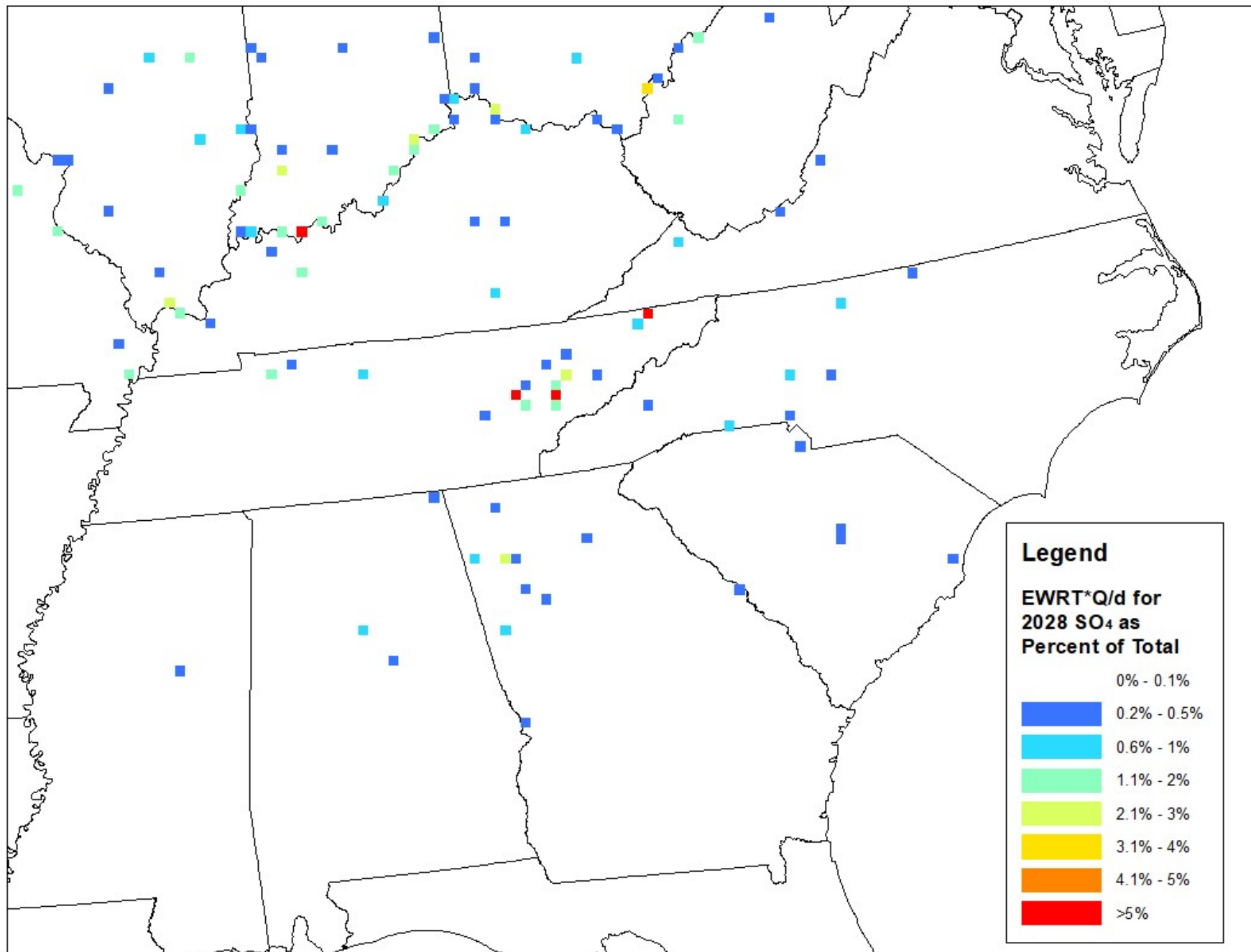
Hours by hexbin; Class I site: 16; Year: 2011-2016; all heights



Sulfate EWRT at GRSM



Sulfate $Q/d * EWRT$ at GRSM



AOI Point Contributions for Cohutta

State	FACILITY NAME	DISTANCE (km)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
GA	Ga Power Company - Plant Bowen	78.0	6,643.3	10,453.4	1.15%	19.58%
IN	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.1	8,806.8	30,536.3	0.13%	4.68%
GA	International Paper – Rome	87.4	1,773.4	1,791.0	0.18%	4.66%
IN	Gibson	487.1	12,280.3	23,117.2	0.10%	2.31%
IN	INDIANAPOLIS POWER & LIGHT PETERSBURG	477.0	10,665.3	18,141.9	0.16%	2.18%
KY	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	7,007.3	19,504.7	0.07%	2.18%
TN	TVA KINGSTON FOSSIL PLANT	124.0	1,687.4	1,886.1	0.13%	2.17%
OH	General James M. Gavin Power Plant (0627010056)	512.0	8,122.5	41,595.8	0.02%	1.71%
TN	TVA CUMBERLAND FOSSIL PLANT	327.0	4,916.5	8,427.3	0.09%	1.38%
KY	Big Rivers Electric Corp - Wilson Station	369.0	1,151.9	6,934.2	0.01%	1.07%
OH	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	454.6	7,150.0	22,133.9	0.06%	1.05%
GA	Ga Power Company - Plant Wansley	156.8	2,052.5	4,856.0	0.04%	1.05%
KY	KY Utilities Co - Ghent Station	441.5	7,939.9	10,169.3	0.08%	1.05%
IL	Joppa Steam	466.9	4,706.3	20,509.3	0.02%	1.04%
GA	Mohawk Industries Inc	32.0	66.5	77.1	0.07%	1.02%
TN	EASTMAN CHEMICAL COMPANY	269.8	6,900.3	6,420.2	0.09%	0.99%
MO	AMEREN MISSOURI-LABADIE PLANT	695.4	9,685.5	41,740.3	0.01%	0.96%
IL	Newton	564.0	1,934.9	10,631.6	0.01%	0.91%
GA	Chemical Products Corporation	71.9	19.5	513.8	0.00%	0.89%
IN	INDIANA KENTUCKY ELECTRIC CORPORATION	444.4	6,188.5	9,038.1	0.04%	0.76%

AOI Point Contributions for Okefenokee

State	FACILITY NAME	DISTANCE (km)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	71.5	112.4	2,745.0	0.03%	14.63%
FL	ROCK TENN CP, LLC	64.8	2,316.8	2,606.7	0.88%	12.82%
FL	JEA	65.6	651.8	2,094.5	0.18%	6.60%
FL	SEMINOLE ELECTRIC COOPERATIVE, INC.	121.4	917.8	3,713.4	0.07%	3.25%
FL	IFF CHEMICAL HOLDINGS, INC.	56.8	37.7	898.9	0.01%	3.25%
FL	RAYONIER PERFORMANCE FIBERS LLC	63.4	2,327.1	562.0	0.90%	2.82%
GA	International Paper - Savannah	178.9	1,560.7	3,945.4	0.08%	2.81%
FL	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	153.5	1,830.7	1,520.4	0.14%	2.18%
FL	RENESENZ LLC	59.8	66.3	569.5	0.02%	1.96%
FL	DUKE ENERGY FLORIDA, INC. (DEF)	205.0	2,489.8	5,306.4	0.06%	1.40%
AL	Sanders Lead Co	384.6	121.7	7,951.1	0.00%	1.11%
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	197.2	351.5	1,860.2	0.01%	1.05%
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.05%	1.02%
GA	Brunswick Cellulose Inc	75.3	1,554.5	294.2	0.34%	1.01%
SC	ALUMAX OF SOUTH CAROLINA	322.7	108.1	3,751.7	0.00%	0.97%
GA	PCA Valdosta Mill	112.7	1,032.6	485.7	0.09%	0.85%
SC	SANTEE COOPER CROSS GENERATING STATION	348.1	3,273.5	4,281.2	0.05%	0.85%
FL	CITY OF GAINESVILLE, GRU	111.7	410.0	881.4	0.03%	0.79%
SC	KAPSTONE CHARLESTON KRAFT LLC	314.9	2,355.8	1,863.7	0.06%	0.65%
GA	Ga Power Company - Plant Wansley	403.7	2,052.5	4,856.0	0.02%	0.65%

AOI Point Contributions for Wolf Island

State	FACILITY NAME	DISTANCE (km)	NOx_2028 (tons/year)	SO2_2028 (tons/year)	NOx Contribution	SO2 Contribution
GA	Brunswick Cellulose Inc	27.9	1,554.5	294.2	2.94%	8.84%
FL	ROCK TENN CP, LLC	74.9	2,316.8	2,606.7	0.39%	8.56%
GA	International Paper - Savannah	85.9	1,560.7	3,945.4	0.24%	7.53%
FL	JEA	105.1	651.8	2,094.5	0.09%	4.43%
GA	Georgia-Pacific Consumer Products LP (Savannah River Mill)	109.9	351.5	1,860.2	0.03%	2.65%
FL	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	173.6	112.4	2,745.0	0.01%	1.97%
SC	ALUMAX OF SOUTH CAROLINA	223.0	108.1	3,751.7	0.00%	1.84%
FL	RAYONIER PERFORMANCE FIBERS LLC	77.4	2,327.1	562.0	0.38%	1.79%
FL	SEMINOLE ELECTRIC COOPERATIVE, INC.	181.4	917.8	3,713.4	0.02%	1.77%
OH	General James M. Gavin Power Plant (0627010056)	845.3	8,122.5	41,595.8	0.02%	1.71%
SC	SANTEE COOPER CROSS GENERATING STATION	251.0	3,273.5	4,281.2	0.09%	1.59%
GA	Southern States Phosphate & Fertilizer	84.1	1.0	597.1	0.00%	1.55%
FL	IFF CHEMICAL HOLDINGS, INC.	118.5	37.7	898.9	0.00%	1.22%
FL	DUKE ENERGY FLORIDA, INC. (DEF)	296.6	2,489.8	5,306.4	0.04%	1.19%
GA	Ga Power Company - Plant Bowen	458.1	6,643.3	10,453.4	0.03%	1.08%
GA	Savannah Sugar Refinery	89.9	521.6	582.0	0.08%	1.06%
SC	INTERNATIONAL PAPER EASTOVER	288.7	1,780.3	3,212.9	0.05%	0.95%
GA	Ga Power Company - Plant McManus	27.1	72.2	30.1	0.14%	0.93%
SC	KAPSTONE CHARLESTON KRAFT LLC	213.6	2,355.8	1,863.7	0.09%	0.89%
PA	GENON NE MGMT CO/KEYSTONE STA	1,048.6	6,578.5	56,939.2	0.01%	0.84%

Georgia Tagging for PSAT

- **Sources in Georgia ($\geq 2\%$ threshold)**

- Ga Power Company – Plant Bowen
- International Paper – Rome (aka TEMPLE INLAND)
- International Paper – Savannah
- Brunswick Cellulose Inc
- Georgia-Pacific Consumer Products LP (Savannah River Mill)

- **Sources outside Georgia ($\geq 4\%$ threshold)**

- INDIANA MICHIGAN POWER DBA AEP ROCKPORT (IN)
- ROCK TENN CP, LLC (FL)
- JEA (FL)

AOI Screening Summary

State	Threshold	Notes
AL	2%	Sulfate only
FL	5%	Sulfate or nitrate, plus Gulf Crist, Mosaic Bartow, Mosaic New Wales, and Mosaic Riverview
GA	2% - 4%	Sulfate or nitrate, 2% threshold for GA facilities, 4% threshold for facilities outside GA
KY	2%	Sulfate or nitrate
MS	2%	Sulfate or nitrate
NC	3%	Sulfate + nitrate
SC	2% - 5%	2% for sulfate, 5% for nitrate, plus Santee Cooper Winyah, International Paper Georgetown, and SCE&G Williams
TN	3%	Sulfate + nitrate, plus CEMEX
VA	2%	Sulfate + nitrate
WV	0.2%	Sulfate or nitrate

PSAT Source Apportionment Modeling

- Quantifies visibility impacts from individual point sources, source sectors, and geographic regions
- NO_x and SO₂ tagging
- Used for further evaluation of AOI results
- Refines information on contributions to visibility impairment
- Can be used to adjust future year visibility projections to account for additional emission controls
- VISTAS contract with ERG allows for up to 250 tags

PSAT SO₂ and NO_x Tags (209)

Round 1 (122 tags)

- *Total SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags*
- *Total NO_x tags for 10 individual VISTAS states + 3 RPOs = 13 tags*
- *EGU point SO₂ tags for 10 individual VISTAS states + 3 RPOs = 13 tags*
- *EGU point NO_x tags for 10 individual VISTAS states + 3 RPOs = 13 tags*
- **SO₂ tags for individual VISTAS facilities = 50 tags**
- **NO_x tags for individual VISTAS facilities = 20 tags**

Round 2 (87 tags)

- *Non-EGU point SO₂ for 10 individual VISTAS states + 3 RPOs = 13 tags*
- *Non-EGU point NO_x for 10 individual VISTAS states + 3 RPOs = 13 tags*
- *SO₂ and NO_x for N/S/W/E boundaries = 8 tags*
- **SO₂ tags for individual VISTAS facilities = 10 tags**
- **NO_x tags for individual VISTAS facilities = 16 tags**
- **SO₂ tags for individual non-VISTAS facilities = 17 tags**
- **NO_x tags for individual non-VISTAS facilities = 10 tags**

➔ 87 Total Facility Tags (both SO₂ and NO_x)

Facility Tags (AL, FL, GA)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 (TPY)	NOx (TPY)
AL	VISTAS	01097-949811	Akzo Nobel Chemicals Inc	3,335.72	20.71
AL	VISTAS	01097-1056111	Ala Power - Barry	6,033.17	2,275.76
AL	VISTAS	01129-1028711	American Midstream Chatom, LLC	3,106.38	425.87
AL	VISTAS	01073-1018711	DRUMMOND COMPANY, INC.	2,562.17	1,228.55
AL	VISTAS	01053-7440211	Escambia Operating Company LLC	18,974.39	349.32
AL	VISTAS	01053-985111	Escambia Operating Company LLC	8,589.60	149.64
AL	VISTAS	01103-1000011	Nucor Steel Decatur LLC	170.23	331.24
AL	VISTAS	01109-985711	Sanders Lead Co	7,951.06	121.71
AL	VISTAS	01097-1061611	Union Oil of California - Chunchula Gas Plant	2,573.15	349.23
FL	VISTAS	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	1,520.42	1,830.71
FL	VISTAS	12086-900111	CEMEX CONSTRUCTION MATERIALS FL. LLC.	29.51	910.36
FL	VISTAS	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	5,306.41	2,489.85
FL	VISTAS	12086-900011	FLORIDA POWER & LIGHT (PTF)	13.05	170.61
FL	VISTAS	12033-752711	GULF POWER - Crist	2,615.65	2,998.39
FL	VISTAS	12086-3532711	HOMESTEAD CITY UTILITIES	0.00	97.09
FL	VISTAS	12031-640211	JEA	2,094.48	651.79
FL	VISTAS	12105-717711	MOSAIC FERTILIZER LLC	7,900.67	310.42
FL	VISTAS	12057-716411	MOSAIC FERTILIZER, LLC	3,034.06	159.71
FL	VISTAS	12105-919811	MOSAIC FERTILIZER, LLC	4,425.56	141.02
FL	VISTAS	12089-845811	RAYONIER PERFORMANCE FIBERS LLC	561.97	2,327.10
FL	VISTAS	12089-753711	ROCK TENN CP, LLC	2,606.72	2,316.77
FL	VISTAS	12005-535411	ROCKTENN CP LLC	2,590.88	1,404.89
FL	VISTAS	12129-2731711	TALLAHASSEE CITY PURDOM GENERATING STA.	2.86	121.46
FL	VISTAS	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	6,084.90	2,665.03
FL	VISTAS	12086-899911	TARMAC AMERICA LLC	9.38	879.70
FL	VISTAS	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	3,197.77	112.41
GA	VISTAS	13127-3721011	Brunswick Cellulose Inc	294.20	1,554.51
GA	VISTAS	13015-2813011	Ga Power Company - Plant Bowen	10,453.41	6,643.32
GA	VISTAS	13103-536311	Georgia-Pacific Consumer Products LP (Savannah River Mill)	1,860.18	351.52
GA	VISTAS	13051-3679811	International Paper – Savannah	3,945.38	1,560.73
GA	VISTAS	13115-539311	TEMPLE INLAND	1,791.00	1,773.35

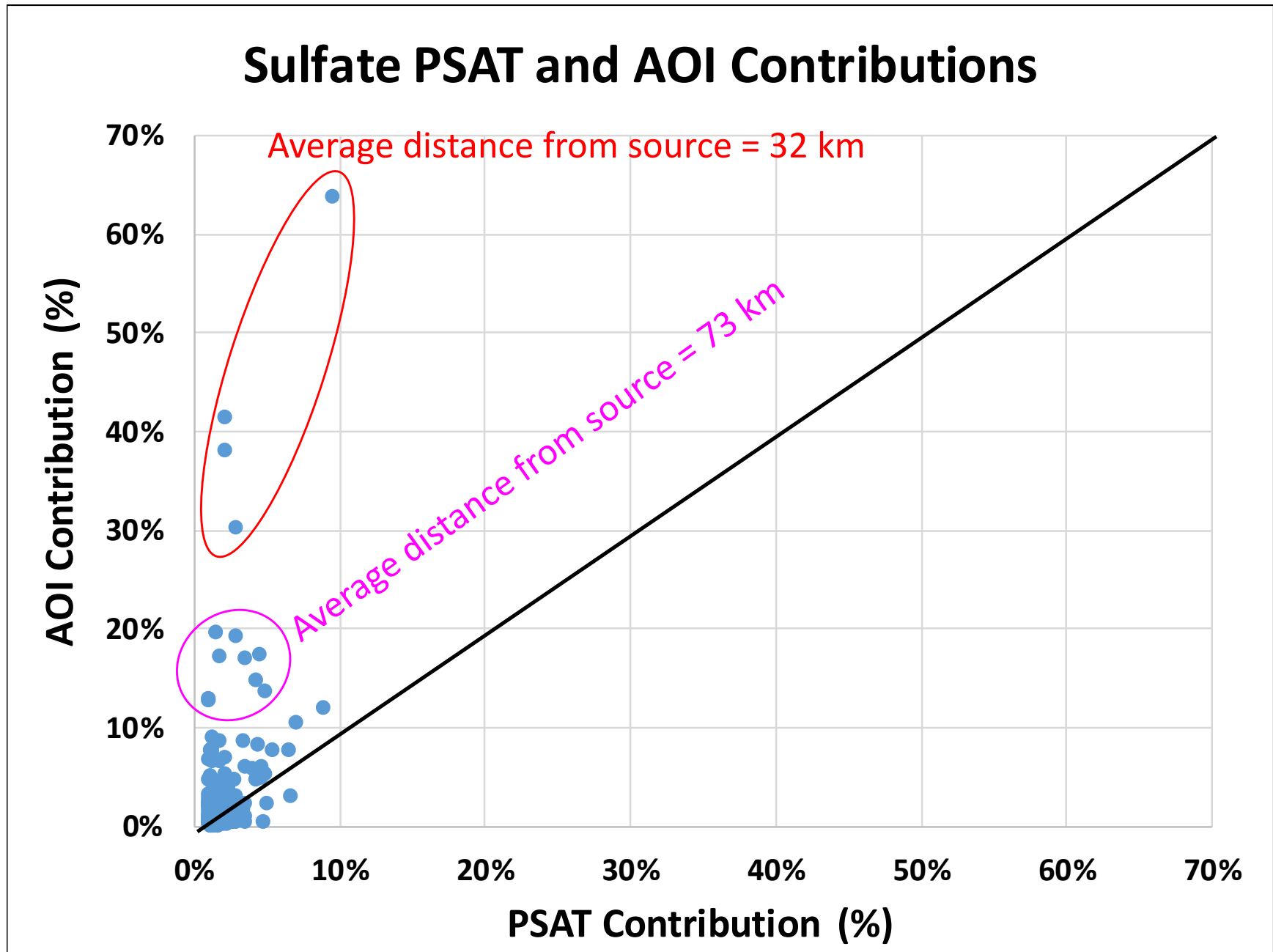
Facility Tags (KY, MS, NC, SC, TN, VA)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 (TPY)	NOx (TPY)
KY	VISTAS	21183-5561611	Big Rivers Electric Corp - Wilson Station	6,934.16	1,151.95
KY	VISTAS	21091-7352411	Century Aluminum of KY LLC	5,044.16	197.66
KY	VISTAS	21177-5196711	Tennessee Valley Authority - Paradise Fossil Plant	3,011.01	3,114.52
KY	VISTAS	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	19,504.75	7,007.34
MS	VISTAS	28059-8384311	Chevron Products Company, Pascagoula Refinery	741.60	1,534.12
MS	VISTAS	28059-6251011	Mississippi Power Company, Plant Victor J Daniel	231.92	3,829.72
NC	VISTAS	37087-7920511	Blue Ridge Paper Products - Canton Mill	1,127.07	2,992.37
NC	VISTAS	37117-8049311	Domtar Paper Company, LLC	687.45	1,796.49
NC	VISTAS	37035-8370411	Duke Energy Carolinas, LLC - Marshall Steam Station	4,139.21	7,511.31
NC	VISTAS	37013-8479311	PCS Phosphate Company, Inc. - Aurora	4,845.90	495.58
NC	VISTAS	37023-8513011	SGL Carbon LLC	261.64	21.69
SC	VISTAS	45015-4834911	ALUMAX OF SOUTH CAROLINA	3,751.69	108.08
SC	VISTAS	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	2,767.52	2,031.26
SC	VISTAS	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	1,863.65	2,355.82
SC	VISTAS	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	4,281.17	3,273.47
SC	VISTAS	45043-6652811	SANTEE COOPER WINYAH GENERATING STATION	2,246.86	1,772.53
SC	VISTAS	45015-8306711	SCE&G WILLIAMS	392.48	992.73
TN	VISTAS	47093-4979911	Cemex - Knoxville Plant	121.47	711.50
TN	VISTAS	47163-3982311	EASTMAN CHEMICAL COMPANY	6,420.16	6,900.33
TN	VISTAS	47105-4129211	TATE & LYLE, Loudon	472.76	883.25
TN	VISTAS	47001-6196011	TVA BULL RUN FOSSIL PLANT	622.54	964.16
TN	VISTAS	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	8,427.33	4,916.52
TN	VISTAS	47145-4979111	TVA KINGSTON FOSSIL PLANT	1,886.09	1,687.38
VA	VISTAS	51027-4034811	Jewell Coke Company LLP	5,090.95	520.17
VA	VISTAS	51580-5798711	Meadwestvaco Packaging Resource Group	2,115.31	1,985.69
VA	VISTAS	51023-5039811	Roanoke Cement Company	2,290.17	1,972.97

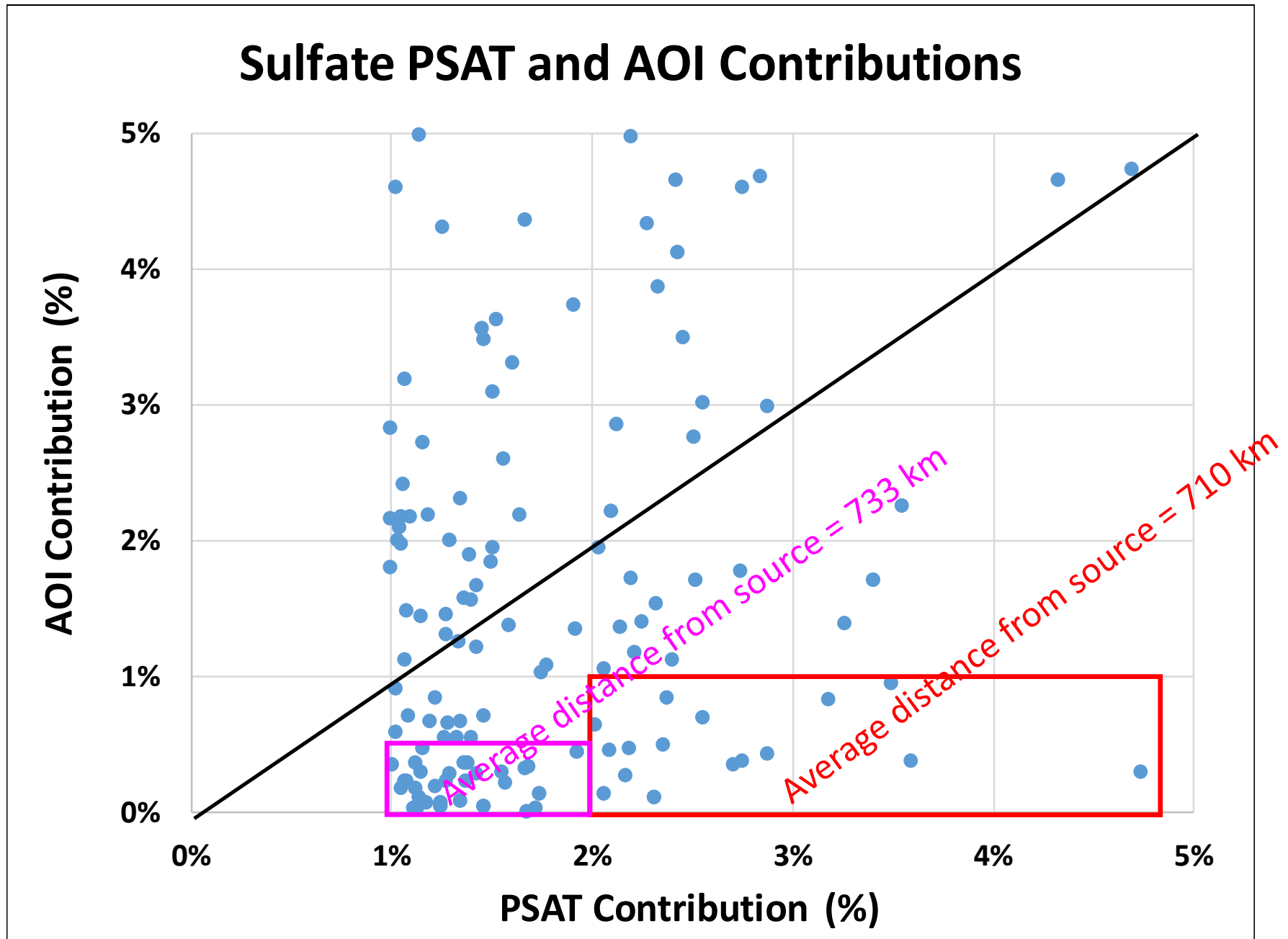
Facility Tags (WV, AR, MO, MD, PA, IL, IN, OH)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 (TPY)	NOx (TPY)
WV	VISTAS	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	10,082.94	11,830.88
WV	VISTAS	54049-4864511	AMERICAN BITUMINOUS POWER-GRANT TOWN PLT	2,210.25	1,245.10
WV	VISTAS	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	10,984.24	4,878.10
WV	VISTAS	54023-6257011	Dominion Resources, Inc. - MOUNT STORM POWER STATION	2,123.64	1,984.14
WV	VISTAS	54041-6900311	EQUITRANS - COPLEY RUN CS 70	0.10	511.06
WV	VISTAS	54083-6790711	FILES CREEK 6C4340	0.15	643.35
WV	VISTAS	54083-6790511	GLADY 6C4350	0.11	343.29
WV	VISTAS	54093-6327811	KINGSFORD MANUFACTURING COMPANY	16.96	140.88
WV	VISTAS	54061-16320111	LONGVIEW POWER	2,313.73	1,556.57
WV	VISTAS	54051-6902311	MITCHELL PLANT	5,372.40	2,719.62
WV	VISTAS	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	4,881.87	13,743.32
WV	VISTAS	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	16,817.43	5,497.37
WV	VISTAS	54061-6773811	MORGANTOWN ENERGY ASSOCIATES	828.64	655.58
AR	CENRAP	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	32,050.48	14,133.10
MO	CENRAP	29143-5363811	NEW MADRID POWER PLANT-MARSTON	16,783.71	4,394.10
MD	MANE-VU	24001-7763811	Luke Paper Company	22,659.84	3,607.00
PA	MANE-VU	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	56,939.25	6,578.47
PA	MANE-VU	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	11,865.70	5,215.96
PA	MANE-VU	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	8,880.26	2,254.64
IL	Midwest RPO	17127-7808911	Joppa Steam	20,509.28	4,706.35
IN	Midwest RPO	18173-8183111	Alcoa Warrick Power Plt Agc Div of AL	5,071.28	11,158.55
IN	Midwest RPO	18051-7363111	Gibson	23,117.23	12,280.34
IN	Midwest RPO	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	30,536.33	8,806.77
IN	Midwest RPO	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	18,141.88	10,665.27
IN	Midwest RPO	18129-8166111	Sigeco AB Brown South Indiana Gas & Ele	7,644.70	1,578.59
OH	Midwest RPO	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	7,460.79	2,467.31
OH	Midwest RPO	39031-8010811	Conesville Power Plant (0616000000)	6,356.23	9,957.87
OH	Midwest RPO	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	22,133.90	7,149.97
OH	Midwest RPO	39053-8148511	General James M. Gavin Power Plant (0627010056)	41,595.81	8,122.51
OH	Midwest RPO	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	3,400.14	9,143.84

Sulfate AOI vs. Sulfate PSAT ($\geq 1.00\%$)



Sulfate AOI vs. Sulfate PSAT ($\geq 1.00\%$)



AOI vs. PSAT Summary

- AOI tends to overestimate impacts for facilities near the Class I area.
- AOI tends to underestimate impacts for facilities far away from the Class I area.
 - AOI uses 72-hour back trajectories, sulfate can last for weeks and travel hundreds to thousands of km.
- PSAT is the most reliable modeling tool for tracking facility contributions to visibility impairment at Class I areas.

PSAT Reasonable Progress Screening

- The **facility sulfate and nitrate contributions (Mm^{-1})** from the individual 87 tagged facilities should not change unless a facility has reduced or increased SO_2 and/or NO_x emissions.
- The updated 2028 CAMx modeling will impact the **total sulfate and total nitrate contribution** from point sources at each Class I area since the SO_2 and NO_x emissions have decreased.
 - The facility percent contribution will increase even if the facility emissions do not change since the denominator will decrease

Facility Sulfate Contribution (%) =

$$\frac{\text{Facility Sulfate Impact (Mm}^{-1}) \downarrow \uparrow}{\text{Total Impact of All Point Sources of Sulfate + Nitrate (Mm}^{-1}) \downarrow}$$

PSAT Reasonable Progress Screening

- Due to the amount of resources already invested in the AOI and PSAT analysis, **VISTAS does not plan to redo the original AOI or PSAT analyses.**
- In cases where emissions decreased or increased at individual facilities being considered for a four-factor analysis, the facility contributions will be adjusted to be consistent with the lower/higher facility emissions before comparing to the PSAT contribution threshold.
- **EPA verbally stated this should be okay 2/6/2020.**

Original Facility PSAT Contributions

- **Original Facility Sulfate PSAT Contributions (%)**

$$\begin{aligned} & \text{Facility Sulfate PSAT Contributions (Mm}^{-1}\text{)} \\ = & \frac{\text{Facility Sulfate PSAT Contributions (Mm}^{-1}\text{)}}{\text{Total Sulfate + Nitrate Point Contribution (Mm}^{-1}\text{)}} \end{aligned}$$

- **Original Facility Nitrate PSAT Contributions (%)**

$$\begin{aligned} & \text{Facility Nitrate PSAT Contributions (Mm}^{-1}\text{)} \\ = & \frac{\text{Facility Nitrate PSAT Contributions (Mm}^{-1}\text{)}}{\text{Total Sulfate + Nitrate Point Contribution (Mm}^{-1}\text{)}} \end{aligned}$$

Revised Facility Sulfate PSAT Results

- **Revised Facility Sulfate PSAT Results**
= Original Facility Sulfate PSAT Results
*** SO₂ Ratio_Facility * Ratio_Class_I_Area**

(Revised facility SO₂ emissions)

where, SO₂ Ratio_Facility = -----
(Original facility SO₂ emissions)

(Original sulfate + nitrate point contribution)

where, Ratio_Class_I_Area = -----
(Revised sulfate + nitrate point contribution)

Revised Facility Nitrate PSAT Results

- **Revised Facility Nitrate PSAT Results**
= Original Facility Nitrate PSAT Results
*** NOx Ratio_Facility * Ratio_Class_I_Area**

(Revised facility NOx emissions)

where, NOx Ratio_Facility = -----
(Original facility NOx emissions)

(Original sulfate + nitrate point contribution)

where, Ratio_Class_I_Area = -----
(Revised sulfate + nitrate point contribution)

Facility Ratios (AL, FL, GA)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 Ratio	NOx Ratio
AL	VISTAS	01097-949811	Akzo Nobel Chemicals Inc	1.000	1.000
AL	VISTAS	01097-1056111	Ala Power - Barry	0.499	1.000
AL	VISTAS	01129-1028711	American Midstream Chatom, LLC	0.000	0.000
AL	VISTAS	01073-1018711	DRUMMOND COMPANY, INC.	1.000	1.000
AL	VISTAS	01053-7440211	Escambia Operating Company LLC	0.199	1.000
AL	VISTAS	01053-985111	Escambia Operating Company LLC	0.010	0.000
AL	VISTAS	01103-1000011	Nucor Steel Decatur LLC	1.000	1.000
AL	VISTAS	01109-985711	Sanders Lead Co	1.000	1.000
AL	VISTAS	01097-1061611	Union Oil of California - Chunchula Gas Plant	0.000	0.000
FL	VISTAS	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	1.000	1.000
FL	VISTAS	12086-900111	CEMEX CONSTRUCTION MATERIALS FL. LLC.	1.000	2.856
FL	VISTAS	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	0.493	0.421
FL	VISTAS	12086-900011	FLORIDA POWER & LIGHT (PTF)	1.000	1.000
FL	VISTAS	12033-752711	GULF POWER - Crist	0.219	0.382
FL	VISTAS	12086-3532711	HOMESTEAD CITY UTILITIES	1.000	1.000
FL	VISTAS	12031-640211	JEA	1.027	1.591
FL	VISTAS	12105-717711	MOSAIC FERTILIZER LLC	0.568	1.000
FL	VISTAS	12057-716411	MOSAIC FERTILIZER, LLC	0.595	1.057
FL	VISTAS	12105-919811	MOSAIC FERTILIZER, LLC	0.972	1.000
FL	VISTAS	12089-845811	RAYONIER PERFORMANCE FIBERS LLC	1.000	1.000
FL	VISTAS	12089-753711	ROCK TENN CP, LLC	1.000	1.000
FL	VISTAS	12005-535411	ROCKTENN CP LLC	1.000	1.000
FL	VISTAS	12129-2731711	TALLAHASSEE CITY PURDOM GENERATING STA.	1.000	1.000
FL	VISTAS	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	1.000	1.000
FL	VISTAS	12086-899911	TARMAC AMERICA LLC	1.000	2.701
FL	VISTAS	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	0.487	0.909
GA	VISTAS	13127-3721011	Brunswick Cellulose Inc	1.000	1.000
GA	VISTAS	13015-2813011	Ga Power Company - Plant Bowen	1.000	1.000
GA	VISTAS	13103-536311	Georgia-Pacific Consumer Products LP (Savannah River Mill)	1.000	1.000
GA	VISTAS	13051-3679811	International Paper - Savannah	1.000	1.000
GA	VISTAS	13115-539311	TEMPLE INLAND	1.000	1.000

Facility Ratios (KY, MS, NC, SC, TN, VA)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 Ratio	NOx Ratio
KY	VISTAS	21183-5561611	Big Rivers Electric Corp - Wilson Station	1.000	1.000
KY	VISTAS	21091-7352411	Century Aluminum of KY LLC	0.441	1.000
KY	VISTAS	21177-5196711	Tennessee Valley Authority - Paradise Fossil Plant	0.004	0.238
KY	VISTAS	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1.000	1.000
MS	VISTAS	28059-8384311	Chevron Products Company, Pascagoula Refinery	1.000	1.000
MS	VISTAS	28059-6251011	Mississippi Power Company, Plant Victor J Daniel	1.000	1.000
NC	VISTAS	37087-7920511	Blue Ridge Paper Products - Canton Mill	0.359	0.978
NC	VISTAS	37117-8049311	Domtar Paper Company, LLC	1.000	1.000
NC	VISTAS	37035-8370411	Duke Energy Carolinas, LLC - Marshall Steam Station	0.641	0.713
NC	VISTAS	37013-8479311	PCS Phosphate Company, Inc. - Aurora	1.000	1.000
NC	VISTAS	37023-8513011	SGL Carbon LLC	1.000	1.000
SC	VISTAS	45015-4834911	ALUMAX OF SOUTH CAROLINA	1.000	1.000
SC	VISTAS	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	1.000	1.000
SC	VISTAS	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	1.000	1.000
SC	VISTAS	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	1.000	1.000
SC	VISTAS	45043-6652811	SANTEE COOPER WINYAH GENERATING STATION	1.000	1.000
SC	VISTAS	45015-8306711	SCE&G WILLIAMS	1.000	1.000
TN	VISTAS	47093-4979911	Cemex - Knoxville Plant	1.000	1.000
TN	VISTAS	47163-3982311	EASTMAN CHEMICAL COMPANY	1.000	1.000
TN	VISTAS	47105-4129211	TATE & LYLE, Loudon	0.352	0.261
TN	VISTAS	47001-6196011	TVA BULL RUN FOSSIL PLANT	0.000	0.000
TN	VISTAS	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	1.000	1.000
TN	VISTAS	47145-4979111	TVA KINGSTON FOSSIL PLANT	0.225	0.225
VA	VISTAS	51027-4034811	Jewell Coke Company LLP	1.000	1.000
VA	VISTAS	51580-5798711	Meadwestvaco Packaging Resource Group	1.000	1.000
VA	VISTAS	51023-5039811	Roanoke Cement Company	1.000	1.000

Facility Ratios (WV, AR, MO, MD, PA, IL, IN, OH)

Facility State	Facility RPO	FACILITY_ID_STD	FACILITY_NAME_STD	SO2 Ratio	NOx Ratio
WV	VISTAS	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	1.027	0.847
WV	VISTAS	54049-4864511	AMERICAN BITUMINOUS POWER-GRANT TOWN PLT	1.278	1.394
WV	VISTAS	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	0.555	1.495
WV	VISTAS	54023-6257011	Dominion Resources, Inc. - MOUNT STORM POWER STATION	0.449	0.487
WV	VISTAS	54041-6900311	EQUITRANS - COPLEY RUN CS 70	1.000	1.000
WV	VISTAS	54083-6790711	FILES CREEK 6C4340	1.000	1.000
WV	VISTAS	54083-6790511	GLADY 6C4350	1.000	1.000
WV	VISTAS	54093-6327811	KINGSFORD MANUFACTURING COMPANY	1.000	1.000
WV	VISTAS	54061-16320111	LONGVIEW POWER	1.010	1.437
WV	VISTAS	54051-6902311	MITCHELL PLANT	0.787	1.459
WV	VISTAS	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	0.626	0.873
WV	VISTAS	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	0.684	1.042
WV	VISTAS	54061-6773811	MORGANTOWN ENERGY ASSOCIATES	0.004	0.330
AR	CENRAP	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	0.426	0.317
MO	CENRAP	29143-5363811	NEW MADRID POWER PLANT-MARSTON	0.665	0.923
MD	MANE-VU	24001-7763811	Luke Paper Company	0.436	1.000
PA	MANE-VU	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	0.370	0.773
PA	MANE-VU	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	0.782	0.951
PA	MANE-VU	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	0.767	0.724
IL	Midwest RPO	17127-7808911	Joppa Steam	0.392	0.424
IN	Midwest RPO	18173-8183111	Alcoa Warrick Power Plt Agc Div of AL	0.288	0.271
IN	Midwest RPO	18051-7363111	Gibson	0.562	0.702
IN	Midwest RPO	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	0.353	0.962
IN	Midwest RPO	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	0.519	0.502
IN	Midwest RPO	18129-8166111	Sigeco AB Brown South Indiana Gas & Ele	0.000	0.018
OH	Midwest RPO	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	1.326	1.639
OH	Midwest RPO	39031-8010811	Conesville Power Plant (0616000000)	0.000	0.000
OH	Midwest RPO	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	0.467	0.820
OH	Midwest RPO	39053-8148511	General James M. Gavin Power Plant (0627010056)	0.525	0.983
OH	Midwest RPO	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	1.258	0.685

Class I Area Ratios

State	Class I Area	Ratio_Class_I_Area
AL	Sipsey Wilderness Area (SIPS)	1.382
FL	Chassahowitzka Wilderness Area (CHAS)	1.325
FL	Everglades NP (EVER)	1.290
FL	St Marks Wilderness Area (SAMA)	1.363
GA	Cohutta Wilderness Area (COHU)	1.363
GA	Okefenokee Wilderness Area (OKEF)	1.317
GA	Wolf Island Wilderness (WOLF)	1.311
KY	Mammoth Cave NP (MACA)	1.337
NC	Linville Gorge Wilderness Area (LIGO)	1.411
NC	Shining Rock Wilderness Area (SHRO)	1.410
NC	Swanquarter Wilderness Area (SWAN)	1.398
SC	Cape Romain Wilderness (ROMA)	1.302
TN/NC	Great Smoky Mountains NP (GRSM)	1.394
TN/NC	Joyce Kilmer-Slickrock Wilderness (JOYC)	1.401
VA	James River Face Wilderness (JARI)	1.416
VA	Shenandoah NP (SHEN)	1.463
WV	Dolly Sods Wilderness (DOSO)	1.417
WV	Otter Creek Wilderness (OTCR)	1.412
AR	Caney Creek Wilderness Area (CACR)	1.518
AR	Upper Buffalo Wilderness Area (UPBU)	1.490
LA	Breton Wilderness (BRET)	1.306
ME	Acadia National Park (ACAD)	1.402
ME	Moosehorn Wilderness EDM (MOOS)	1.417
MI	Seney Wilderness Area (SENE)	1.262
MO	Hercules-Glades Wilderness Area (HEGL)	1.450
MO	Mingo Wilderness Area (MING)	1.360
NH	Great Gulf Wilderness Area (GRGU)	1.463
NH	Presidential Range-Dry River Wilderness (PRDR)	1.463
NJ	Brigantine Wilderness Area (BRIG)	1.391
VT	Lye Brook Wilderness (LYEB)	1.471

EXAMPLE: New Madrid Power at SIPS

- **Revised Facility Sulfate PSAT Results**
= Original Facility Sulfate PSAT Results
*** SO₂ Ratio_Facility * Ratio_Class_I_Area**
- **Original Facility Sulfate PSAT Results = 1.46%**
- **Revised Facility Sulfate PSAT Results**
= 1.46% * 0.665 (Slide 100) * 1.382 (Slide 101)
= 1.34% (Slide 103)

*For detailed calculations, see [Handout - Roadmap](https://www.metro4-sesarm.org/content/vistas-regional-haze-program) located at:
<https://www.metro4-sesarm.org/content/vistas-regional-haze-program>*

Sipsey Wilderness Area (AL)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	337.7	0.364	16.370	2.22%	0.009	16.370	0.05%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	690.9	0.327	16.370	1.99%	0.021	16.370	0.13%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	398.4	0.327	16.370	1.99%	0.050	16.370	0.31%
IN	18051-7363111	Gibson	448.7	0.270	16.370	1.65%	0.029	16.370	0.18%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	464.4	0.258	16.370	1.57%	0.026	16.370	0.16%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	228.9	0.242	16.370	1.48%	0.028	16.370	0.17%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	314.5	0.220	16.370	1.34%	0.012	16.370	0.07%
KY	21183-5561611	Big Rivers Electric Corp - Wilson Station	345.5	0.211	16.370	1.29%	0.008	16.370	0.05%

Chassahowitzka Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
FL	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	27.4	0.629	10.092	6.24%	0.023	10.092	0.23%
GA	13015-2813011	Ga Power Company - Plant Bowen	637.2	0.230	10.092	2.28%	0.003	10.092	0.03%
FL	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	106.8	0.129	10.092	1.28%	0.007	10.092	0.07%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1,098.0	0.102	10.092	1.01%	0.005	10.092	0.05%
AL	01109-985711	Sanders Lead Co	471.2	0.101	10.092	1.00%	0.001	10.092	0.01%

Everglades NP (FL)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
FL	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	316.6	0.044	1.333	3.30%	0.000	1.333	0.00%
FL	12105-919811	MOSAIC FERTILIZER, LLC	304.7	0.035	1.333	2.62%	0.000	1.333	0.00%
FL	12105-717711	MOSAIC FERTILIZER LLC	303.3	0.035	1.333	2.60%	0.000	1.333	0.00%
FL	12086-899911	TARMAC AMERICA LLC	61.7	0.003	1.333	0.23%	0.035	1.333	2.63%

St Marks Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
GA	13015-2813011	Ga Power Company - Plant Bowen	452.9	0.574	11.729	4.89%	0.004	11.729	0.03%
FL	12005-535411	ROCKTENN CP LLC	140.8	0.540	11.729	4.60%	0.015	11.729	0.13%
AL	01109-985711	Sanders Lead Co	255.9	0.131	11.729	1.12%	0.000	11.729	0.00%

Cohutta Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	512.0	0.322	13.229	2.44%	0.009	13.229	0.07%
GA	13015-2813011	Ga Power Company - Plant Bowen	78.0	0.282	13.229	2.13%	0.005	13.229	0.04%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	0.190	13.229	1.44%	0.002	13.229	0.02%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.1	0.181	13.229	1.37%	0.005	13.229	0.04%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	454.6	0.173	13.229	1.31%	0.005	13.229	0.04%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	269.8	0.165	13.229	1.25%	0.012	13.229	0.09%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	801.1	0.137	13.229	1.04%	0.002	13.229	0.01%
IN	18051-7363111	Gibson	487.1	0.137	13.229	1.03%	0.002	13.229	0.02%

Okefenokee Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	71.5	0.372	13.400	2.77%	0.002	13.400	0.01%
GA	13015-2813011	Ga Power Company - Plant Bowen	458.1	0.308	13.400	2.30%	0.007	13.400	0.05%
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	153.5	0.289	13.400	2.16%	0.019	13.400	0.14%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	909.1	0.203	13.400	1.51%	0.002	13.400	0.01%
FL	12089-753711	ROCK TENN CP, LLC	64.8	0.176	13.400	1.31%	0.020	13.400	0.15%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	348.1	0.158	13.400	1.18%	0.006	13.400	0.04%
GA	13051-3679811	International Paper - Savannah	178.9	0.140	13.400	1.04%	0.008	13.400	0.06%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	939.4	0.138	13.400	1.03%	0.006	13.400	0.04%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,129.0	0.137	13.400	1.02%	0.002	13.400	0.01%

Wolf Island Wilderness (GA)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
FL	12089-753711	ROCK TENN CP, LLC	74.9	0.304	12.957	2.35%	0.018	12.957	0.14%
GA	13015-2813011	Ga Power Company - Plant Bowen	458.1	0.302	12.957	2.33%	0.007	12.957	0.05%
GA	13127-3721011	Brunswick Cellulose Inc	27.9	0.228	12.957	1.76%	0.017	12.957	0.13%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	845.3	0.224	12.957	1.73%	0.003	12.957	0.02%
GA	13051-3679811	International Paper - Savannah	85.9	0.200	12.957	1.54%	0.012	12.957	0.09%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	251.0	0.168	12.957	1.30%	0.011	12.957	0.08%
FL	12031-640211	JEA	105.1	0.167	12.957	1.29%	0.008	12.957	0.06%
SC	45015-4834911	ALUMAX OF SOUTH CAROLINA	223.0	0.162	12.957	1.25%	0.001	12.957	0.01%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,048.6	0.149	12.957	1.15%	0.002	12.957	0.01%

Mammoth Cave NP (KY)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	0.426	25.289	1.68%	0.085	25.289	0.33%
IN	18051-7363111	Gibson	198.2	0.411	25.289	1.63%	0.084	25.289	0.33%
KY	21183-5561611	Big Rivers Electric Corp - Wilson Station	89.9	0.361	25.289	1.43%	0.020	25.289	0.08%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	233.6	0.290	25.289	1.15%	0.049	25.289	0.19%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	312.7	0.289	25.289	1.14%	0.022	25.289	0.09%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	182.9	0.264	25.289	1.04%	0.068	25.289	0.27%

Linville Gorge Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	81.9	0.522	12.884	4.05%	0.013	12.884	0.10%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	329.2	0.446	12.884	3.46%	0.002	12.884	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	567.5	0.235	12.884	1.82%	0.000	12.884	0.00%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.172	12.884	1.34%	0.002	12.884	0.02%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	516.6	0.154	12.884	1.20%	0.001	12.884	0.01%
GA	13015-2813011	Ga Power Company - Plant Bowen	340.9	0.146	12.884	1.13%	0.000	12.884	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	0.142	12.884	1.10%	0.012	12.884	0.09%
IN	18051-7363111	Gibson	582.3	0.138	12.884	1.07%	0.008	12.884	0.07%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	688.6	0.134	12.884	1.04%	0.000	12.884	0.00%
VA	51027-4034811	Jewell Coke Company LLP	140.4	0.132	12.884	1.02%	0.000	12.884	0.00%

Shining Rock Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	397.3	0.297	12.313	2.41%	0.001	12.313	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	573.4	0.201	12.313	1.63%	0.003	12.313	0.02%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	454.1	0.162	12.313	1.32%	0.002	12.313	0.02%
GA	13015-2813011	Ga Power Company - Plant Bowen	241.6	0.159	12.313	1.29%	0.001	12.313	0.01%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	625.2	0.158	12.313	1.28%	0.001	12.313	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	473.3	0.156	12.313	1.27%	0.012	12.313	0.09%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	657.6	0.151	12.313	1.23%	0.000	12.313	0.00%
IN	18051-7363111	Gibson	554.2	0.151	12.313	1.23%	0.008	12.313	0.07%
NC	37087-7920511	Blue Ridge Paper Products - Canton Mill	16.9	0.133	12.313	1.08%	0.012	12.313	0.10%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	406.7	0.129	12.313	1.05%	0.002	12.313	0.01%
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.129	12.313	1.04%	0.001	12.313	0.01%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	126.9	0.128	12.313	1.04%	0.003	12.313	0.02%

Swanquarter Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	640.2	0.375	10.894	3.44%	0.009	10.894	0.09%
NC	37013-8479311	PCS Phosphate Company, Inc. - Aurora	52.5	0.329	10.894	3.02%	0.007	10.894	0.06%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	651.5	0.219	10.894	2.01%	0.005	10.894	0.05%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.203	10.894	1.86%	0.007	10.894	0.06%
MD	24001-7763811	Luke Paper Company	512.5	0.191	10.894	1.75%	0.008	10.894	0.07%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC- HARRISON	568.6	0.186	10.894	1.71%	0.013	10.894	0.12%
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	620.1	0.151	10.894	1.38%	0.008	10.894	0.07%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	625.7	0.127	10.894	1.17%	0.005	10.894	0.05%
GA	13015-2813011	Ga Power Company - Plant Bowen	810.6	0.112	10.894	1.03%	0.003	10.894	0.03%
NC	37117-8049311	Domtar Paper Company, LLC	69.0	0.109	10.894	1.00%	0.022	10.894	0.20%

Cape Romain Wilderness Area (SC)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
SC	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	29.3	0.523	14.028	3.73%	0.046	14.028	0.33%
GA	13015-2813011	Ga Power Company - Plant Bowen	506.2	0.495	14.028	3.53%	0.019	14.028	0.14%
SC	45015-4834911	ALUMAX OF SOUTH CAROLINA	39.1	0.327	14.028	2.33%	0.003	14.028	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	857.1	0.320	14.028	2.28%	0.002	14.028	0.01%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	63.8	0.316	14.028	2.25%	0.038	14.028	0.27%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	701.0	0.305	14.028	2.17%	0.005	14.028	0.04%
SC	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	57.4	0.230	14.028	1.64%	0.021	14.028	0.15%
SC	45043-6652811	SANTEE COOPER WINYAH GENERATING STATION	51.4	0.187	14.028	1.33%	0.024	14.028	0.17%
GA	13051-3679811	International Paper - Savannah	166.1	0.180	14.028	1.28%	0.009	14.028	0.06%

Great Smoky Mountains National Park (TN/NC)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	400.5	0.520	13.916	3.73%	0.003	13.916	0.02%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	465.3	0.183	13.916	1.32%	0.011	13.916	0.08%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	160.1	0.170	13.916	1.22%	0.007	13.916	0.05%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	688.2	0.166	13.916	1.19%	0.001	13.916	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	375.5	0.166	13.916	1.19%	0.035	13.916	0.25%
IN	18051-7363111	Gibson	456.3	0.146	13.916	1.05%	0.037	13.916	0.27%

Joyce Kilmer-Slickrock Wilderness Area (TN/NC)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	425.1	0.473	13.694	3.45%	0.002	13.694	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.189	13.694	1.38%	0.014	13.694	0.10%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	179.2	0.178	13.694	1.30%	0.003	13.694	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	711.0	0.154	13.694	1.12%	0.000	13.694	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	391.2	0.154	13.694	1.12%	0.030	13.694	0.22%
GA	13015-2813011	Ga Power Company - Plant Bowen	166.2	0.152	13.694	1.11%	0.001	13.694	0.01%
IN	18051-7363111	Gibson	471.7	0.139	13.694	1.02%	0.029	13.694	0.21%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	385.1	0.137	13.694	1.00%	0.002	13.694	0.01%

James River Face Wilderness Area (VA)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	0.582	14.404	4.04%	0.016	14.404	0.11%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	207.6	0.526	14.404	3.65%	0.020	14.404	0.14%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	0.520	14.404	3.61%	0.008	14.404	0.06%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	248.0	0.325	14.404	2.26%	0.007	14.404	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.5	0.278	14.404	1.93%	0.016	14.404	0.11%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	337.1	0.217	14.404	1.51%	0.005	14.404	0.04%
VA	51580-5798711	Meadwestvaco Packaging Resource Group	46.5	0.209	14.404	1.45%	0.031	14.404	0.22%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	270.0	0.170	14.404	1.18%	0.006	14.404	0.04%
WV	54051-6902311	MITCHELL PLANT	269.6	0.156	14.404	1.08%	0.006	14.404	0.04%

Shenandoah National Park (VA)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	249.8	0.740	15.375	4.81%	0.009	15.375	0.06%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	269.6	0.692	15.375	4.50%	0.018	15.375	0.12%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	189.7	0.636	15.375	4.14%	0.070	15.375	0.46%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	323.4	0.576	15.375	3.75%	0.022	15.375	0.14%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	265.0	0.339	15.375	2.20%	0.043	15.375	0.28%
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	230.4	0.274	15.375	1.78%	0.010	15.375	0.06%
MD	24001-7763811	Luke Paper Company	118.4	0.216	15.375	1.41%	0.021	15.375	0.14%
PA	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	215.5	0.172	15.375	1.12%	0.003	15.375	0.02%
WV	54051-6902311	MITCHELL PLANT	251.8	0.155	15.375	1.01%	0.025	15.375	0.16%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	324.1	0.155	15.375	1.01%	0.009	15.375	0.06%

Dolly Sods Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	83.6	1.390	19.349	7.18%	0.059	19.349	0.31%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	233.8	0.945	19.349	4.88%	0.009	19.349	0.05%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	163.9	0.810	19.349	4.19%	0.020	19.349	0.10%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	163.9	0.778	19.349	4.02%	0.007	19.349	0.03%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	416.9	0.288	19.349	1.49%	0.010	19.349	0.05%
WV	54051-6902311	MITCHELL PLANT	144.2	0.276	19.349	1.42%	0.009	19.349	0.05%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	172.8	0.246	19.349	1.27%	0.001	19.349	0.00%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	234.9	0.229	19.349	1.18%	0.003	19.349	0.02%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	219.8	0.221	19.349	1.14%	0.006	19.349	0.03%
WV	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	79.8	0.218	19.349	1.13%	0.044	19.349	0.23%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.204	19.349	1.05%	0.003	19.349	0.02%

Otter Creek Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_km	FINAL Revised Sulfate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Sulfate PSAT %	FINAL Revised Nitrate PSAT Mm ⁻¹	FINAL Revised EGU + NEGU Mm ⁻¹	FINAL Revised Nitrate PSAT %
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	72.8	1.242	19.077	6.51%	0.059	19.077	0.31%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	214.2	1.001	19.077	5.25%	0.011	19.077	0.06%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	148.3	0.809	19.077	4.24%	0.023	19.077	0.12%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	162.7	0.727	19.077	3.81%	0.008	19.077	0.04%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	397.5	0.302	19.077	1.58%	0.012	19.077	0.06%
WV	54051-6902311	MITCHELL PLANT	136.8	0.297	19.077	1.56%	0.010	19.077	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	0.249	19.077	1.31%	0.007	19.077	0.04%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	215.3	0.242	19.077	1.27%	0.004	19.077	0.02%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	826.5	0.207	19.077	1.09%	0.003	19.077	0.02%
IN	18051-7363111	Gibson	709.7	0.193	19.077	1.01%	0.009	19.077	0.05%
WV	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	82.7	0.192	19.077	1.00%	0.046	19.077	0.24%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	655.7	0.191	19.077	1.00%	0.007	19.077	0.04%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	186.5	0.190	19.077	1.00%	0.001	19.077	0.00%

Non-VISTAS Class I Areas

- Only two VISTAS facilities have a contribution $\geq 1.00\%$ at any non-VISTAS Class I Area
- **ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON (WV)**
 - Moosehorn Wilderness EDM (1.06% sulfate)
- **Tennessee Valley Authority (TVA) - Shawnee Fossil Plant (KY)**
 - Caney Creek Wilderness Area (1.09% sulfate)
 - Hercules-Glades Wilderness Area (1.95% sulfate)
 - Mingo Wilderness Area (1.47% sulfate)
 - Great Gulf Wilderness Area (1.03% sulfate)
 - Presidential Range-Dry River Wilderness (1.03% sulfate)

VISTAS Facilities $\geq 1.00\%$

State	FACILITY_ID_STD	FACILITY_NAME_STD	IMPACTED CLASS I AREAS
AL	01109-985711	Sanders Lead Co	CHAS, SAMA
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	OKEF
FL	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	CHAS
FL	12031-640211	JEA	WOLF
FL	12105-717711	MOSAIC FERTILIZER LLC	EVER
FL	12105-919811	MOSAIC FERTILIZER, LLC	EVER
FL	12089-753711	ROCK TENN CP, LLC	OKEF, WOLF
FL	12005-535411	ROCKTENN CP LLC	SAMA
FL	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	CHAS, EVER
FL	12086-899911	TARMAC AMERICA LLC	EVER
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	OKEF
GA	13127-3721011	Brunswick Cellulose Inc	WOLF
GA	13015-2813011	Ga Power Company - Plant Bowen	CHAS, COHU, JOYC, LIGO, OKEF, ROMA, SAMA, SHRO, SWAN, WOLF
GA	13051-3679811	International Paper - Savannah	OKEF, ROMA, WOLF
KY	21183-5561611	Big Rivers Electric Corp - Wilson Station	MACA, SIPS
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	CACR, CHAS, COHU, DOSO, GRGU, GRSM, HEGL, JOYC, LIGO, MACA, MING, OKEF, OTCR, PRDR, SHRO, SIPS
NC	37087-7920511	Blue Ridge Paper Products - Canton Mill	SHRO
NC	37117-8049311	Domtar Paper Company, LLC	SWAN
NC	37013-8479311	PCS Phosphate Company, Inc. - Aurora	SWAN
SC	45015-4834911	ALUMAX OF SOUTH CAROLINA	ROMA, WOLF
SC	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	ROMA
SC	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	ROMA
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	OKEF, ROMA, WOLF
SC	45043-6652811	SANTEE COOPER WINYAH GENERATING STATION	ROMA
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	COHU, GRSM, JOYC, LIGO, SHRO
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	LIGO, SHRO, SIPS
VA	51027-4034811	Jewell Coke Company LLP	LIGO
VA	51580-5798711	Meadwestvaco Packaging Resource Group	JARI
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	DOSO, JARI, MOOS, OTCR, SHEN, SWAN
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	DOSO, JARI, OTCR
WV	54051-6902311	MITCHELL PLANT	DOSO, JARI, OTCR, SHEN
WV	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	DOSO, OTCR
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	DOSO, JARI, OTCR, SHEN, SWAN

Non-VISTAS Facilities $\geq 1.00\%$

State	FACILITY_ID_STD	FACILITY_NAME_STD	IMPACTED CLASS I AREAS
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	SHRO
IN	18051-7363111	Gibson	COHU, GRSM, JOYC, LIGO, MACA, OTCR, SHRO, SIPS
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	COHU, GRSM, JOYC, LIGO, MACA, OTCR, SHRO, SIPS
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	MACA, SIPS
MD	24001-7763811	Luke Paper Company	SHEN, SWAN
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	LIGO, MACA, SHRO, SIPS
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	DOSO, JARI, OTCR, SHEN, SWAN
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	COHU, DOSO, JOYC, OTCR, SHRO
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	COHU, DOSO, GRSM, JARI, JOYC, LIGO, OKEF, OTCR, ROMA, SHEN, SHRO, SIPS, SWAN, WOLF
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	DOSO, JARI, OTCR, SHEN
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	COHU, DOSO, GRSM, JARI, JOYC, LIGO, OKEF, OTCR, ROMA, SHEN, SHRO, SWAN, WOLF
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	SHEN, SWAN
PA	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	SHEN

EPA Guidance (August 20, 2019)

- Many facilities already have effective emission control technologies in place. States will consider control options for these facilities on a case-by-case basis.
 - “For the purpose of SO₂ control measures, an EGU that has add-on flue gas desulfurization (FGD) and that meets the applicable alternative SO₂ emission limit of the 2012 Mercury Air Toxics Standards (MATS) rule for power plants. The two limits in the rule (0.2 lb/MMBtu for coal-fired EGUs or 0.3 lb/MMBtu for EGUs fired with oil-derived solid fuel) are low enough that it is unlikely that an analysis of control measures for a source already equipped with a scrubber and meeting one of these limits would conclude that even more stringent control of SO₂ is necessary to make reasonable progress.”
 - “For the purposes of SO₂ and NO_x control measures, a combustion source (e.g., an EGU or industrial boiler or process heater) that, during the first implementation period, installed a FGD system that operates year-round with an effectiveness of at least 90 percent or by the installation of a selective catalytic reduction system that operates year-round with an overall effectiveness of at least 90 percent (in both cases calculating the effectiveness as the total for the system, including any bypassed flue gas), on a pollutant-specific basis.”

Additional Considerations

- The final list of four-factor analysis sources will be determined in consultation with the FLMs, EPA, other states, and stakeholders.
- Some VISTAS states may perform additional four-factor analyses for sources not listed on Slide 122.
- States will verify projected SO₂ and NO_x emissions with facilities. PSAT results can be adjusted to match.
- Some states may allow their facilities to take a permit limit that will result in adjusted PSAT impacts below the 1.00% threshold in lieu of performing a four-factor analysis.
- The large number of coal-fired EGU retirements and fuel switching from coal to natural gas need to be considered along with the sources selected for the four-factor analysis. States should not be penalized for early action.

Next Steps and Schedule

Remaining VISTAS Work Schedule

Task	Schedule
2028 Point Emissions Updates	Completed *
2028 Emissions Processing	Completed *
2028 CAMx Modeling	Completed *
2028 Visibility Projections	Completed *
2028 Deposition Projections	Late May/Early June 2020 *
Final Reports and Documentation	Late July 2020
Website Updates and Postings	Late July 2020
End of Contract	September 30, 2020
Regional Haze SIPs Due to EPA	July 31, 2021

** References technical work completion. Draft reports to follow.*

Contacts for Further Information

- For general, technical, and SIP-related questions, contact the TAWG and CC Chairs:
 - TAWG – Randy Strait (randy.strait@ncdenr.gov)
 - CC – Jim Boylan (james.boylan@dnr.ga.gov)
- For project and contract management questions, contact the Project Manager:
 - John Hornback (hornback@metro4-sesarm.org)



Appendix:

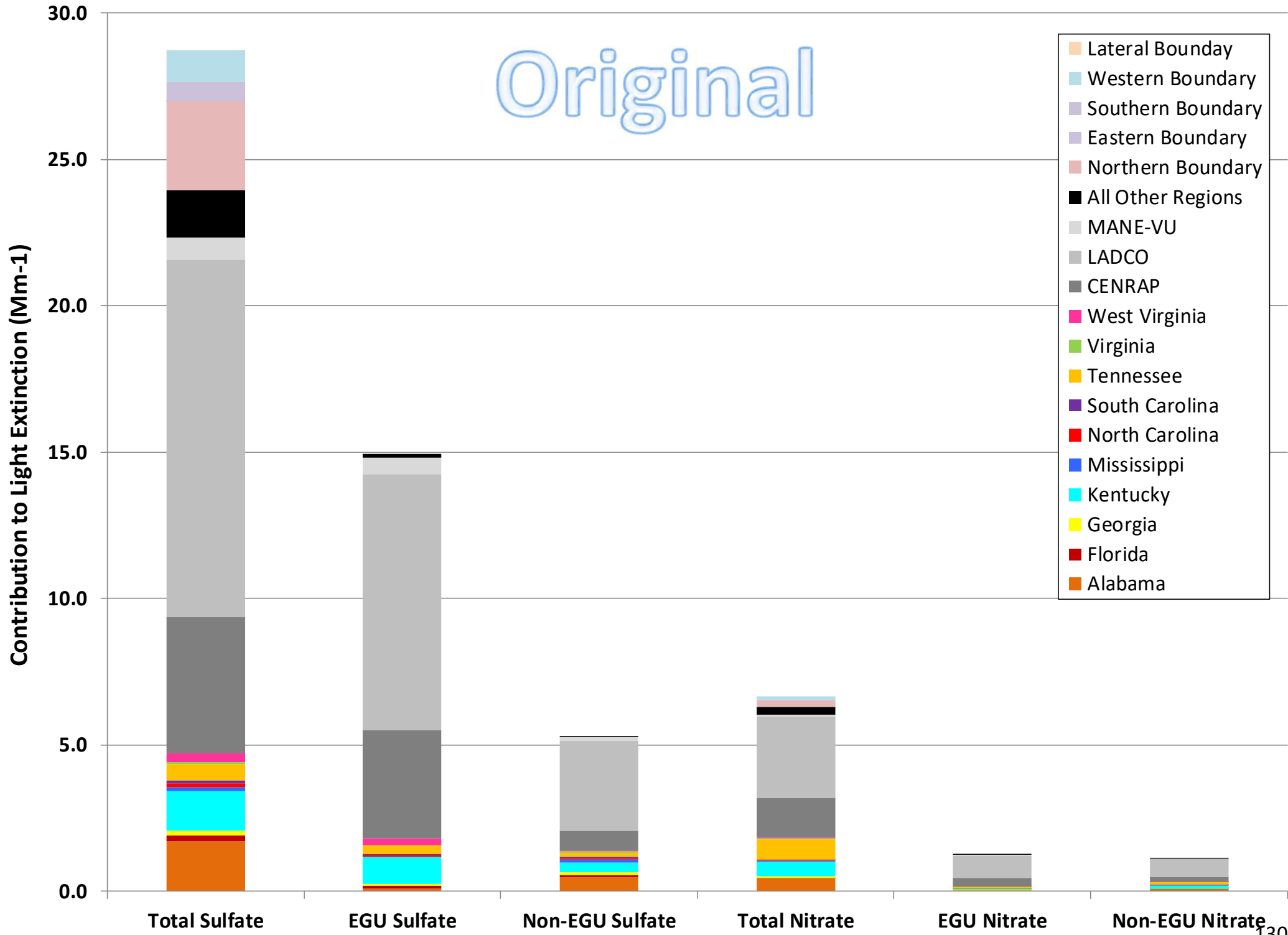
Original Analysis

(Conducted 2018-2019)

2028 Contribution to Light Extinction on 20% Most Impaired Days - Sipsey Wilderness (AL)

Original

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

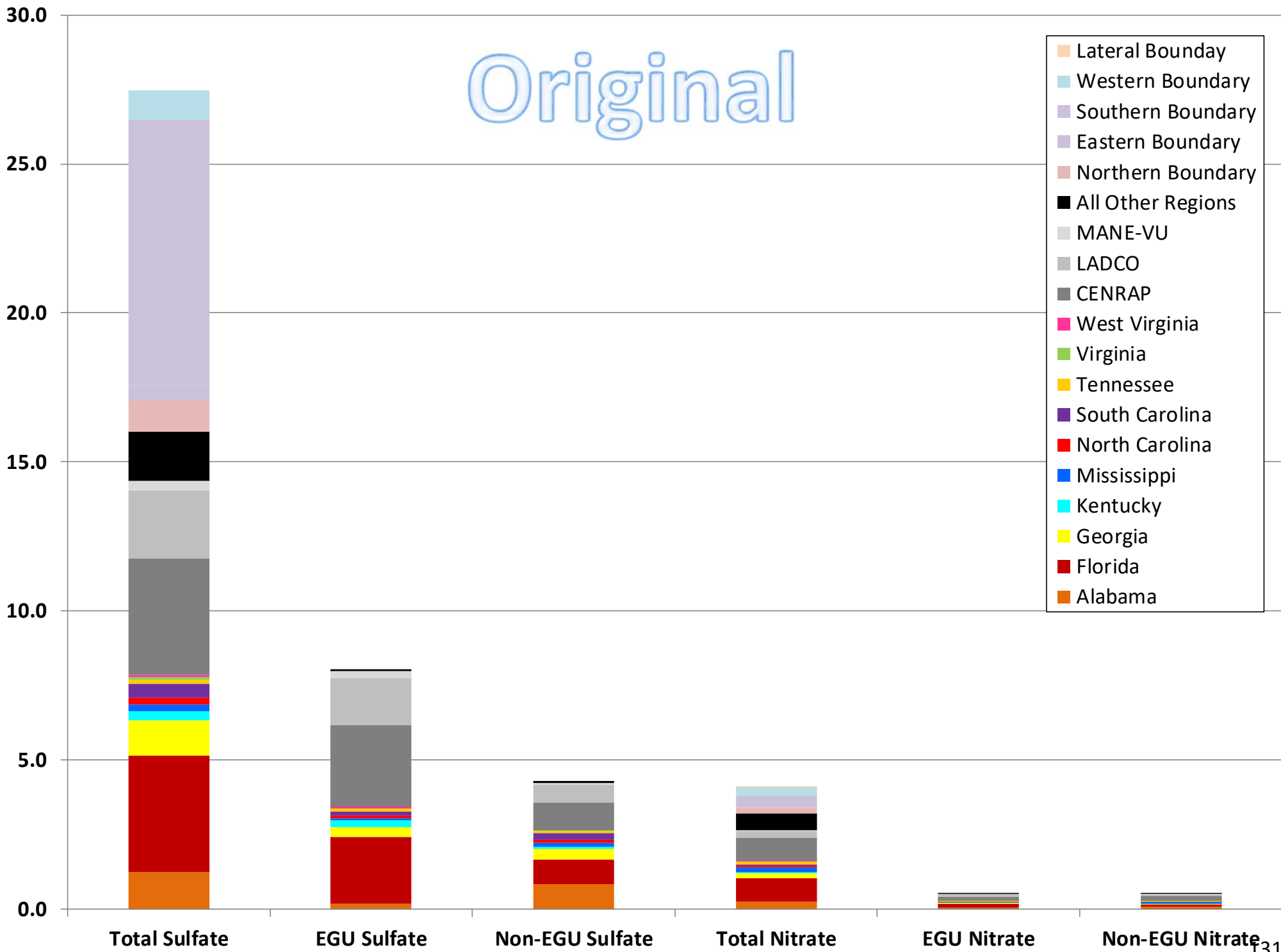


2028 Contribution to Light Extinction on 20% Most Impaired Days - Chassahowitzka (FL)

Original

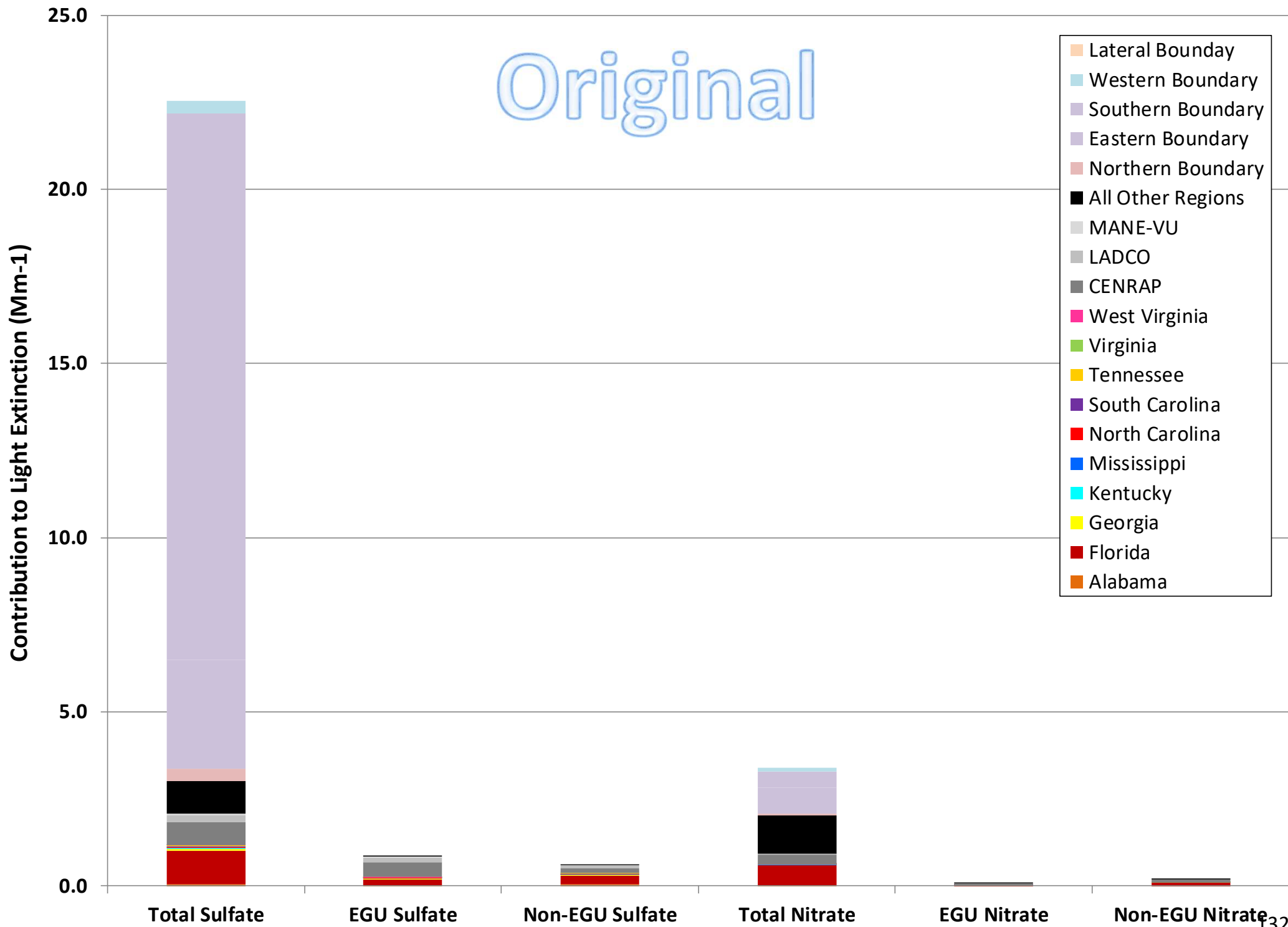
- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Contribution to Light Extinction (Mm-1)

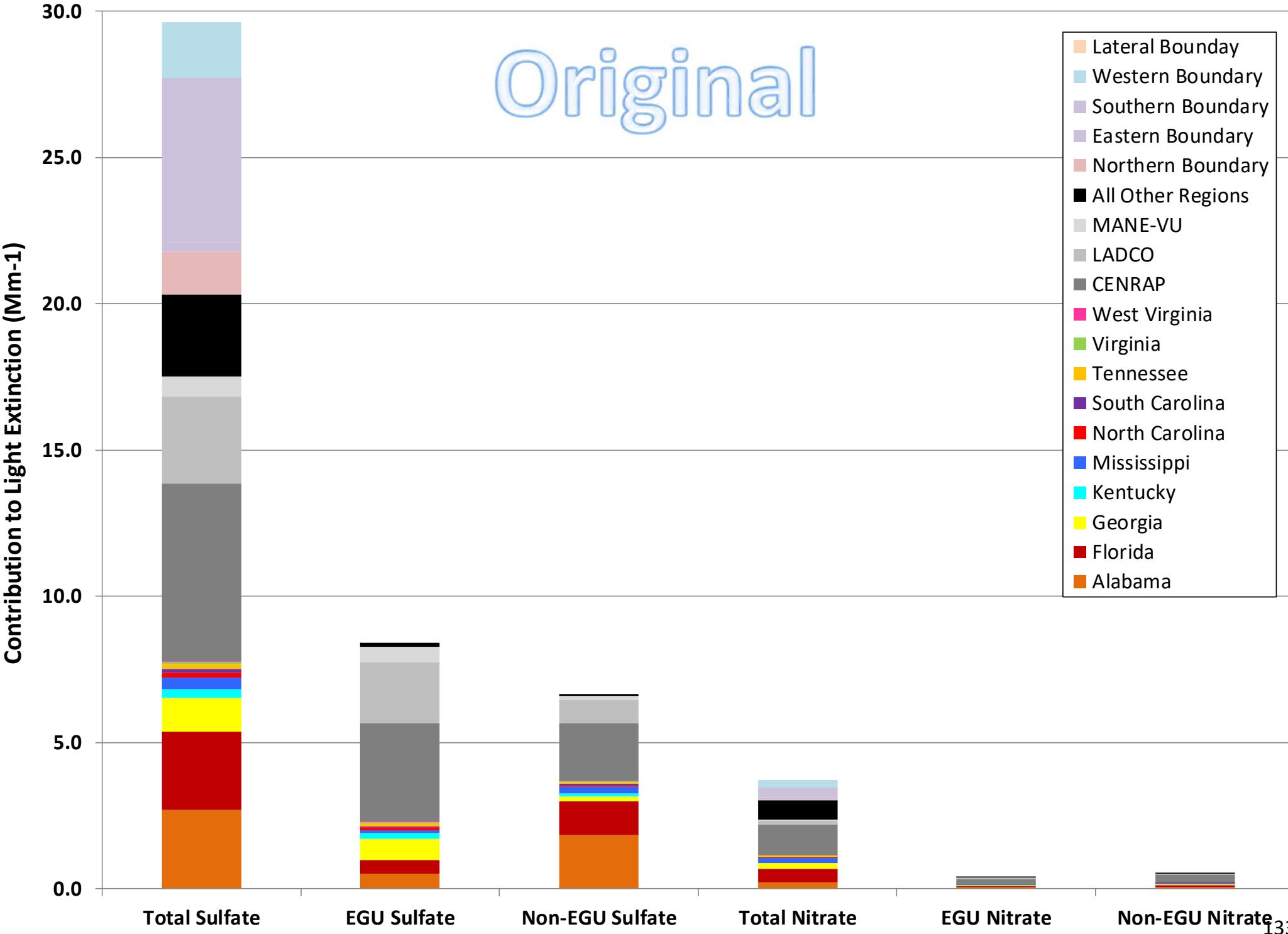


2028 Contribution to Light Extinction on 20% Most Impaired Days - Everglades NP (FL)

Original

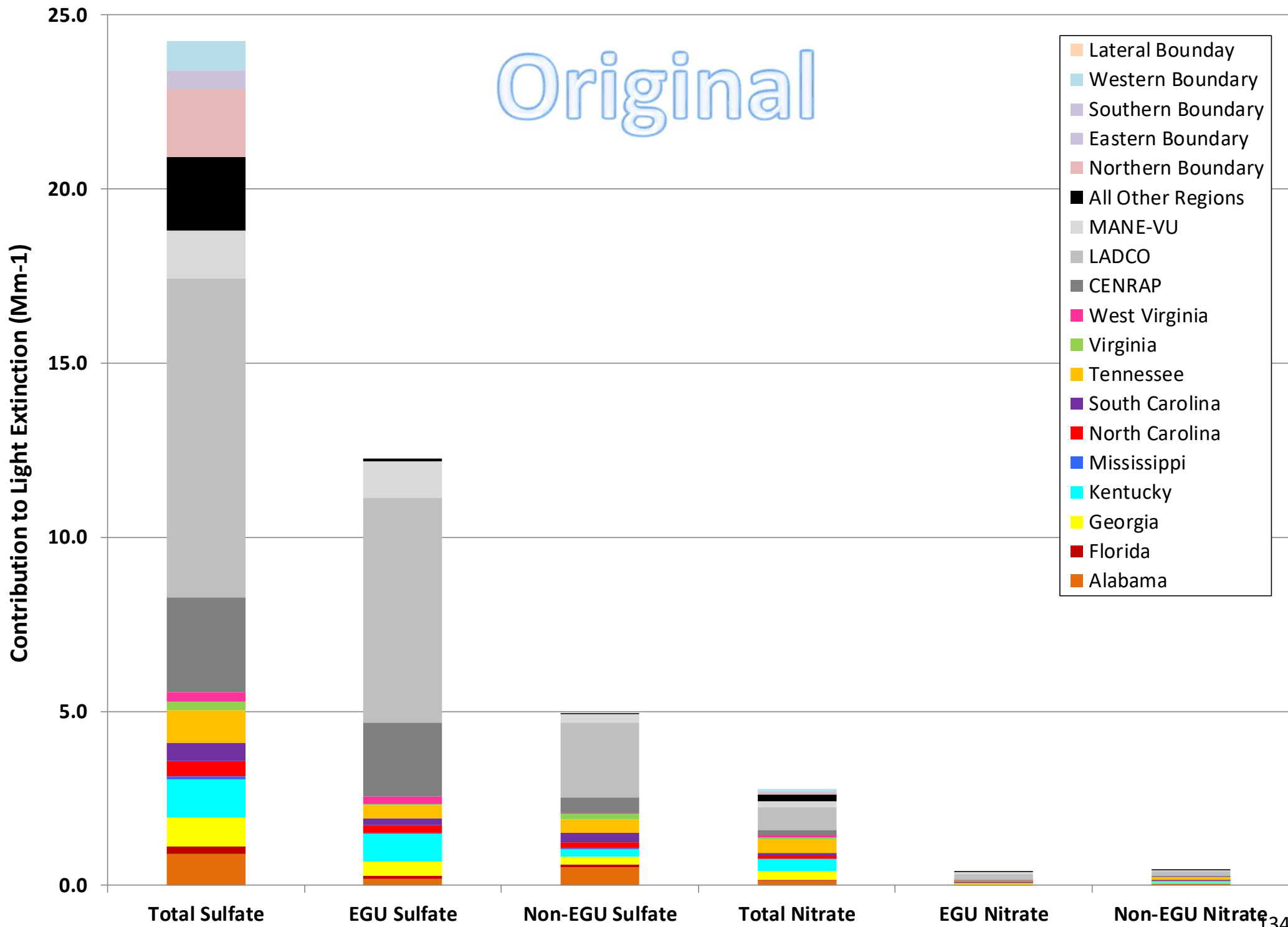


2028 Contribution to Light Extinction on 20% Most Impaired Days - St. Marks (FL)

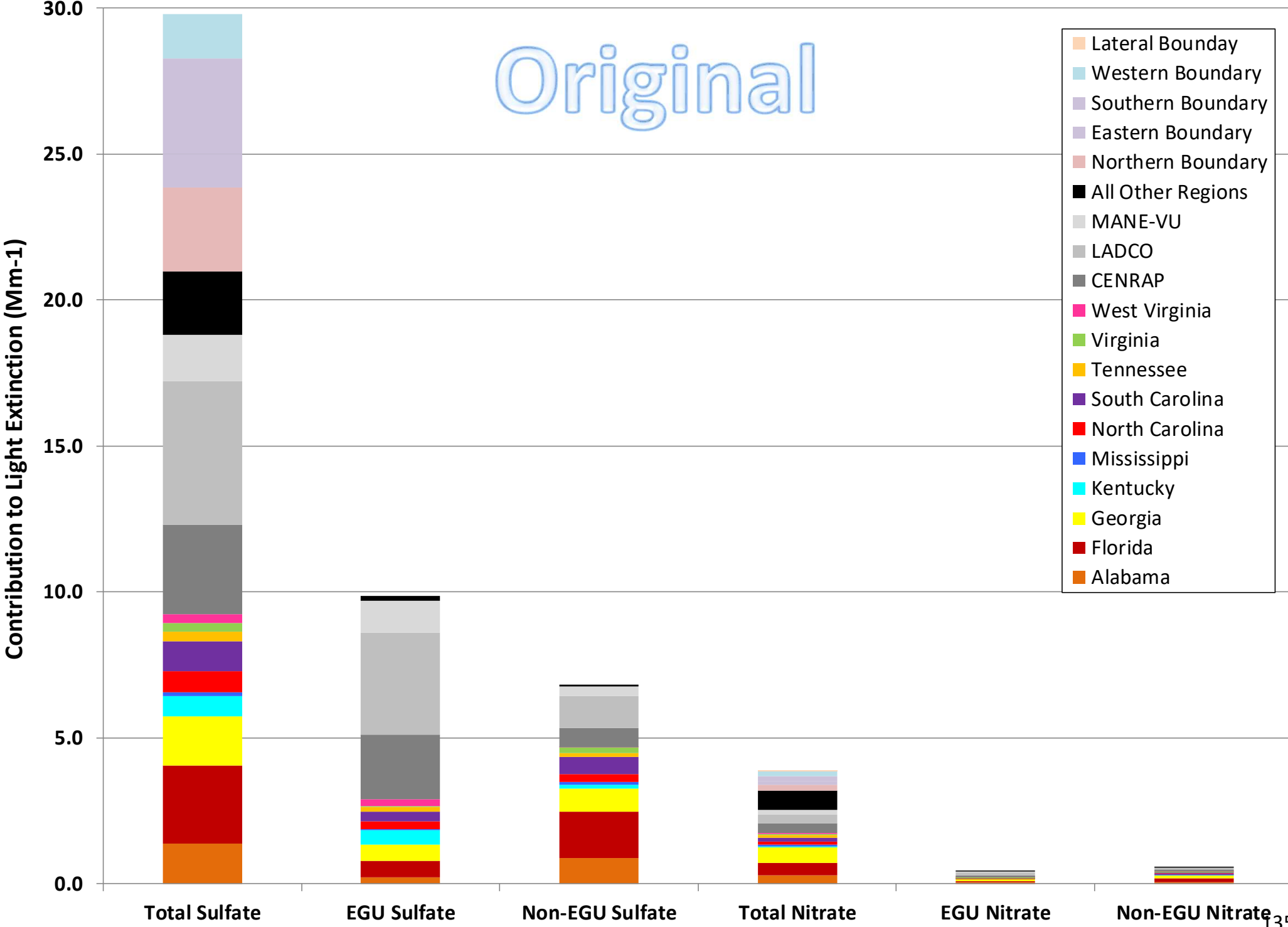


2028 Contribution to Light Extinction on 20% Most Impaired Days - Cohutta Wilderness (GA)

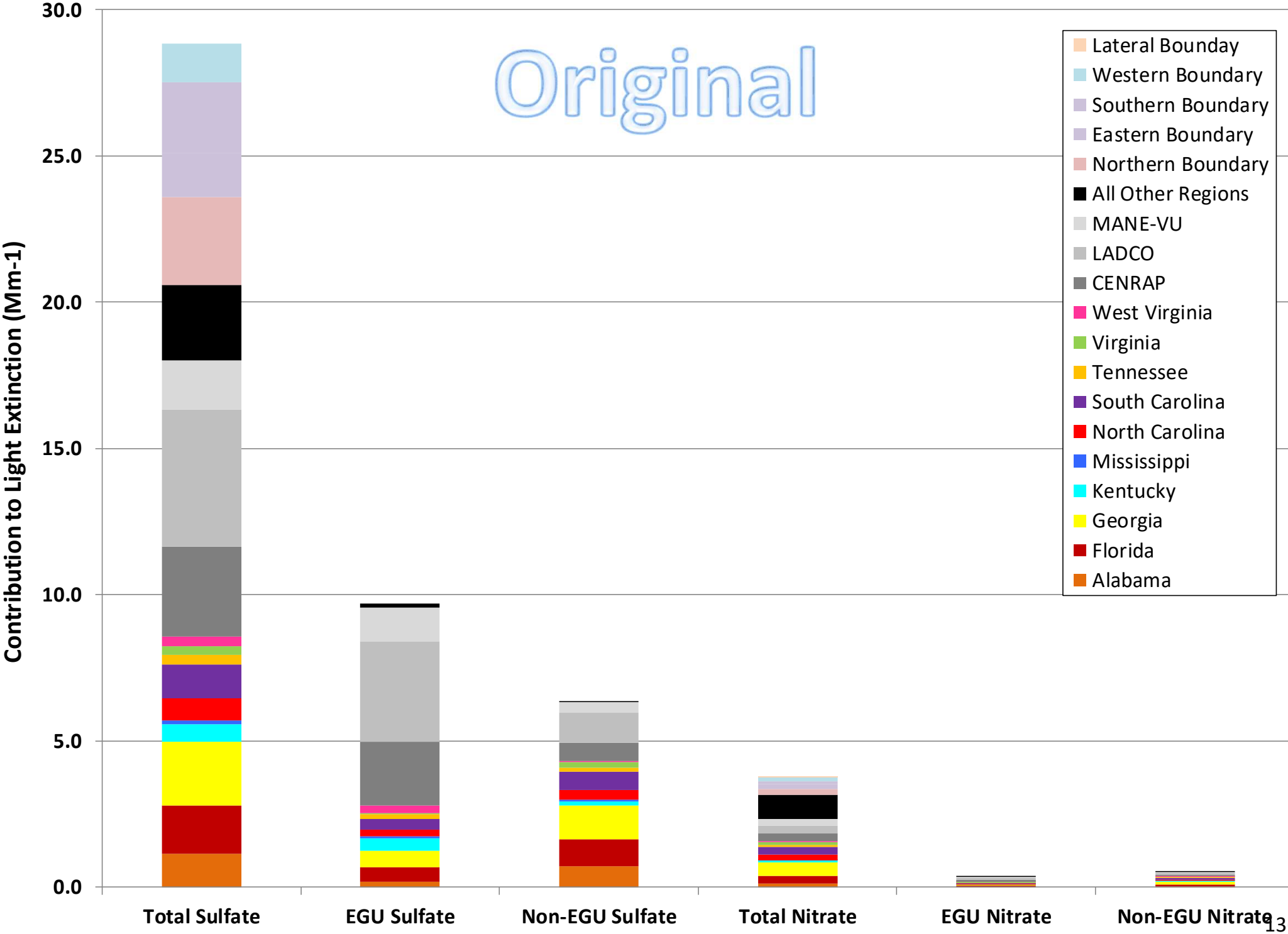
Original



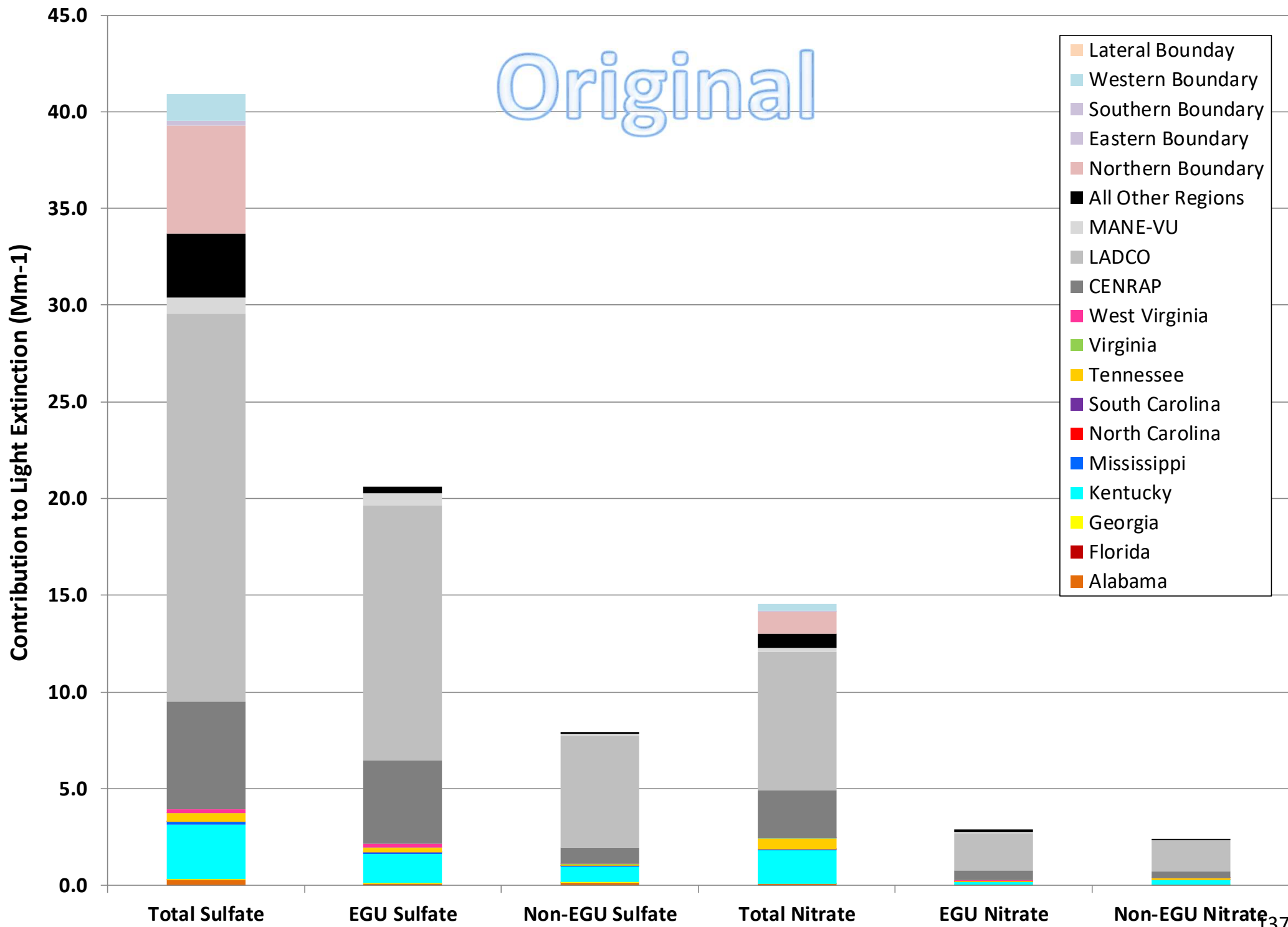
2028 Contribution to Light Extinction on 20% Most Impaired Days - Okefenokee (GA)



2028 Contribution to Light Extinction on 20% Most Impaired Days - Wolf Island (GA)



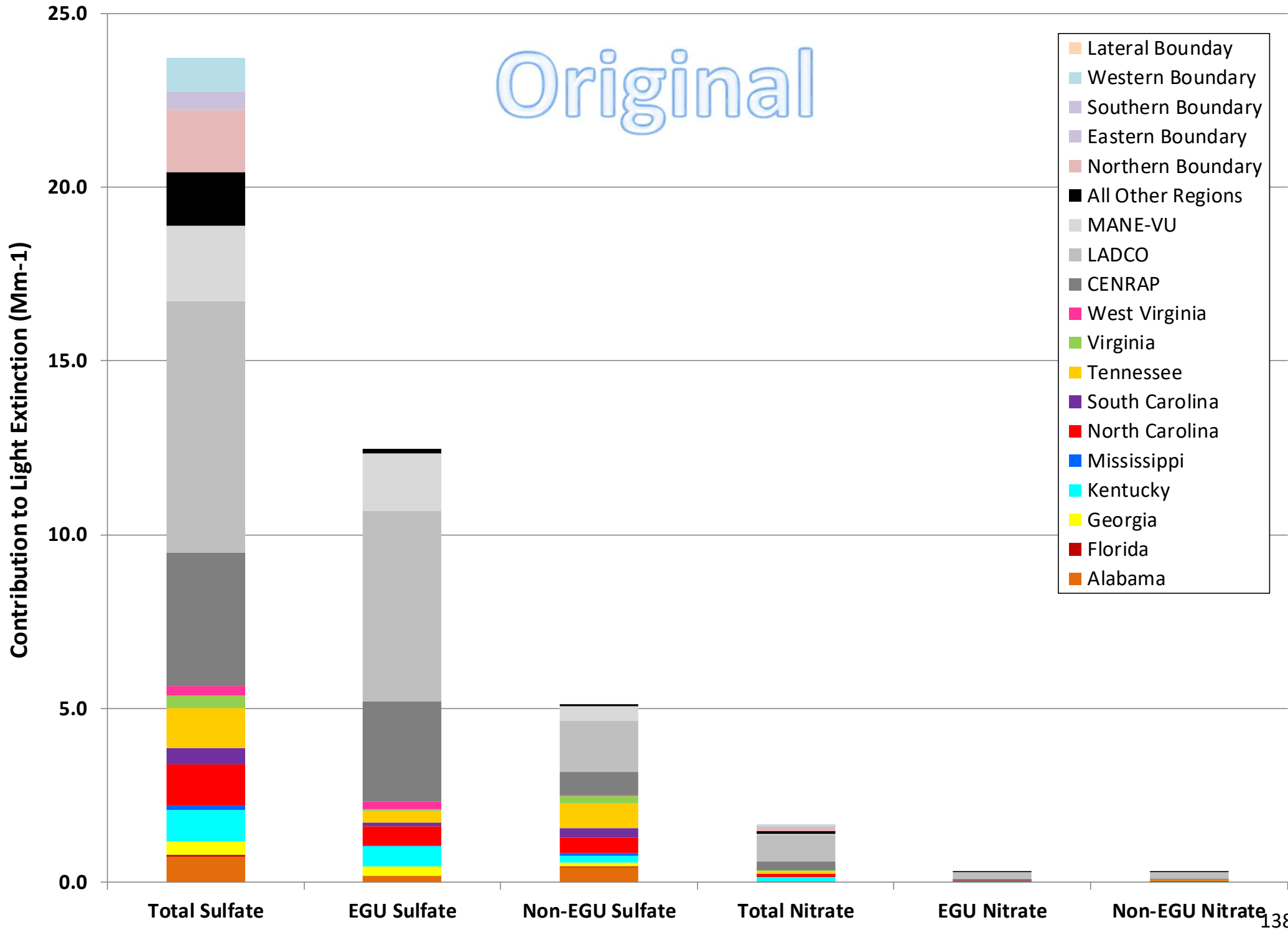
2028 Contribution to Light Extinction on 20% Most Impaired Days - Mammoth Cave NP (KY)



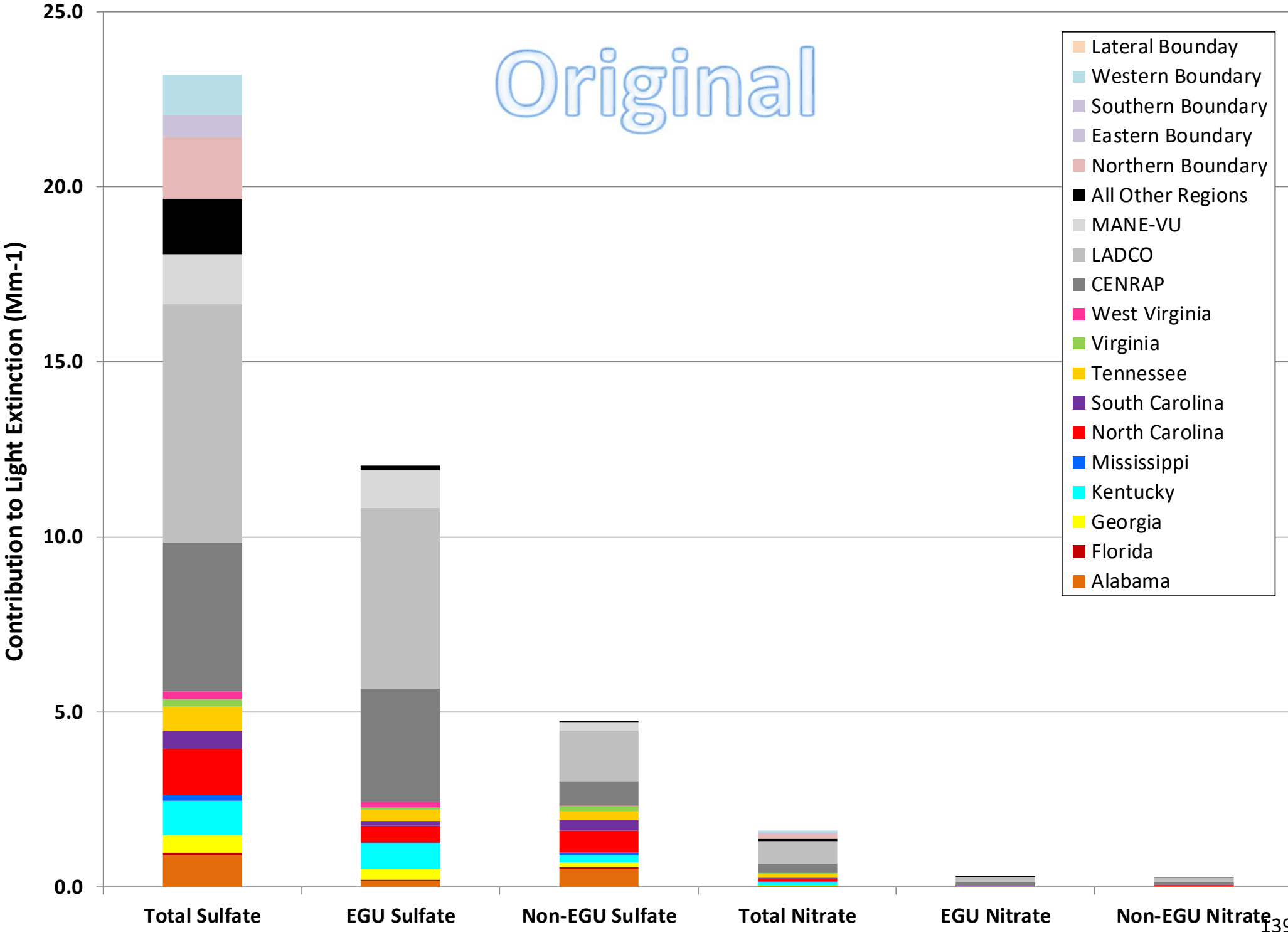
2028 Contribution to Light Extinction on 20% Most Impaired Days - Linville Gorge Wilderness (NC)

Original

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

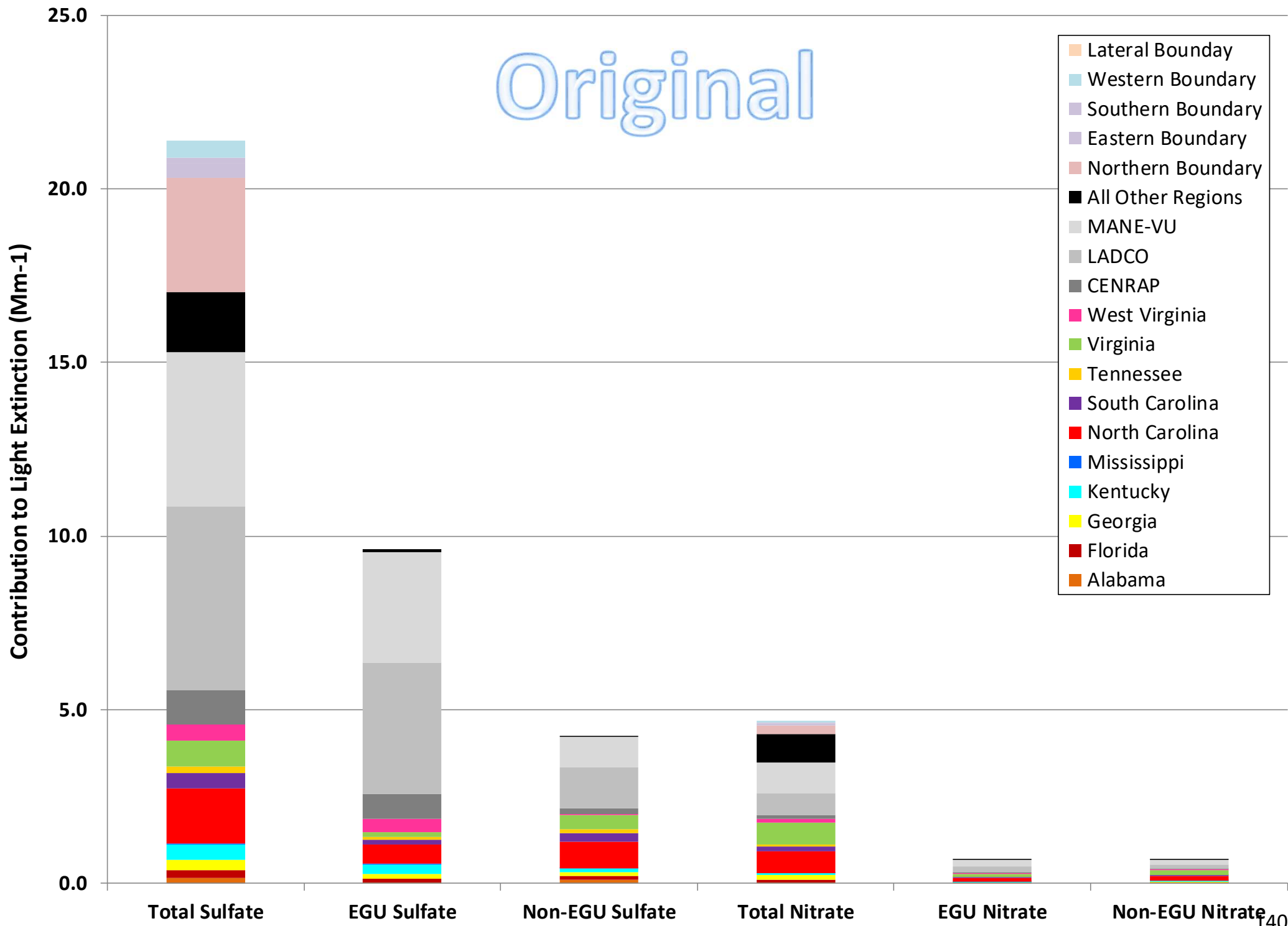


2028 Contribution to Light Extinction on 20% Most Impaired Days - Shining Rock Wilderness (NC)



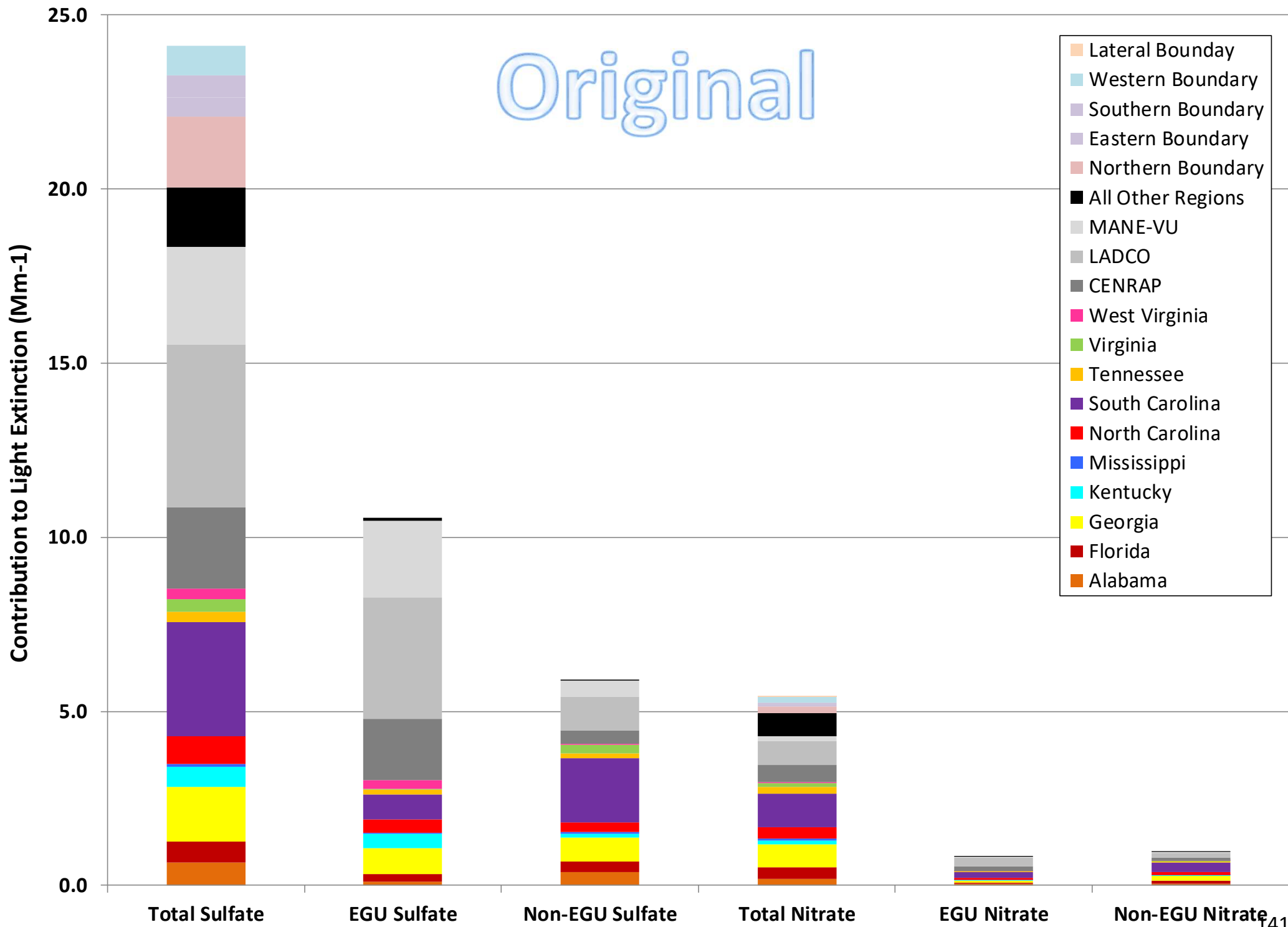
2028 Contribution to Light Extinction on 20% Most Impaired Days - Swanquarter (NC)

Original



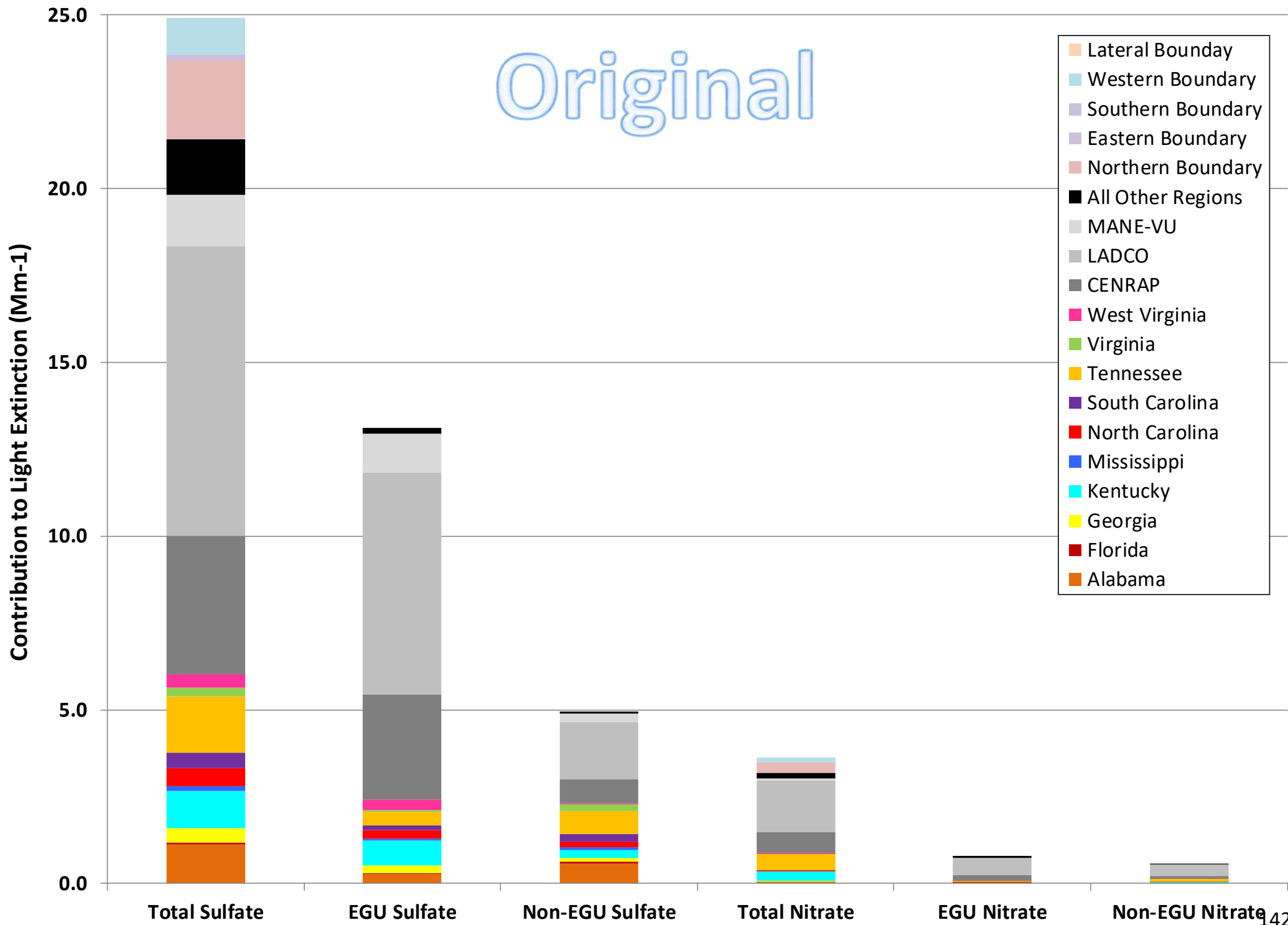
2028 Contribution to Light Extinction on 20% Most Impaired Days - Cape Romain (SC)

Original



2028 Contribution to Light Extinction on 20% Most Impaired Days - Great Smoky Mountains NP (TN/NC)

Original



2028 Contribution to Light Extinction on 20% Most Impaired Days - Joyce-Kilmer-Slickrock (TN/NC)

Wilderness

Original

Contribution to Light Extinction (Mm-1)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

EGU Sulfate

Non-EGU Sulfate

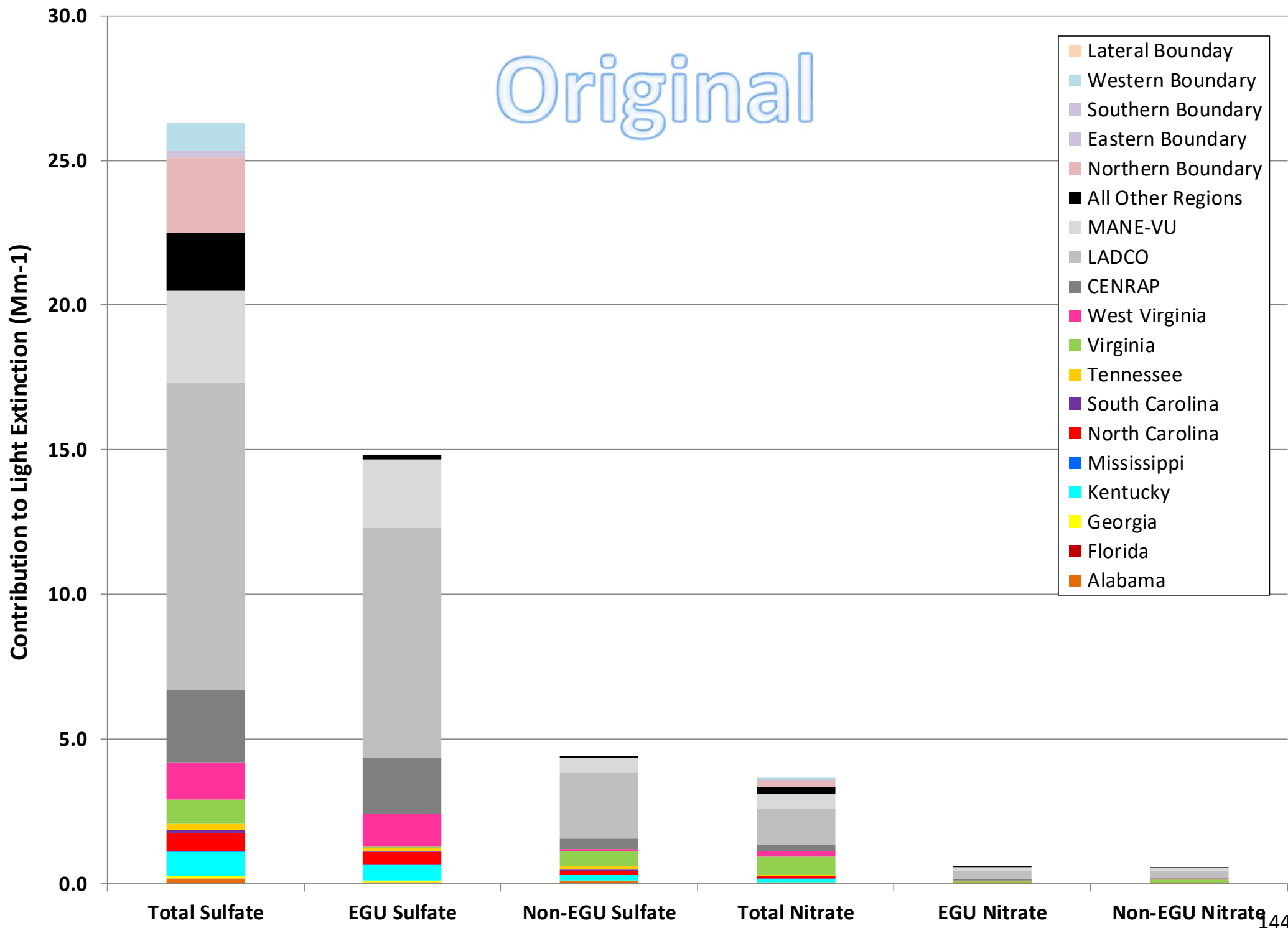
Total Nitrate

EGU Nitrate

Non-EGU Nitrate

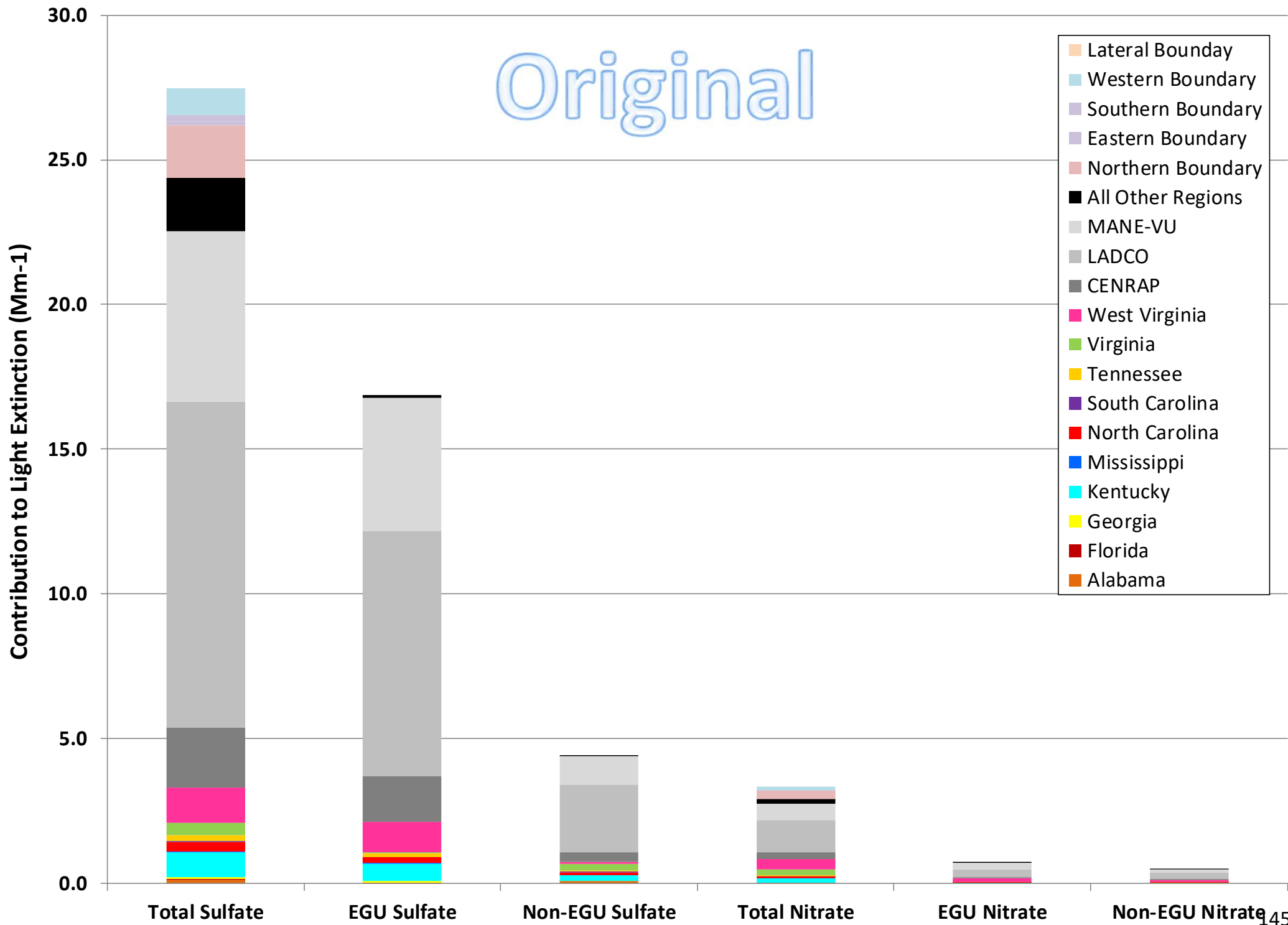
2028 Contribution to Light Extinction on 20% Most Impaired Days - James River Face Wilderness (VA)

Original



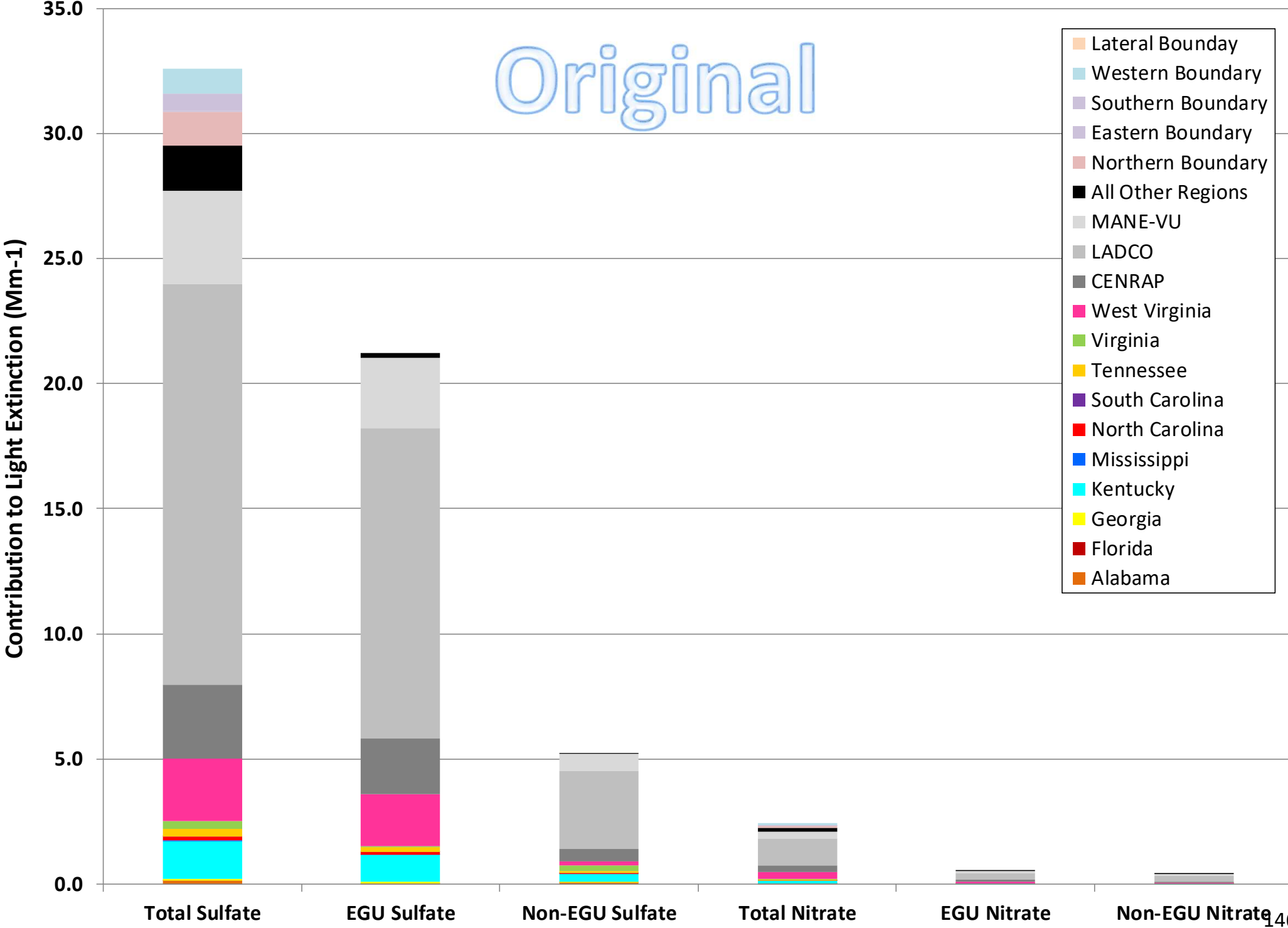
2028 Contribution to Light Extinction on 20% Most Impaired Days - Shenandoah NP (VA)

Original



2028 Contribution to Light Extinction on 20% Most Impaired Days - Dolly Sods Wilderness (WV)

Original

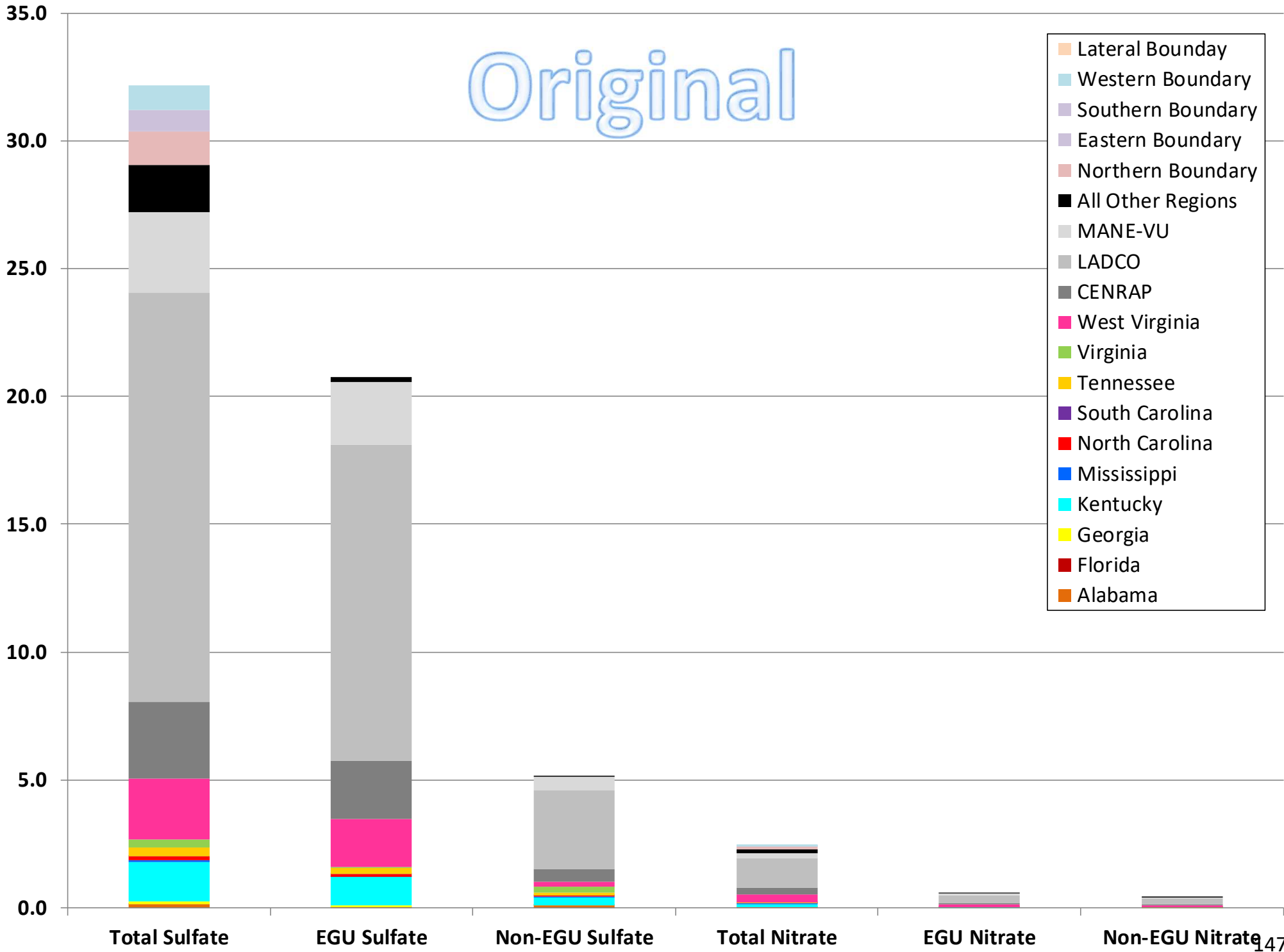


2028 Contribution to Light Extinction on 20% Most Impaired Days - Otter Creek Wilderness (WV)

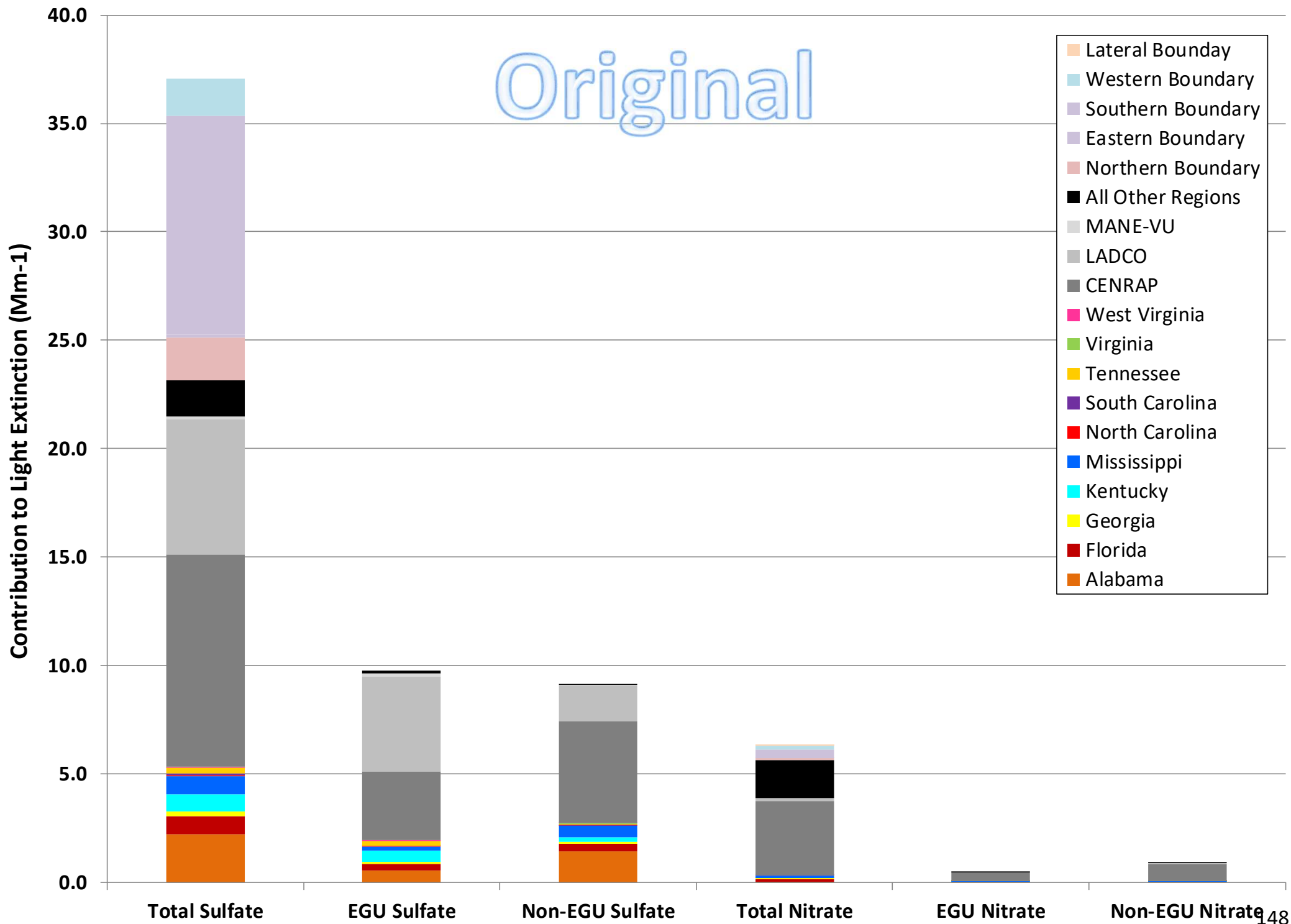
Original

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Contribution to Light Extinction (Mm-1)



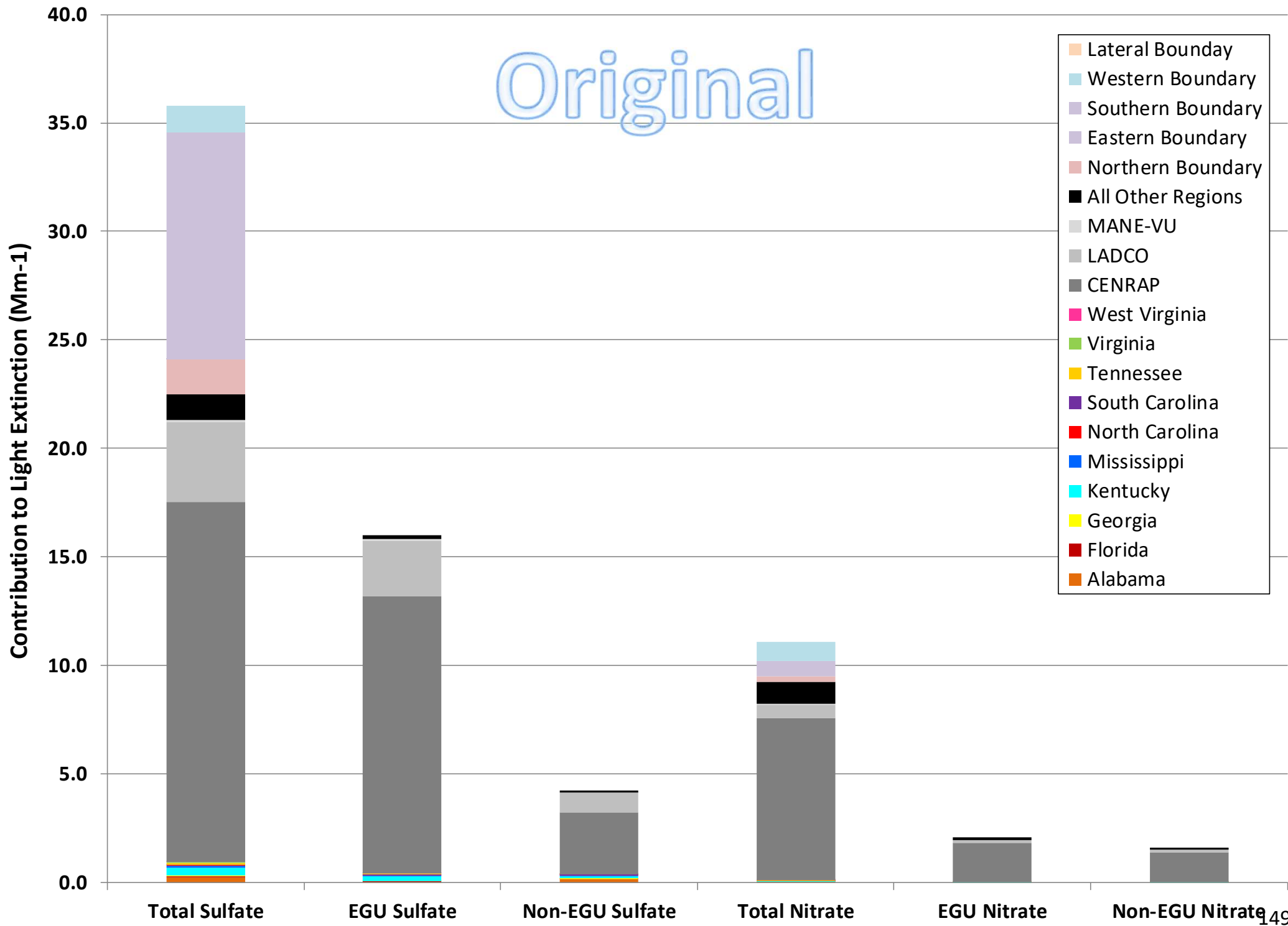
2028 Contribution to Light Extinction on 20% Most Impaired Days - Breton (LA)



2028 Contribution to Light Extinction on 20% Most Impaired Days - Caney Creek Wilderness (AR)

Original

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama



2028 Contribution to Light Extinction on 20% Most Impaired Days - Upper Buffalo Wilderness (AR)

Original

Contribution to Light Extinction (Mm-1)

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Total Sulfate

EGU Sulfate

Non-EGU Sulfate

Total Nitrate

EGU Nitrate

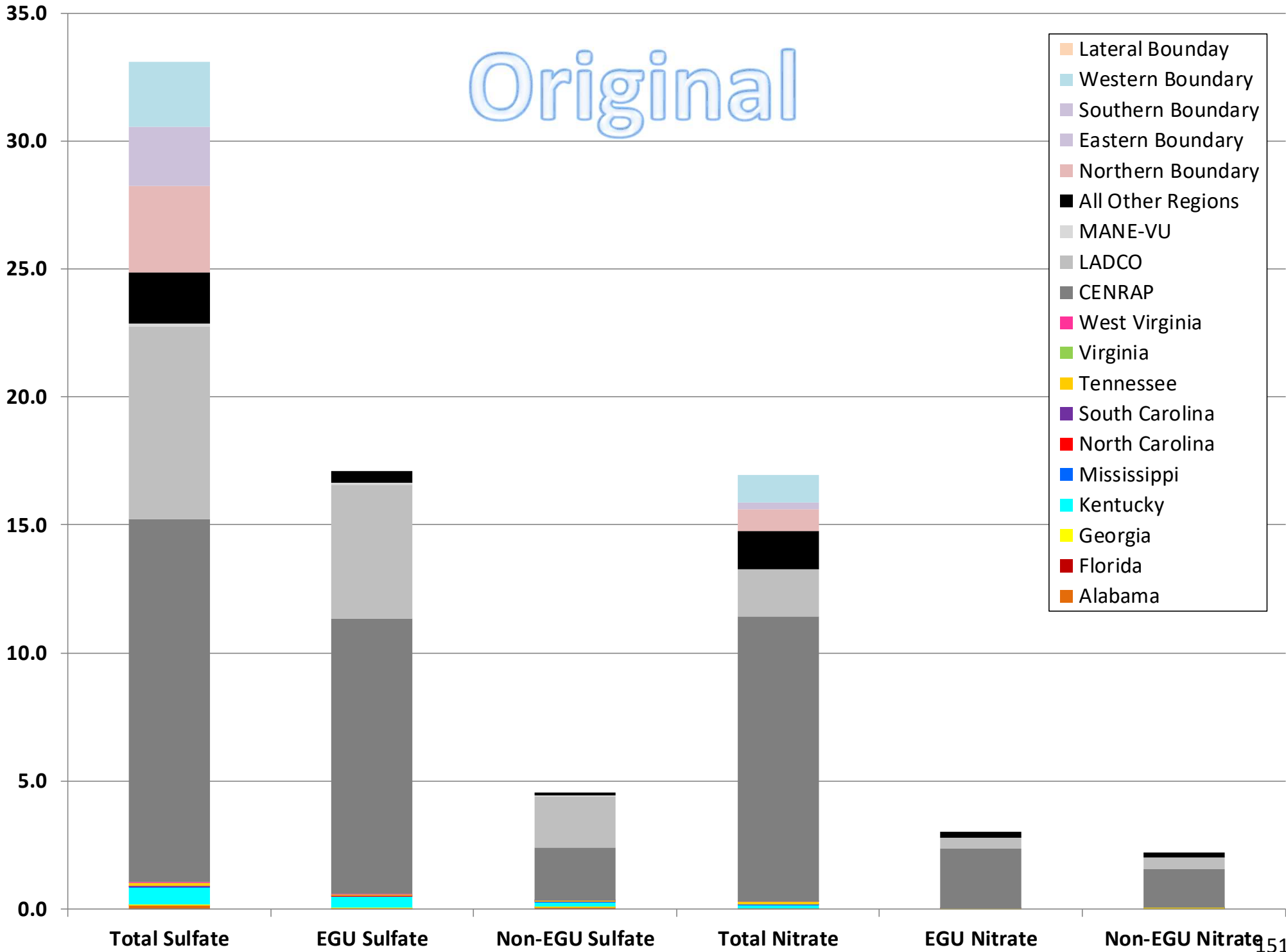
Non-EGU Nitrate

2028 Contribution to Light Extinction on 20% Most Impaired Days - Hercules-Glades Wilderness (MO)

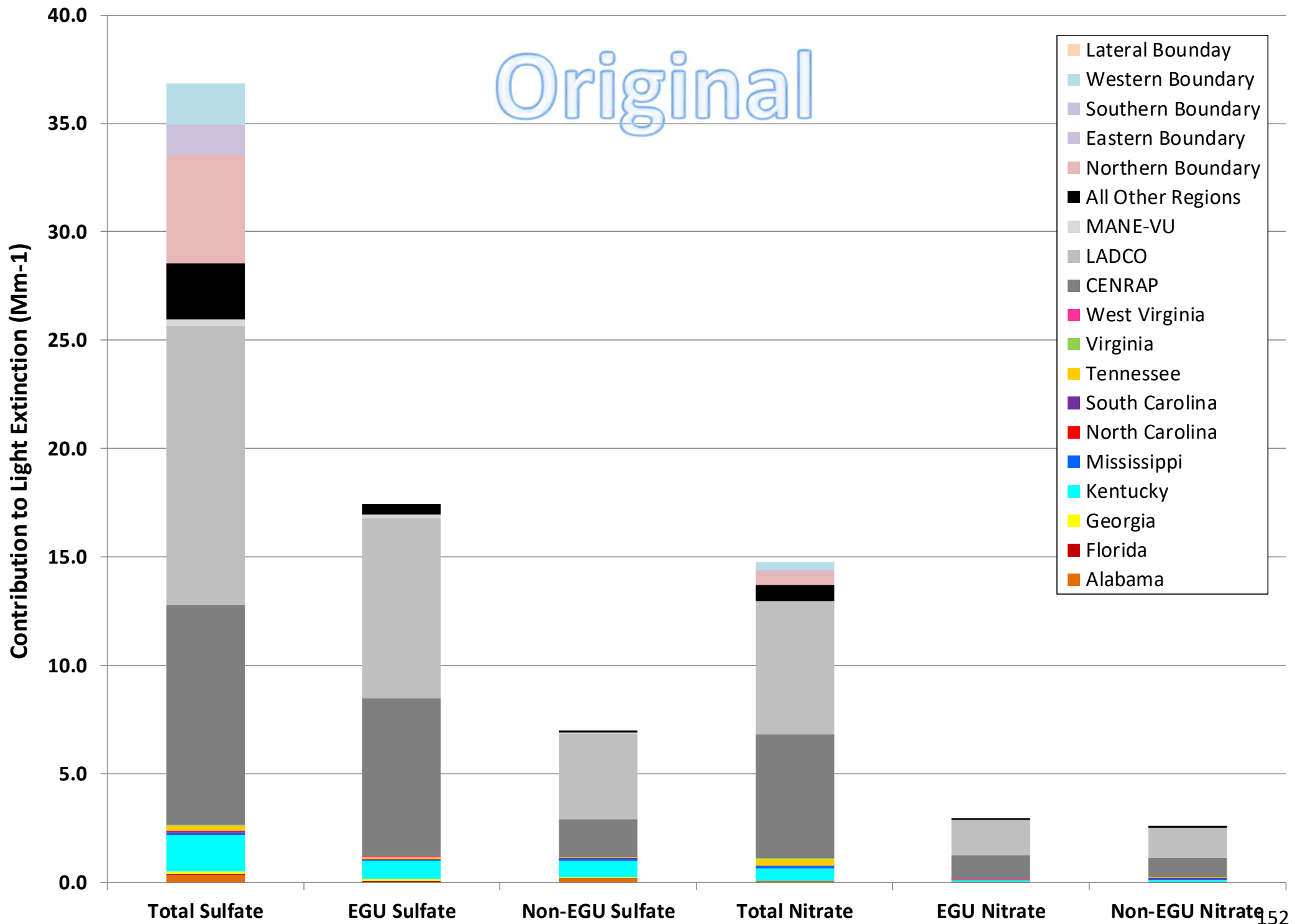
Original

- Lateral Boundary
- Western Boundary
- Southern Boundary
- Eastern Boundary
- Northern Boundary
- All Other Regions
- MANE-VU
- LADCO
- CENRAP
- West Virginia
- Virginia
- Tennessee
- South Carolina
- North Carolina
- Mississippi
- Kentucky
- Georgia
- Florida
- Alabama

Contribution to Light Extinction (Mm-1)

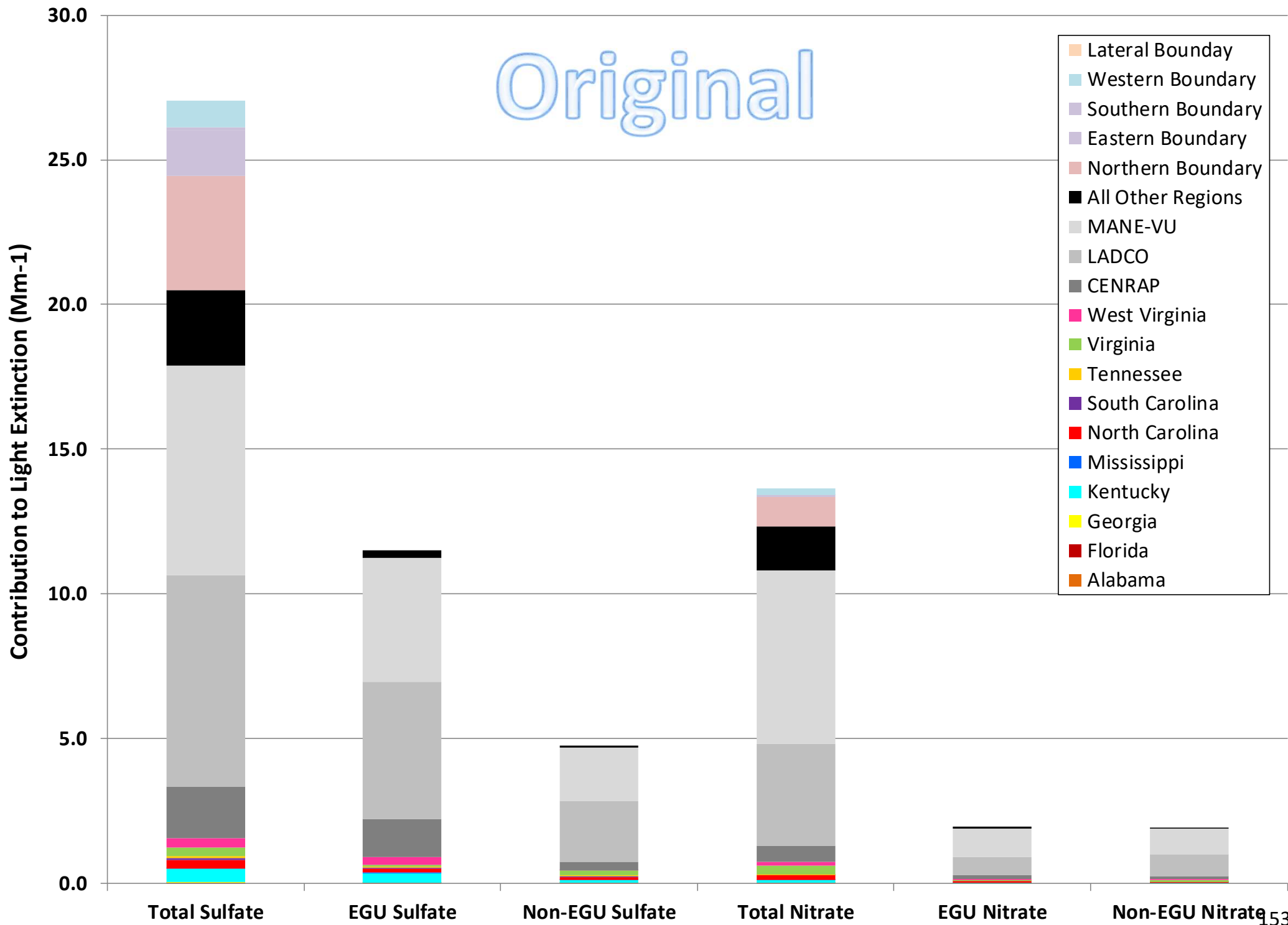


2028 Contribution to Light Extinction on 20% Most Impaired Days - Mingo (MO)

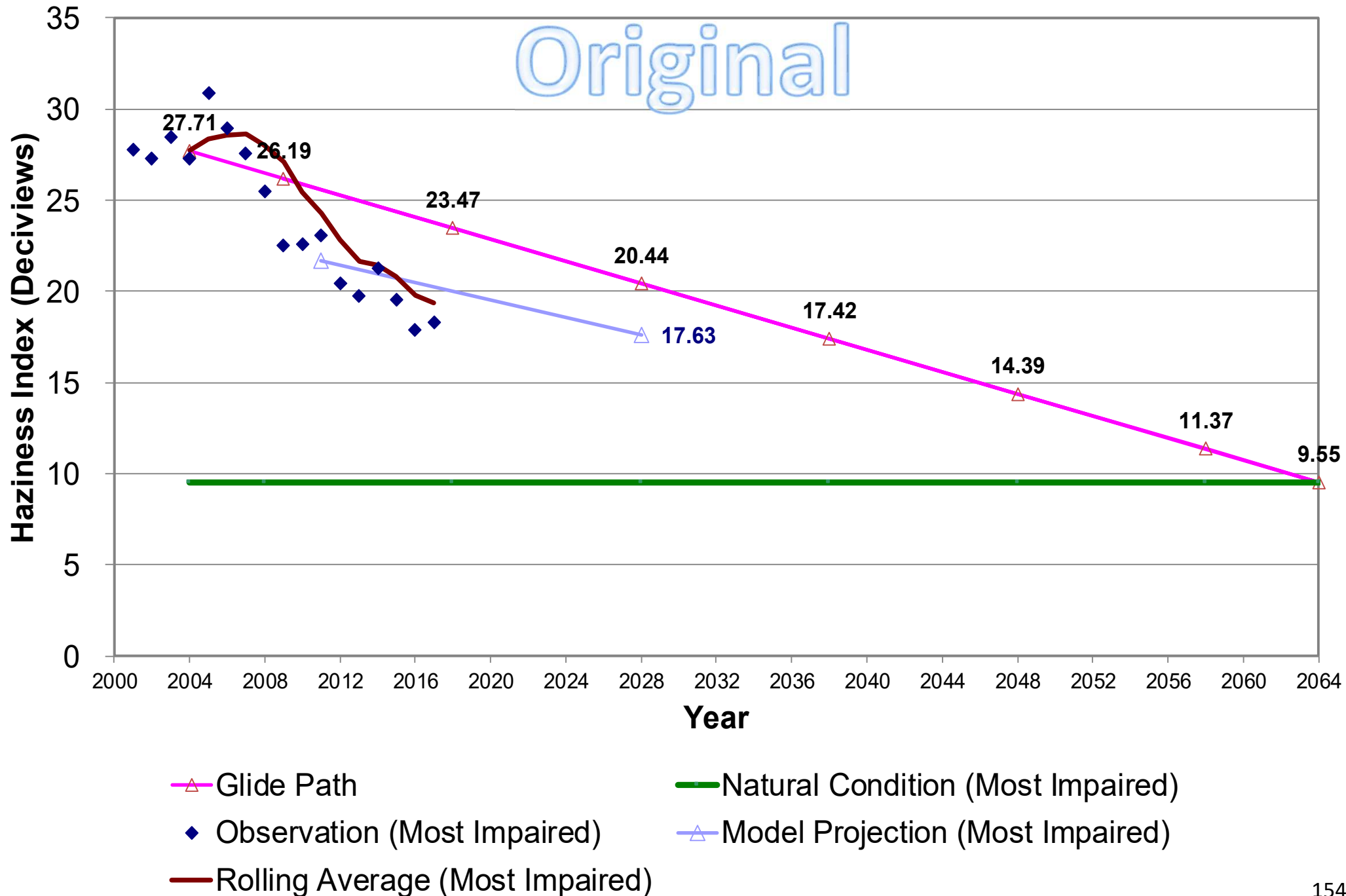


2028 Contribution to Light Extinction on 20% Most Impaired Days - Brigantine (NJ)

Original

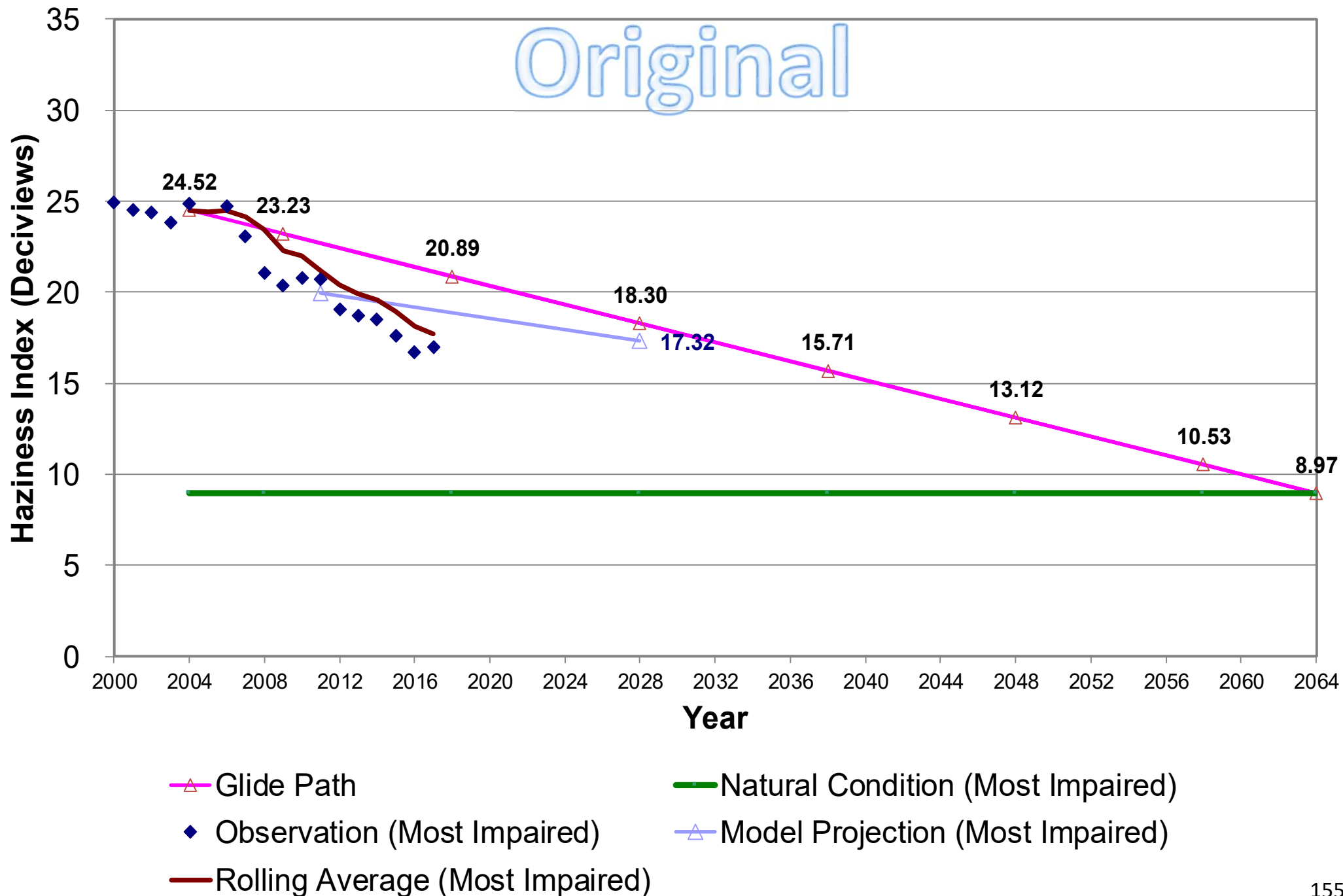


Uniform Rate of Progress Glide Path Sipsey - 20% Most Impaired Data Days

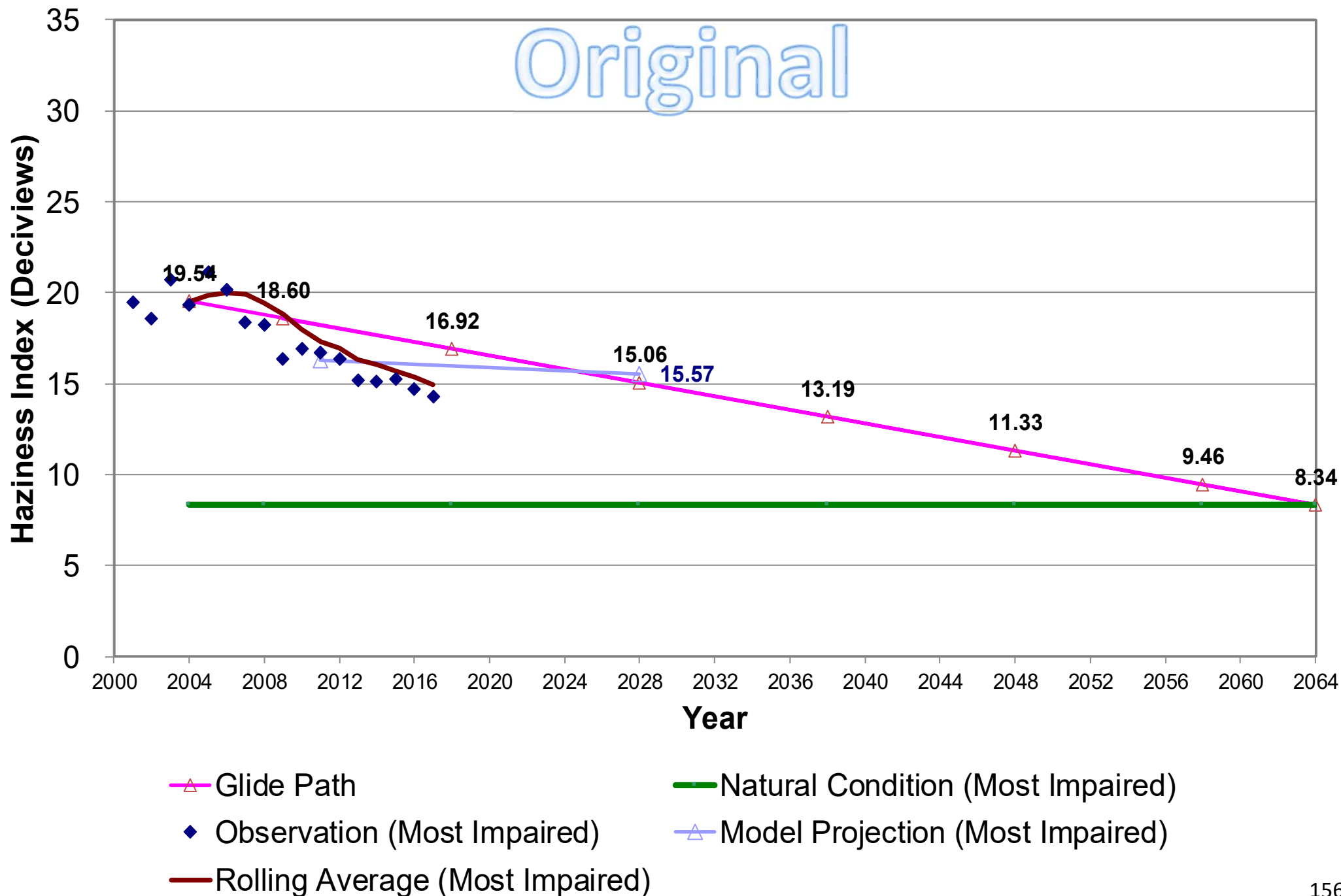


Uniform Rate of Progress Glide Path

Chassahowitzka - 20% Most Impaired Data Days

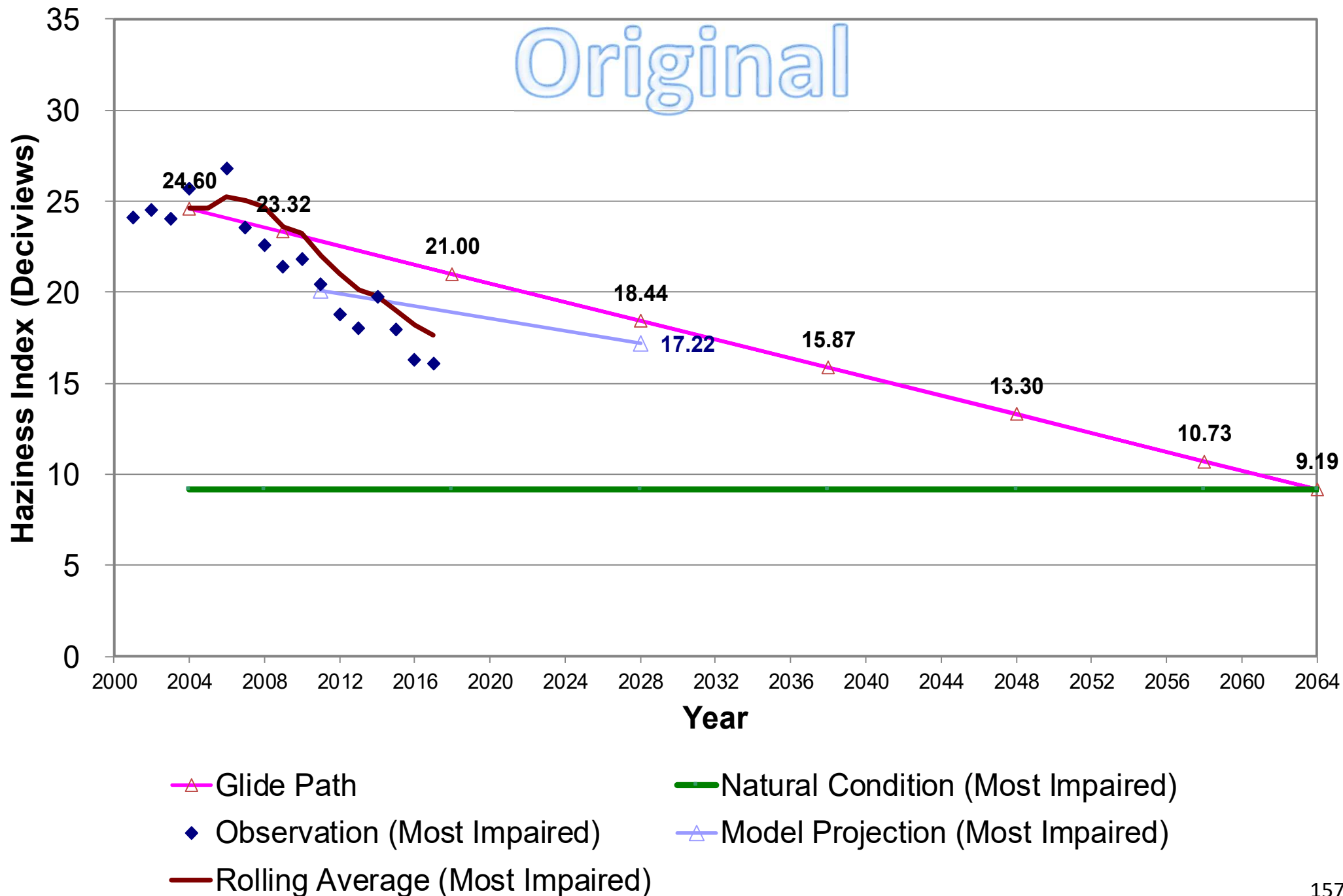


Uniform Rate of Progress Glide Path Everglades - 20% Most Impaired Data Days

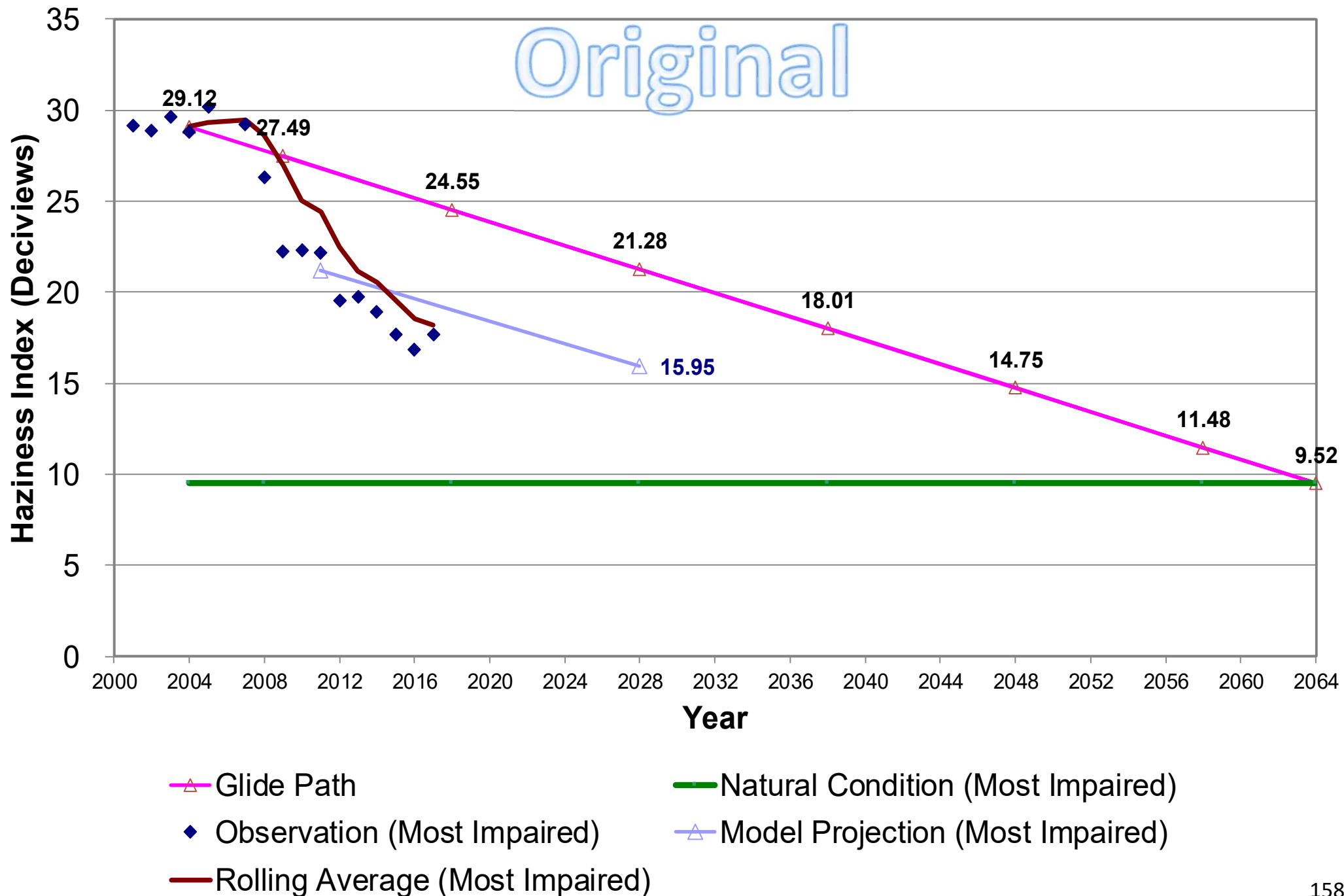


Uniform Rate of Progress Glide Path

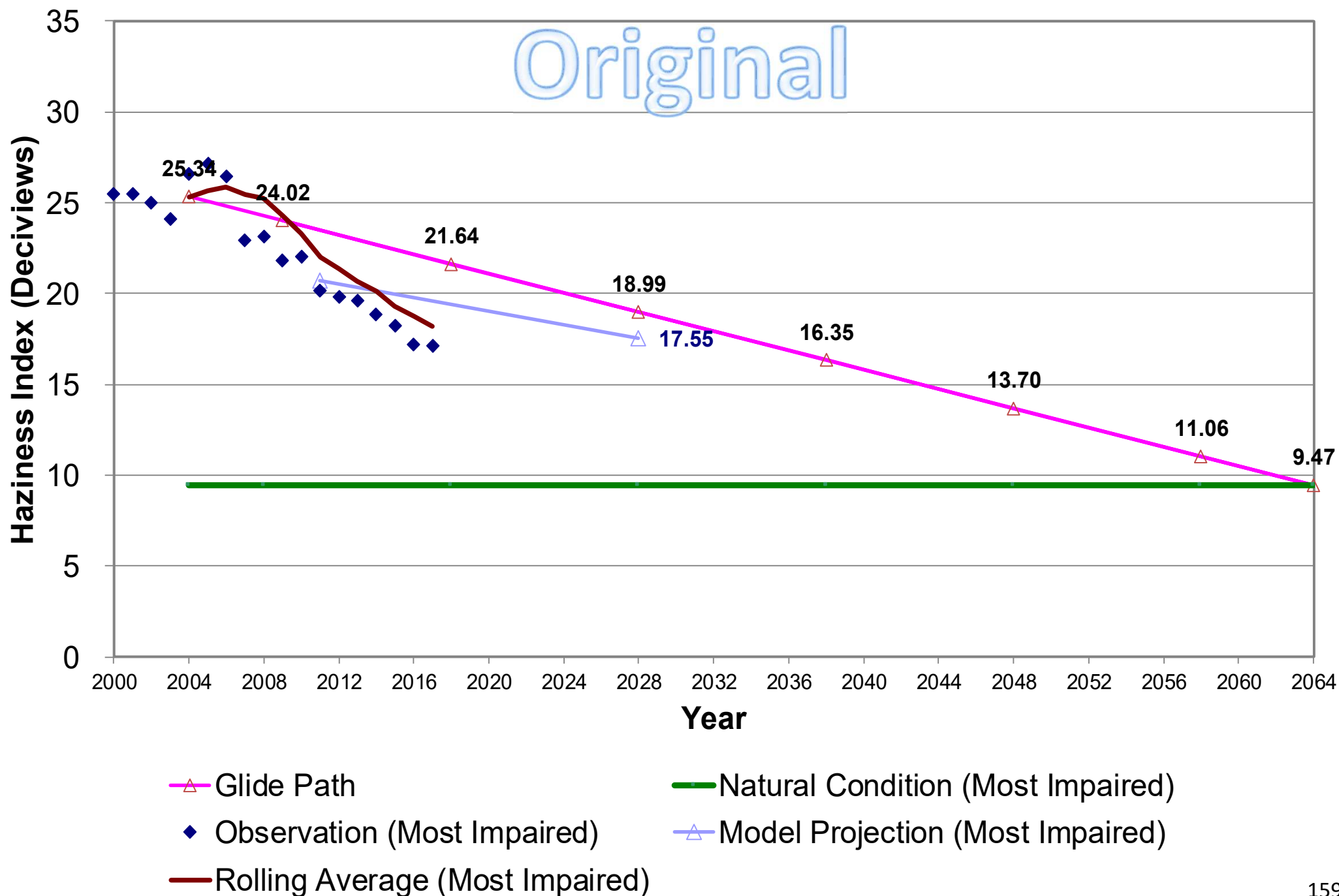
Saint Marks - 20% Most Impaired Data Days



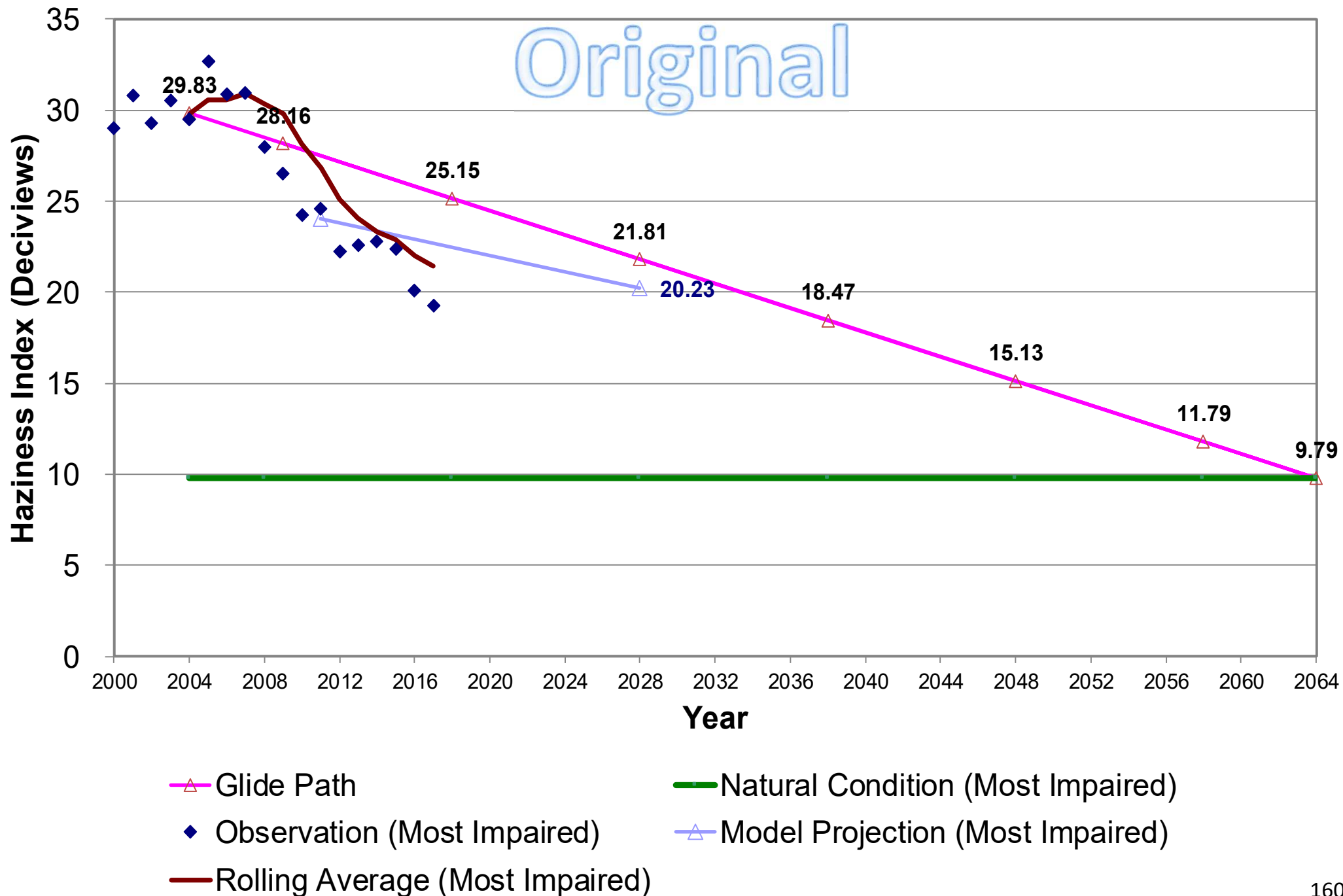
Uniform Rate of Progress Glide Path Cohutta - 20% Most Impaired Data Days



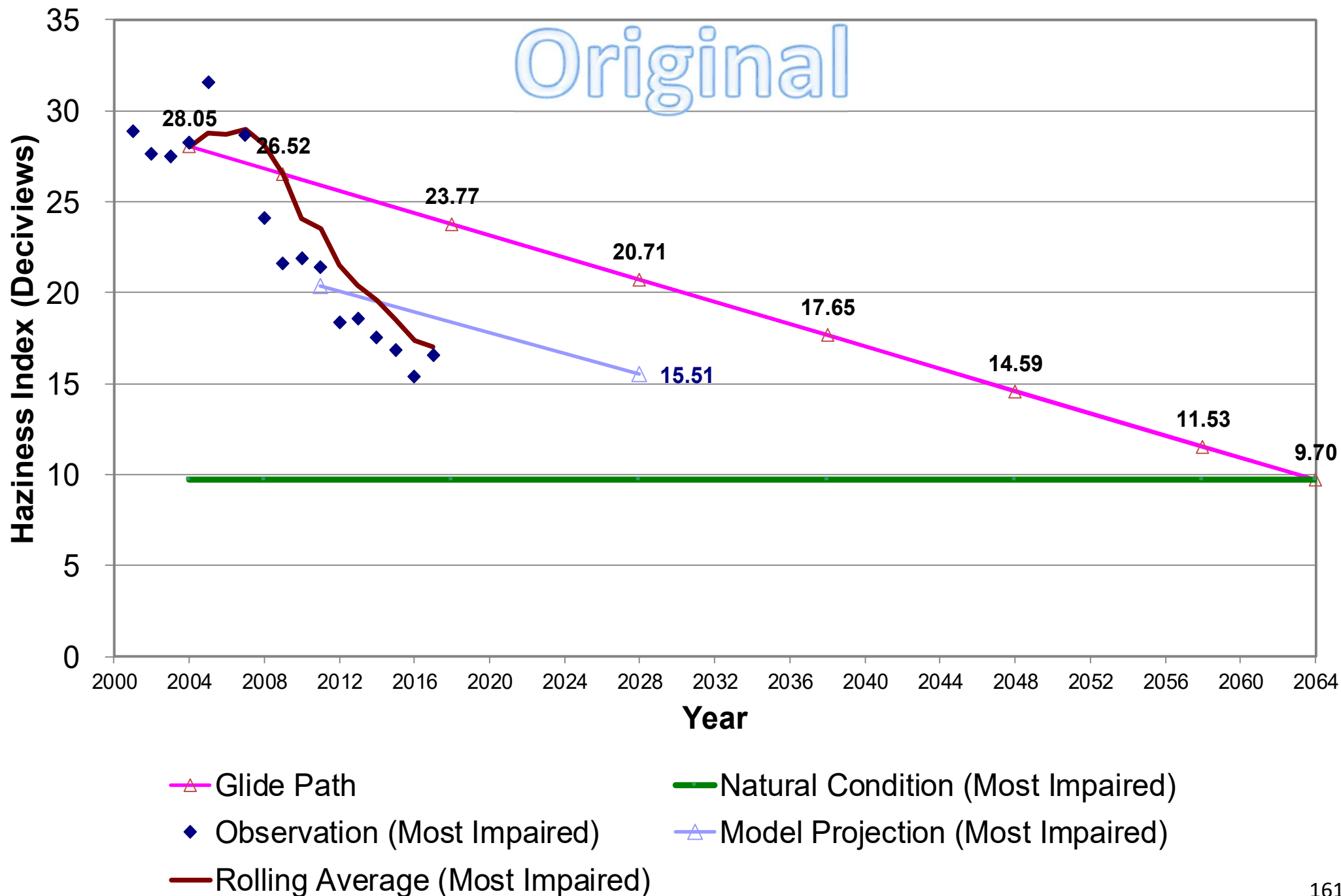
Uniform Rate of Progress Glide Path Okefenokee - 20% Most Impaired Data Days



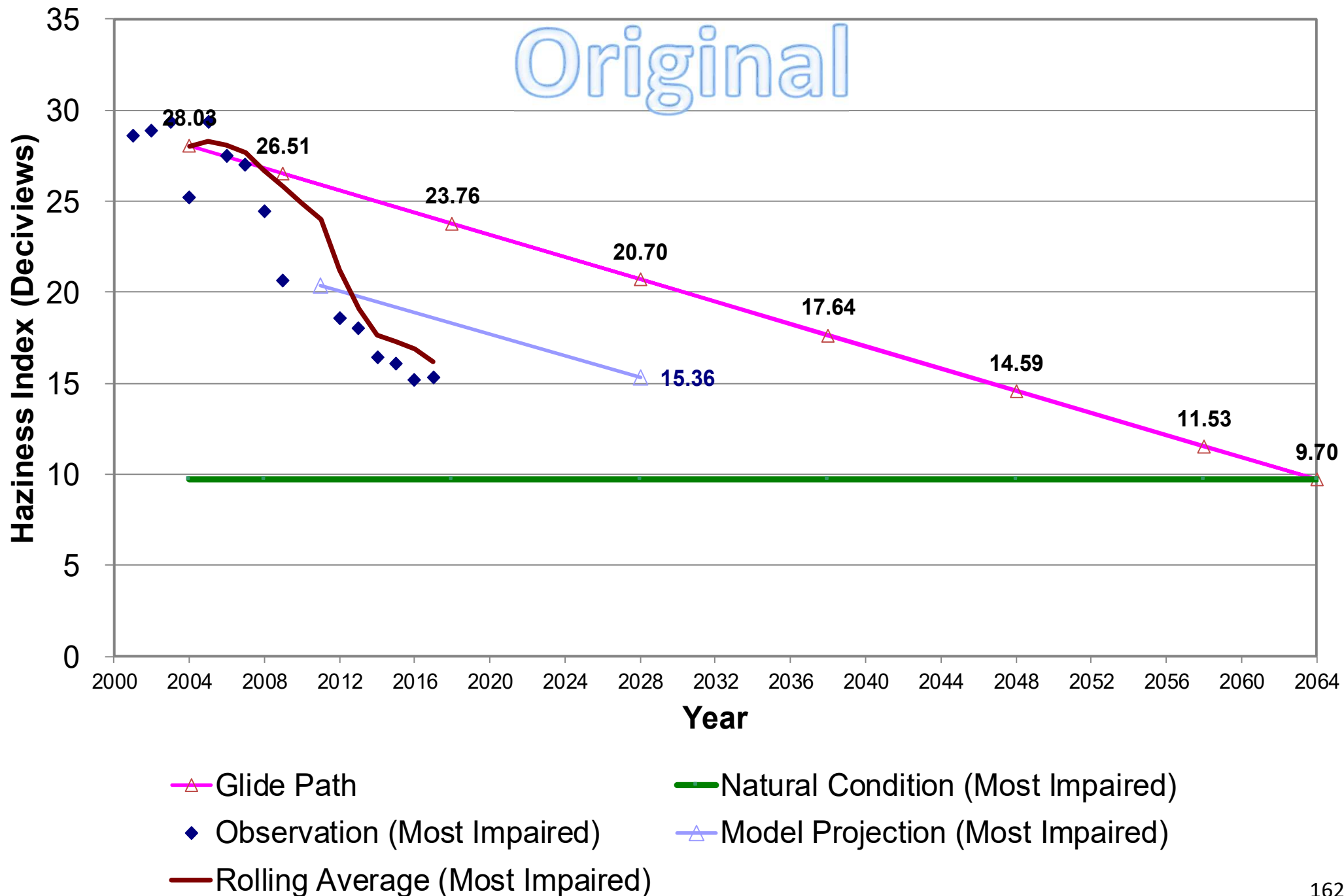
Uniform Rate of Progress Glide Path Mammoth Cave - 20% Most Impaired Data Days



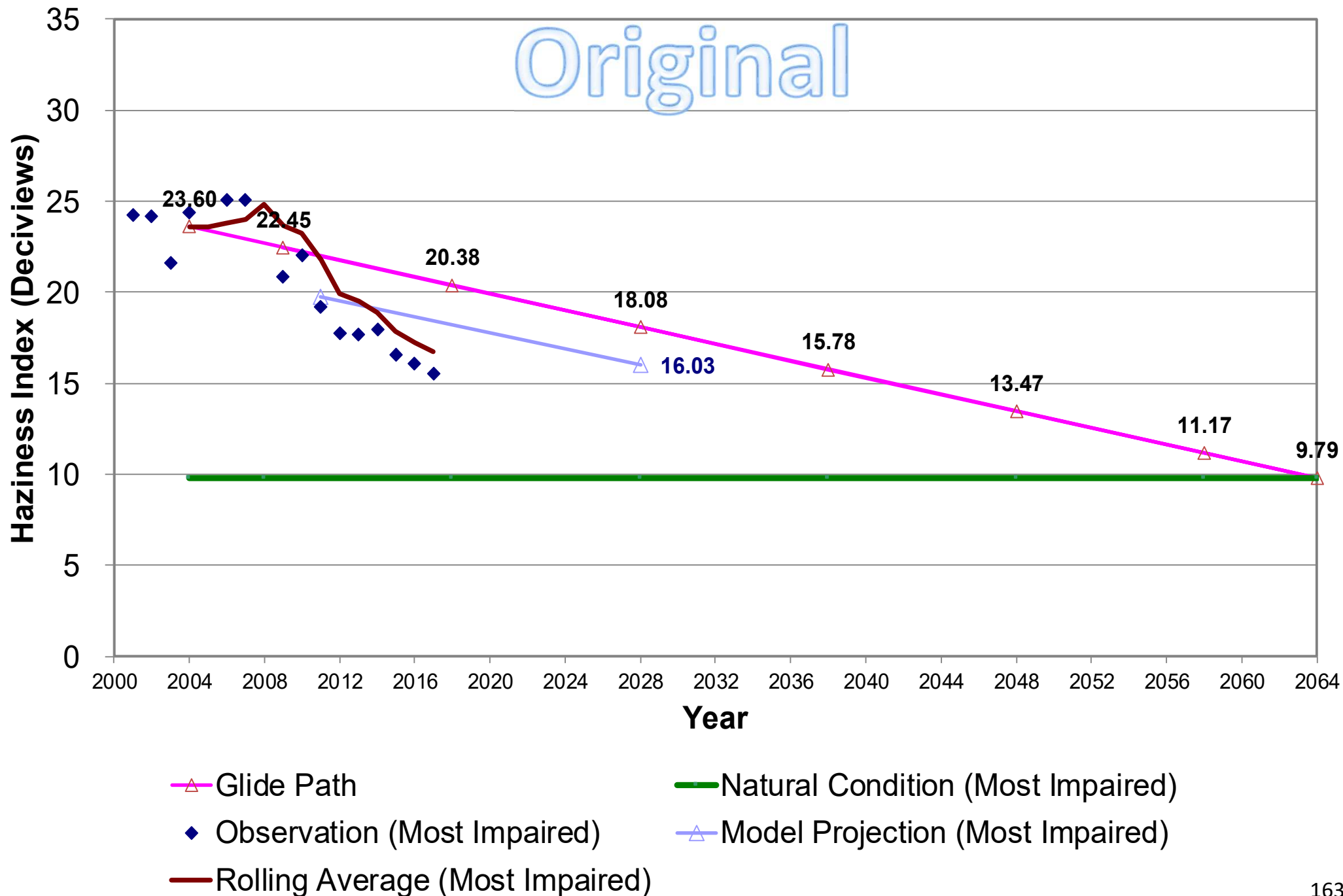
Uniform Rate of Progress Glide Path Linville Gorge - 20% Most Impaired Data Days



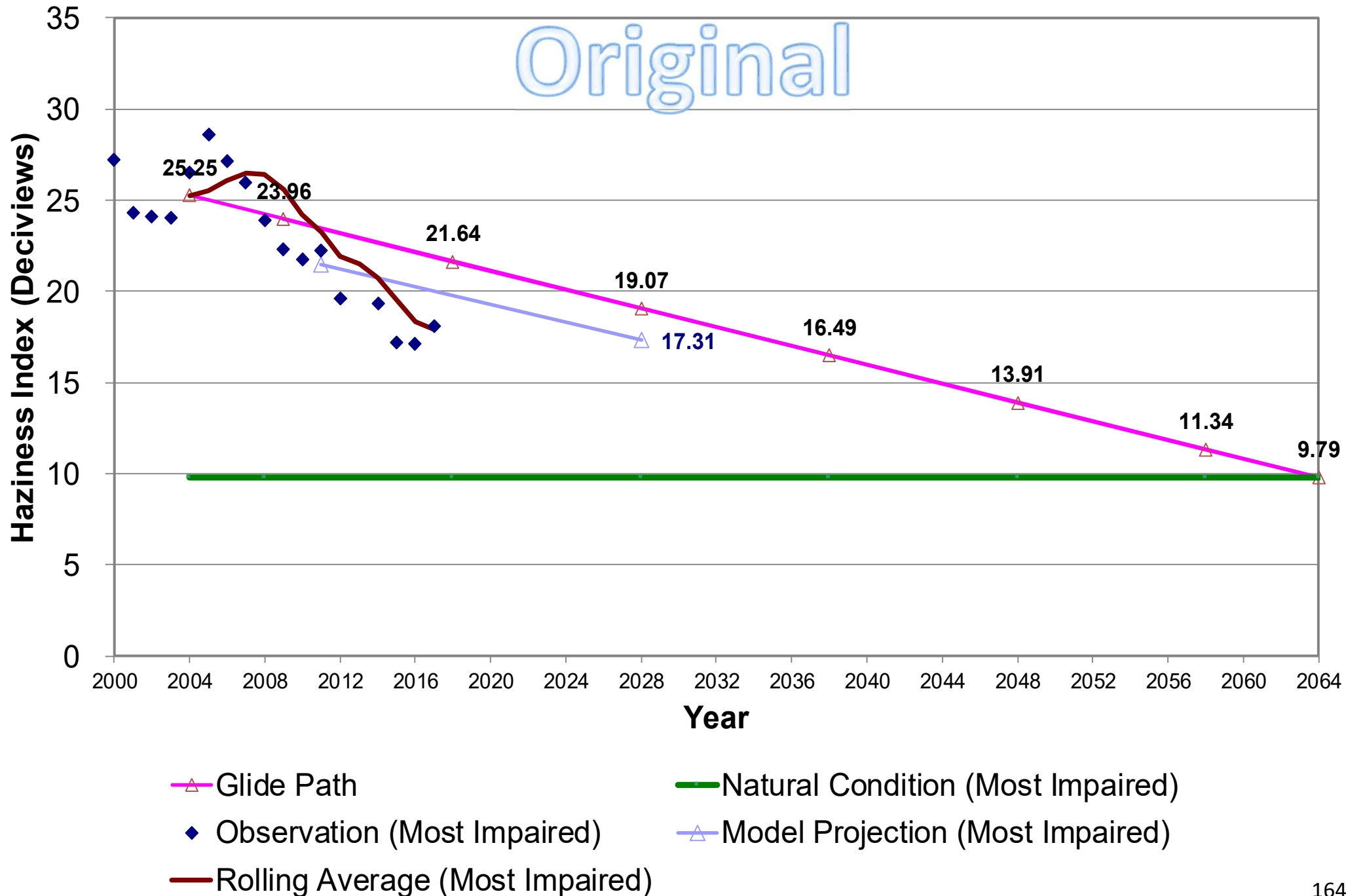
Uniform Rate of Progress Glide Path Shining Rock - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Swanquarter - 20% Most Impaired Data Days

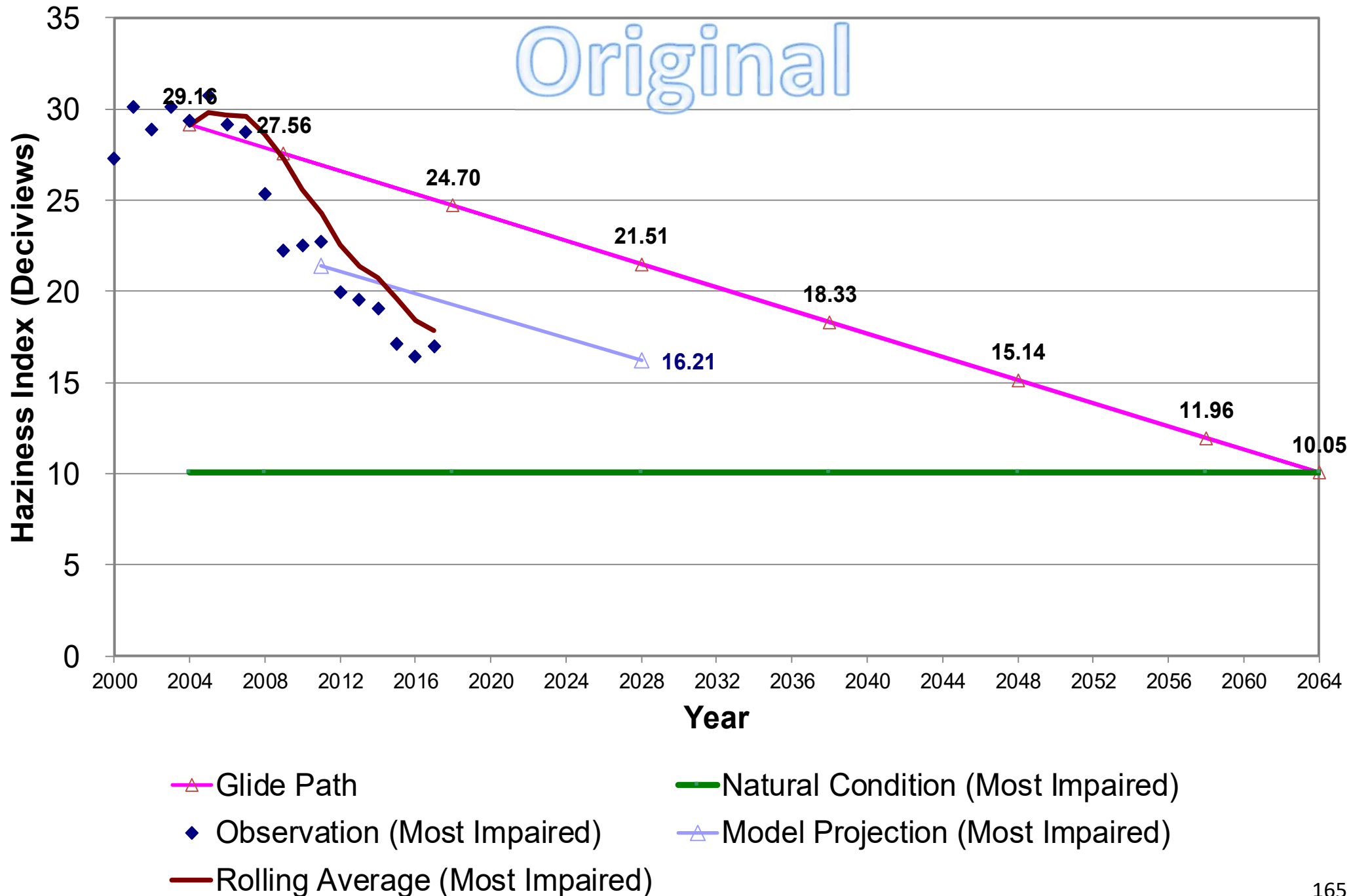


Uniform Rate of Progress Glide Path Cape Romain - 20% Most Impaired Data Days



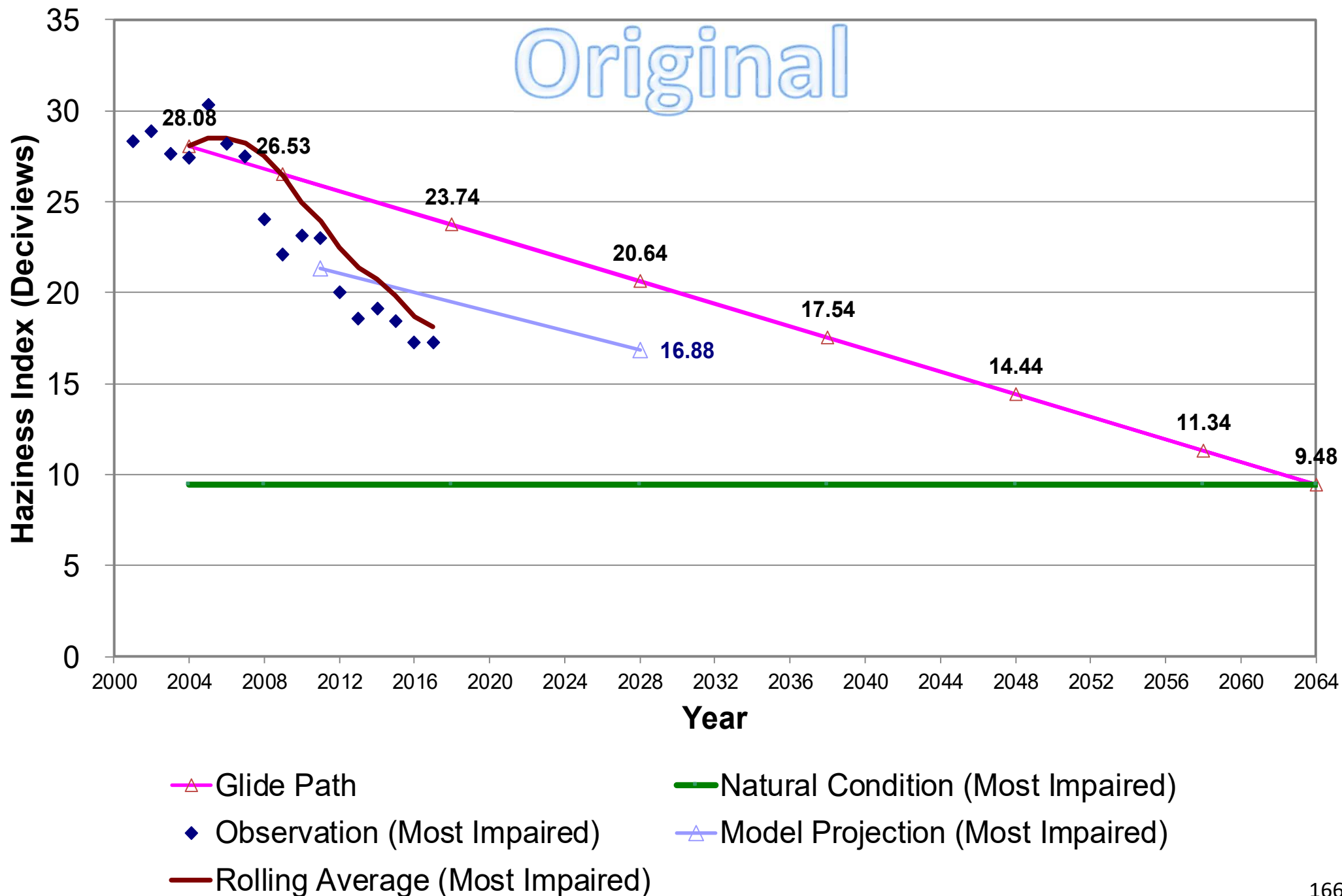
Uniform Rate of Progress Glide Path

Great Smoky Mountains - 20% Most Impaired Data Days

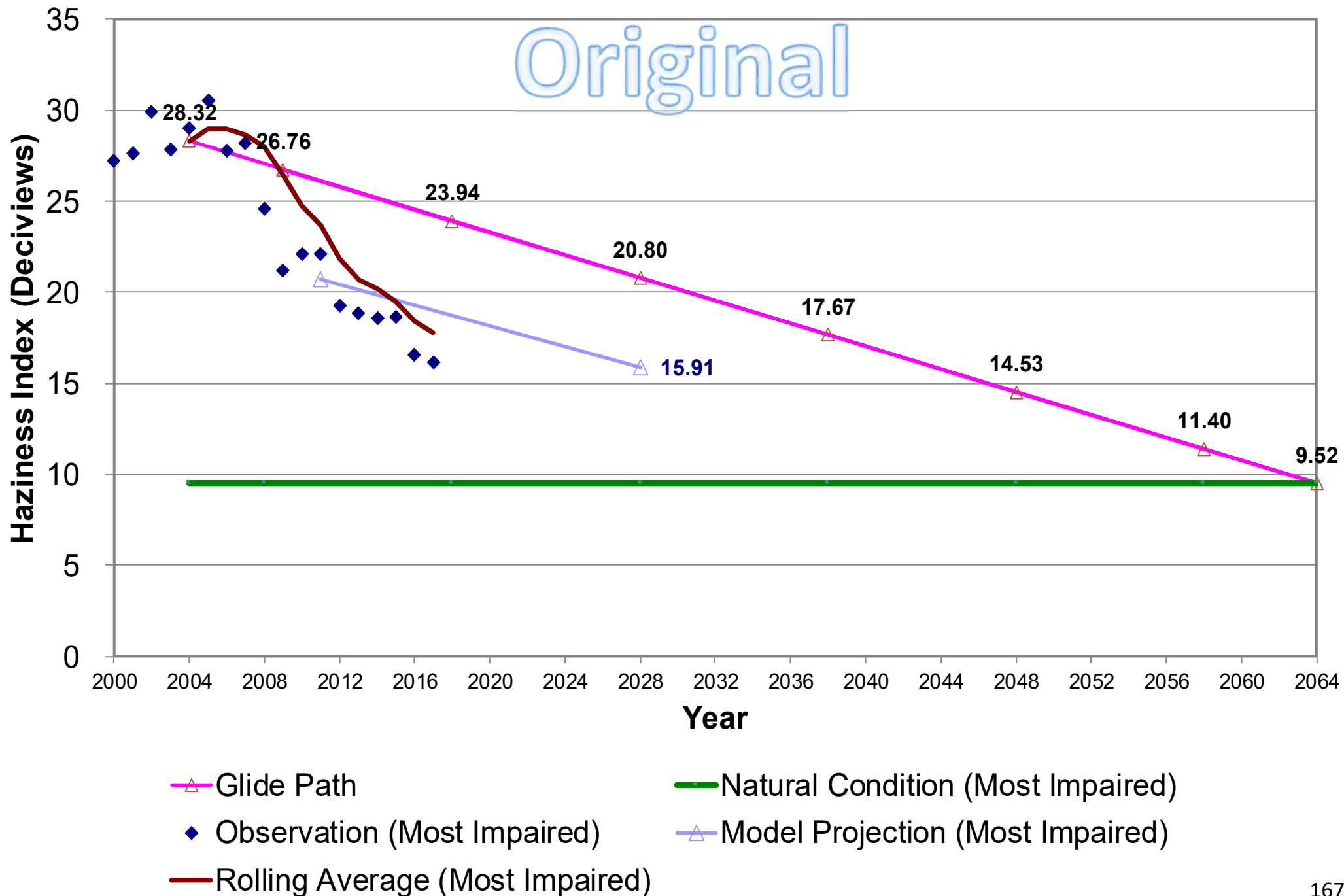


Uniform Rate of Progress Glide Path

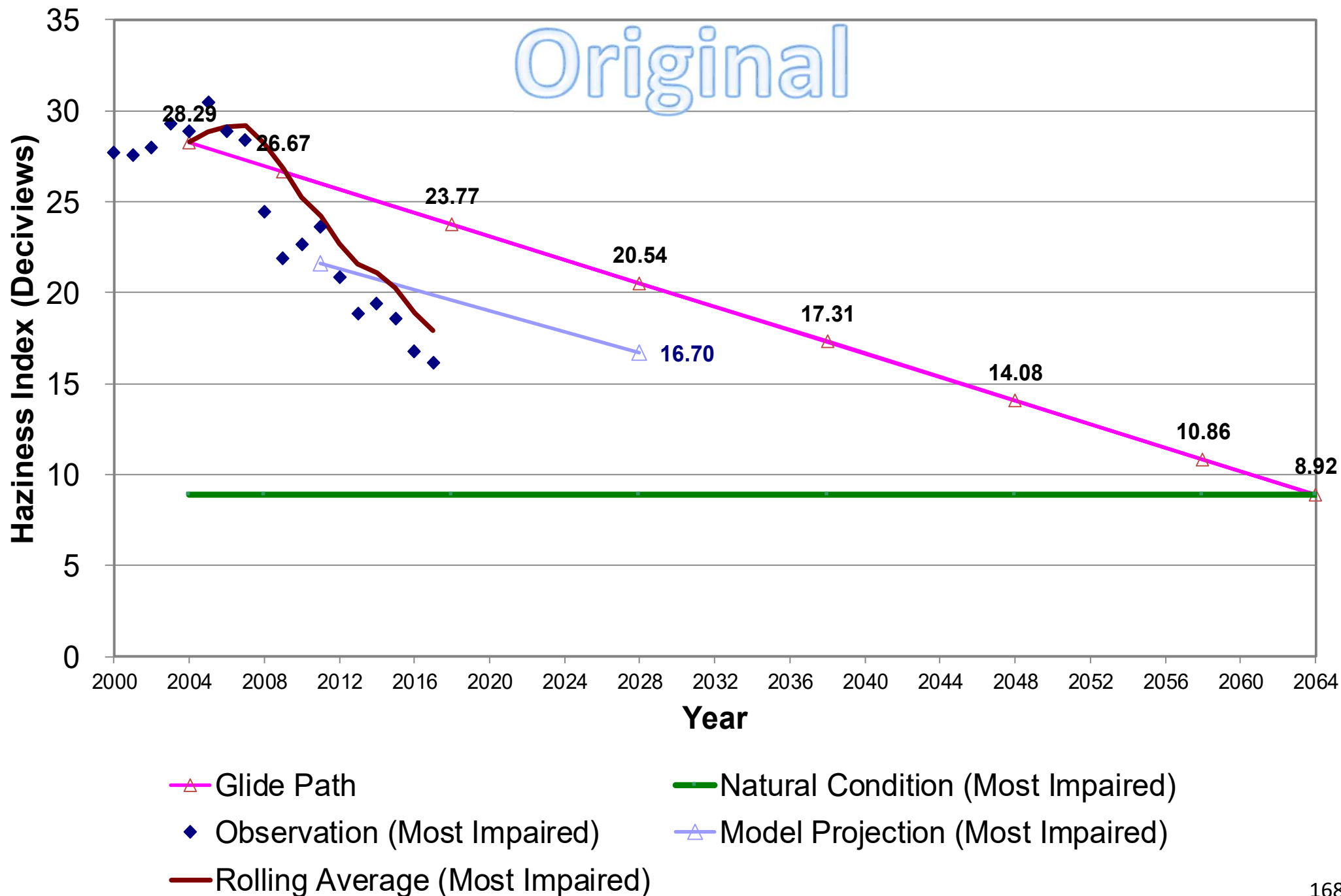
James River Face - 20% Most Impaired Data Days



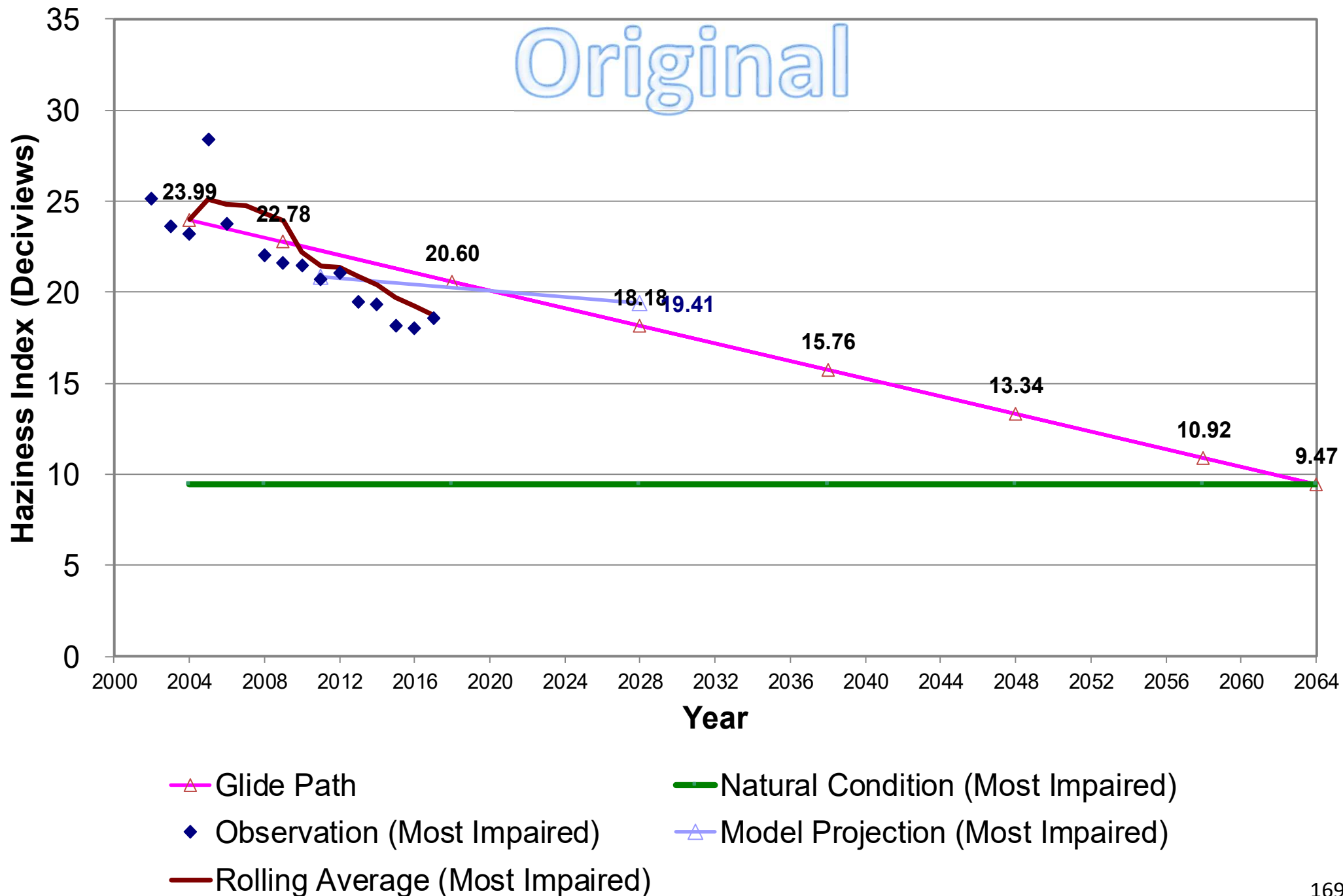
Uniform Rate of Progress Glide Path Shenandoah - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Dolly Sods - 20% Most Impaired Data Days

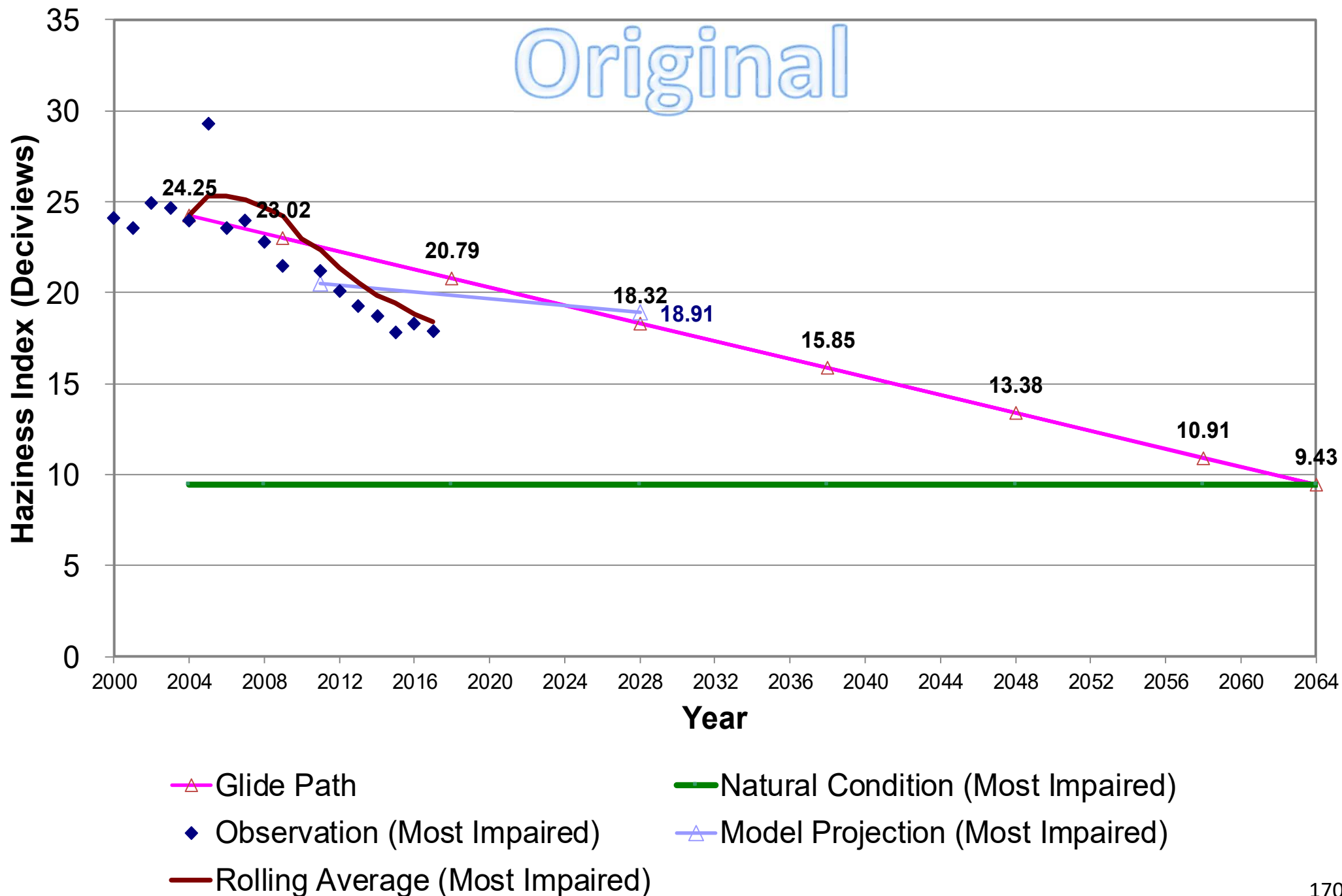


Uniform Rate of Progress Glide Path Caney Creek - 20% Most Impaired Data Days



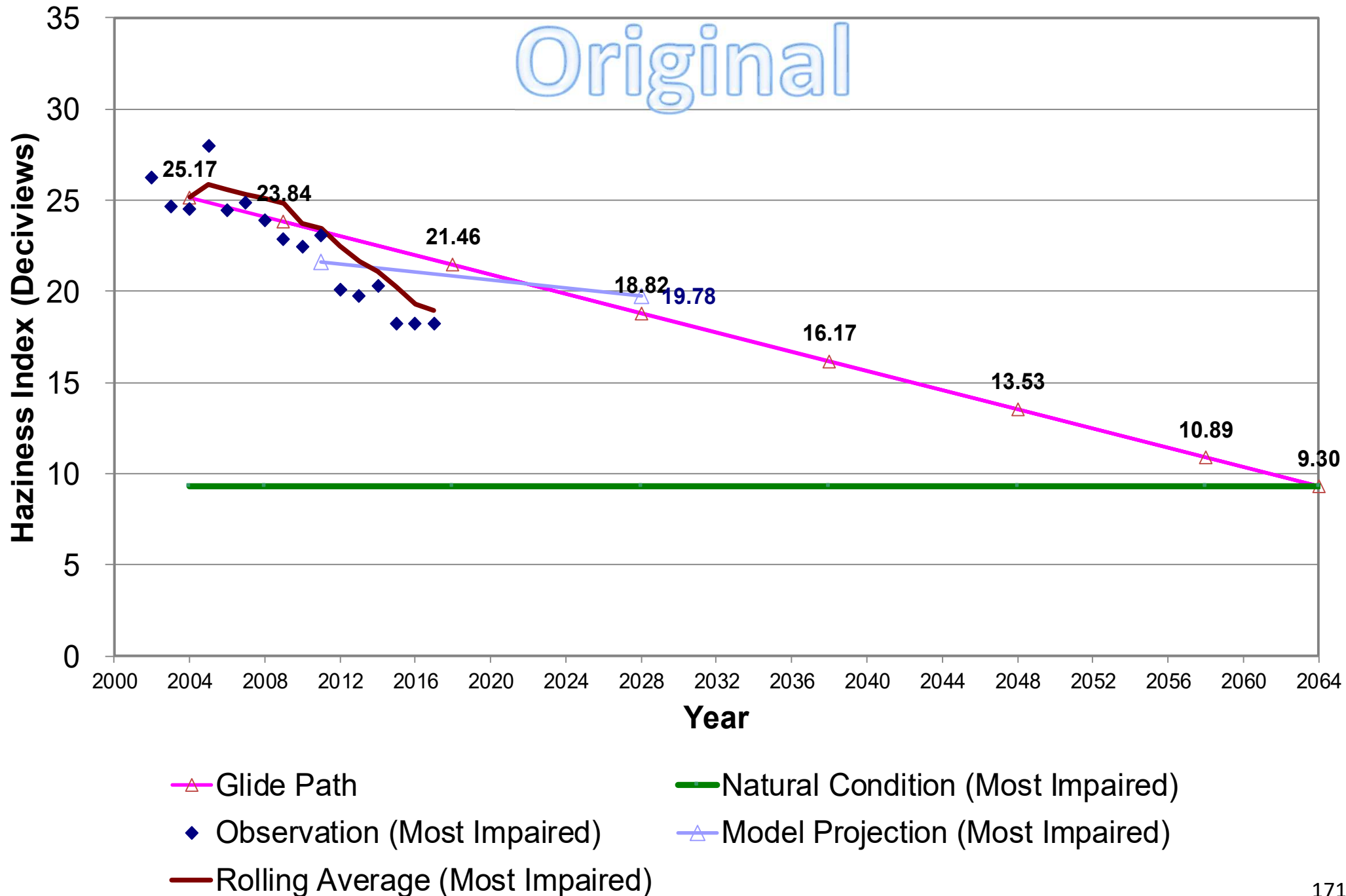
Uniform Rate of Progress Glide Path

Upper Buffalo - 20% Most Impaired Data Days

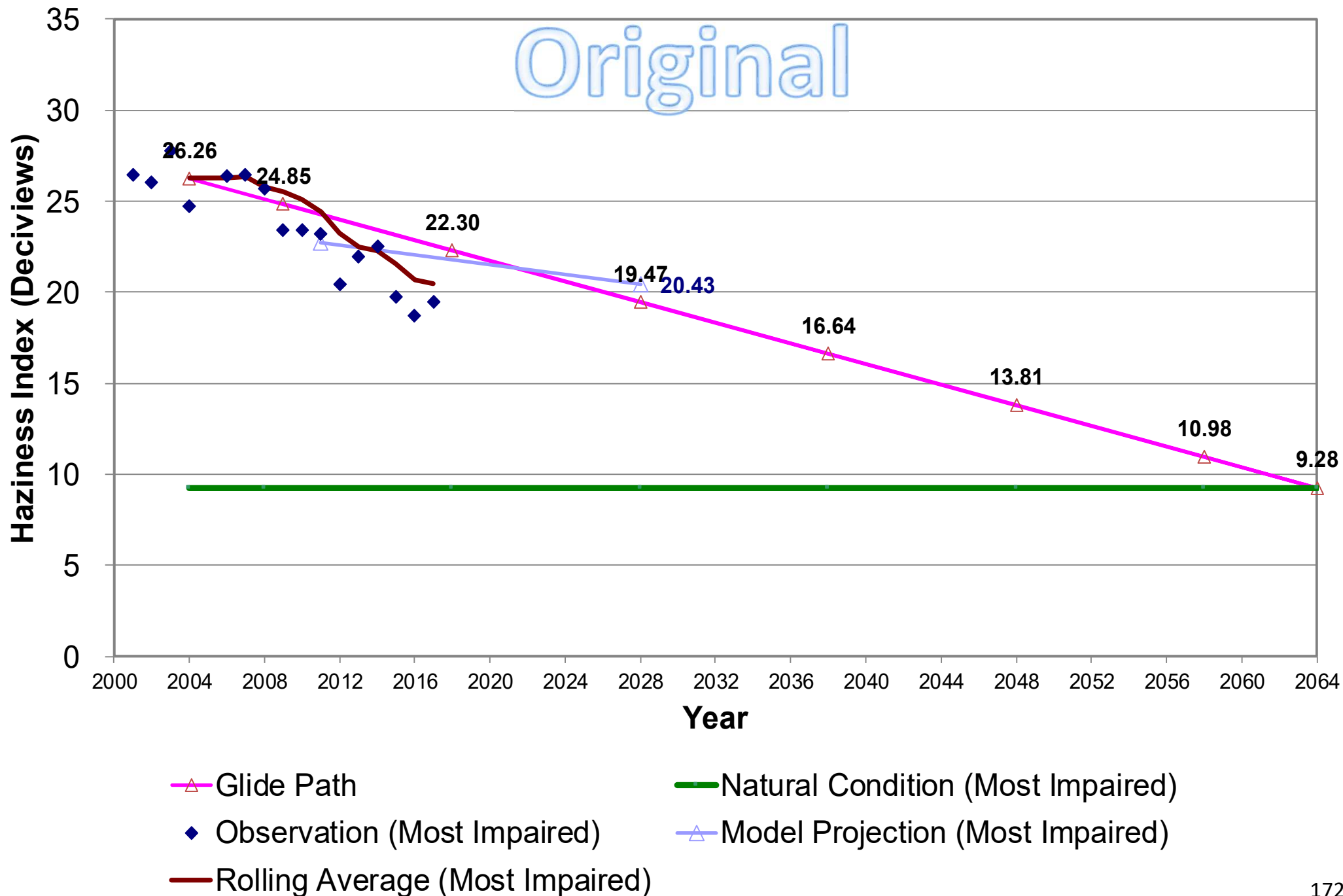


Uniform Rate of Progress Glide Path

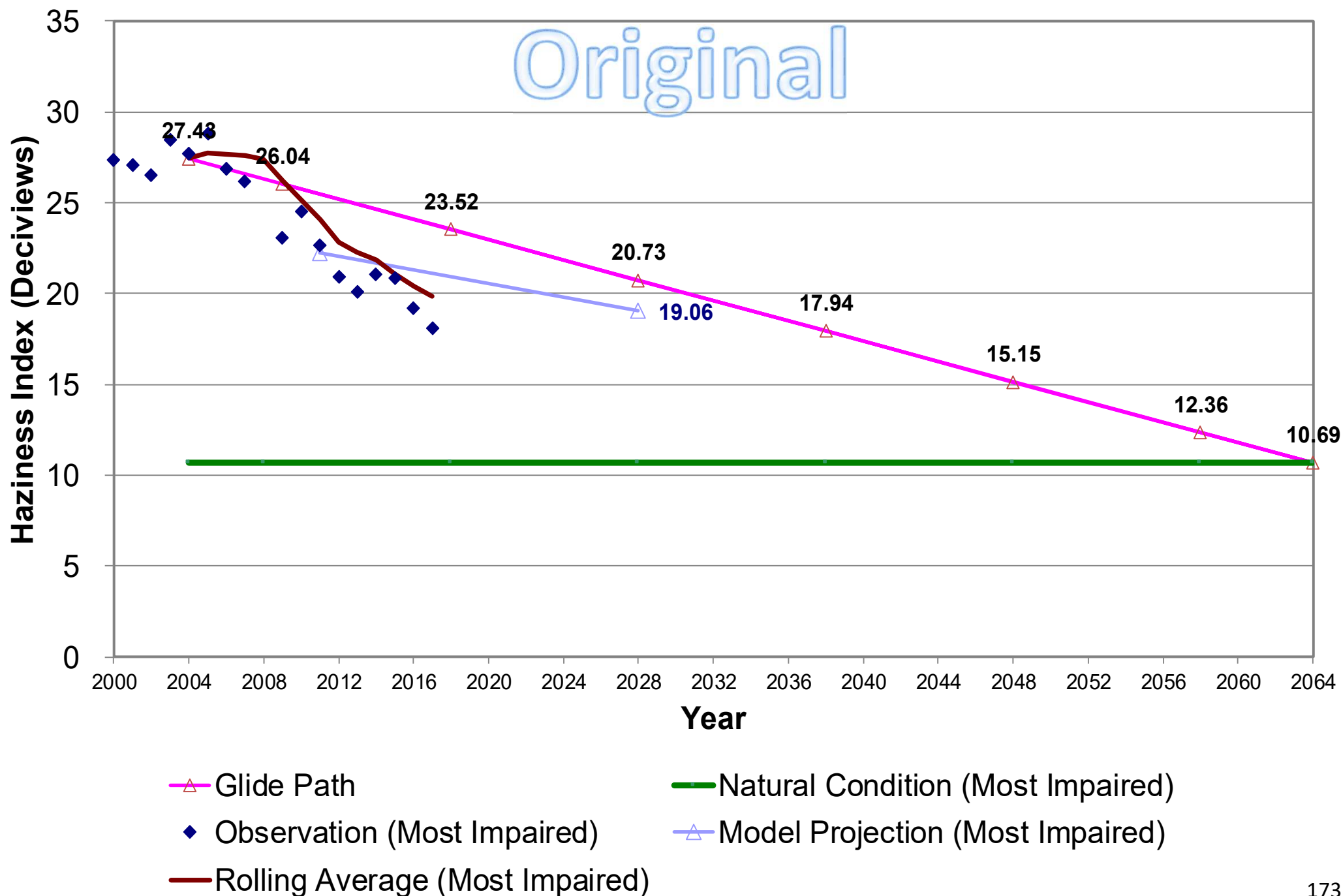
Hercules - Glade - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Mingo - 20% Most Impaired Data Days



Uniform Rate of Progress Glide Path Brigantine - 20% Most Impaired Data Days



Sipsey Wilderness Area (AL)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate PSAT % Original	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate PSAT % Original	FINAL Revised Nitrate PSAT %
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	337.7	3.31%	1.61%	2.22%	0.57%	0.04%	0.05%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	690.9	0.38%	2.75%	1.99%	0.01%	0.09%	0.13%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	398.4	5.72%	4.09%	1.99%	0.31%	0.23%	0.31%
IN	18051-7363111	Gibson	448.7	2.85%	2.12%	1.65%	0.27%	0.19%	0.18%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	464.4	1.72%	2.19%	1.57%	0.23%	0.23%	0.16%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	228.9	3.18%	1.07%	1.48%	0.48%	0.12%	0.17%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	314.5	3.48%	1.46%	1.34%	0.26%	0.06%	0.07%
KY	21183-5561611	Big Rivers Electric Corp - Wilson Station	345.5	1.99%	0.93%	1.29%	0.07%	0.04%	0.05%
Facilities That Dropped Off After REVISION									
IL	17127-7808911	Joppa Steam	346.5	1.94%	1.51%	0.82%	0.25%	0.03%	0.02%
IN	18173-8183111	ALCOA WARRICK POWER PLT AGC DIV OF AL	396.3	0.91%	1.02%	0.41%	0.62%	0.52%	0.19%

Chassahowitzka Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
FL	12017-640611	DUKE ENERGY FLORIDA, INC. (DEF)	27.4	63.62%	9.55%	6.24%	1.95%	0.40%	0.23%
GA	13015-2813011	Ga Power Company - Plant Bowen	637.2	0.03%	1.72%	2.28%	0.00%	0.02%	0.03%
FL	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	106.8	4.73%	0.96%	1.28%	0.24%	0.05%	0.07%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	1,098.0	0.03%	0.76%	1.01%	0.00%	0.04%	0.05%
AL	01109-985711	Sanders Lead Co	471.2	0.15%	0.76%	1.00%	0.00%	0.01%	0.01%
Facilities That Dropped Off After REVISION									
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	1,133.4	0.05%	1.47%	0.83%	0.00%	0.09%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	1,099.6	0.03%	1.13%	0.53%	0.00%	0.04%	0.06%
AL	01053-7440211	Escambia Operating Company LLC	530.7	0.21%	1.57%	0.41%	0.00%	0.01%	0.01%

Everglades NP (FL)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
FL	12057-538611	TAMPA ELECTRIC COMPANY (TEC)	316.6	3.02%	2.56%	3.30%	0.08%	0.00%	0.00%
FL	12105-919811	MOSAIC FERTILIZER, LLC	304.7	2.21%	2.09%	2.62%	0.01%	0.00%	0.00%
FL	12105-717711	MOSAIC FERTILIZER LLC	303.3	2.26%	3.55%	2.60%	0.02%	0.00%	0.00%
FL	12086-899911	TARMAC AMERICA LLC	61.7	0.16%	0.17%	0.23%	2.02%	0.76%	2.63%

St Marks Wilderness Area (FL)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
GA	13015-2813011	Ga Power Company - Plant Bowen	452.9	0.38%	3.59%	4.89%	0.01%	0.03%	0.03%
FL	12005-535411	ROCKTENN CP LLC	140.8	8.54%	3.38%	4.60%	0.24%	0.09%	0.13%
AL	01109-985711	Sanders Lead Co	255.9	3.06%	0.82%	1.12%	0.00%	0.00%	0.00%
Facilities That Dropped Off After REVISION									
AL	01097-1056111	Ala Power - Barry	383.1	1.67%	1.43%	0.97%	0.03%	0.02%	0.03%
AL	01053-7440211	Escambia Operating Company LLC	325.6	5.95%	3.53%	0.96%	0.01%	0.00%	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	908.4	0.33%	1.67%	0.80%	0.00%	0.01%	0.01%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,251.0	0.29%	1.29%	0.65%	0.01%	0.00%	0.00%
AL	01053-985111	Escambia Operating Company LLC	315.0	0.00%	1.68%	0.02%	0.00%	0.00%	0.00%

Cohutta Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate PSAT % Original	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate PSAT % Original	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	512.0	1.71%	3.41%	2.44%	0.02%	0.05%	0.07%
GA	13015-2813011	Ga Power Company - Plant Bowen	78.0	19.58%	1.56%	2.13%	1.15%	0.03%	0.04%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	457.2	2.18%	1.05%	1.44%	0.07%	0.01%	0.02%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	410.1	4.68%	2.84%	1.37%	0.13%	0.03%	0.04%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	454.6	1.05%	2.06%	1.31%	0.06%	0.03%	0.04%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	269.8	0.99%	0.92%	1.25%	0.09%	0.07%	0.09%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	801.1	0.14%	2.06%	1.04%	0.00%	0.01%	0.01%
IN	18051-7363111	Gibson	487.1	2.31%	1.35%	1.03%	0.10%	0.02%	0.02%
Facilities That Dropped Off After REVISION									
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	477.0	2.18%	1.19%	0.84%	0.16%	0.03%	0.02%
TN	47145-4979111	TVA KINGSTON FOSSIL PLANT	124.0	2.17%	1.10%	0.34%	0.13%	0.06%	0.02%

Okefenokee Wilderness Area (GA)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate Original PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate Original PSAT %	FINAL Revised Nitrate PSAT %
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	71.5	14.63%	4.32%	2.77%	0.03%	0.01%	0.01%
GA	13015-2813011	Ga Power Company - Plant Bowen	458.1	1.02%	1.74%	2.30%	0.05%	0.04%	0.05%
FL	12123-752411	BUCKEYE FLORIDA, LIMITED PARTNERSHIP	153.5	2.18%	1.64%	2.16%	0.14%	0.11%	0.14%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	909.1	0.46%	2.19%	1.51%	0.01%	0.01%	0.01%
FL	12089-753711	ROCK TENN CP, LLC	64.8	12.82%	1.00%	1.31%	0.88%	0.11%	0.15%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	348.1	0.85%	0.89%	1.18%	0.05%	0.03%	0.04%
GA	13051-3679811	International Paper - Savannah	178.9	2.81%	0.79%	1.04%	0.08%	0.05%	0.06%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	939.4	0.23%	0.78%	1.03%	0.00%	0.03%	0.04%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,129.0	0.46%	2.09%	1.02%	0.01%	0.01%	0.01%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	921.9	0.09%	1.34%	0.83%	0.00%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	915.7	0.55%	1.40%	0.65%	0.01%	0.02%	0.03%

Wolf Island Wilderness (GA)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
FL	12089-753711	ROCK TENN CP, LLC	74.9	8.56%	1.79%	2.35%	0.39%	0.11%	0.14%
GA	13015-2813011	Ga Power Company - Plant Bowen	458.1	1.08%	1.78%	2.33%	0.03%	0.04%	0.05%
GA	13127-3721011	Brunswick Cellulose Inc	27.9	8.84%	1.34%	1.76%	2.94%	0.10%	0.13%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	845.3	1.71%	2.51%	1.73%	0.02%	0.02%	0.02%
GA	13051-3679811	International Paper - Savannah	85.9	7.53%	1.18%	1.54%	0.24%	0.07%	0.09%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	251.0	1.59%	0.99%	1.30%	0.09%	0.06%	0.08%
FL	12031-640211	JEA	105.1	4.43%	0.96%	1.29%	0.09%	0.03%	0.06%
SC	45015-4834911	ALUMAX OF SOUTH CAROLINA	223.0	1.84%	0.95%	1.25%	0.00%	0.01%	0.01%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	1,048.6	0.84%	2.37%	1.15%	0.01%	0.01%	0.01%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	876.1	0.07%	1.25%	0.76%	0.00%	0.02%	0.02%
FL	12047-769711	WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	173.6	1.97%	1.05%	0.67%	0.01%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	899.0	0.37%	1.38%	0.64%	0.00%	0.02%	0.03%

Mammoth Cave NP (KY)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate Original PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate Original PSAT %	FINAL Revised Nitrate PSAT %
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	118.0	16.88%	3.57%	1.68%	2.60%	0.26%	0.33%
IN	18051-7363111	Gibson	198.2	5.21%	2.16%	1.63%	1.20%	0.35%	0.33%
KY	21183-5561611	Big Rivers Electric Corp - Wilson Station	89.9	6.72%	1.07%	1.43%	0.37%	0.06%	0.08%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	233.6	1.60%	0.86%	1.15%	0.15%	0.14%	0.19%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	312.7	0.66%	1.29%	1.14%	0.04%	0.07%	0.09%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	182.9	3.09%	1.50%	1.04%	0.96%	0.40%	0.27%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	256.1	1.21%	1.43%	0.89%	0.14%	0.11%	0.12%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	406.5	1.45%	1.15%	0.81%	0.04%	0.02%	0.02%
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	498.6	0.30%	1.15%	0.65%	0.04%	0.05%	0.02%
IN	18173-8183111	ALCOA WARRICK POWER PLT AGC DIV OF AL	136.1	2.00%	1.03%	0.40%	1.74%	0.82%	0.30%
IN	18129-8166111	Sigeco AB Brown South Indiana Gas & Ele	162.9	2.73%	1.16%	0.00%	0.27%	0.06%	0.00%

Linville Gorge Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate PSAT % Original	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate PSAT % Original	FINAL Revised Nitrate PSAT %
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	81.9	19.21%	2.87%	4.05%	0.68%	0.07%	0.10%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	329.2	5.90%	4.67%	3.46%	0.04%	0.01%	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	567.5	0.94%	3.49%	1.82%	0.00%	0.00%	0.00%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	626.3	0.28%	0.95%	1.34%	0.00%	0.01%	0.02%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	516.6	0.11%	0.85%	1.20%	0.00%	0.01%	0.01%
GA	13015-2813011	Ga Power Company - Plant Bowen	340.9	0.53%	0.80%	1.13%	0.02%	0.00%	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	503.5	1.18%	2.22%	1.10%	0.01%	0.07%	0.09%
IN	18051-7363111	Gibson	582.3	0.67%	1.35%	1.07%	0.01%	0.07%	0.07%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	688.6	0.03%	1.11%	1.04%	0.00%	0.00%	0.00%
VA	51027-4034811	Jewell Coke Company LLP	140.4	5.34%	0.73%	1.02%	0.01%	0.00%	0.00%
Facilities That Dropped Off After REVISION									
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	856.4	0.29%	1.43%	0.86%	0.00%	0.01%	0.00%
MD	24001-7763811	Luke Paper Company	463.8	0.23%	1.37%	0.84%	0.00%	0.00%	0.00%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	550.5	0.36%	1.12%	0.82%	0.01%	0.07%	0.05%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	380.3	2.82%	1.00%	0.66%	0.03%	0.02%	0.03%

Shining Rock Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate PSAT % Original	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate PSAT % Original	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	397.3	1.39%	3.26%	2.41%	0.01%	0.01%	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	573.4	0.47%	1.16%	1.63%	0.01%	0.02%	0.02%
TN	47161-4979311	TVA CUMBERLAND FOSSIL PLANT	454.1	0.54%	0.93%	1.32%	0.02%	0.01%	0.02%
GA	13015-2813011	Ga Power Company - Plant Bowen	241.6	1.70%	0.92%	1.29%	0.07%	0.01%	0.01%
MO	29143-5363811	NEW MADRID POWER PLANT-MARSTON	625.2	0.36%	1.37%	1.28%	0.00%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	473.3	0.70%	2.55%	1.27%	0.01%	0.07%	0.09%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	657.6	0.49%	2.36%	1.23%	0.00%	0.00%	0.00%
IN	18051-7363111	Gibson	554.2	0.29%	1.55%	1.23%	0.01%	0.07%	0.07%
NC	37087-7920511	Blue Ridge Paper Products - Canton Mill	16.9	41.29%	2.14%	1.08%	6.65%	0.07%	0.10%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	406.7	1.37%	1.59%	1.05%	0.03%	0.01%	0.01%
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	783.3	0.13%	1.74%	1.04%	0.00%	0.01%	0.01%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	126.9	4.43%	0.74%	1.04%	0.40%	0.02%	0.02%
Facilities That Dropped Off After REVISION									
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	529.0	0.18%	1.12%	0.82%	0.01%	0.11%	0.08%
IL	17127-7808911	Joppa Steam	582.4	0.23%	1.07%	0.59%	0.00%	0.01%	0.00%

Swanquarter Wilderness Area (NC)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate PSAT % Original	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate PSAT % Original	FINAL Revised Nitrate PSAT %
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	640.2	3.00%	6.66%	3.44%	0.08%	0.08%	0.09%
NC	37013-8479311	PCS Phosphate Company, Inc. - Aurora	52.5	37.89%	2.16%	3.02%	0.57%	0.05%	0.06%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	651.5	1.77%	2.74%	2.01%	0.06%	0.03%	0.05%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	659.6	0.35%	1.00%	1.86%	0.02%	0.03%	0.06%
MD	24001-7763811	Luke Paper Company	512.5	0.43%	2.88%	1.75%	0.02%	0.05%	0.07%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	568.6	0.67%	1.19%	1.71%	0.08%	0.10%	0.12%
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	620.1	0.55%	1.27%	1.38%	0.05%	0.05%	0.07%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	625.7	0.84%	1.22%	1.17%	0.07%	0.03%	0.05%
GA	13015-2813011	Ga Power Company - Plant Bowen	810.6	0.15%	0.74%	1.03%	0.00%	0.02%	0.03%
NC	37117-8049311	Domtar Paper Company, LLC	69.0	2.27%	0.72%	1.00%	1.02%	0.14%	0.20%
Facilities That Dropped Off After REVISION									
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	1,005.3	0.34%	1.69%	0.83%	0.02%	0.03%	0.04%

Cape Romain Wilderness Area (SC)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate PSAT % Original	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate PSAT % Original	FINAL Revised Nitrate PSAT %
SC	45019-4973611	KAPSTONE CHARLESTON KRAFT LLC	29.3	30.18%	2.86%	3.73%	2.74%	0.25%	0.33%
GA	13015-2813011	Ga Power Company - Plant Bowen	506.2	0.36%	2.71%	3.53%	0.01%	0.10%	0.14%
SC	45015-4834911	ALUMAX OF SOUTH CAROLINA	39.1	17.07%	1.79%	2.33%	0.03%	0.02%	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	857.1	0.30%	4.74%	2.28%	0.00%	0.01%	0.01%
SC	45015-4120411	SANTEE COOPER CROSS GENERATING STATION	63.8	6.57%	1.73%	2.25%	0.45%	0.21%	0.27%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	701.0	0.84%	3.18%	2.17%	0.00%	0.03%	0.04%
SC	45043-5698611	INTERNATIONAL PAPER GEORGETOWN MILL	57.4	4.31%	1.26%	1.64%	0.35%	0.11%	0.15%
SC	45043-6652811	SANTEE COOPER WINYAH GENERATING STATION	51.4	4.60%	1.02%	1.33%	0.38%	0.13%	0.17%
GA	13051-3679811	International Paper - Savannah	166.1	1.76%	0.99%	1.28%	0.04%	0.05%	0.06%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	776.2	0.11%	1.14%	0.69%	0.00%	0.04%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	868.3	0.06%	1.18%	0.54%	0.00%	0.07%	0.08%

Great Smoky Mountains National Park (TN/NC)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	400.5	2.25%	5.10%	3.73%	0.04%	0.02%	0.02%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	465.3	1.34%	0.94%	1.32%	0.02%	0.06%	0.08%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	160.1	6.01%	0.88%	1.22%	0.19%	0.04%	0.05%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	688.2	0.11%	2.31%	1.19%	0.00%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	375.5	4.66%	2.42%	1.19%	0.21%	0.19%	0.25%
IN	18051-7363111	Gibson	456.3	1.25%	1.34%	1.05%	0.07%	0.27%	0.27%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	360.0	1.84%	1.50%	0.98%	0.09%	0.02%	0.02%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	435.6	1.48%	1.08%	0.78%	0.12%	0.29%	0.20%
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	675.9	0.19%	1.22%	0.72%	0.02%	0.01%	0.00%
TN	47145-4979111	TVA KINGSTON FOSSIL PLANT	60.0	7.38%	1.23%	0.38%	0.71%	0.08%	0.03%

Joyce Kilmer-Slickrock Wilderness Area (TN/NC)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Original Sulfate PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Original Nitrate PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	425.1	4.73%	4.69%	3.45%	0.05%	0.01%	0.01%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	472.8	0.84%	0.99%	1.38%	0.05%	0.07%	0.10%
TN	47163-3982311	EASTMAN CHEMICAL COMPANY	179.2	5.88%	0.93%	1.30%	0.16%	0.02%	0.02%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	711.0	0.27%	2.17%	1.12%	0.00%	0.00%	0.00%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	391.2	4.33%	2.27%	1.12%	0.14%	0.16%	0.22%
GA	13015-2813011	Ga Power Company - Plant Bowen	166.2	3.61%	0.79%	1.11%	0.10%	0.01%	0.01%
IN	18051-7363111	Gibson	471.7	2.00%	1.29%	1.02%	0.11%	0.21%	0.21%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	385.1	3.63%	1.53%	1.00%	0.06%	0.01%	0.01%
Facilities That Dropped Off After REVISION									
AR	05063-1083411	ENTERGY ARKANSAS INC-INDEPENDENCE PLANT	674.4	1.58%	1.36%	0.81%	0.05%	0.02%	0.01%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	453.0	2.16%	1.00%	0.72%	0.14%	0.23%	0.16%
TN	47145-4979111	TVA KINGSTON FOSSIL PLANT	73.7	7.86%	1.24%	0.39%	0.57%	0.10%	0.03%

James River Face Wilderness Area (VA)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate Original PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate Original PSAT %	FINAL Revised Nitrate PSAT %
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	270.2	7.66%	5.44%	4.04%	0.14%	0.08%	0.11%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	207.6	2.76%	2.51%	3.65%	0.36%	0.12%	0.14%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	306.4	1.35%	1.92%	3.61%	0.04%	0.02%	0.06%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	248.0	3.87%	2.33%	2.26%	0.15%	0.03%	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	223.5	3.50%	2.46%	1.93%	0.13%	0.05%	0.11%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	337.1	2.98%	2.88%	1.51%	0.06%	0.03%	0.04%
VA	51580-5798711	Meadwestvaco Packaging Resource Group	46.5	12.64%	1.02%	1.45%	1.14%	0.15%	0.22%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	270.0	0.63%	0.66%	1.18%	0.16%	0.04%	0.04%
WV	54051-6902311	MITCHELL PLANT	269.6	0.68%	0.97%	1.08%	0.03%	0.02%	0.04%
Facilities That Dropped Off After REVISION									
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	435.2	1.89%	1.39%	0.92%	0.05%	0.05%	0.06%
IN	18051-7363111	Gibson	729.4	0.59%	1.02%	0.82%	0.02%	0.01%	0.01%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	663.5	0.56%	1.33%	0.66%	0.03%	0.01%	0.02%

Shenandoah National Park (VA)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate PSAT % Original	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate PSAT % Original	FINAL Revised Nitrate PSAT %
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	249.8	11.83%	8.89%	4.81%	0.10%	0.05%	0.06%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	269.6	1.53%	2.32%	4.50%	0.06%	0.05%	0.12%
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	189.7	4.60%	2.75%	4.14%	0.99%	0.37%	0.46%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	323.4	5.25%	4.88%	3.75%	0.14%	0.10%	0.14%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	265.0	4.97%	2.20%	2.20%	0.24%	0.18%	0.28%
PA	42063-3005211	HOMER CITY GEN LP/ CENTER TWP	230.4	2.60%	1.56%	1.78%	0.13%	0.04%	0.06%
MD	24001-7763811	Luke Paper Company	118.4	6.90%	2.20%	1.41%	0.23%	0.09%	0.14%
PA	42063-3005111	NRG WHOLESALE GEN/SEWARD GEN STA	215.5	1.80%	1.00%	1.12%	0.04%	0.02%	0.02%
WV	54051-6902311	MITCHELL PLANT	251.8	1.46%	0.88%	1.01%	0.11%	0.08%	0.16%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	324.1	0.43%	0.55%	1.01%	0.16%	0.06%	0.06%
Facilities That Dropped Off After REVISION									
WV	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	184.4	2.41%	1.06%	0.97%	1.27%	0.47%	0.60%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	505.4	1.31%	1.28%	0.87%	0.11%	0.05%	0.06%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	295.6	2.09%	1.04%	0.84%	0.09%	0.09%	0.19%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	755.8	0.71%	1.46%	0.76%	0.03%	0.02%	0.03%

Dolly Sods Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate Original PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate Original PSAT %	FINAL Revised Nitrate PSAT %
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	83.6	13.58%	4.94%	7.18%	1.36%	0.26%	0.31%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	233.8	7.62%	6.56%	4.88%	0.10%	0.03%	0.05%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	163.9	4.64%	4.32%	4.19%	0.16%	0.07%	0.10%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	163.9	1.36%	2.14%	4.02%	0.03%	0.01%	0.03%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	416.9	1.40%	2.25%	1.49%	0.02%	0.04%	0.05%
WV	54051-6902311	MITCHELL PLANT	144.2	1.45%	1.28%	1.42%	0.07%	0.02%	0.05%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	172.8	4.12%	2.43%	1.27%	0.01%	0.00%	0.00%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	234.9	0.62%	0.66%	1.18%	0.11%	0.02%	0.02%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	219.8	3.56%	1.45%	1.14%	0.11%	0.01%	0.03%
WV	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	79.8	6.53%	1.27%	1.13%	1.07%	0.18%	0.23%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	847.6	0.12%	0.74%	1.05%	0.00%	0.01%	0.02%
Facilities That Dropped Off After REVISION									
IN	18051-7363111	Gibson	729.5	0.04%	1.24%	0.99%	0.02%	0.04%	0.04%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	676.3	0.44%	1.93%	0.97%	0.01%	0.02%	0.03%
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	682.6	0.18%	1.05%	0.77%	0.02%	0.04%	0.03%
OH	39031-8010811	Conesville Power Plant (0616000000)	242.3	0.71%	1.09%	0.00%	0.12%	0.08%	0.00%

Otter Creek Wilderness Area (WV)

State	Facility ID	Facility Name	DISTANCE_km	Sulfate AOI %	Sulfate Original PSAT %	FINAL Revised Sulfate PSAT %	Nitrate AOI %	Nitrate Original PSAT %	FINAL Revised Nitrate PSAT %
WV	54033-6271711	ALLEGHENY ENERGY SUPPLY CO, LLC-HARRISON	72.8	17.37%	4.49%	6.51%	1.81%	0.26%	0.31%
OH	39053-8148511	General James M. Gavin Power Plant (0627010056)	214.2	10.46%	7.08%	5.25%	0.18%	0.04%	0.06%
WV	54073-4782811	MONONGAHELA POWER CO-PLEASANTS POWER STA	148.3	8.19%	4.39%	4.24%	0.30%	0.08%	0.12%
OH	39081-8115711	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	162.7	1.94%	2.03%	3.81%	0.05%	0.02%	0.04%
OH	39025-8294311	Duke Energy Ohio, Wm. H. Zimmer Station (1413090154)	397.5	1.12%	2.40%	1.58%	0.02%	0.06%	0.06%
WV	54051-6902311	MITCHELL PLANT	136.8	1.56%	1.40%	1.56%	0.06%	0.03%	0.05%
WV	54079-6789111	APPALACHIAN POWER COMPANY - JOHN E AMOS PLANT	198.0	4.36%	1.67%	1.31%	0.12%	0.02%	0.04%
OH	39053-7983011	Ohio Valley Electric Corp., Kyger Creek Station (0627000003)	215.3	0.85%	0.71%	1.27%	0.20%	0.02%	0.02%
KY	21145-6037011	Tennessee Valley Authority (TVA) - Shawnee Fossil Plant	826.5	0.18%	0.77%	1.09%	0.00%	0.01%	0.02%
IN	18051-7363111	Gibson	709.7	0.24%	1.27%	1.01%	0.01%	0.05%	0.05%
WV	54061-6773611	MONONGAHELA POWER CO.- FORT MARTIN POWER	82.7	4.98%	1.14%	1.00%	0.92%	0.20%	0.24%
IN	18147-8017211	INDIANA MICHIGAN POWER DBA AEP ROCKPORT	655.7	0.64%	2.01%	1.00%	0.01%	0.03%	0.04%
PA	42005-3866111	GENON NE MGMT CO/KEYSTONE STA	186.5	3.73%	1.91%	1.00%	0.03%	0.00%	0.00%
Facilities That Dropped Off After REVISION									
IN	18125-7362411	INDIANAPOLIS POWER & LIGHT PETERSBURG	663.0	0.23%	1.07%	0.79%	0.02%	0.04%	0.03%
OH	39031-8010811	Conesville Power Plant (0616000000)	232.8	1.12%	1.07%	0.00%	0.17%	0.08%	0.00%