# APPENDIX E

## CAMx PM Source Apportionment Technology (PSAT) Extinction ($Mm^{-1}$) Contributions for the 2002 Worst and Best 20 Percent Days at CENRAP Class I Areas

Figure E-1: Caney Creek Wilderness Area (CACR), Arkansas
Figure E-2: Upper Buffalo Wilderness Area (UPBU), Arkansas
Figure E-3: Breton Island Wilderness Area (BRET), Louisiana
Figure E-4: Boundary Waters Canoe Area Wilderness Area (BOWA), Minnesota
Figure E-5: Voyageurs National Park (VOYA), Minnesota
Figure E-6: Hercules Glade Wilderness Area (HEGL), Missouri
Figure E-7: Mingo Wilderness Area (MING), Missouri
Figure E-8: Wichita Mountains Wilderness Area (WIMO), Oklahoma
Figure E-9: Big Bend National Park (BIBE), Texas
Figure E-10: Guadalupe Mountains National Park (GUMO), Texas

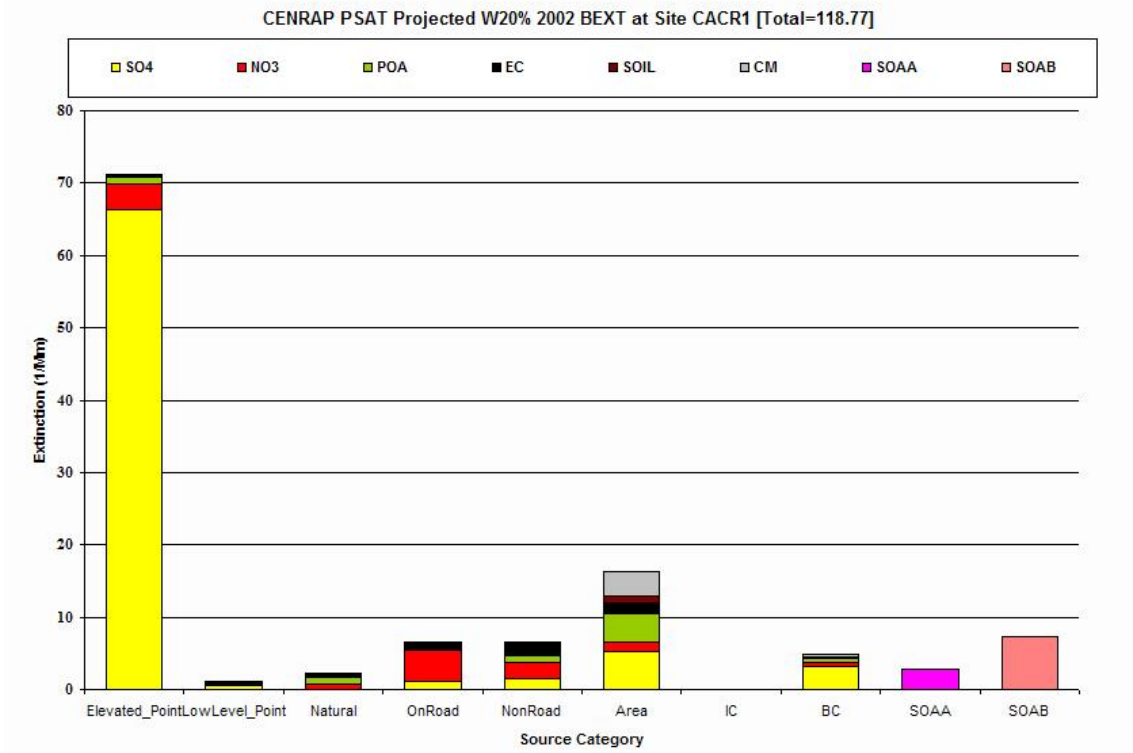



**Figure E-1a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Caney Creek (CACR), Arkansas.

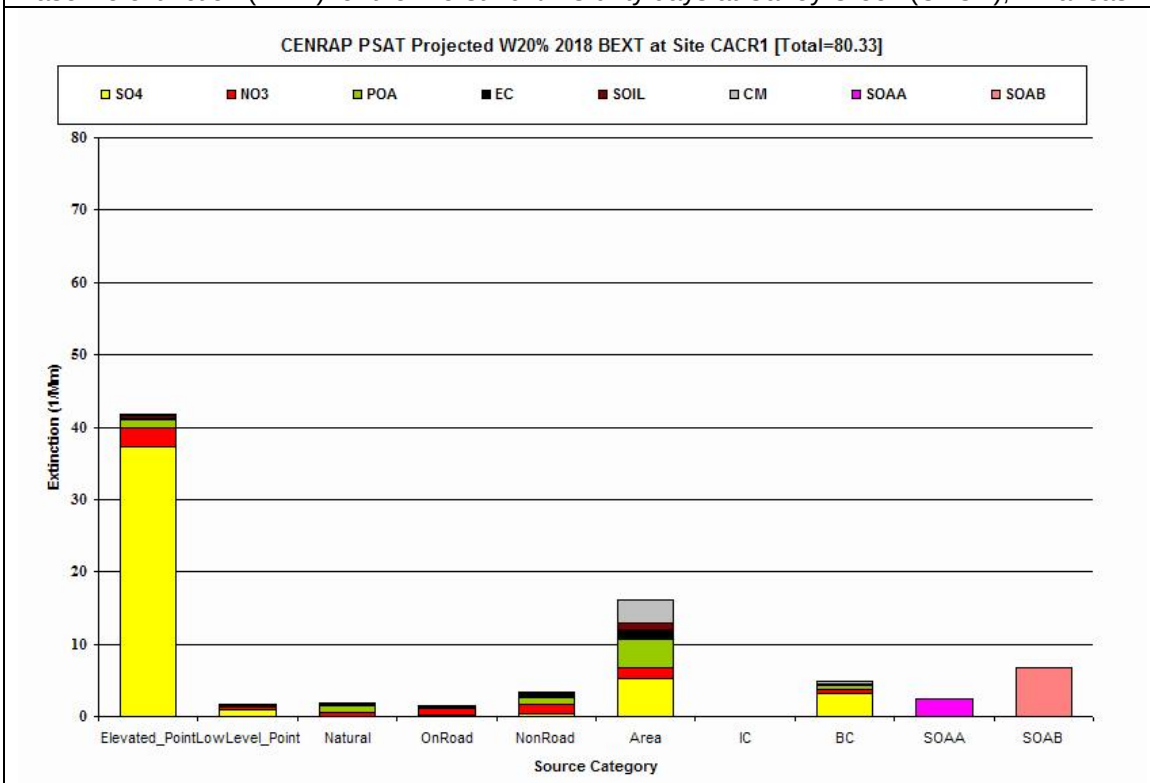



**Figure E-1b.** PSAT source category by PM species contributions to the average 2018 projected

extinction ($Mm^{-1}$) for the Worst 20% visibility days at Caney Creek (CACR), Arkansas.

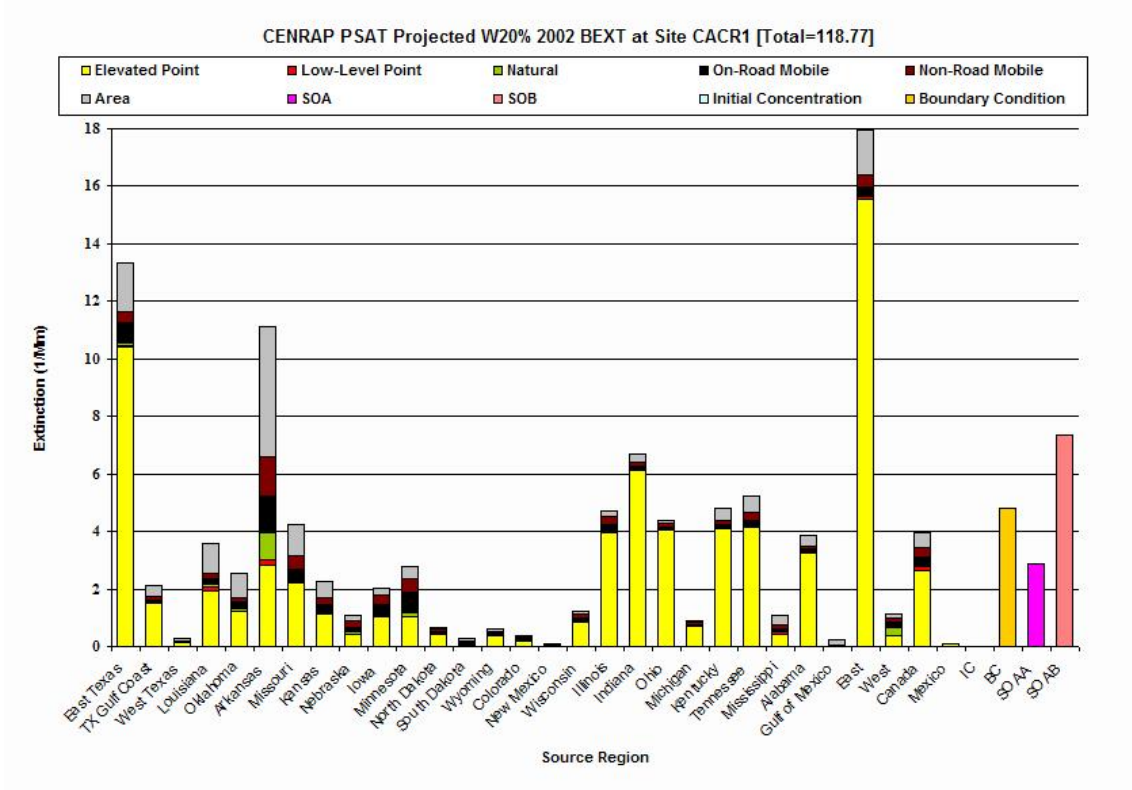



**Figure E-1c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Caney Creek (CACR), Arkansas.

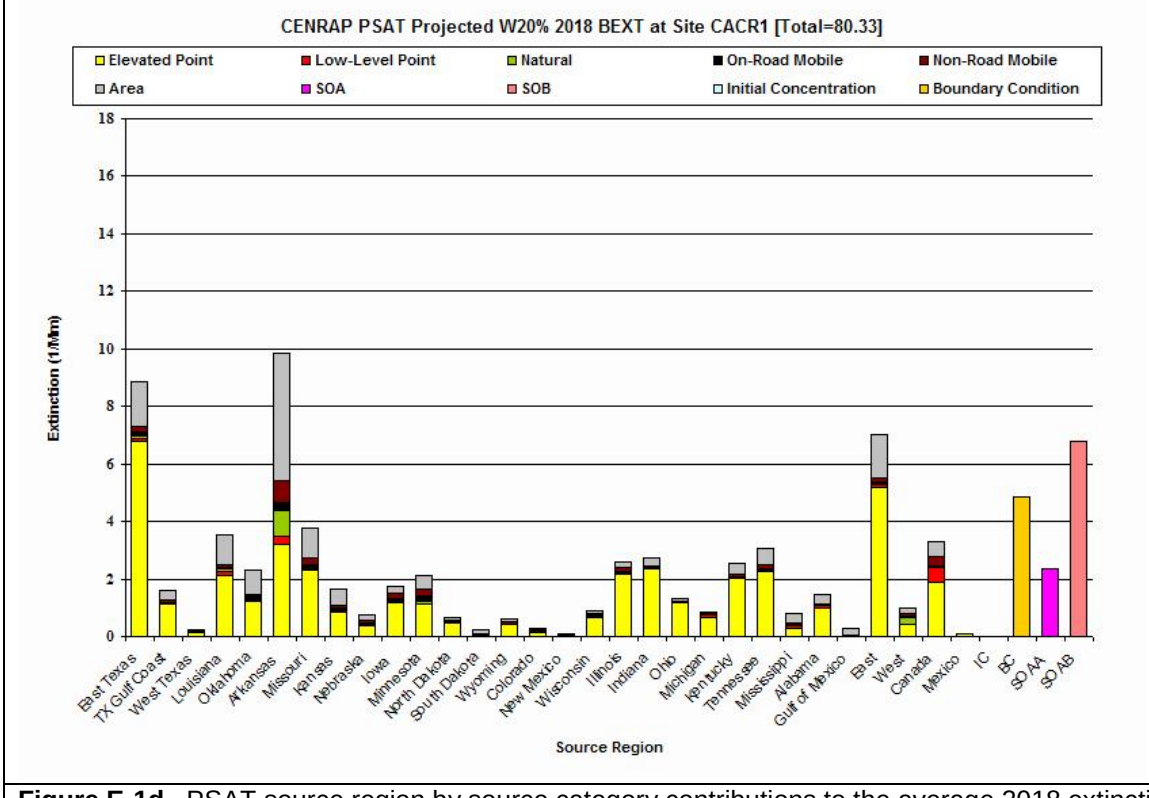



**Figure E-1d.** PSAT source region by source category contributions to the average 2018 extinction

($Mm^{-1}$) for the Worst 20% visibility days at Caney Creek (CACR), Arkansas.

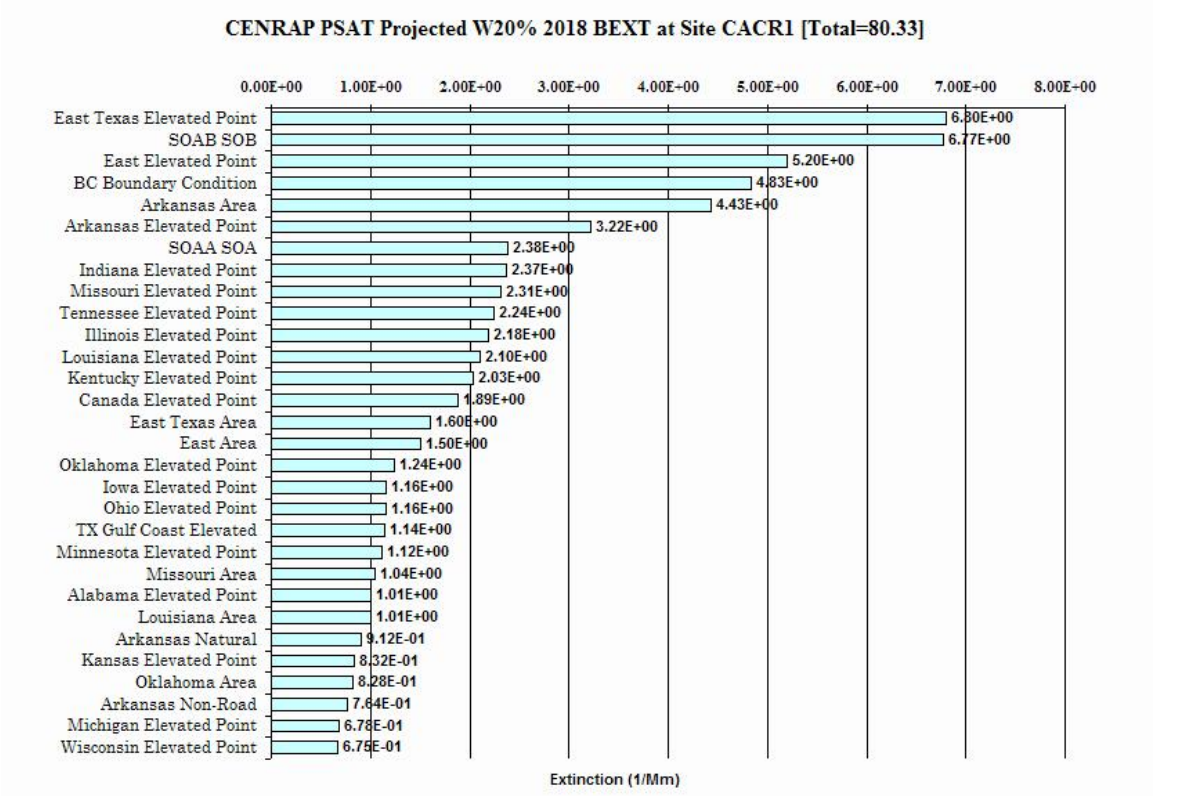



**Figure E-1e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Caney Creek (CACR), Arkansas

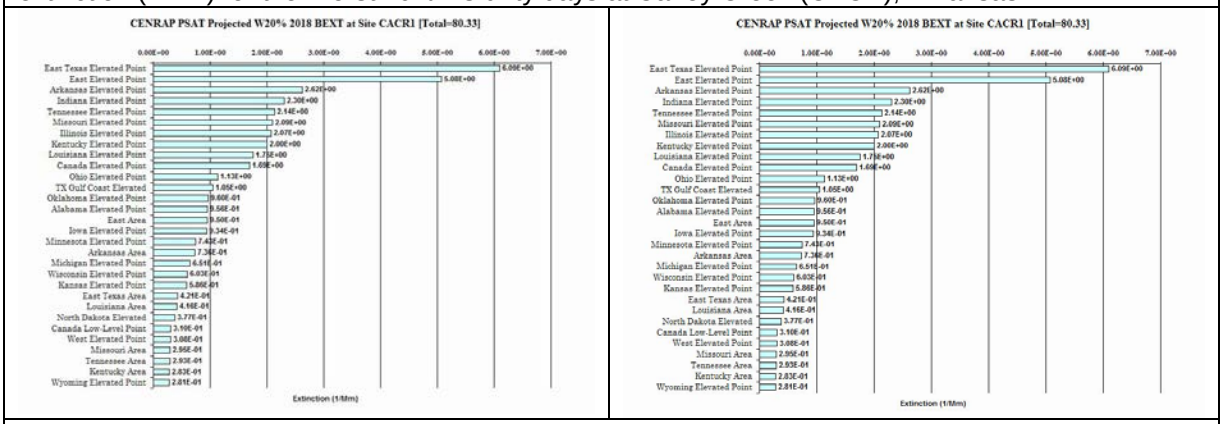



**Figure E-1f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Caney Creek (CACR), Arkansas

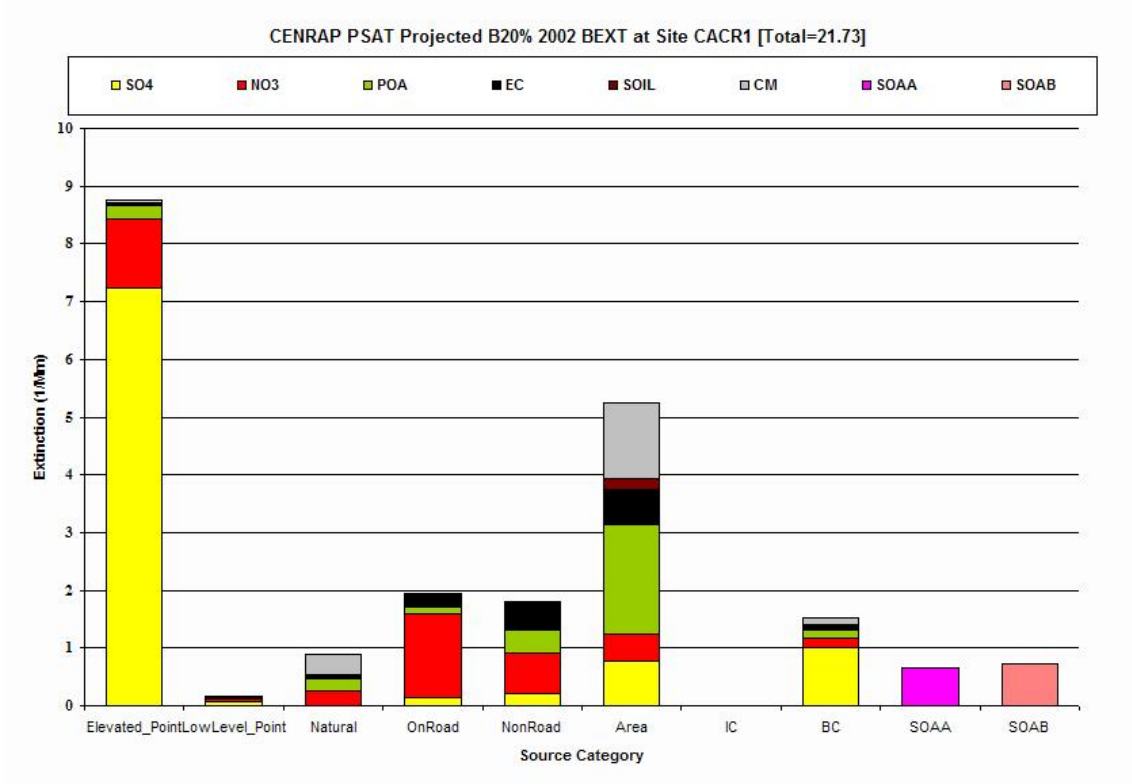



**Figure E-1g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Caney Creek (CACR), Arkansas.

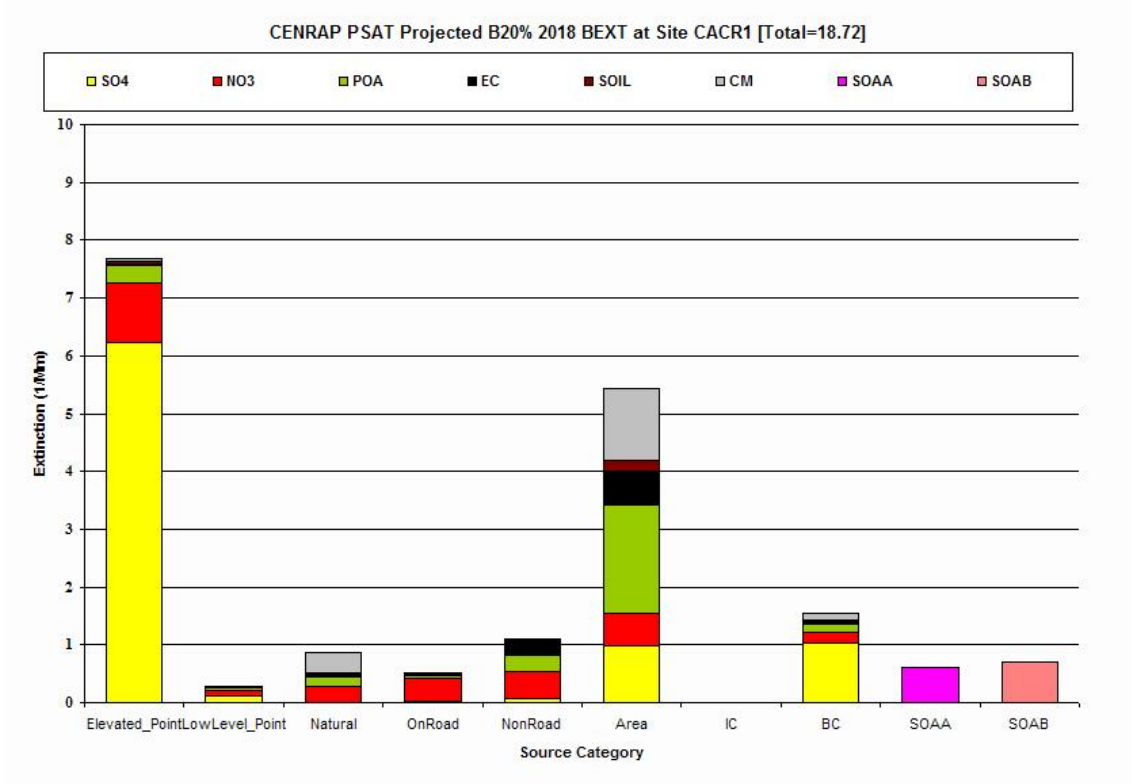



**Figure E-1h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Caney Creek (CACR), Arkansas.

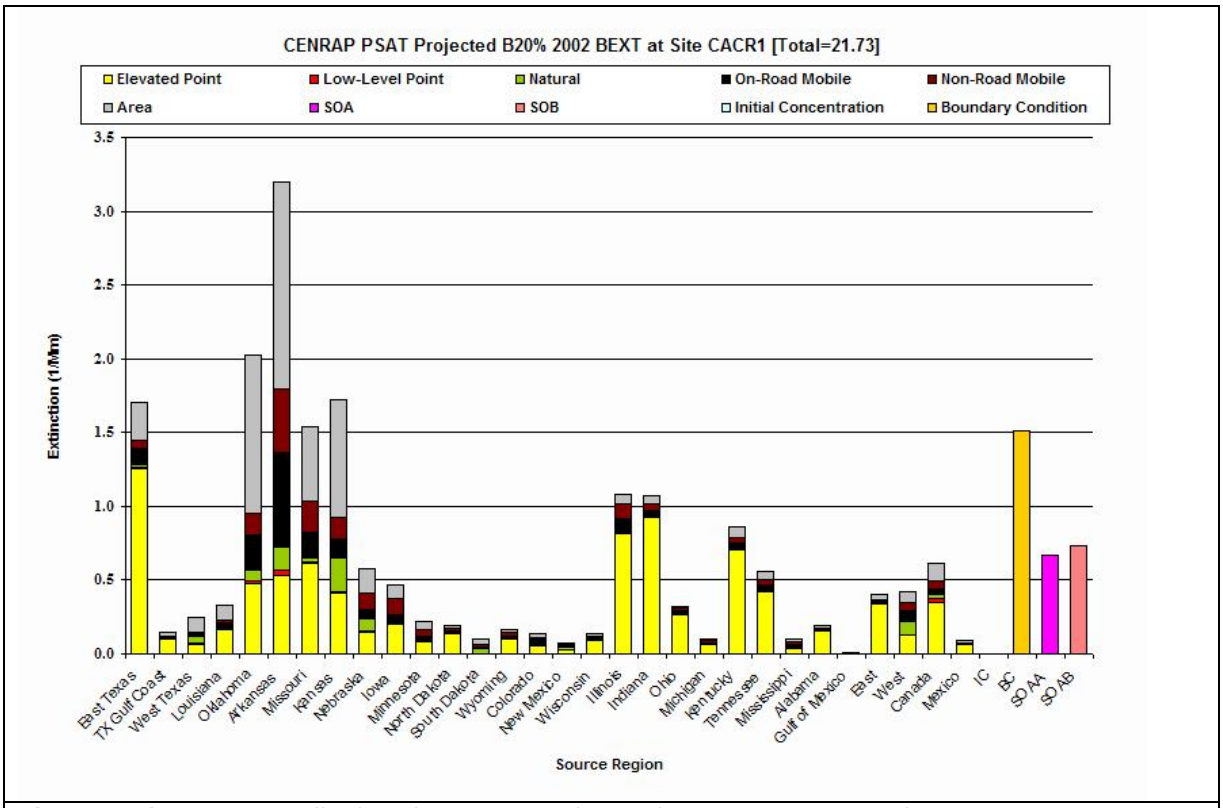



**Figure E-1i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Caney Creek (CACR), Arkansas.

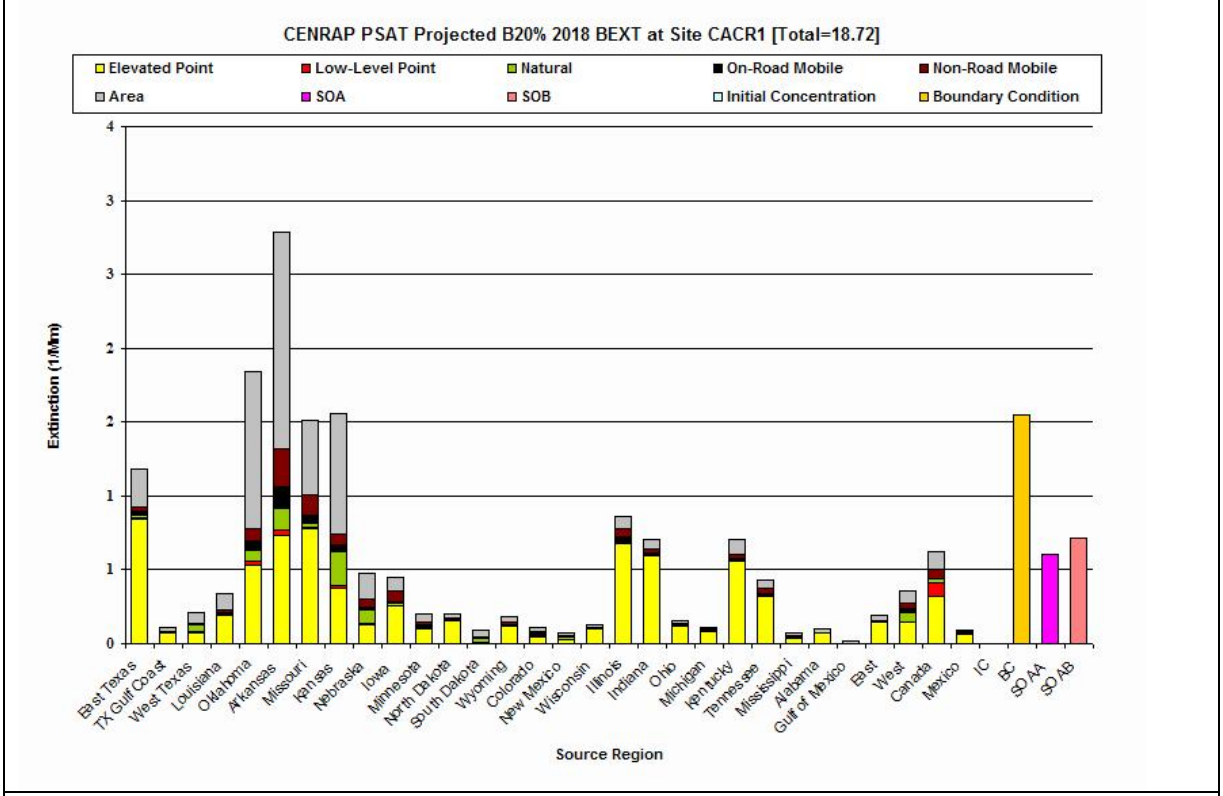



**Figure E-1j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Caney Creek (CACR), Arkansas.

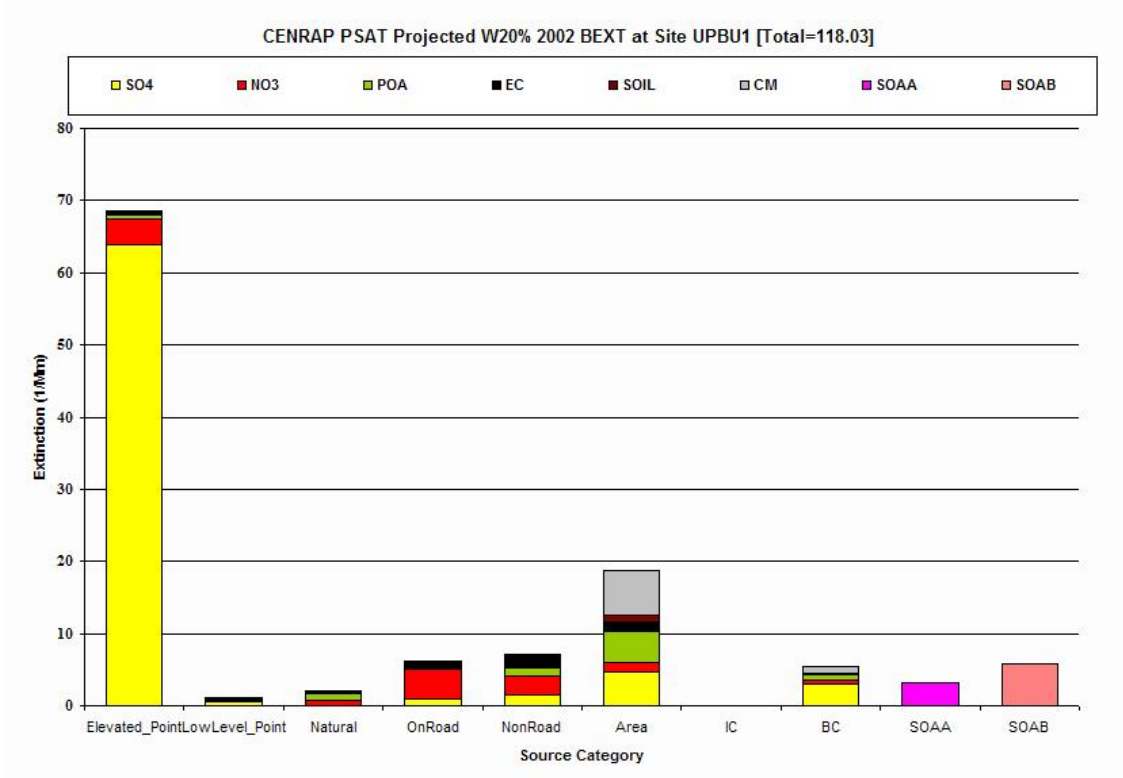



**Figure E-2a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Upper Buffalo (UPBU), Arkansas.

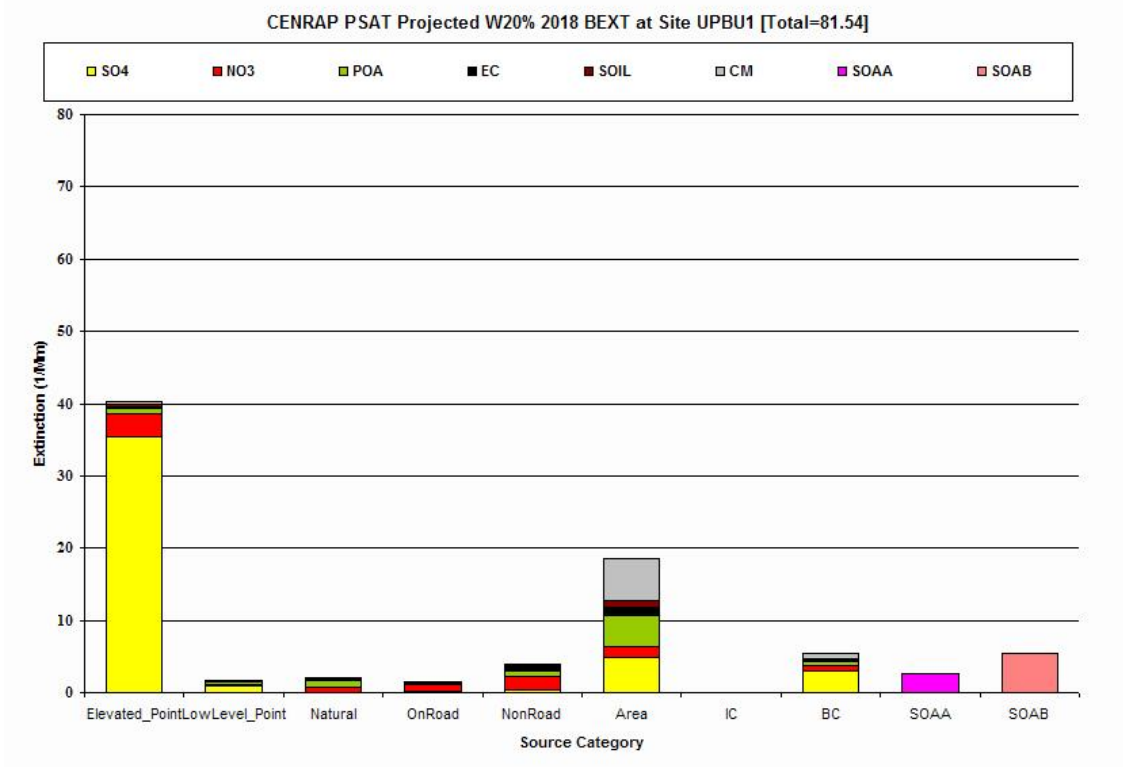



**Figure E-2b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Upper Buffalo (UPBU), Arkansas.

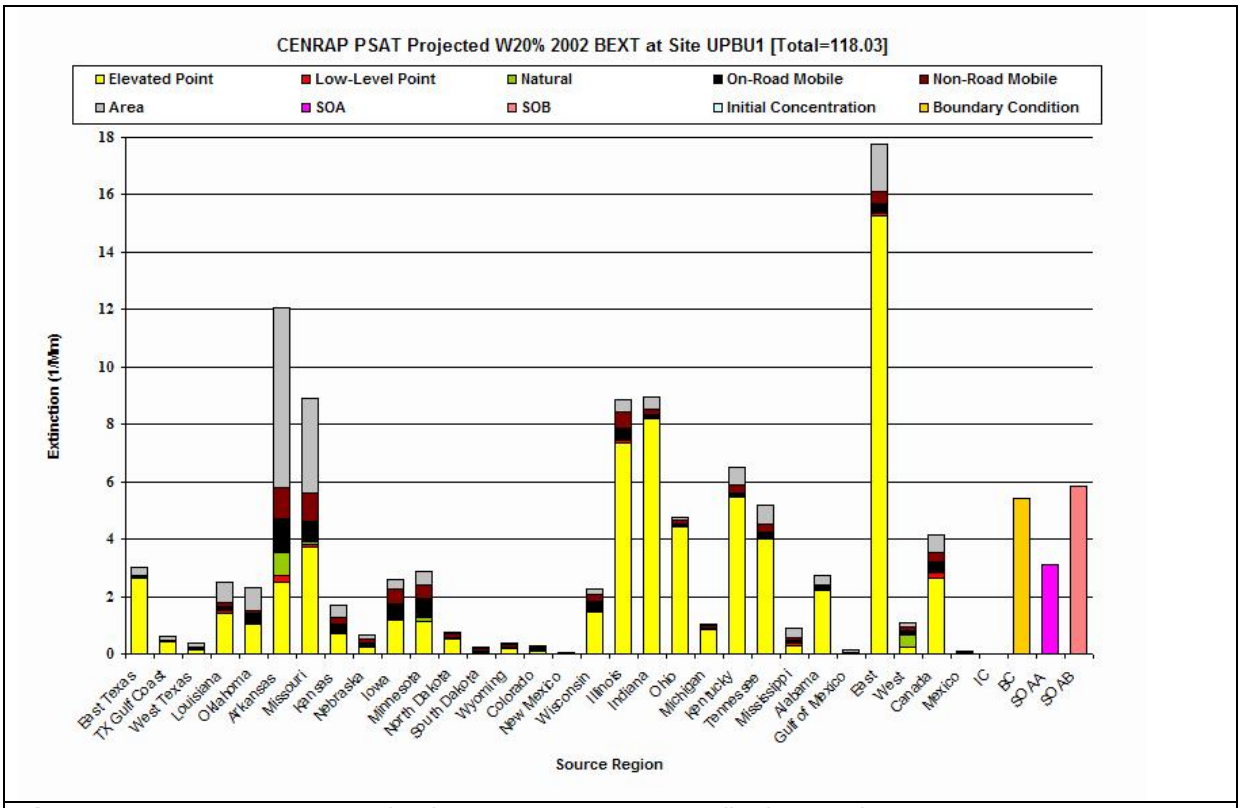



**Figure E-2c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Upper Buffalo (UPBU), Arkansas.

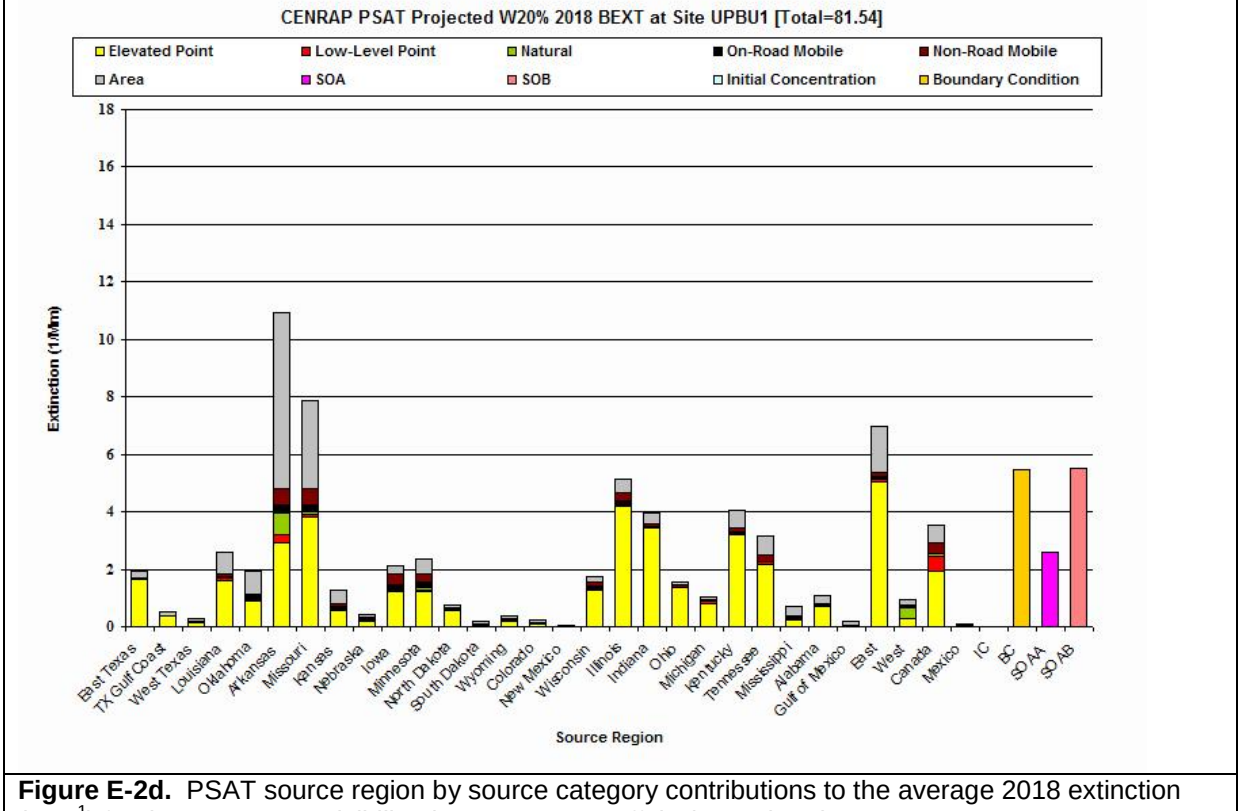



**Figure E-2d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Upper Buffalo (UPBU), Arkansas.

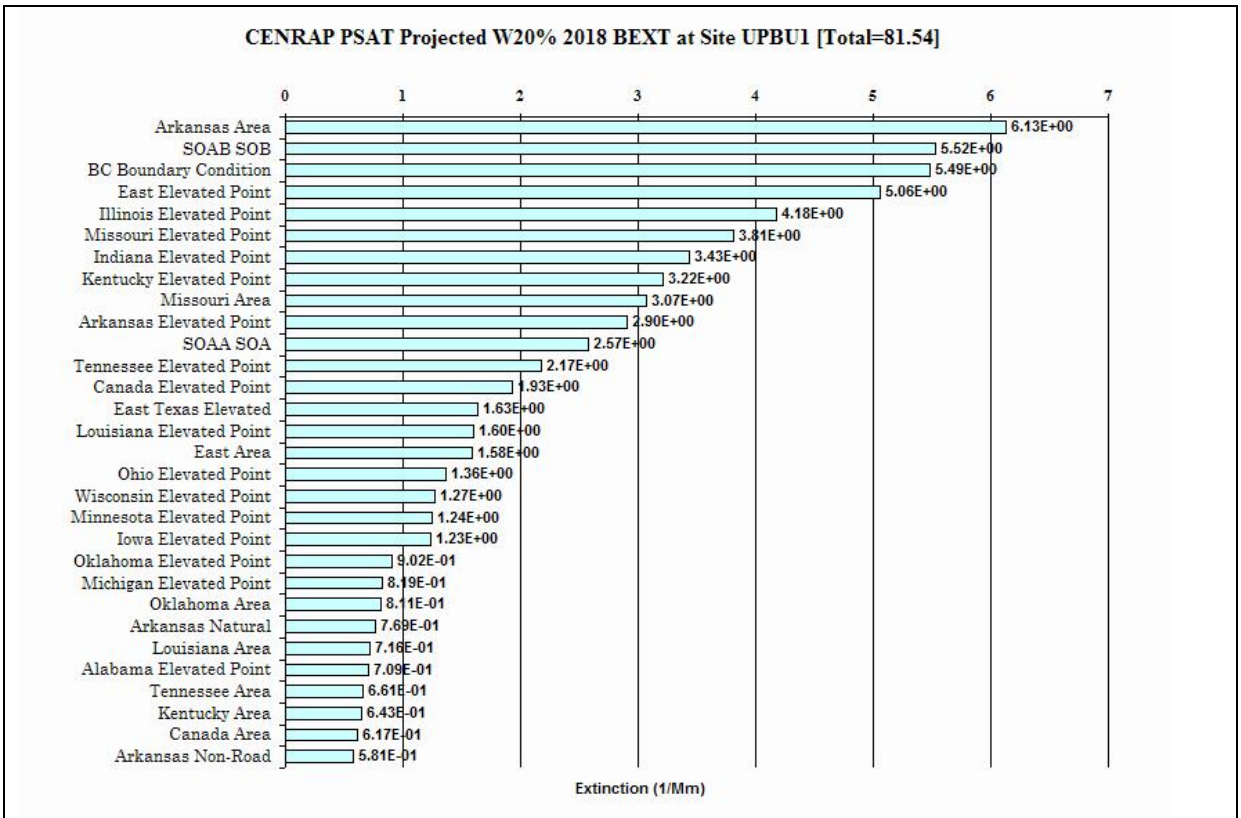
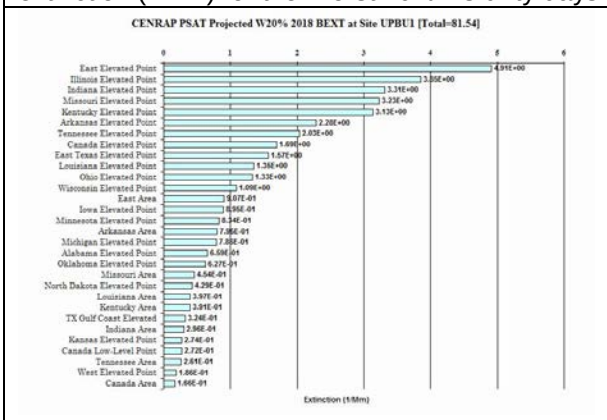



**Figure E-2e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Upper Buffalo (UPBU), Arkansas.



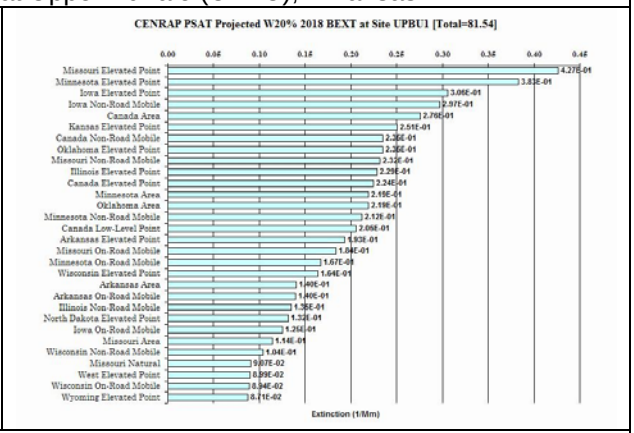




**Figure E-2f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Upper Buffalo (UPBU), Arkansas.

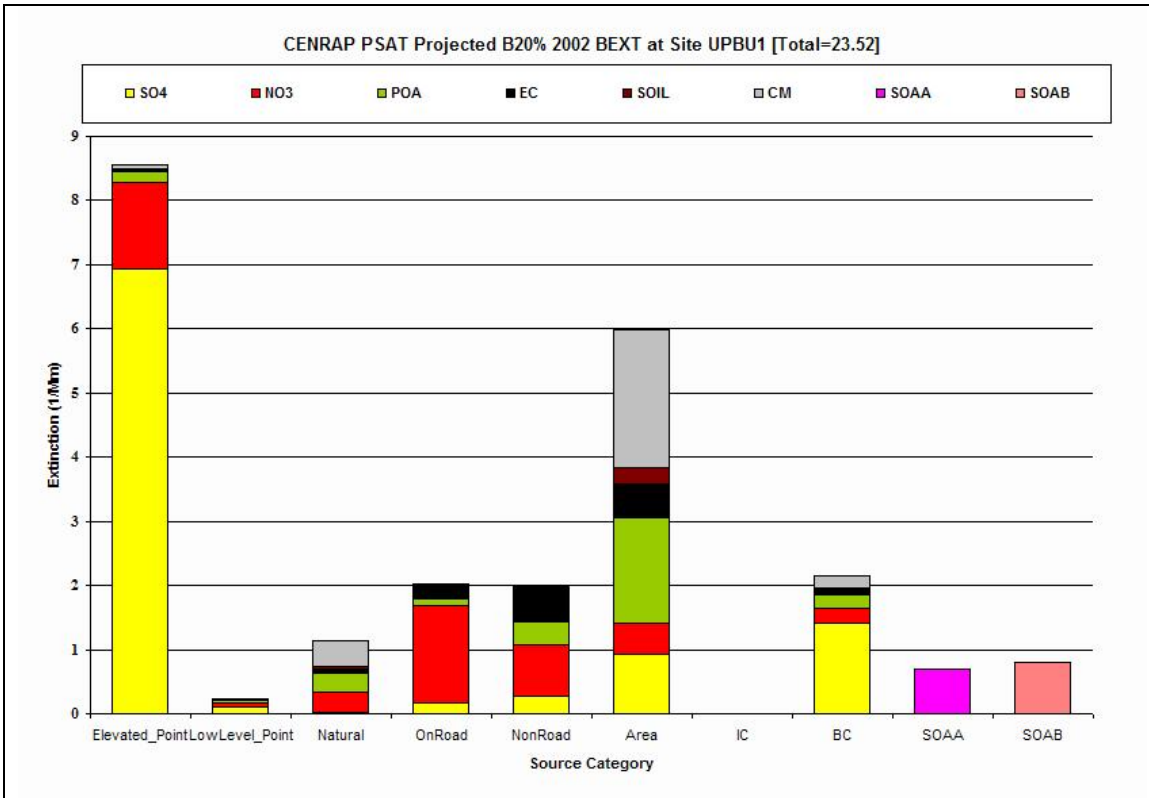



**Figure E-2g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Upper Buffalo (UPBU), Arkansas.

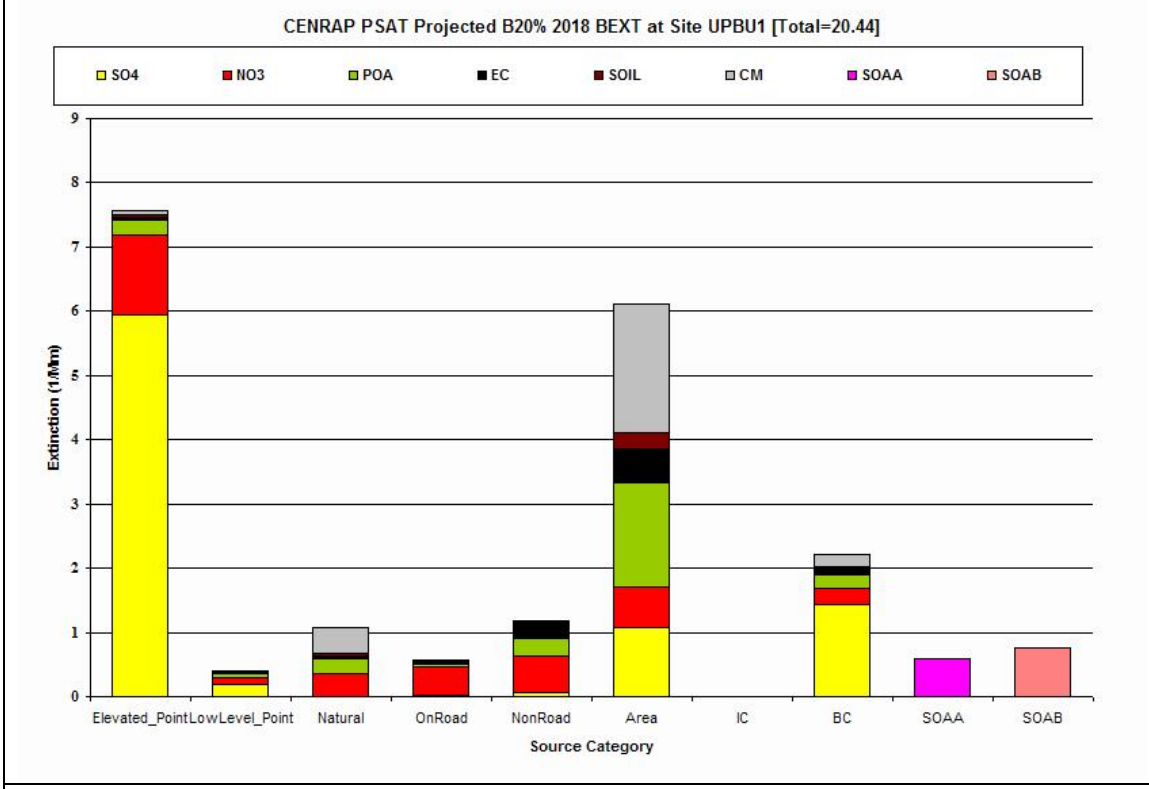



**Figure E-2h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Upper Buffalo (UPBU), Arkansas.

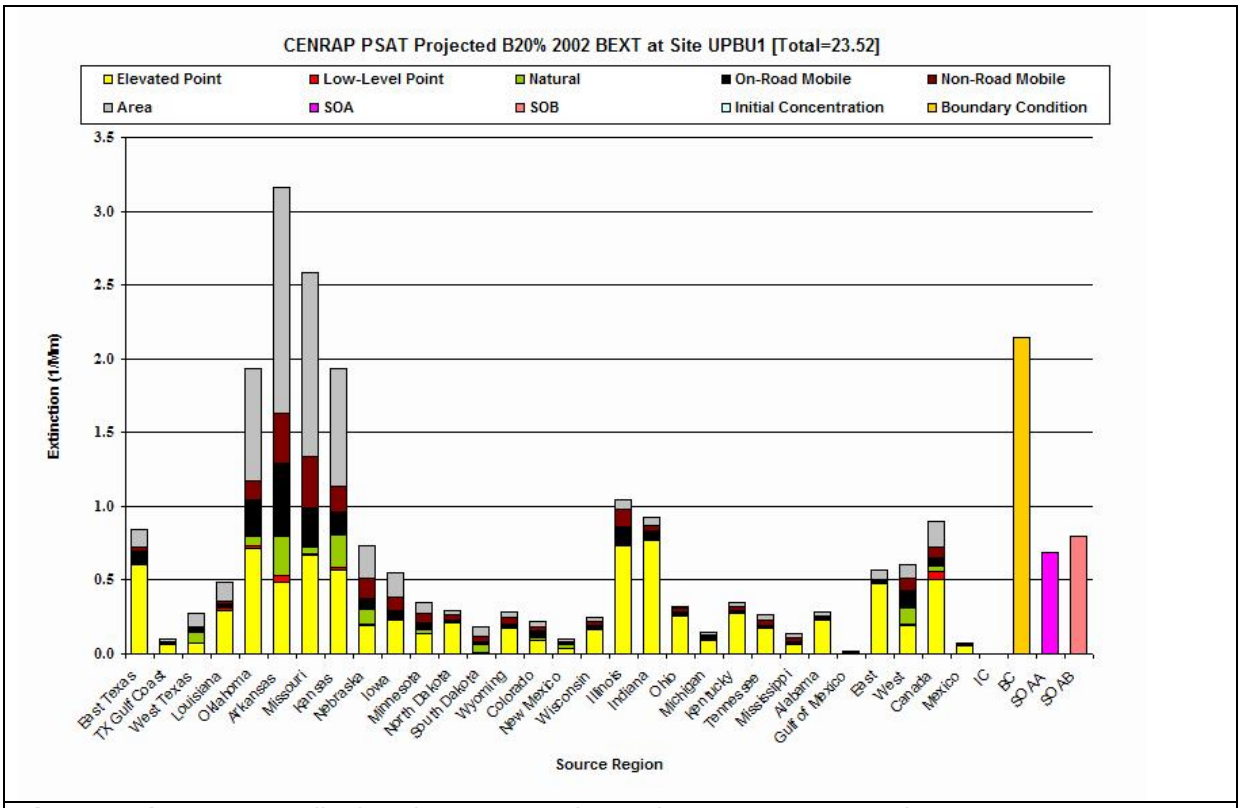



**Figure E-2i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Upper Buffalo (UPBU), Arkansas.

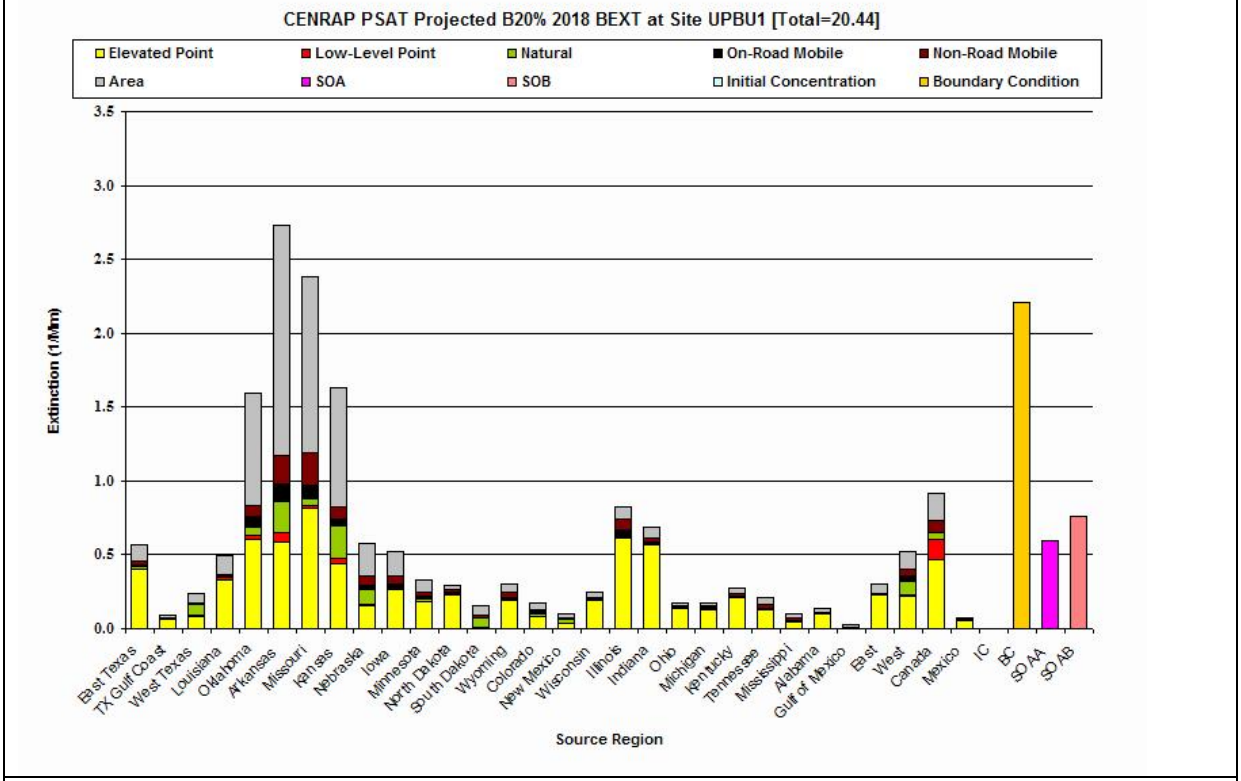



**Figure E-2j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Upper Buffalo (UPBU), Arkansas.

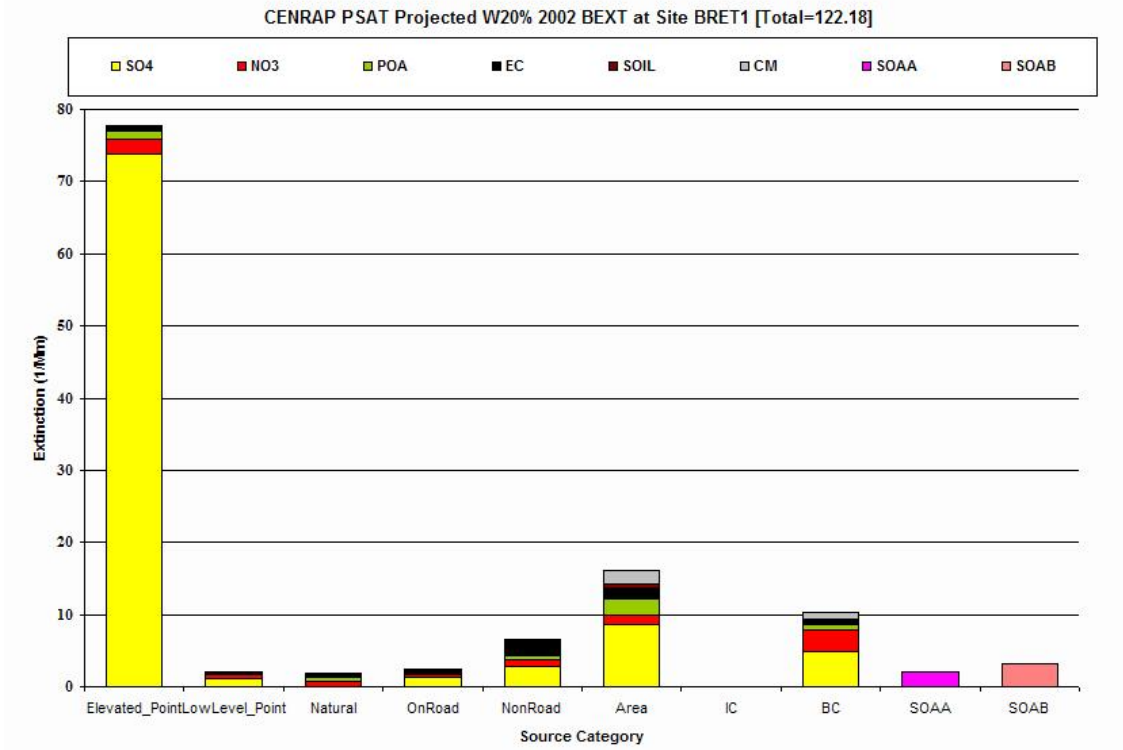



**Figure E-3a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Breton Island (BRET), Louisiana.

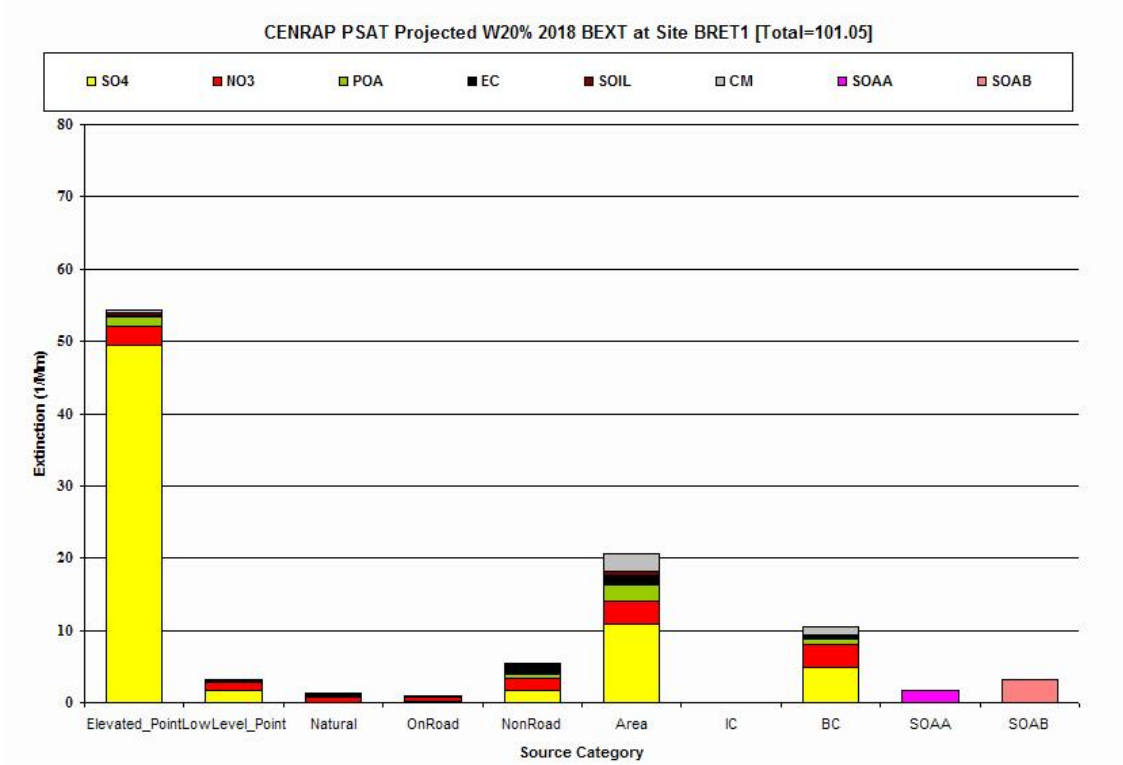



**Figure E-3b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Breton Island (BRET), Louisiana.

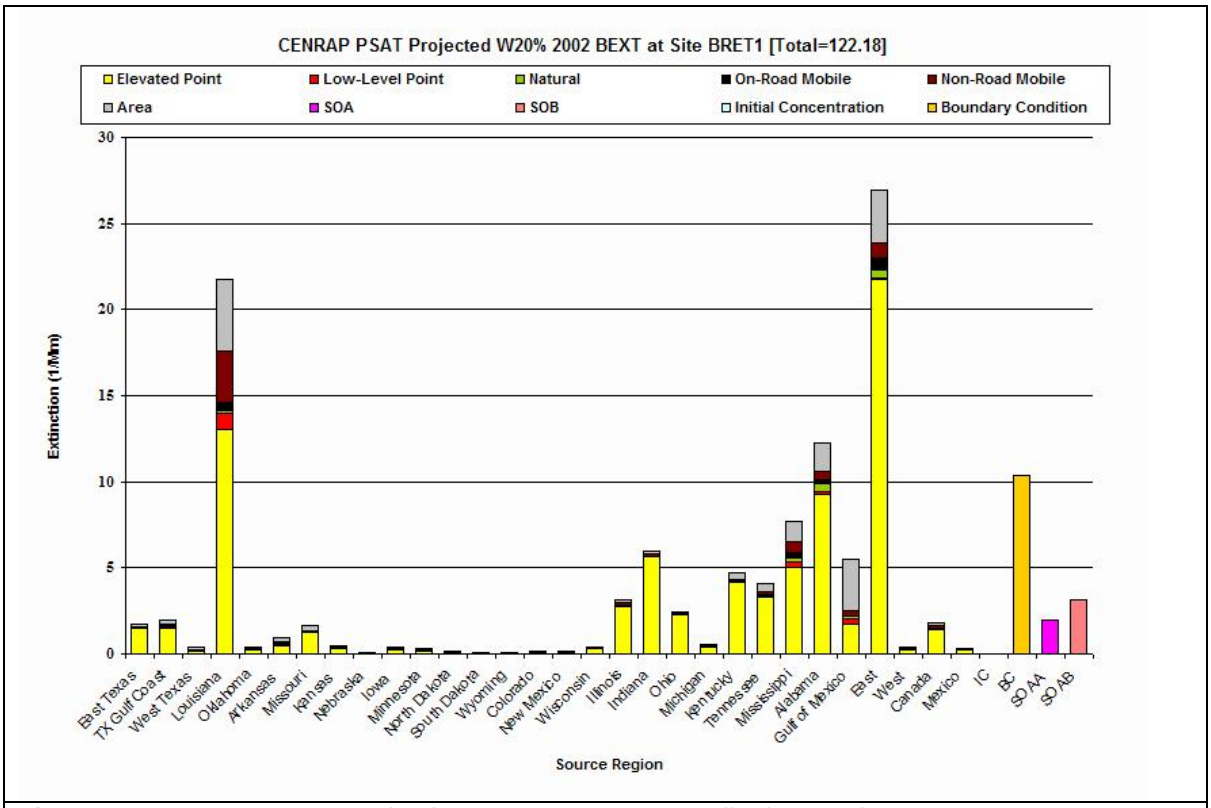



**Figure E-3c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Breton Island (BRET), Louisiana.

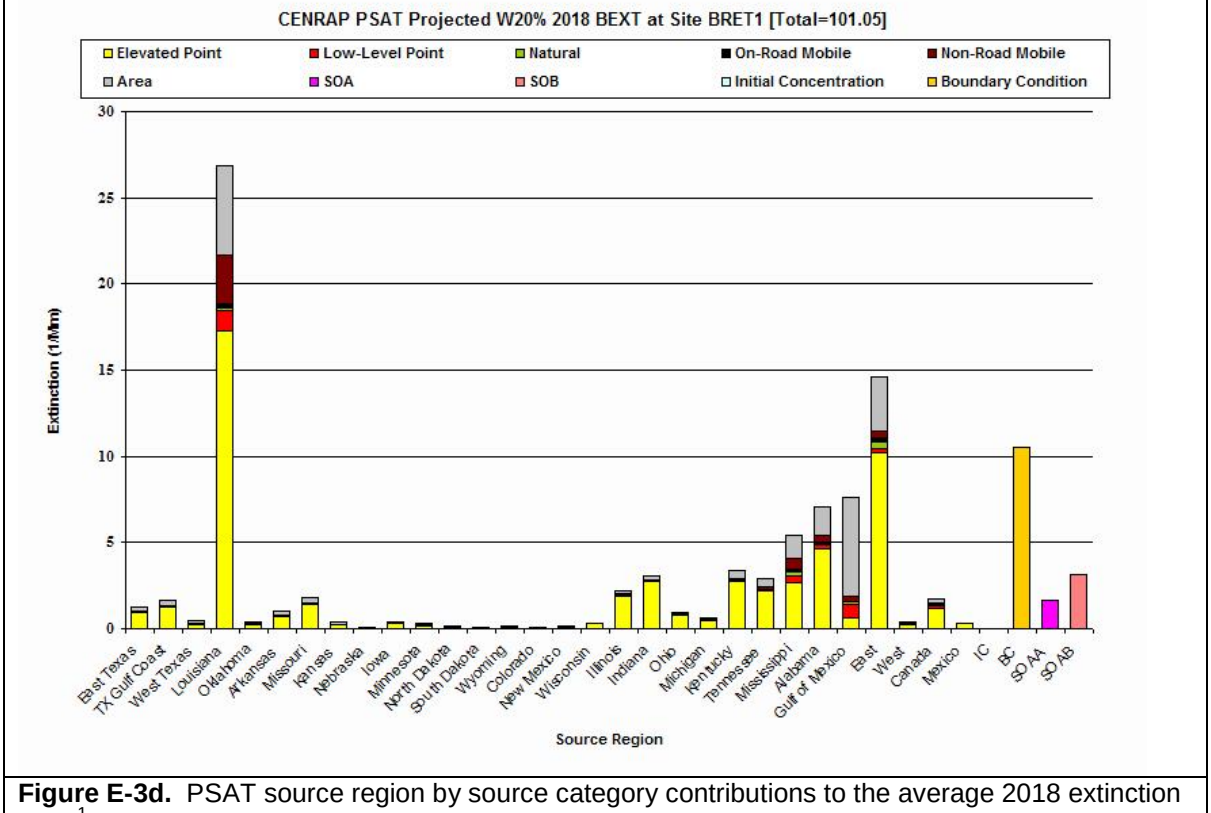



**Figure E-3d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Breton Island (BRET), Louisiana.

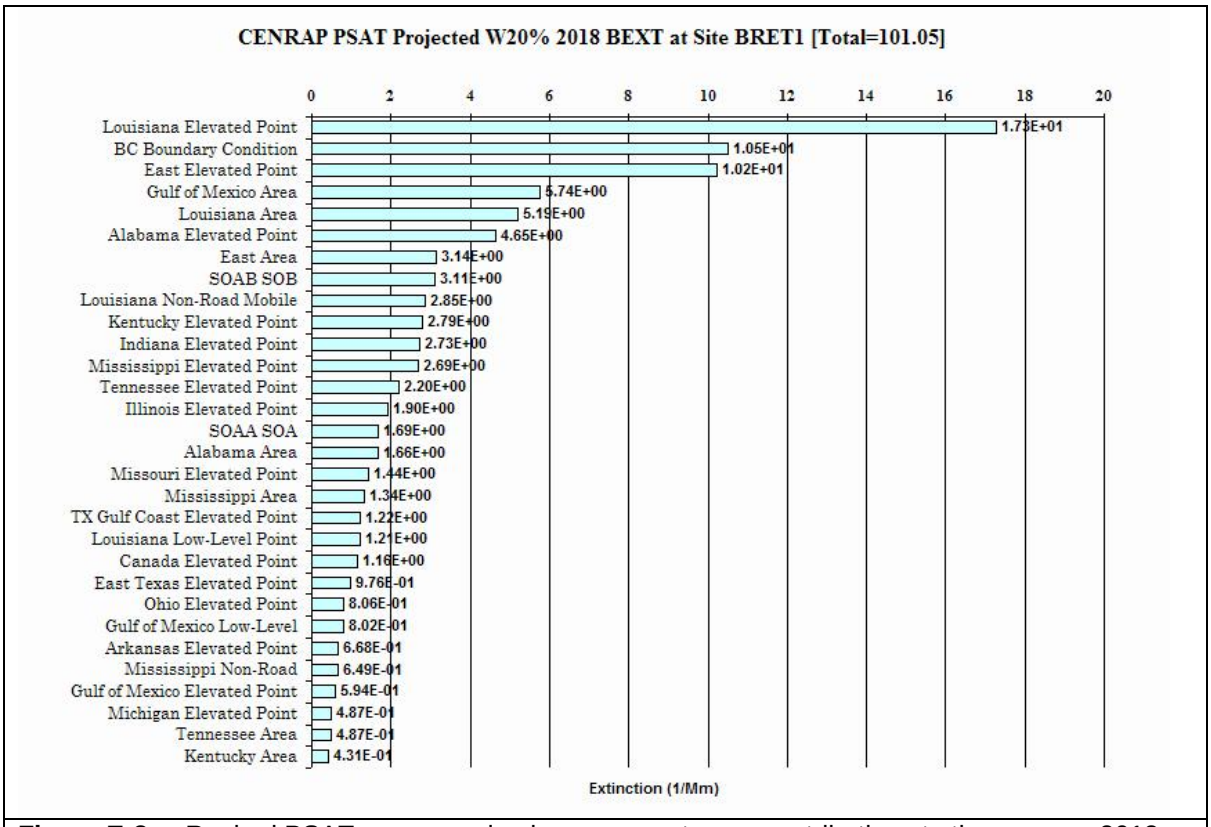



**Figure E-3e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Breton Island (BRET), Louisiana.

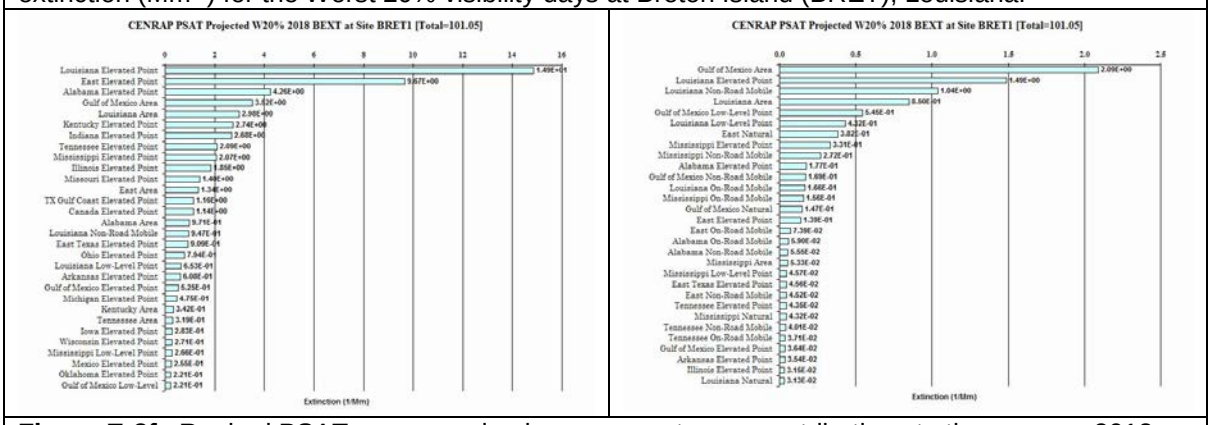



**Figure E-3f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Breton Island (BRET), Louisiana.

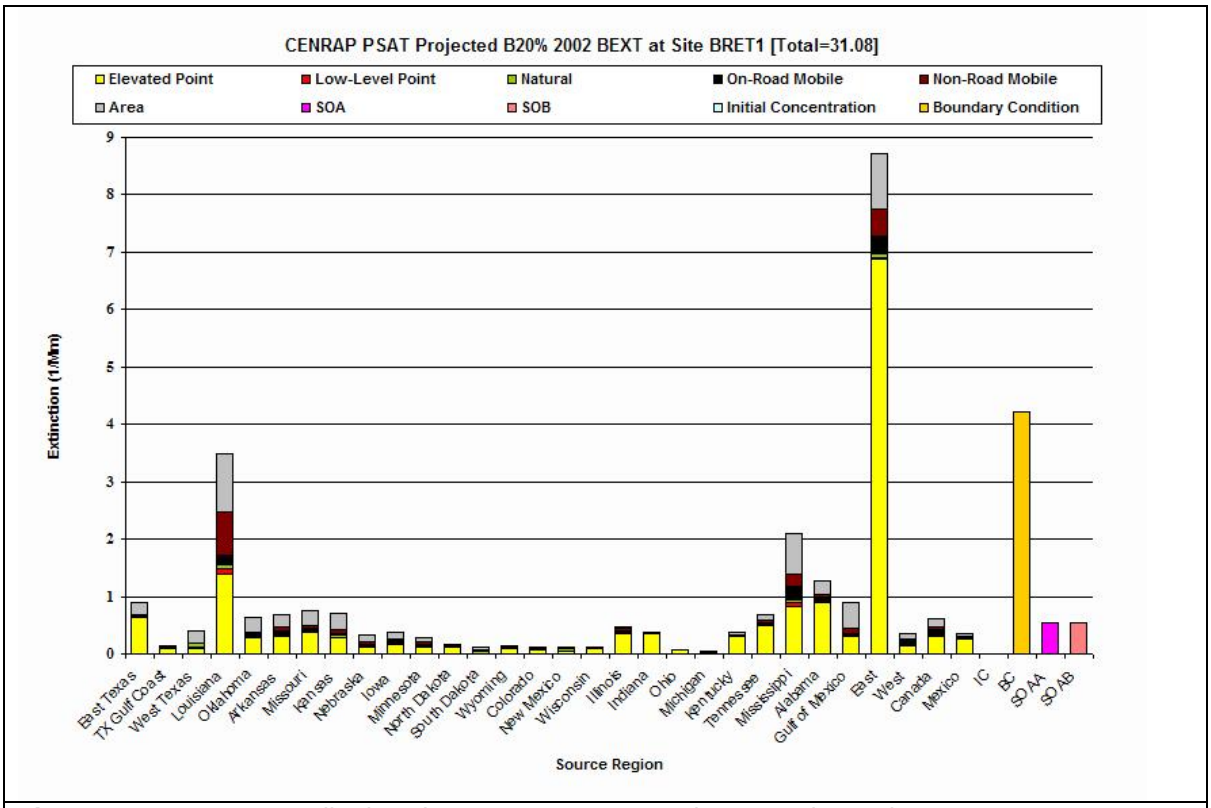



**Figure E-3g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Breton Island (BRET), Louisiana.

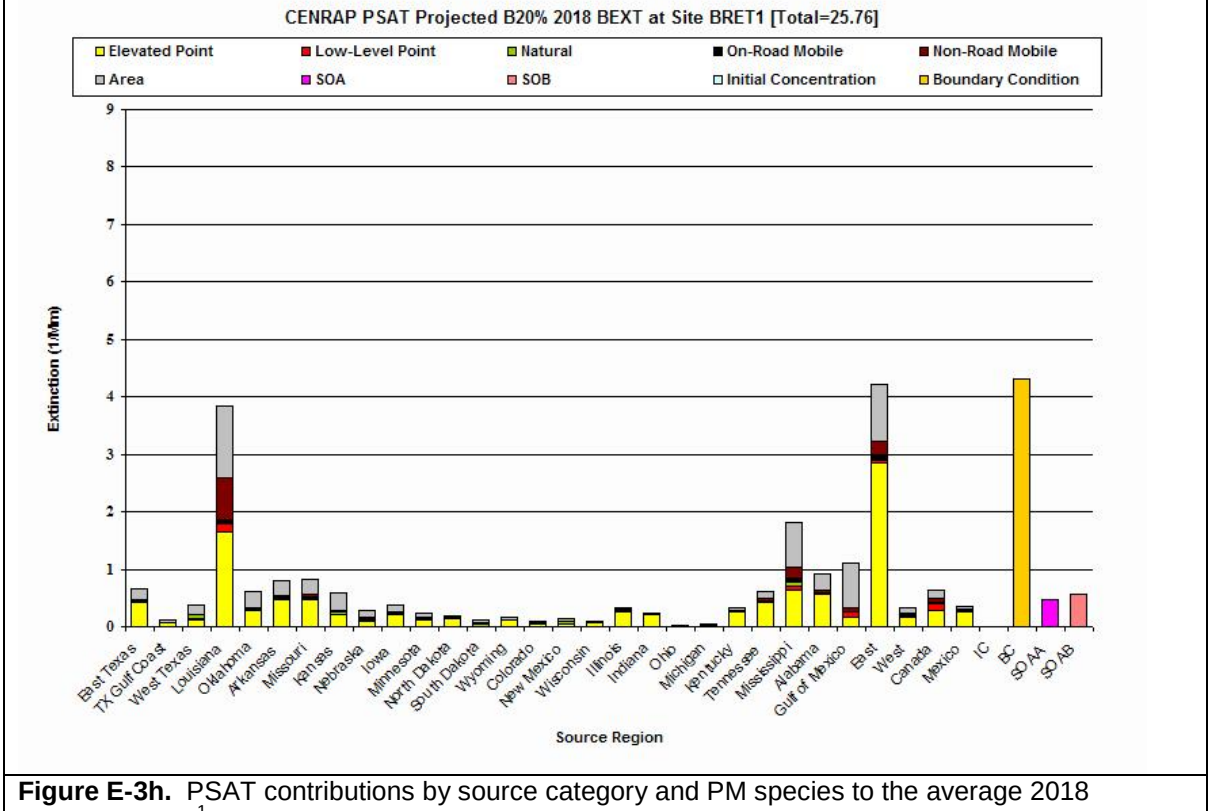



**Figure E-3h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Breton Island (BRET), Louisiana.

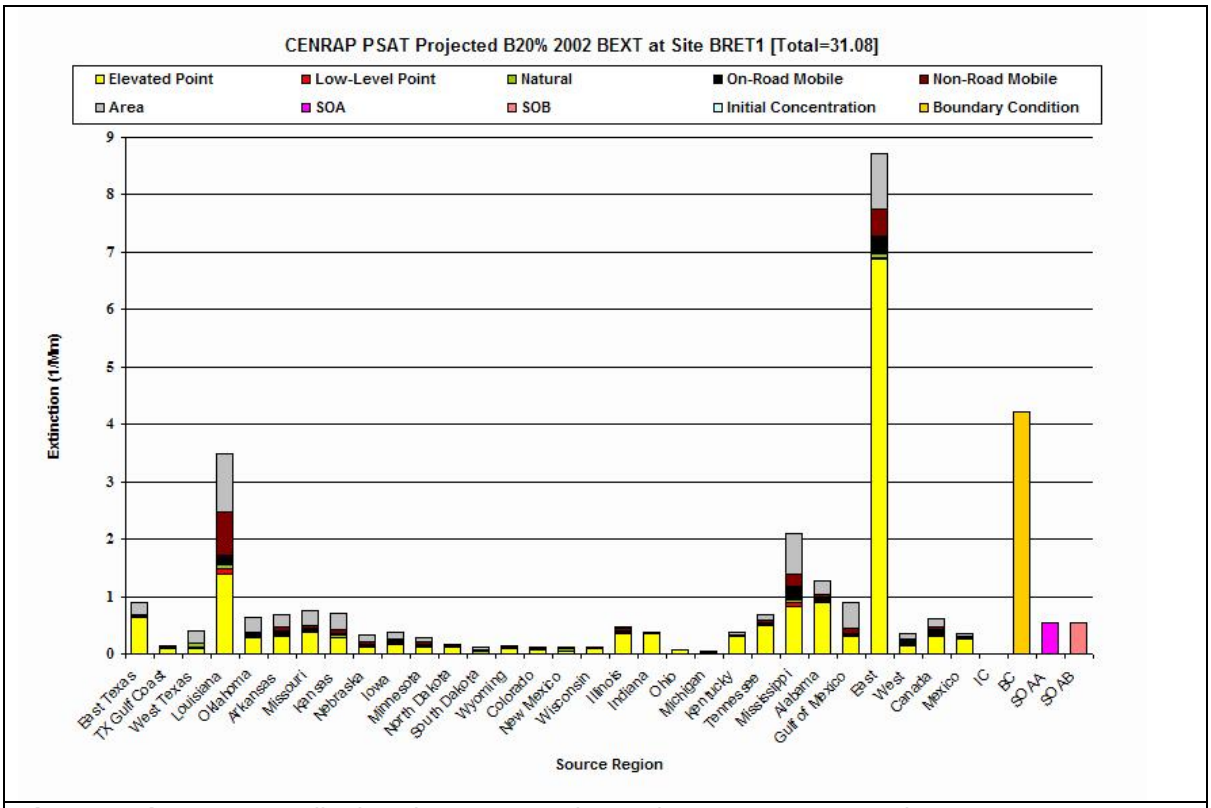



**Figure E-3i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Breton Island (BRET), Louisiana.

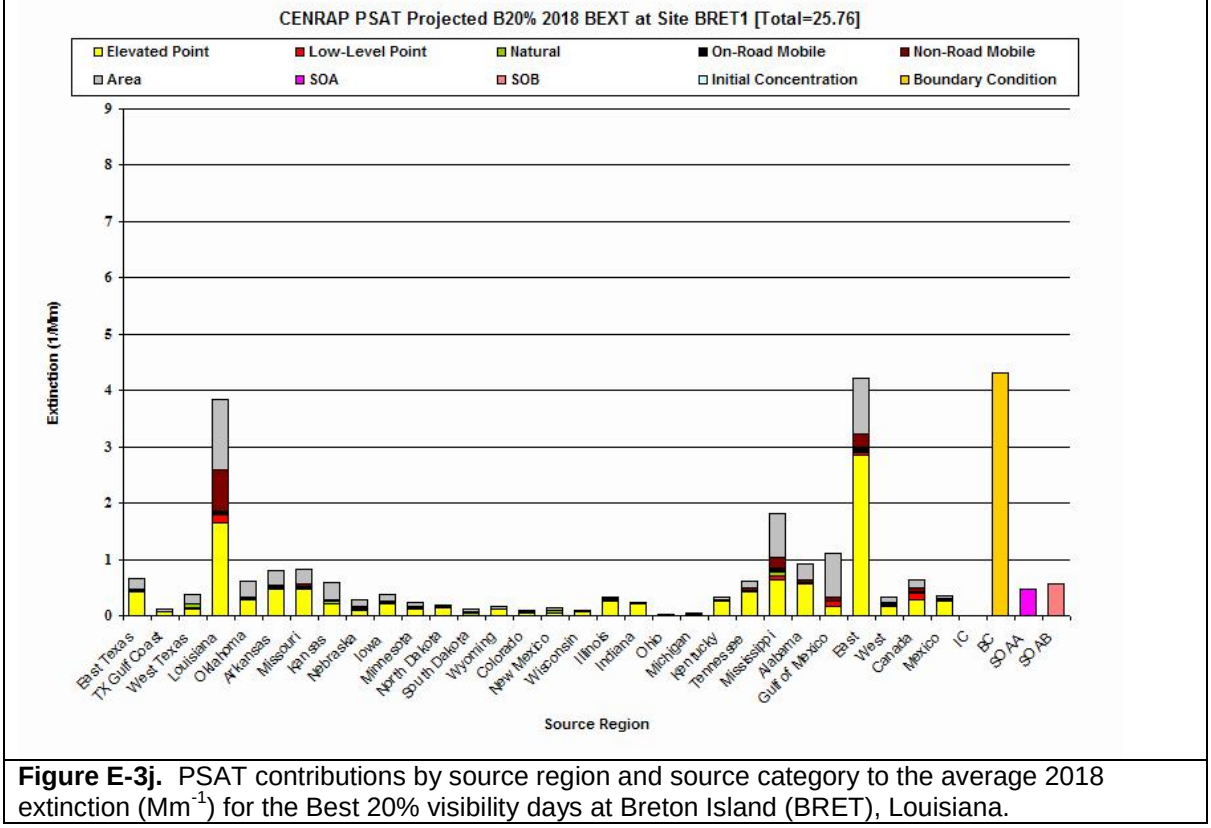



**Figure E-3j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Breton Island (BRET), Louisiana.

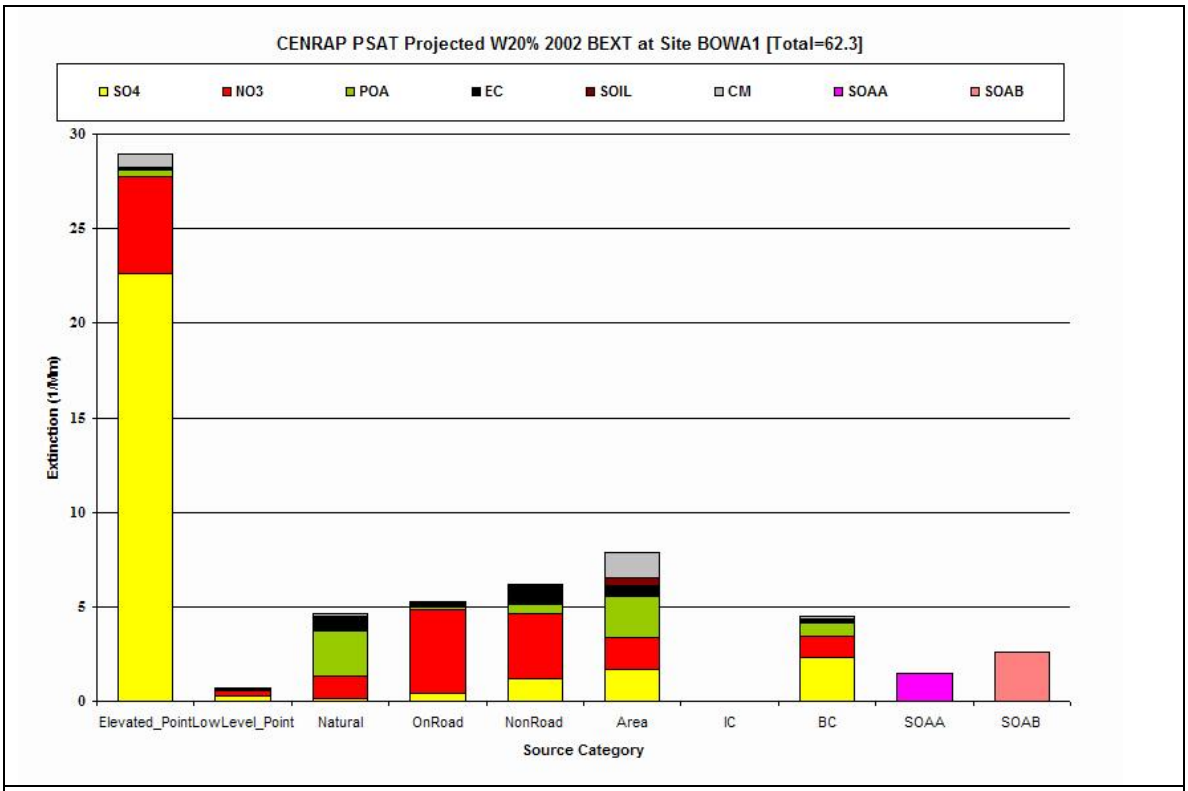



**Figure E-4a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Boundary Waters (BOWA), Minnesota.

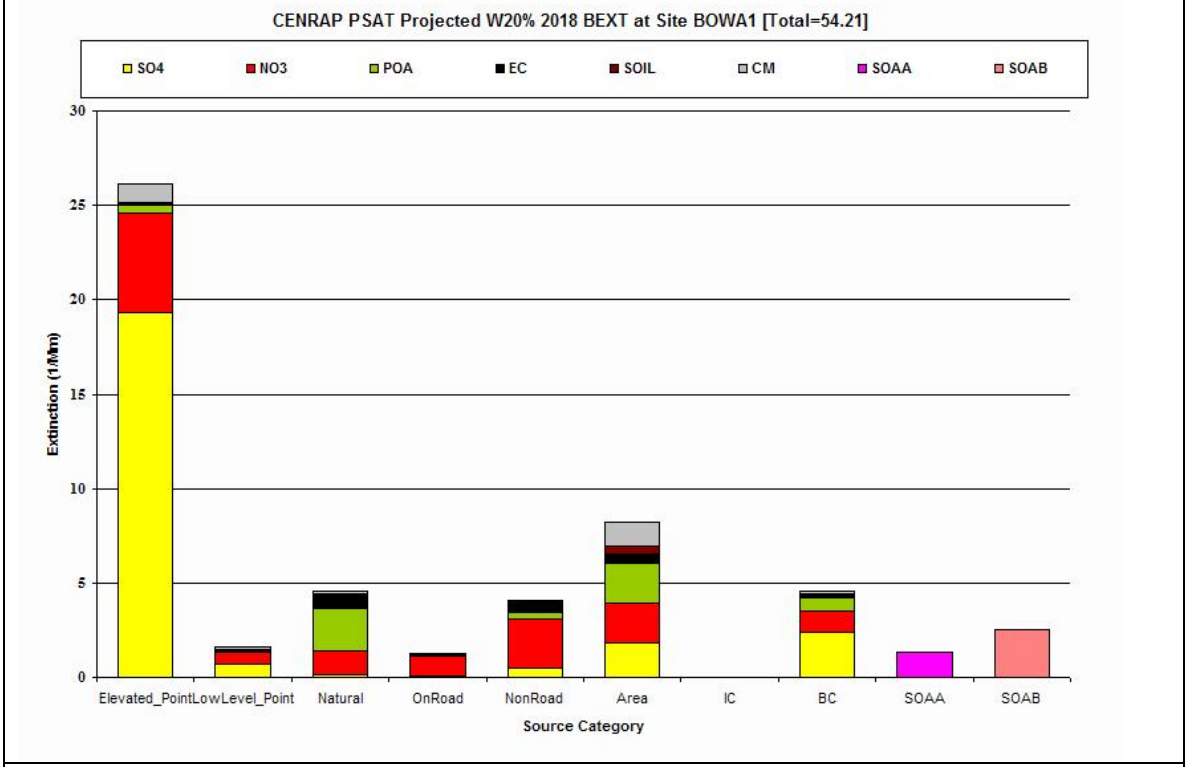



**Figure E-4b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Boundary Waters (BOWA), Minnesota.

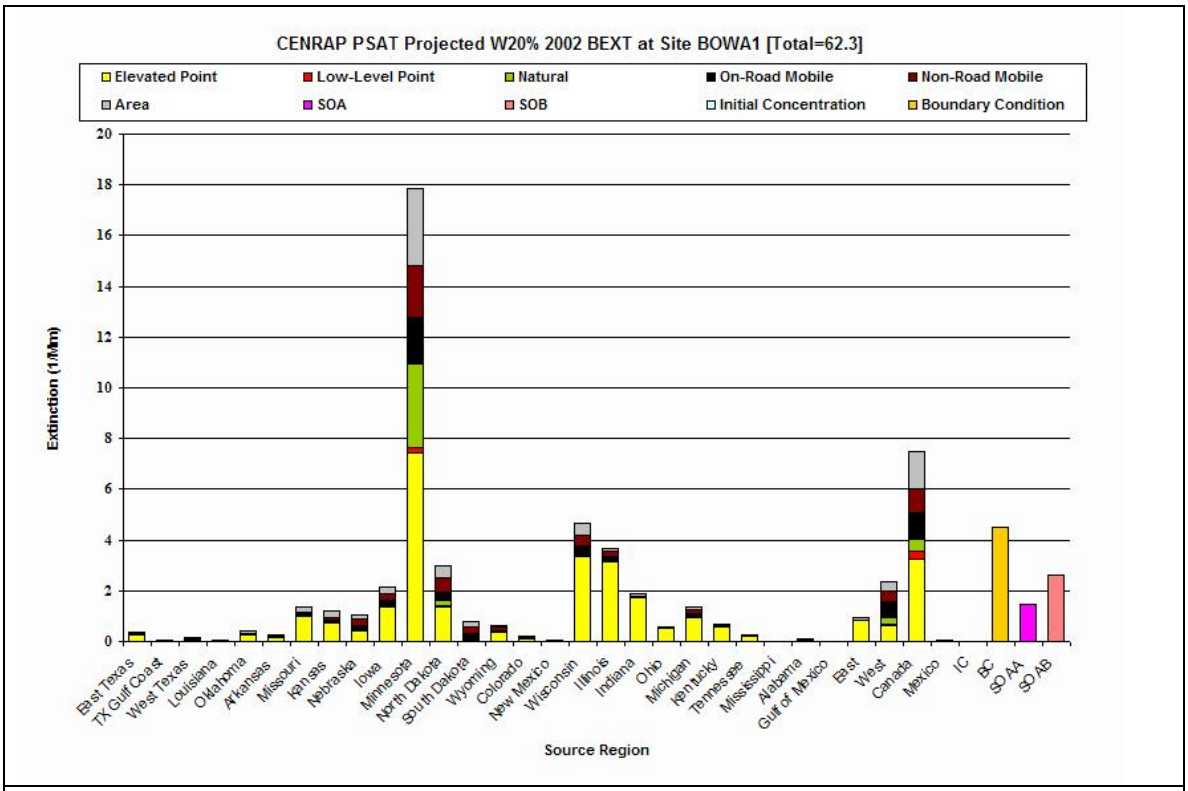



**Figure E-4c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Boundary Waters (BOWA), Minnesota.

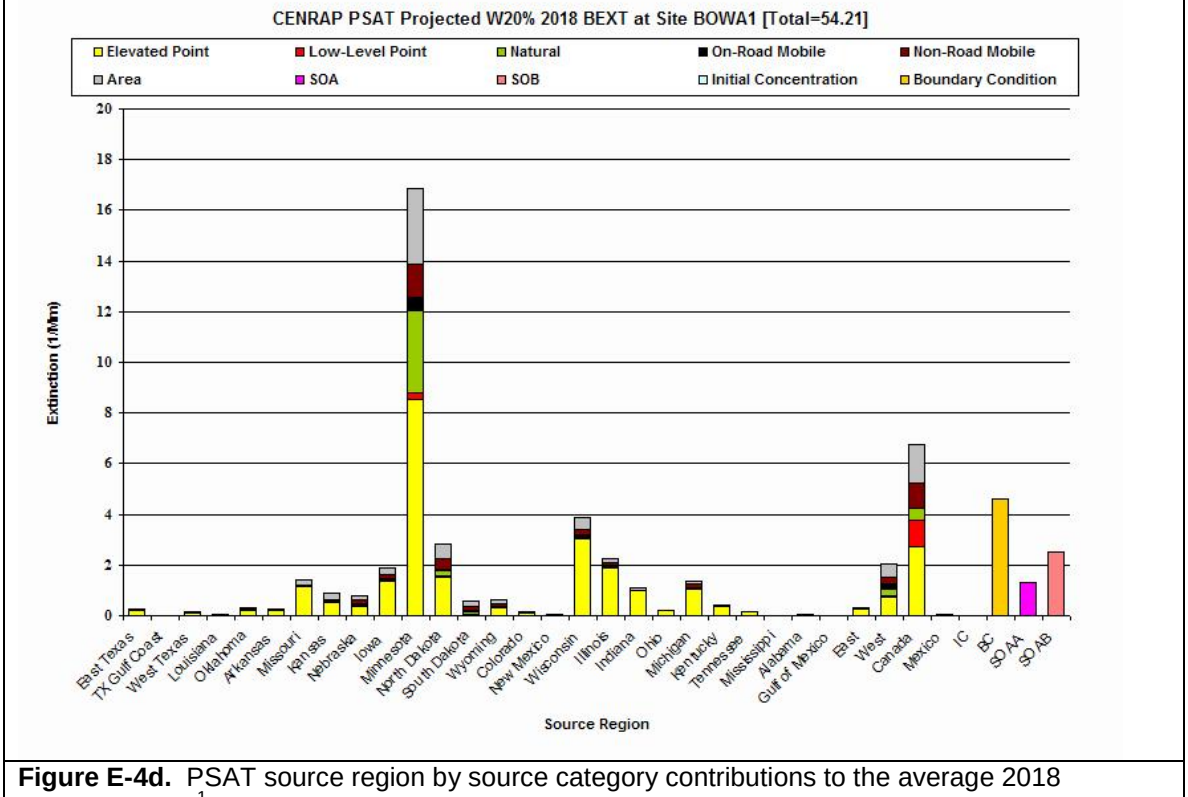



**Figure E-4d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Boundary Waters (BOWA), Minnesota.

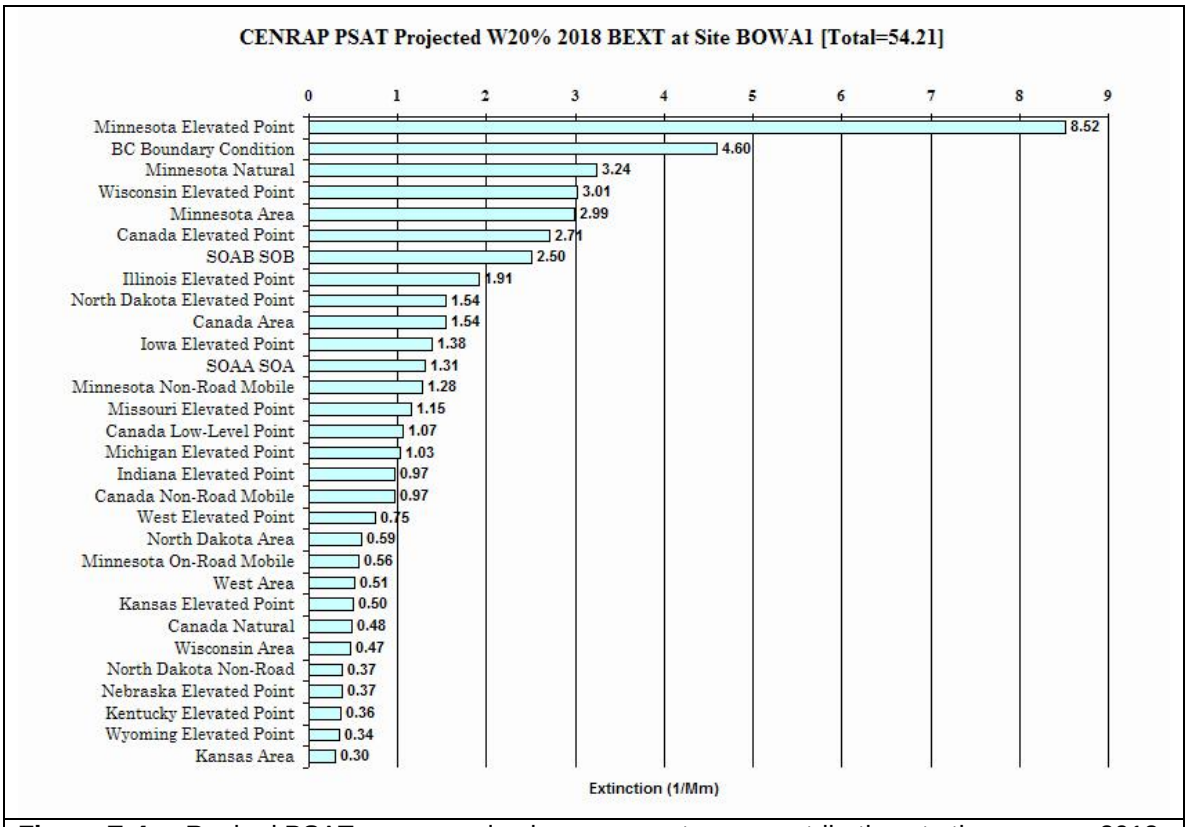



**Figure E-4e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Boundary Waters (BOWA), Minnesota.

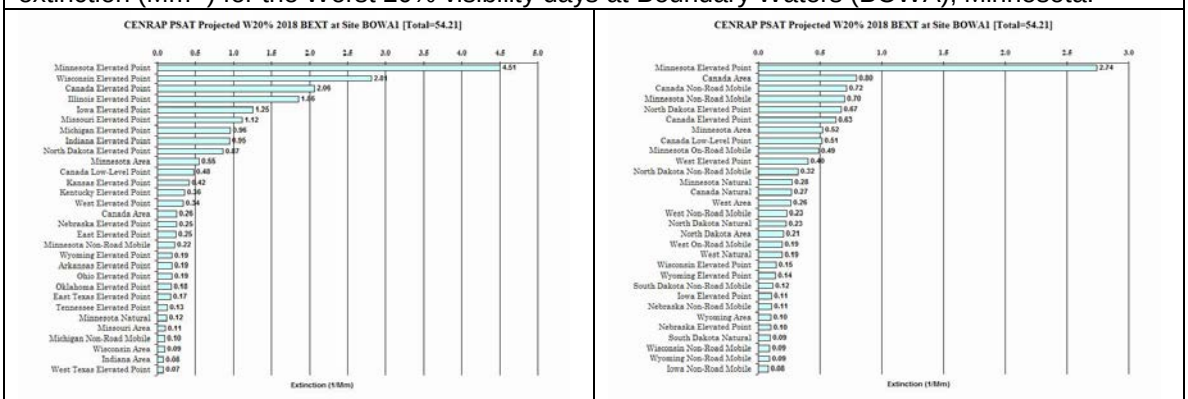



**Figure E-4f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Boundary Waters (BOWA), Minnesota.

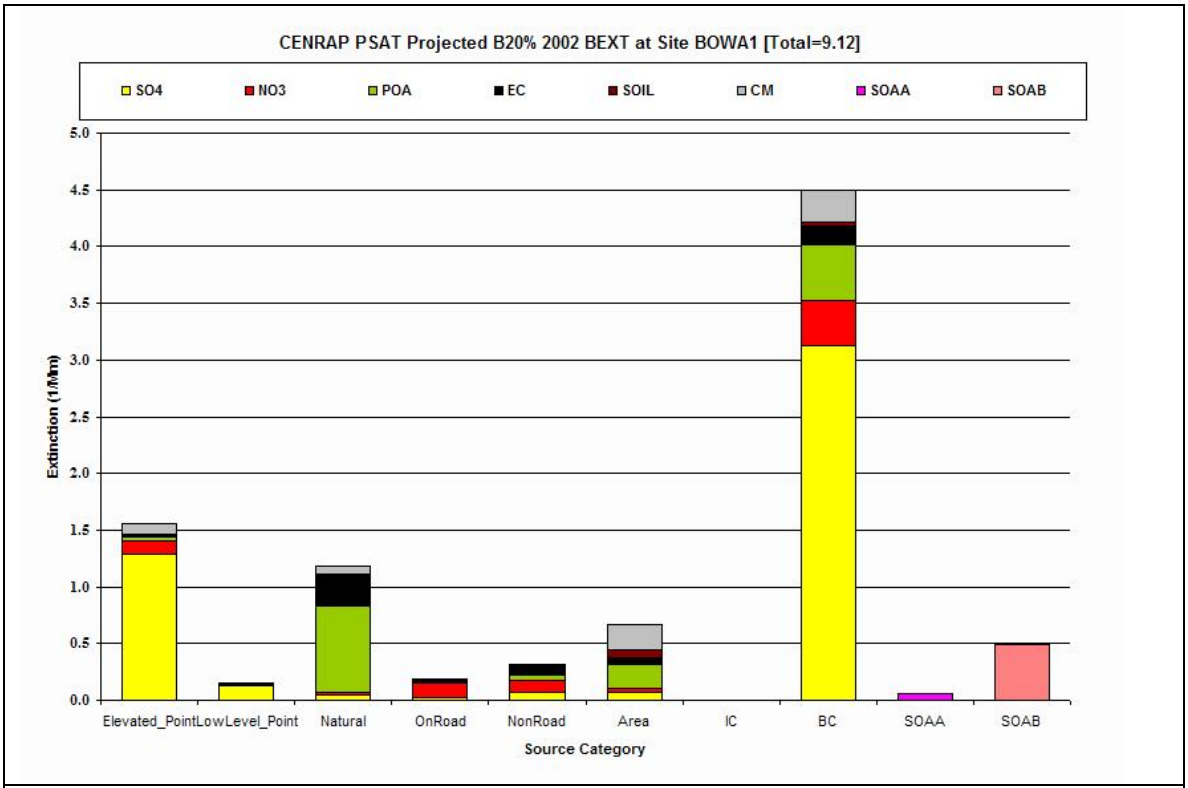



**Figure E-4g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Boundary Waters (BOWA), Minnesota.

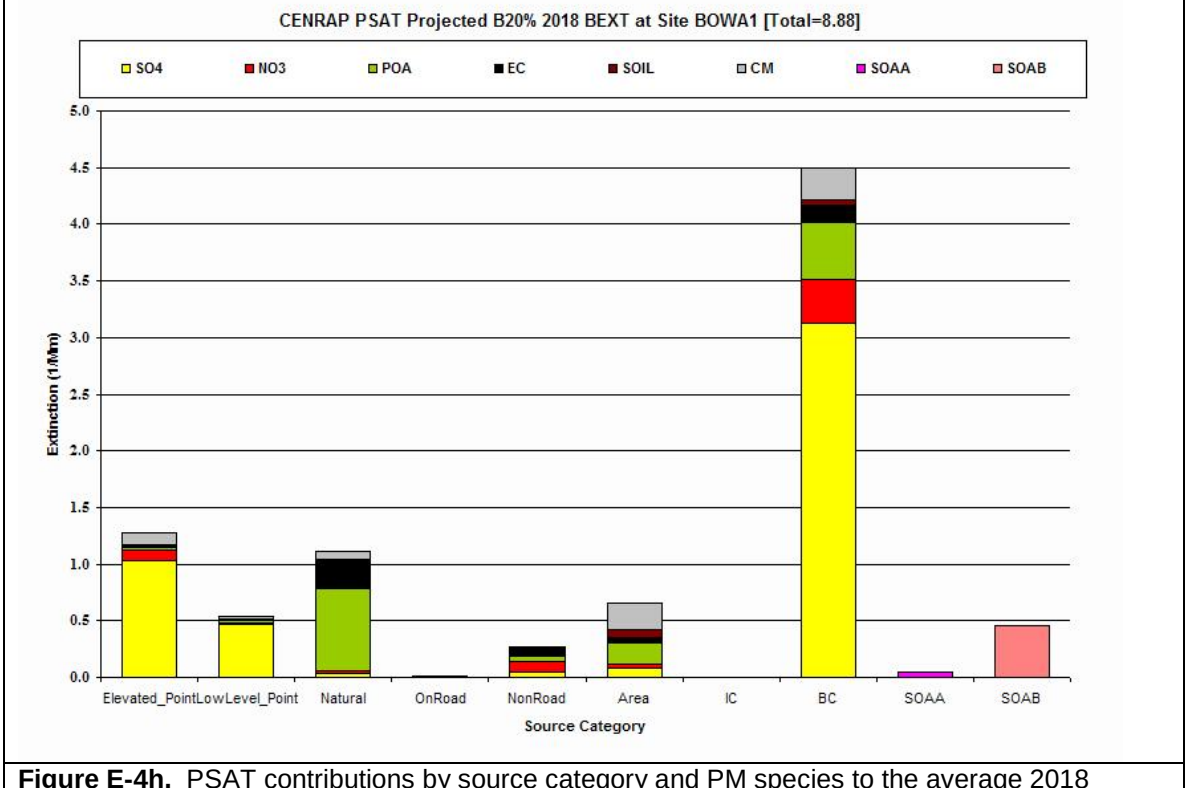



**Figure E-4h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Boundary Waters (BOWA), Minnesota.

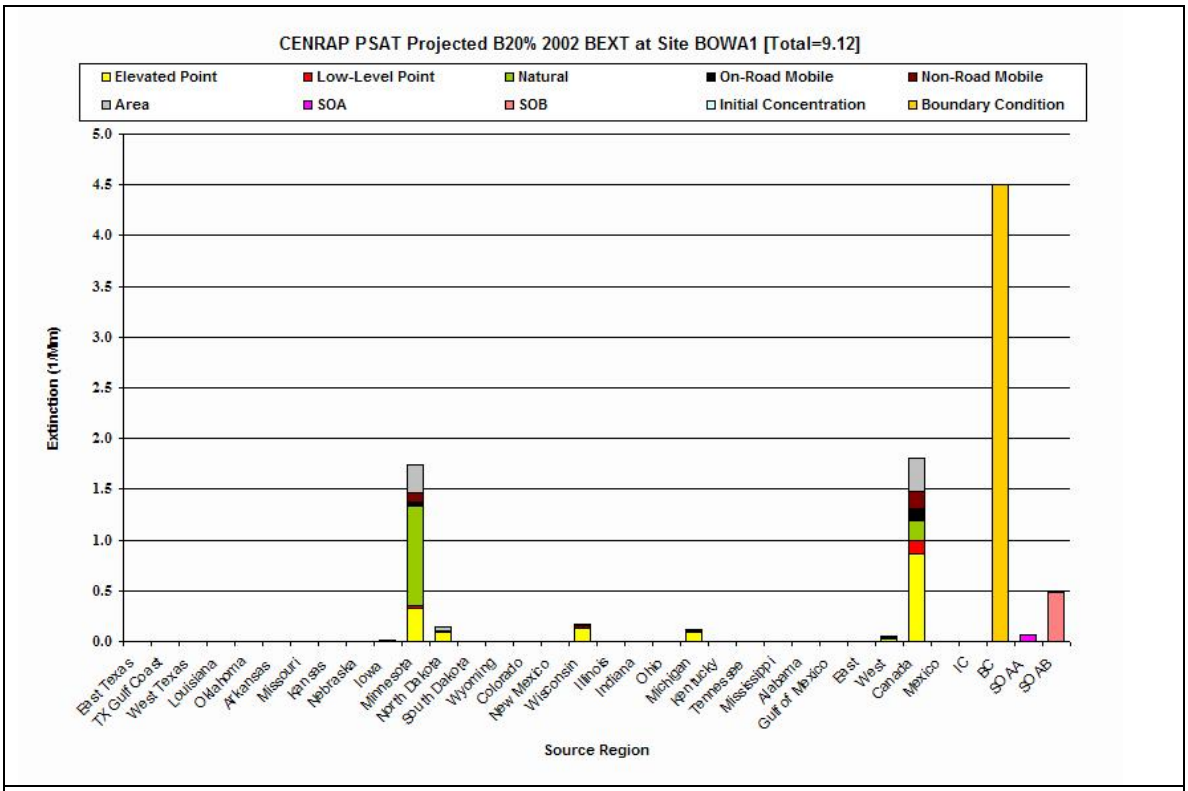



**Figure E-4i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Boundary Waters (BOWA), Minnesota.

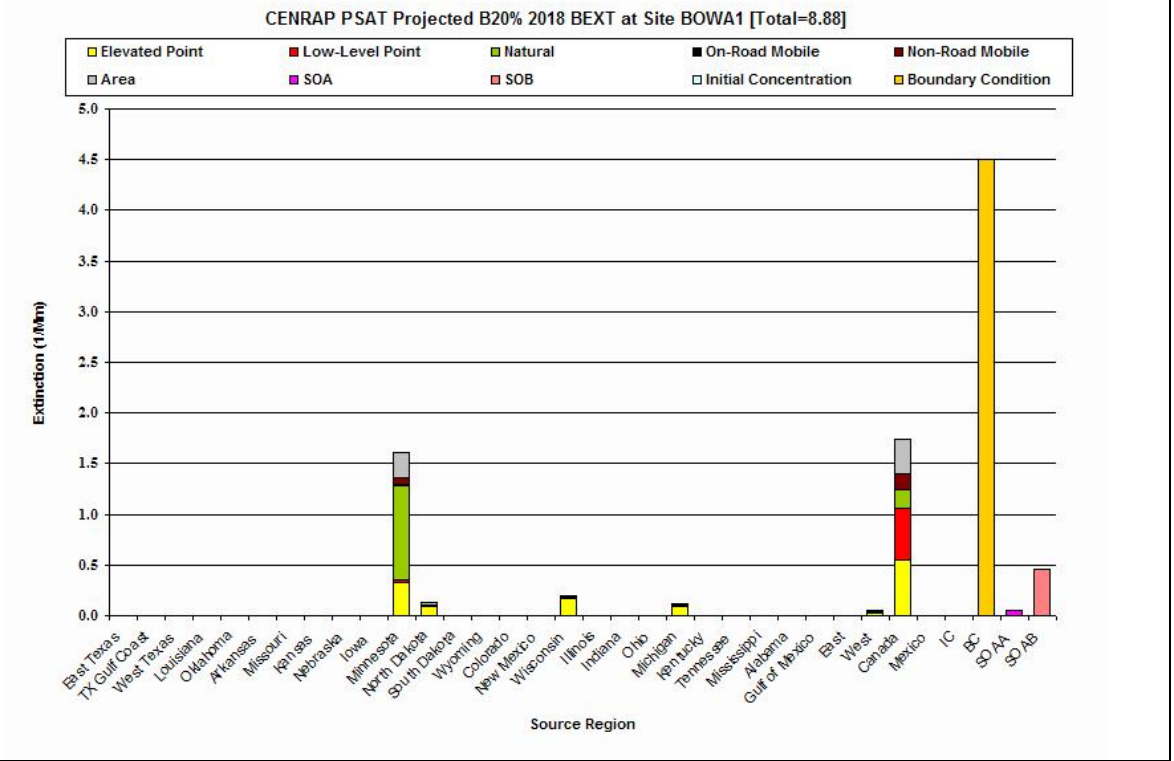



**Figure E-4j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Boundary Waters (BOWA), Minnesota.

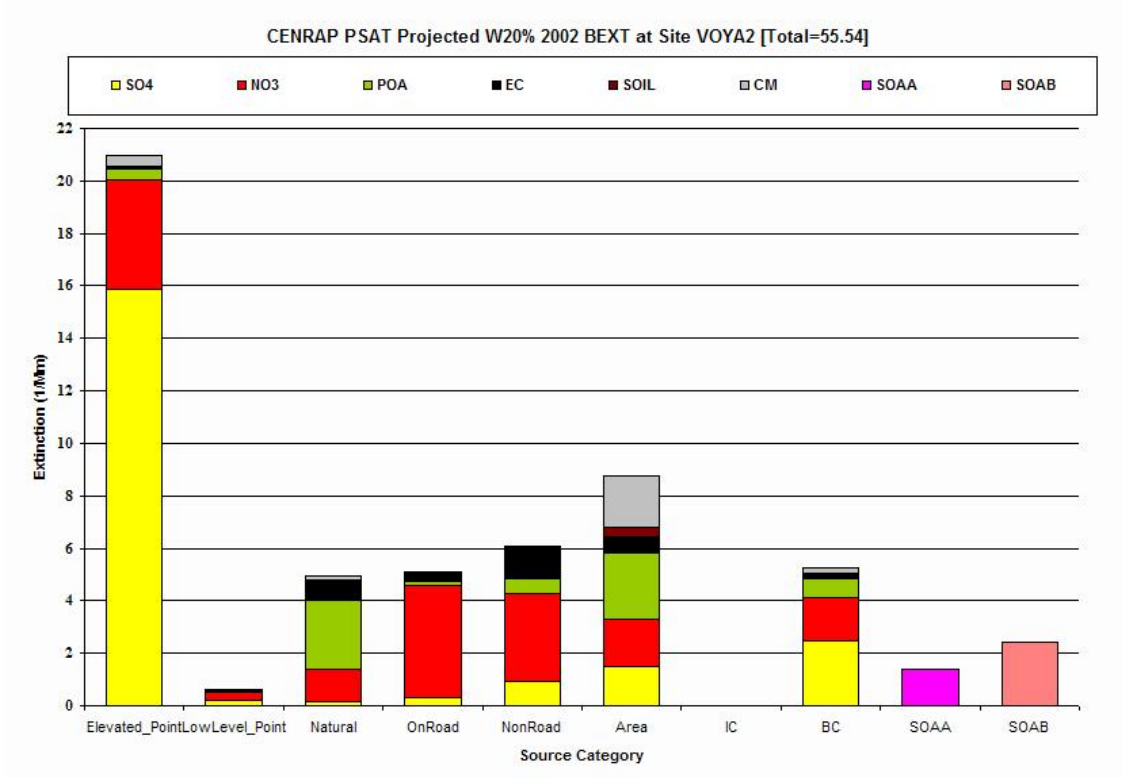



**Figure E-5a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Voyageurs (VOYA), Minnesota.

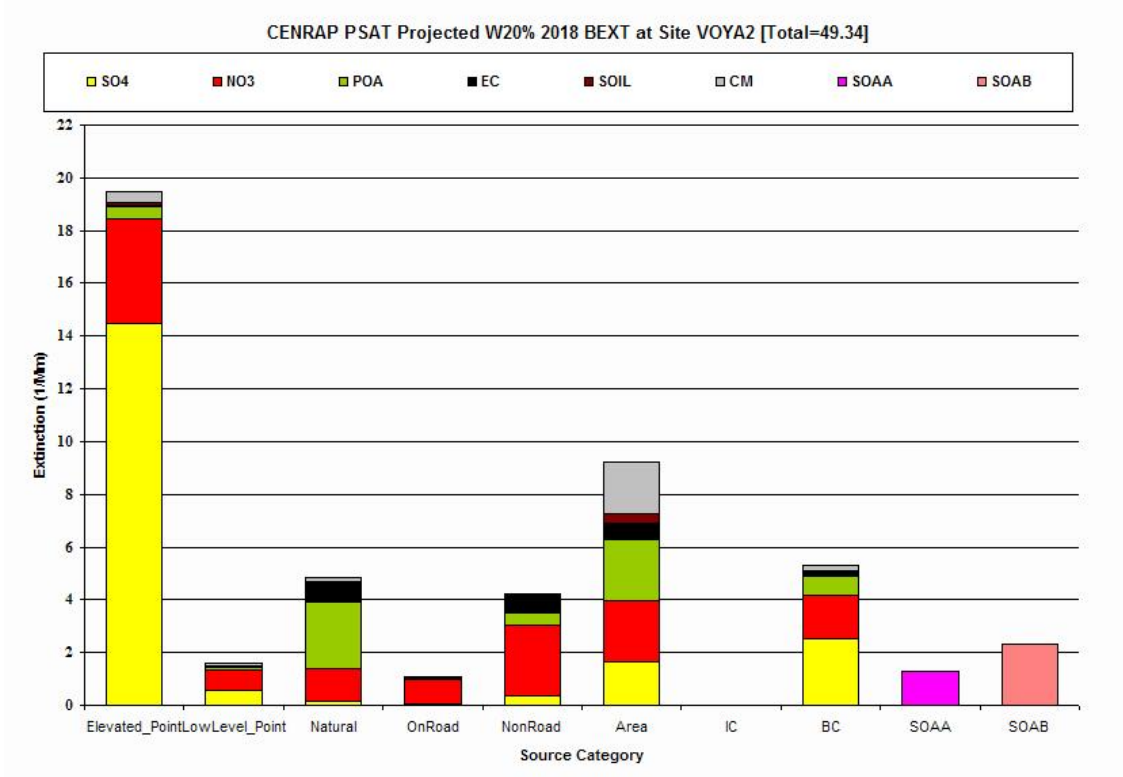



**Figure E-5b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Voyageurs (VOYA), Minnesota.

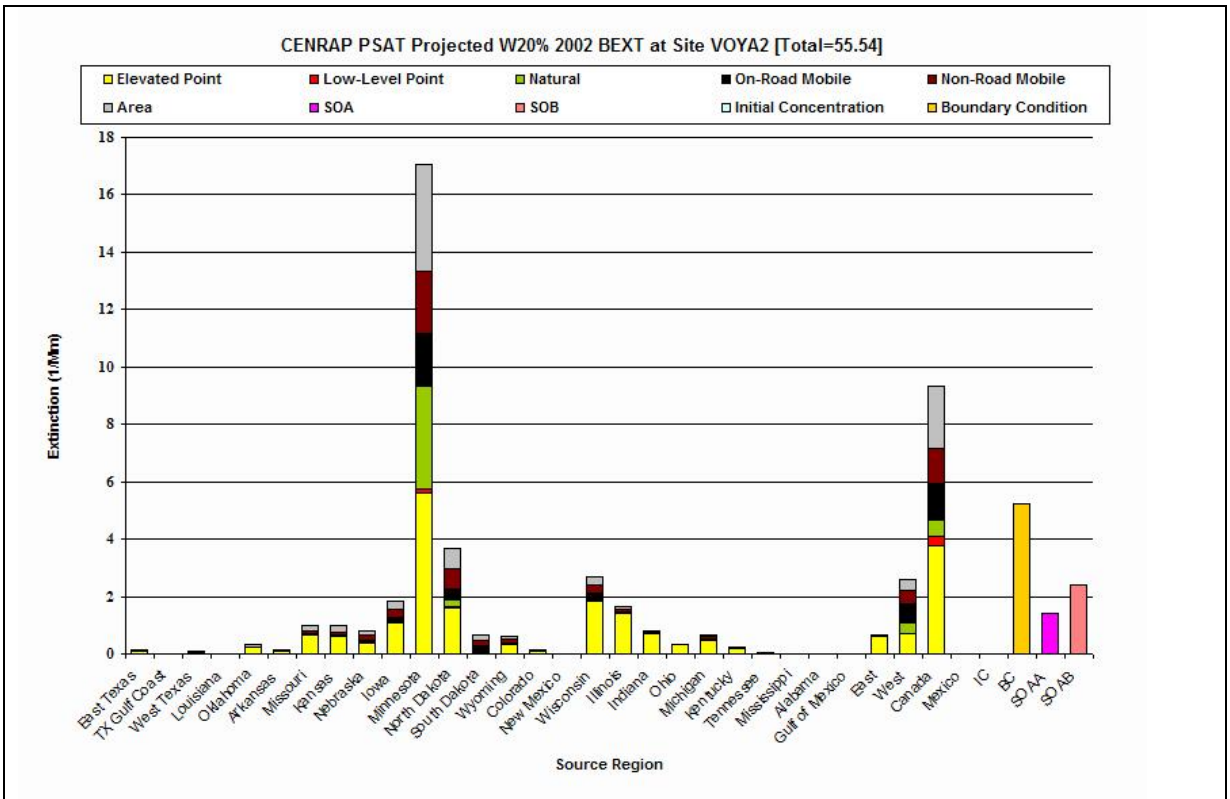



**Figure E-5c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Voyageurs (VOYA), Minnesota.

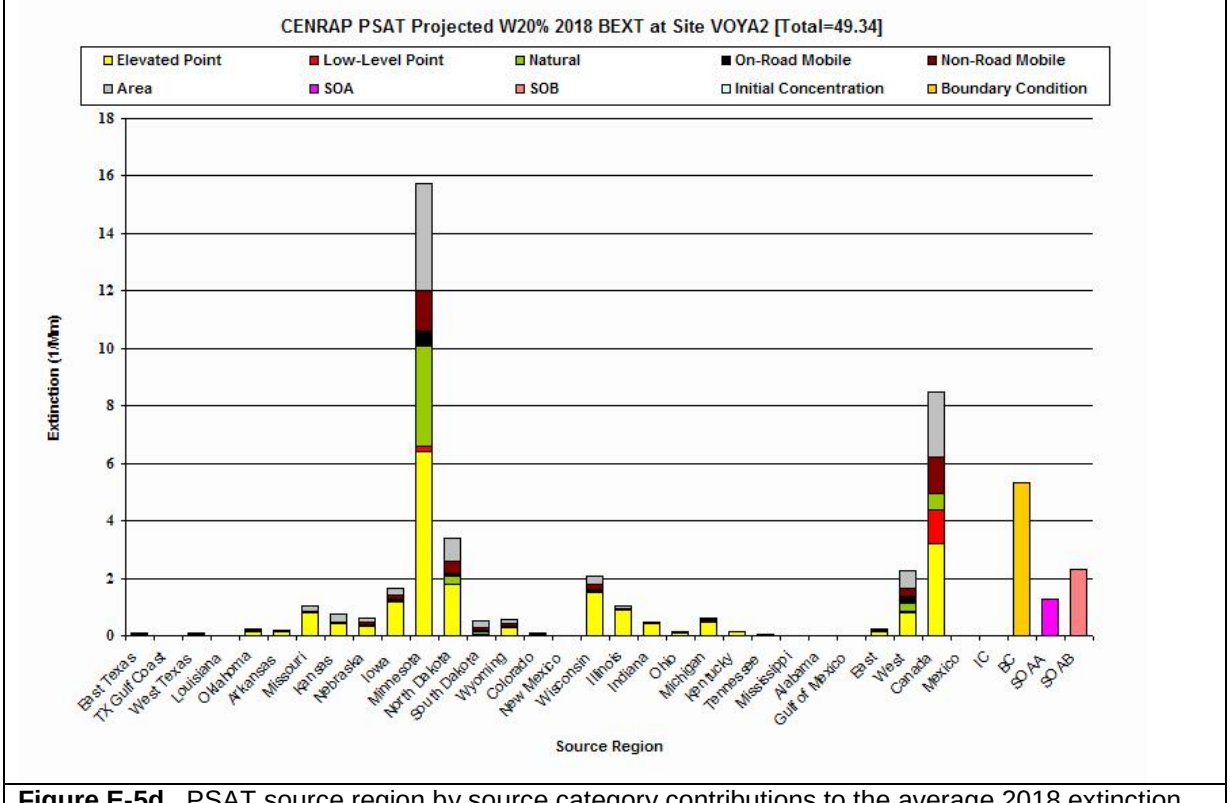



**Figure E-5d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Voyageurs (VOYA), Minnesota.

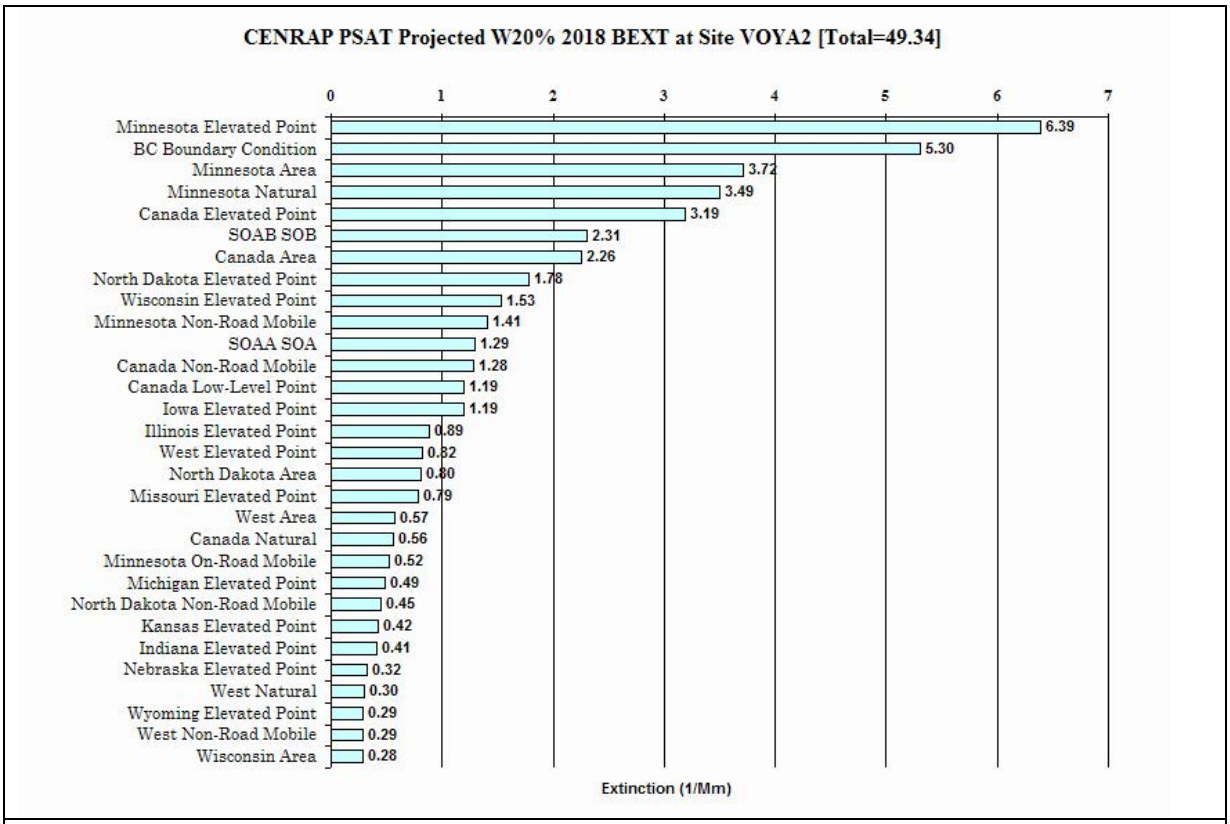
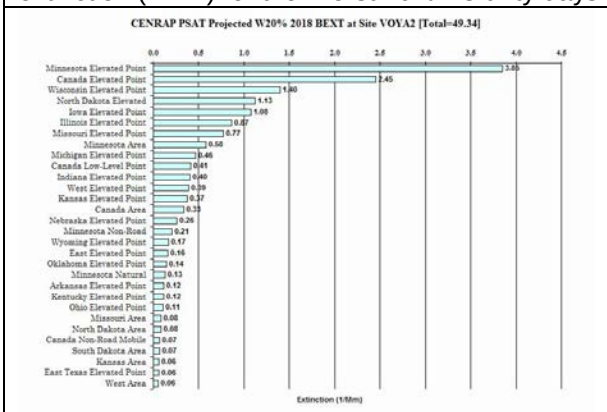



**Figure E-5e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Voyageurs (VOYA), Minnesota.



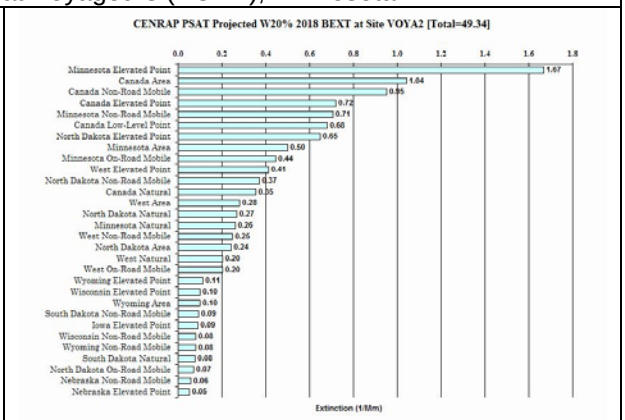




**Figure E-5f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Voyageurs (VOYA), Minnesota.

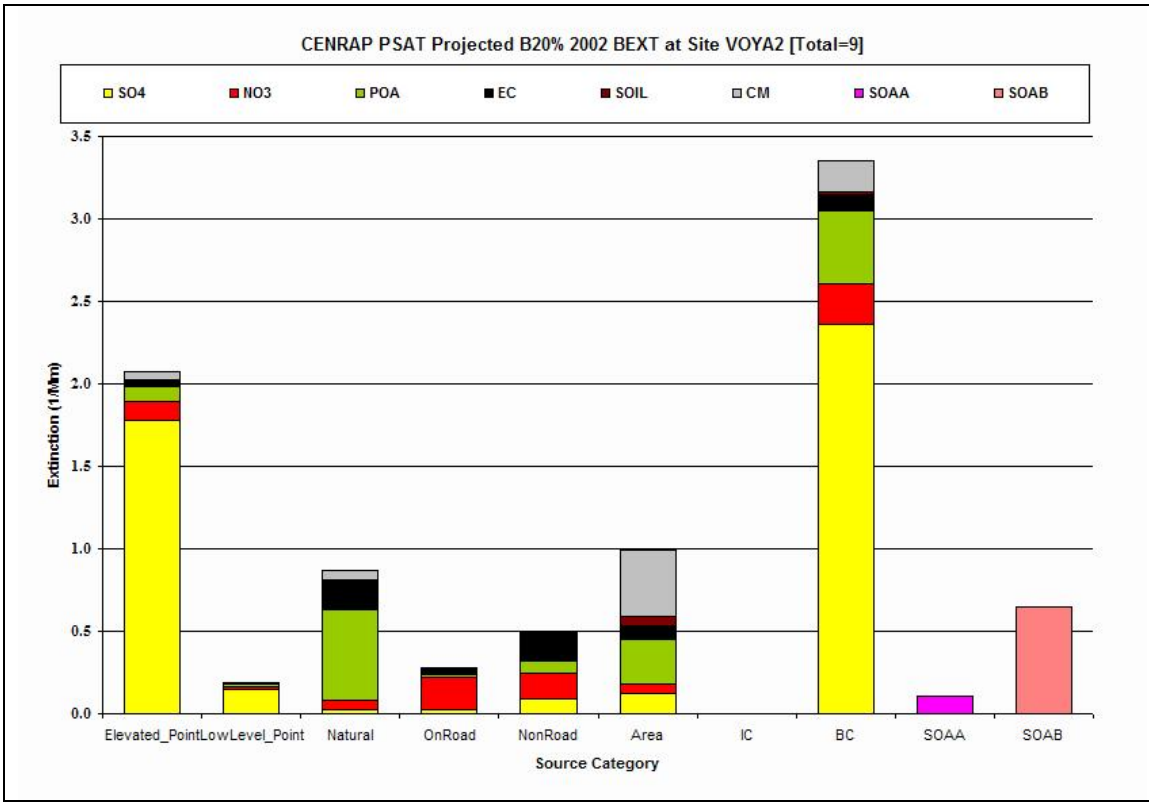



**Figure E-5g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Voyageurs (VOYA), Minnesota.

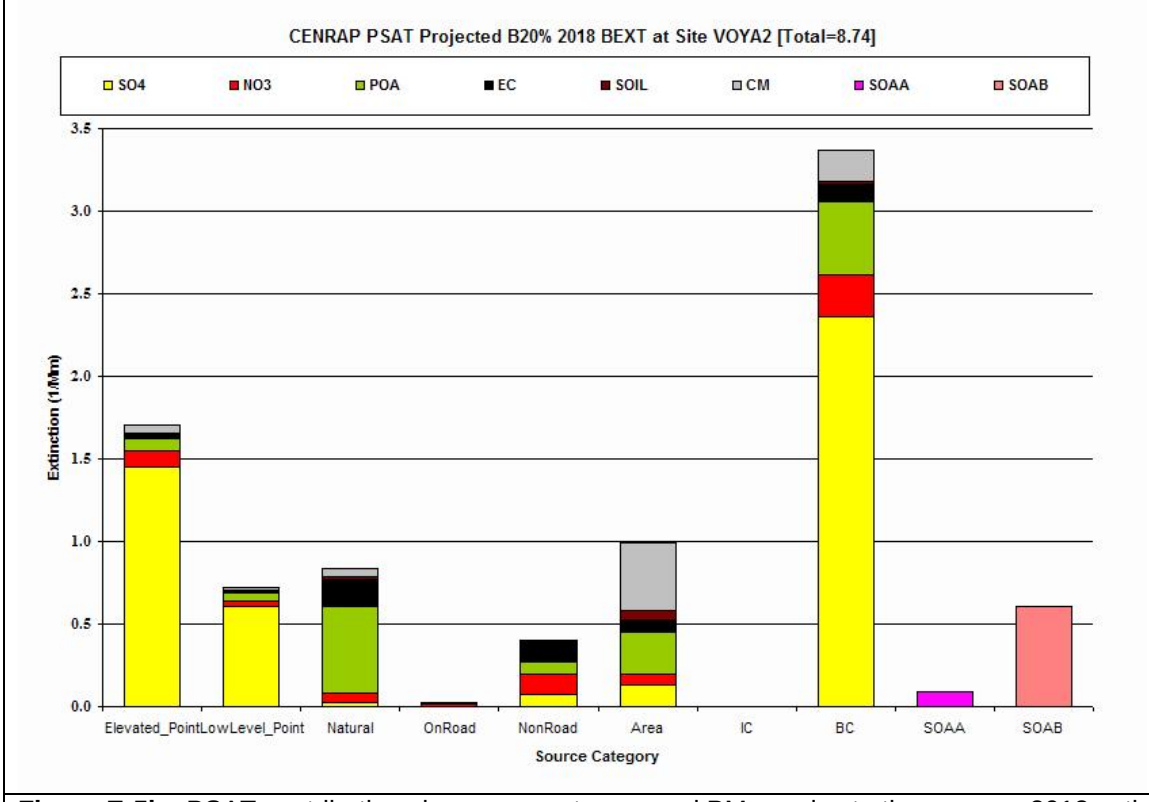



**Figure E-5h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Voyageurs (VOYA), Minnesota.

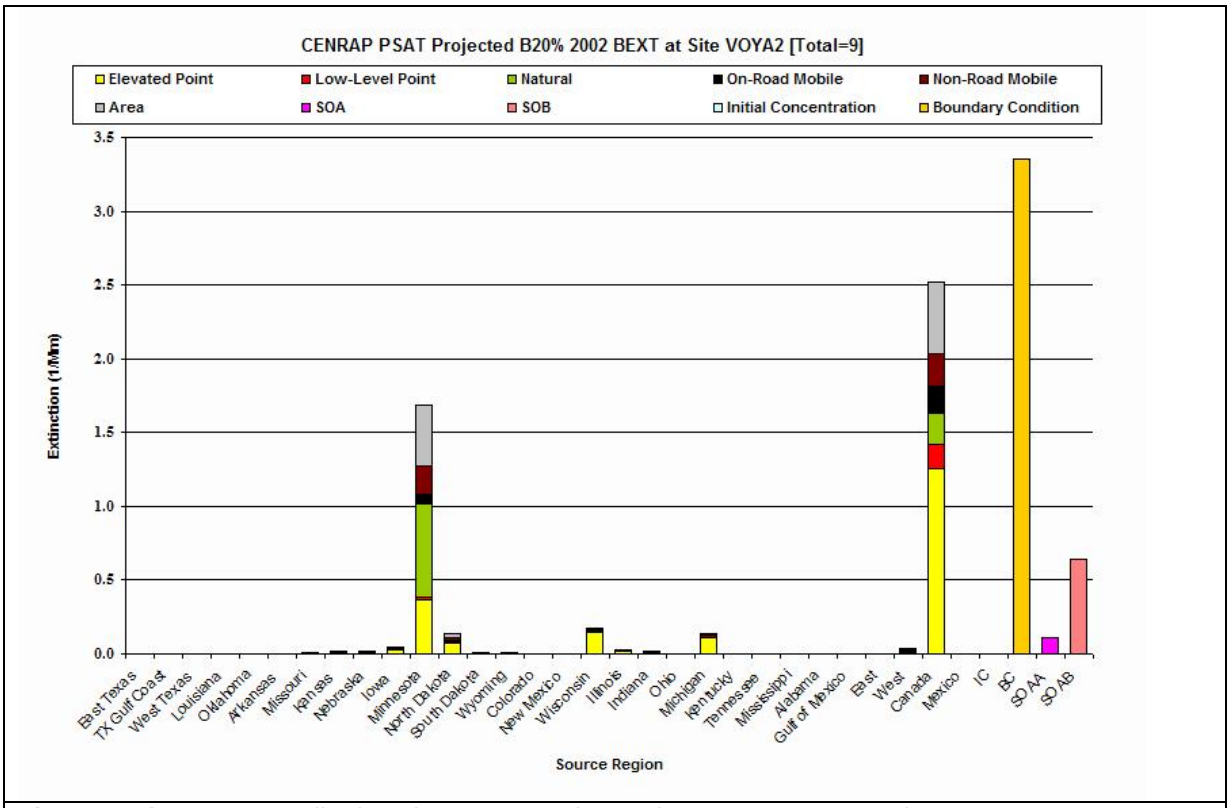



**Figure E-5i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Voyageurs (VOYA), Minnesota.

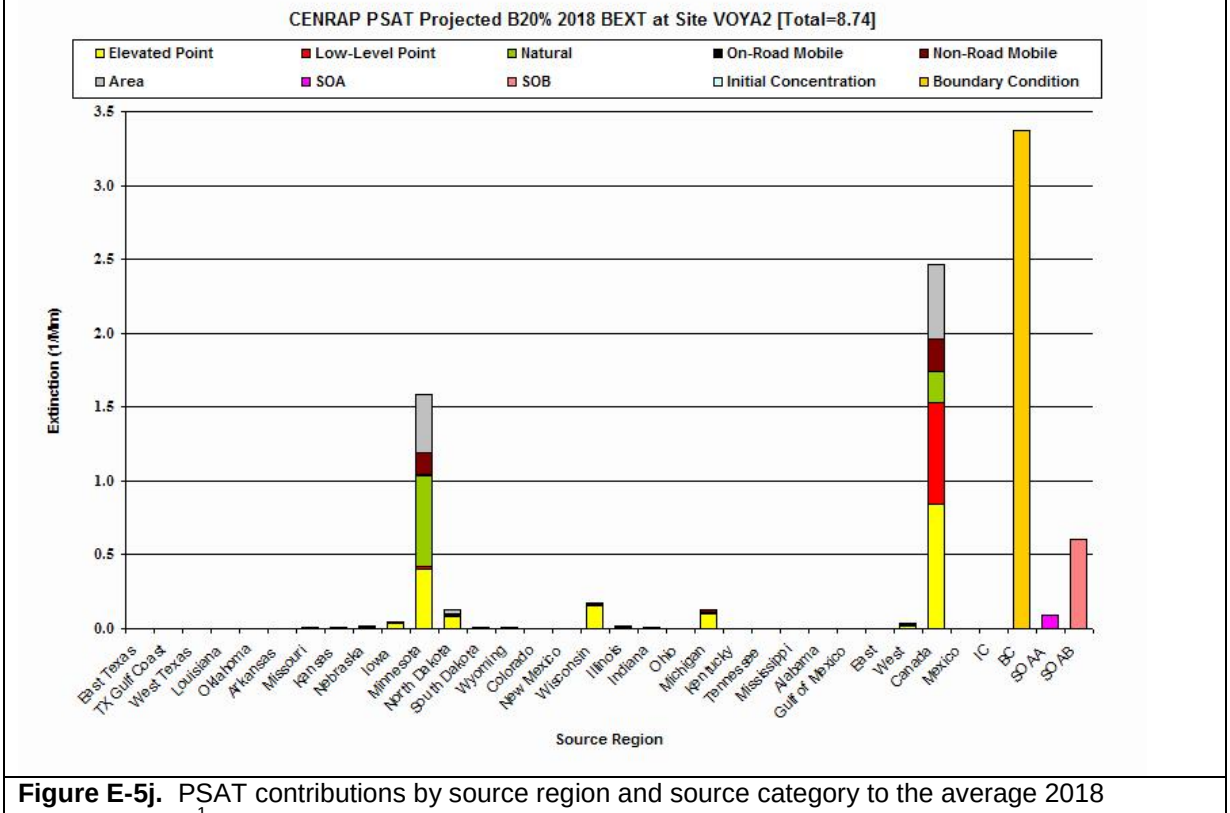



**Figure E-5j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Voyageurs (VOYA), Minnesota.

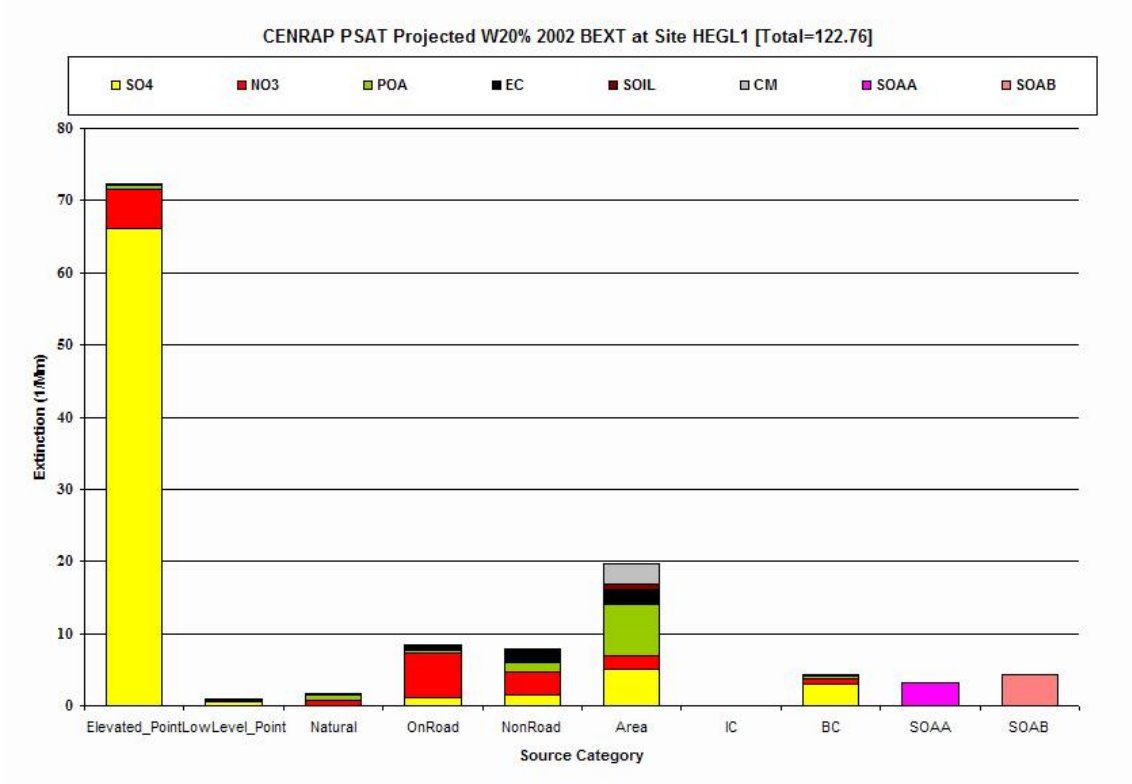



**Figure E-6a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Hercules Glade (HEGL), Missouri.

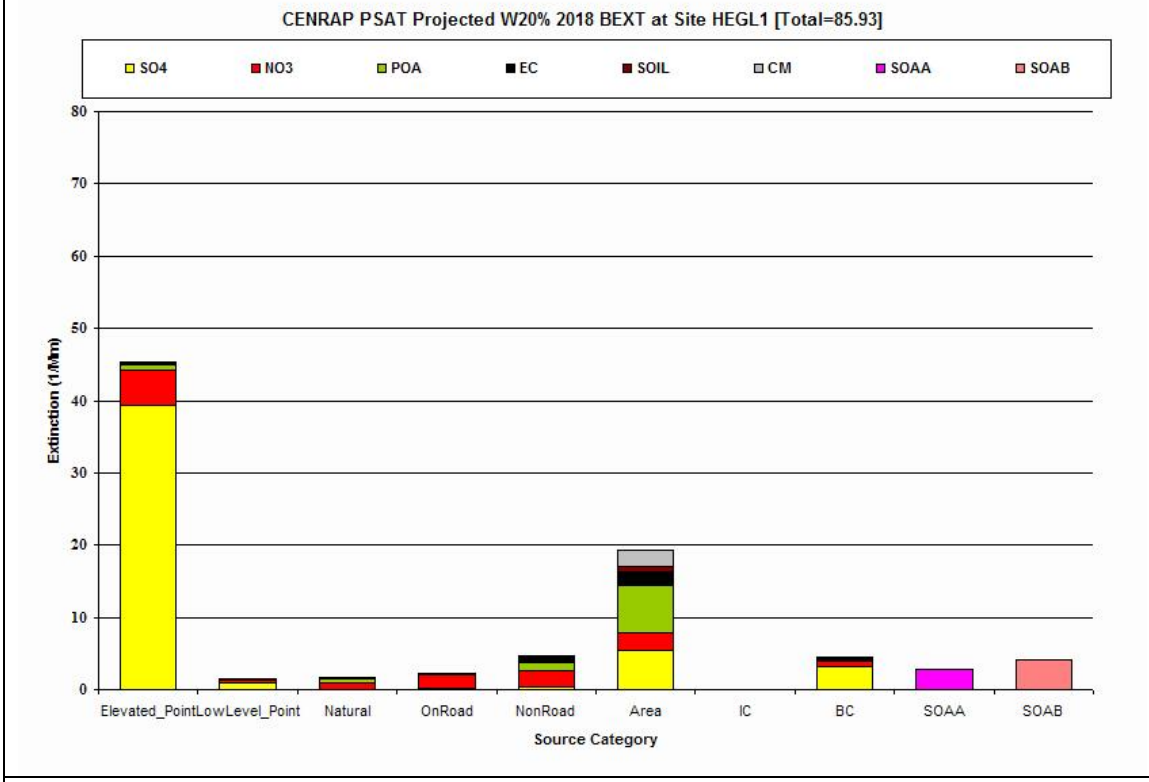



**Figure E-6b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Hercules Glade (HEGL), Missouri.

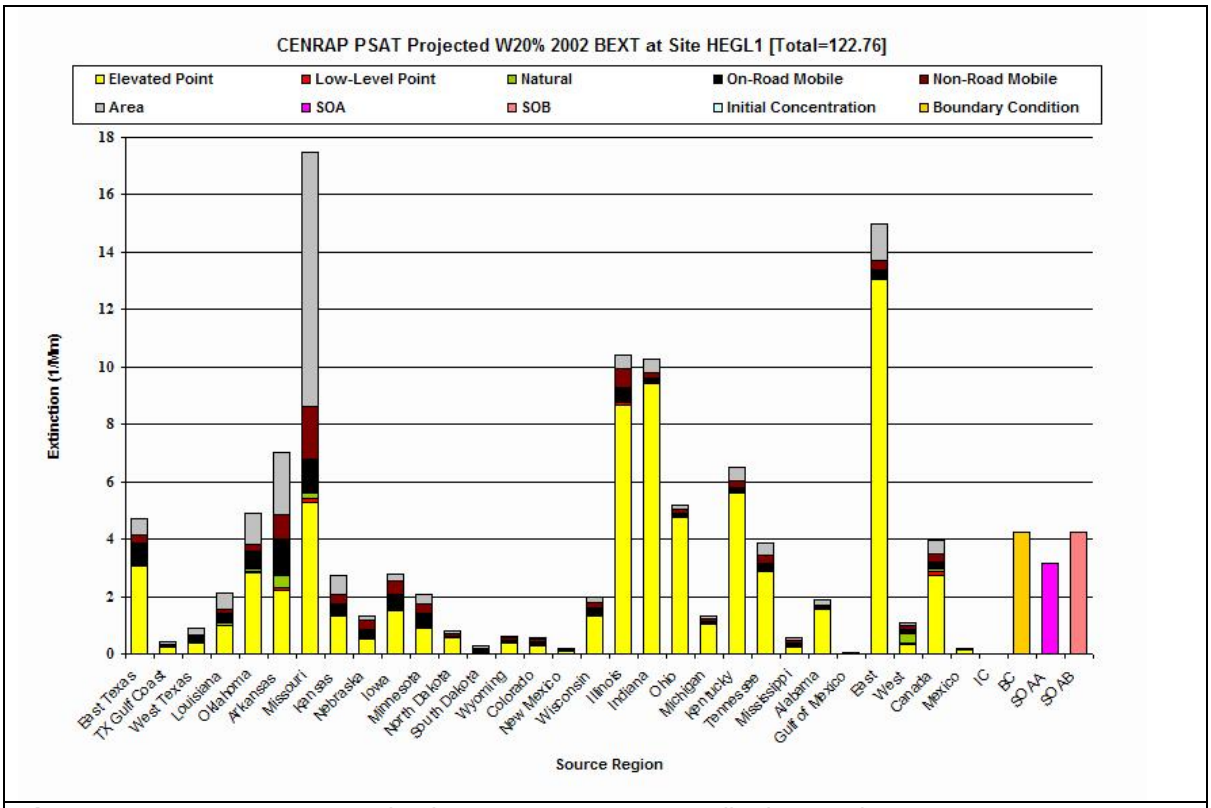



**Figure E-6c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Hercules Glade (HEGL), Missouri.

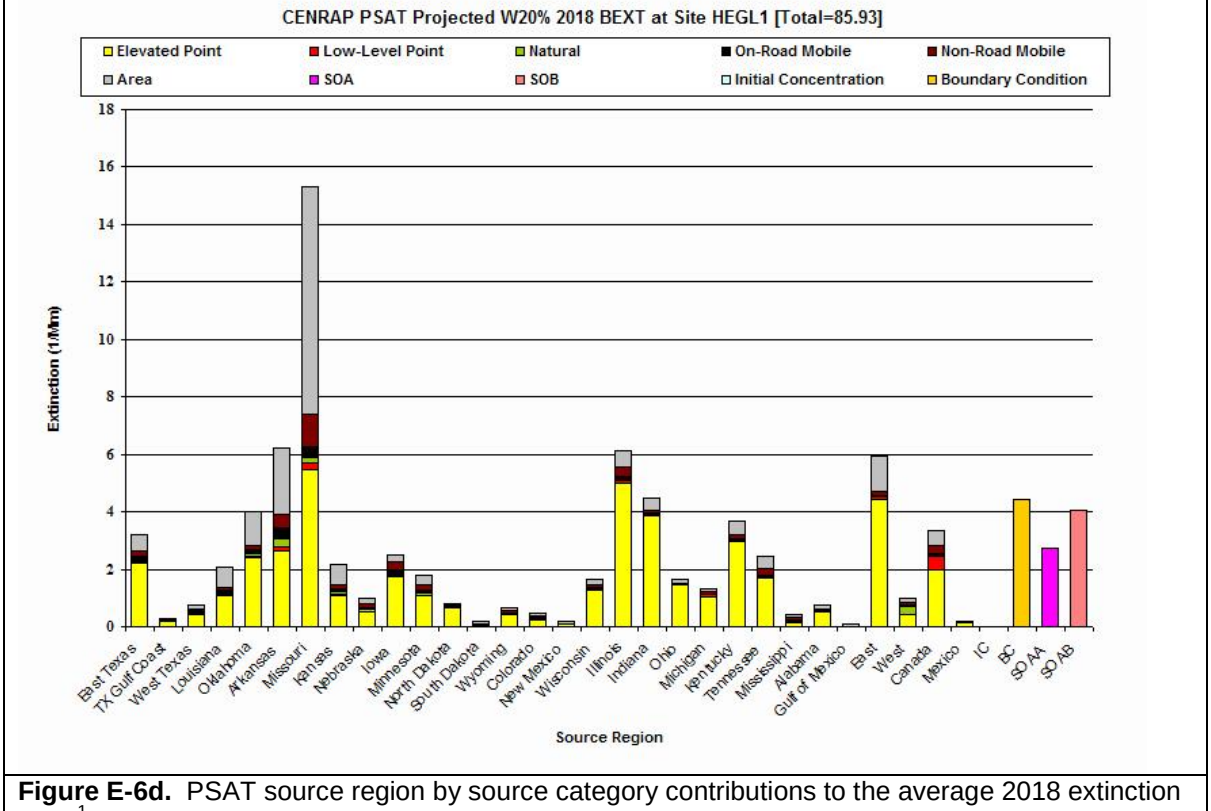



**Figure E-6d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Hercules Glade (HEGL), Missouri.

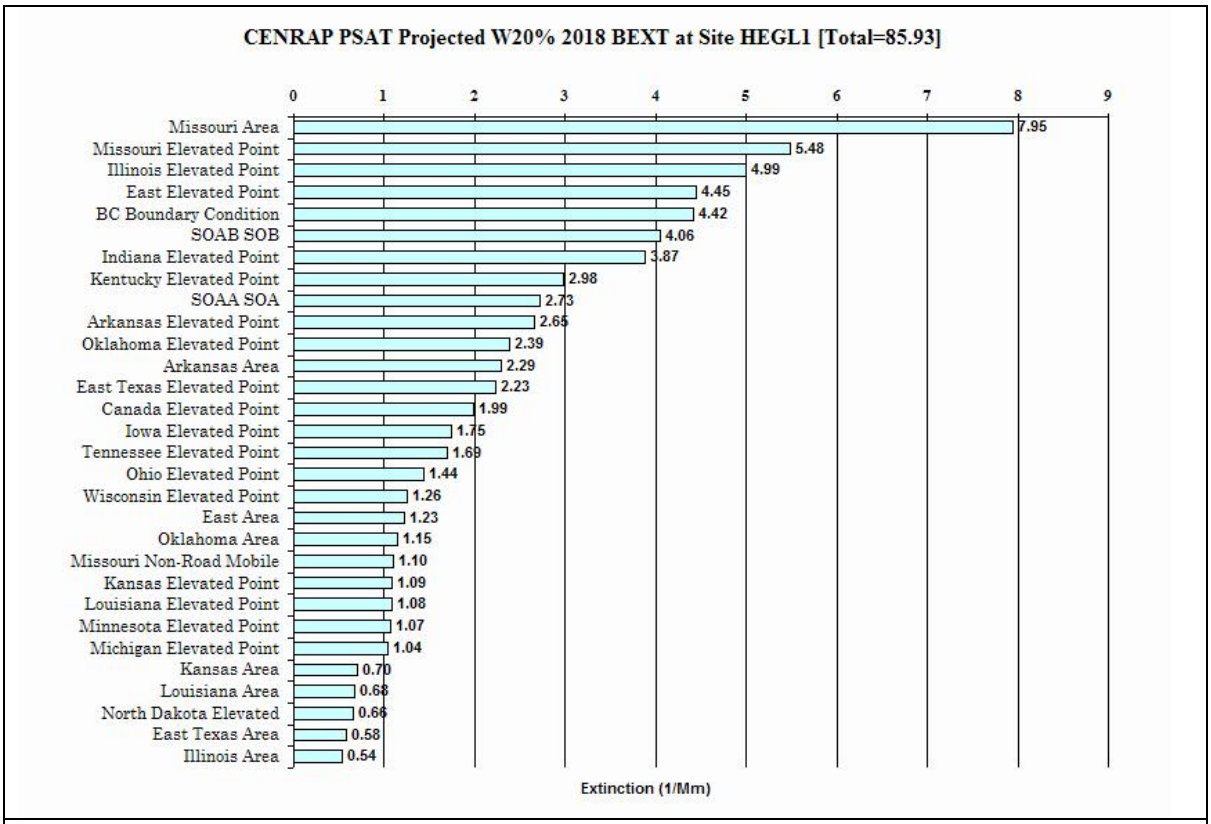



**Figure E-6e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Hercules Glade (HEGL), Missouri.

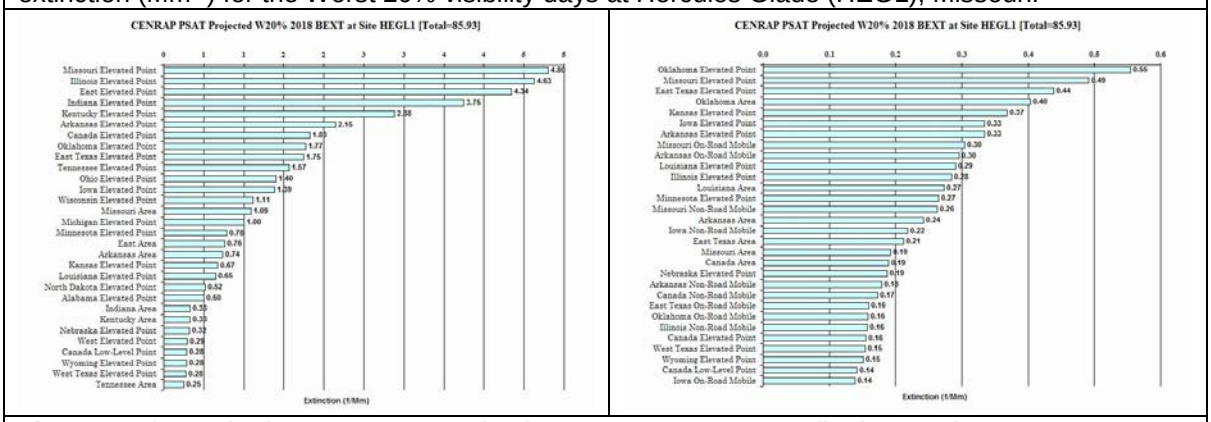



**Figure E-6f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Hercules Glade (HEGL), Missouri.

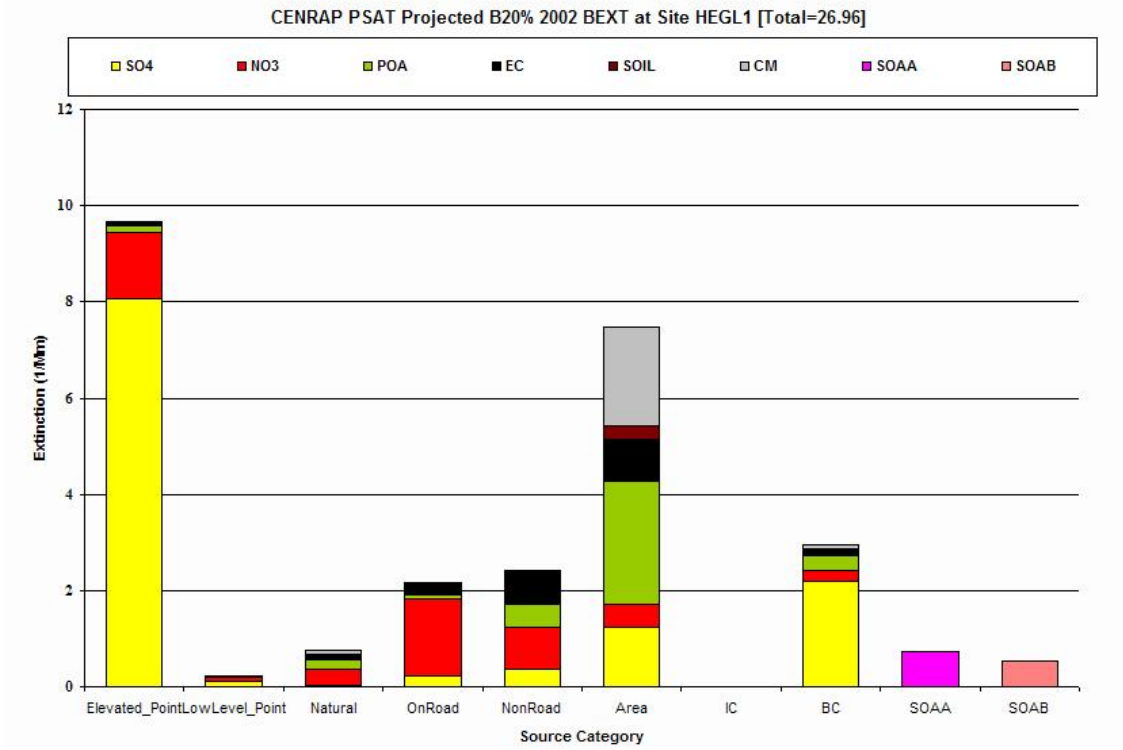



**Figure E-6g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Hercules Glade (HEGL), Missouri.

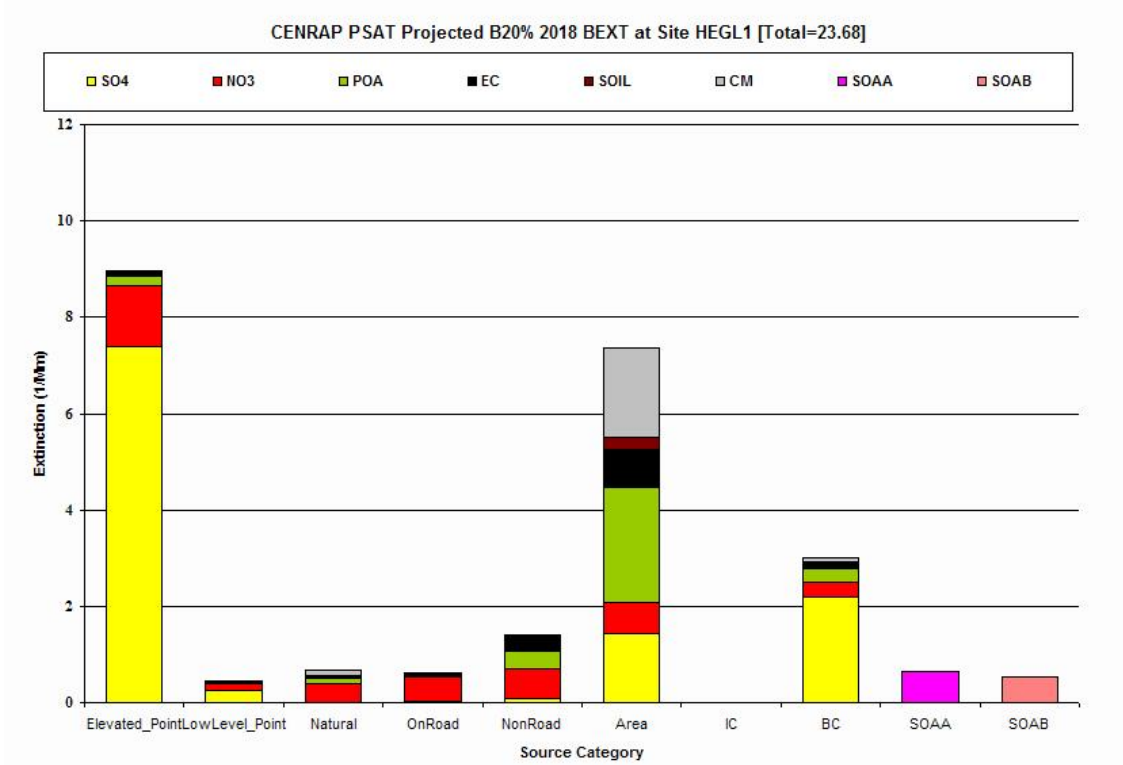



**Figure E-6h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Hercules Glade (HEGL), Missouri.

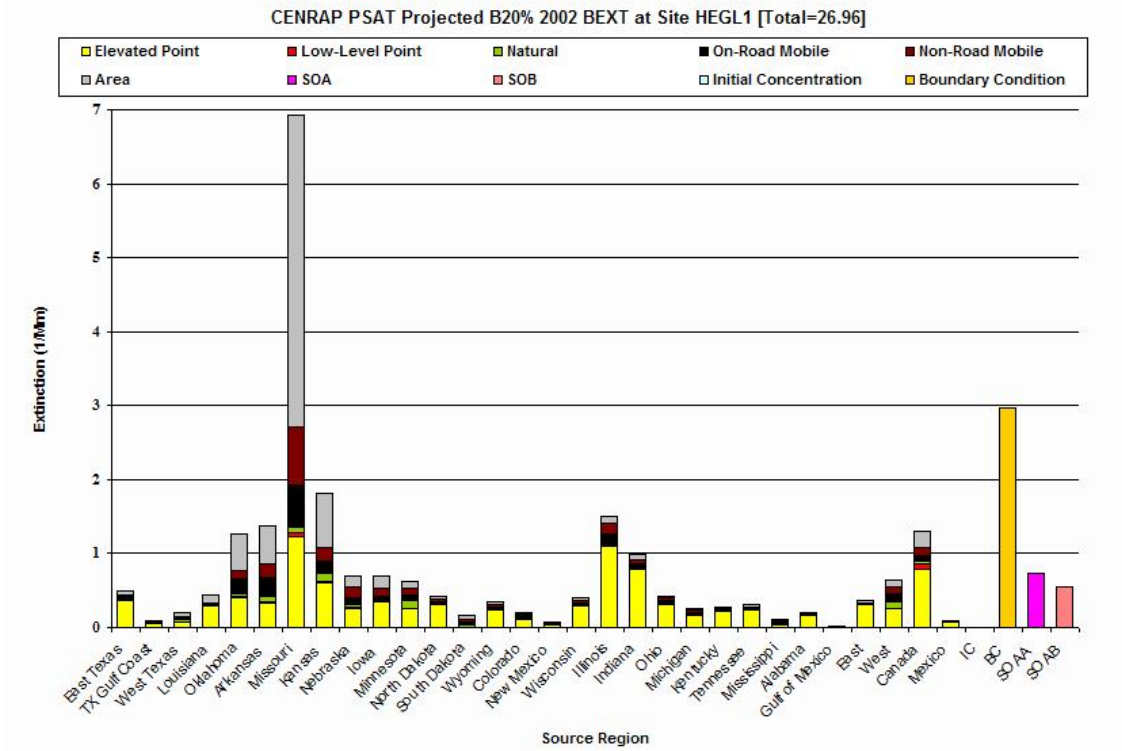



**Figure E-6i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Hercules Glade (HEGL), Missouri.

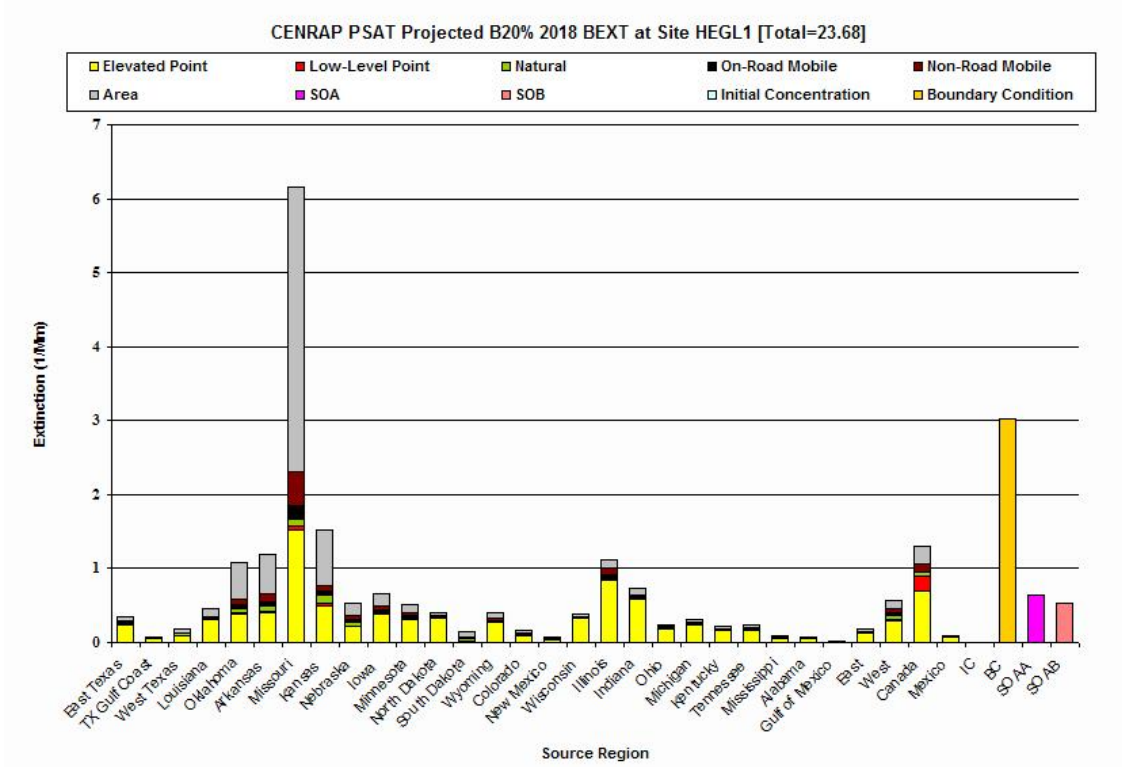



**Figure E-6j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Voyageurs Hercules Glade (HEGL), Missouri.

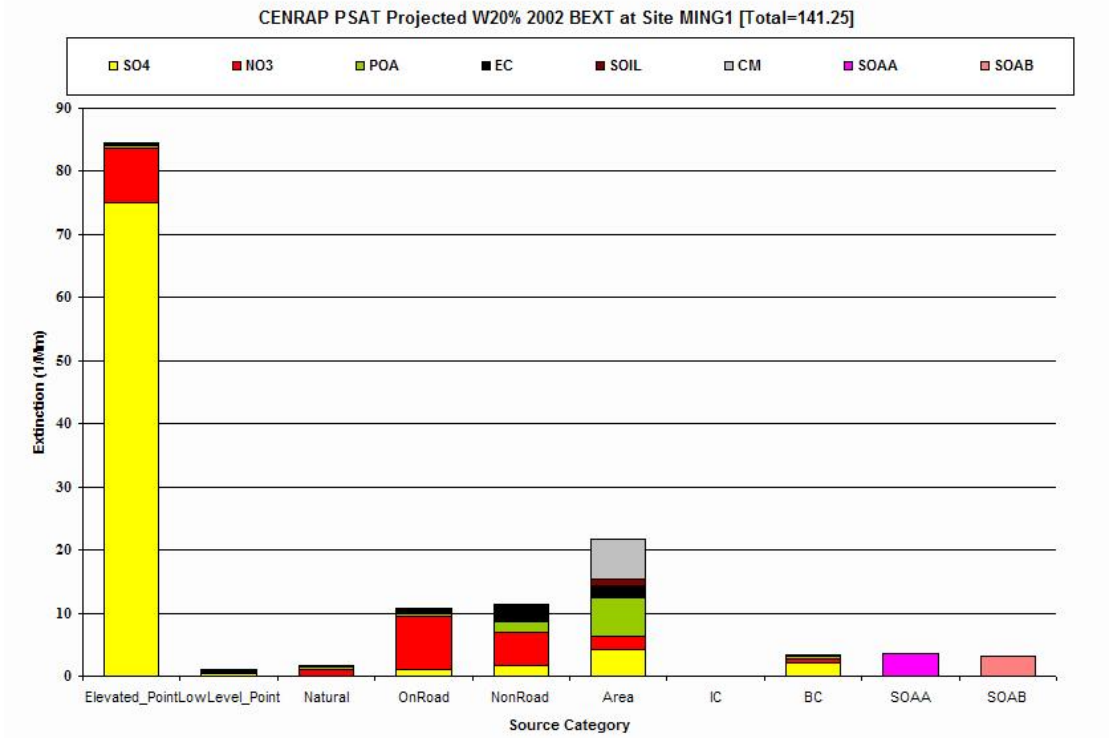



**Figure E-7a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Mingo (MING), Missouri.

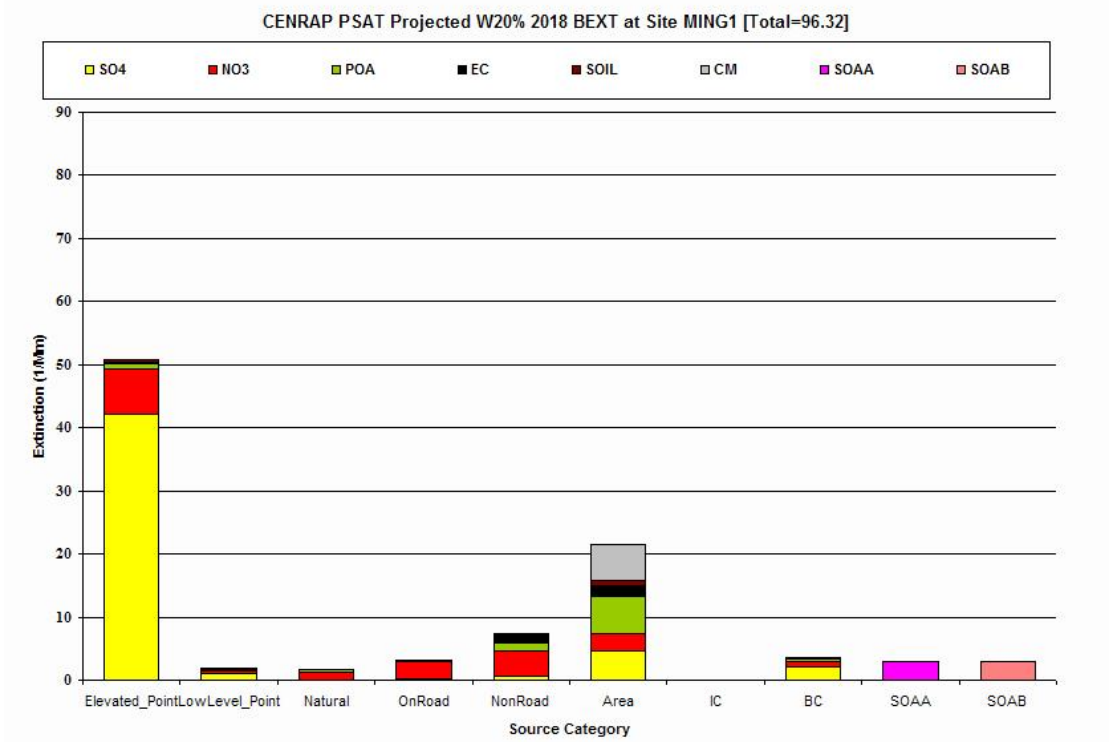



**Figure E-7b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Mingo (MING), Missouri.

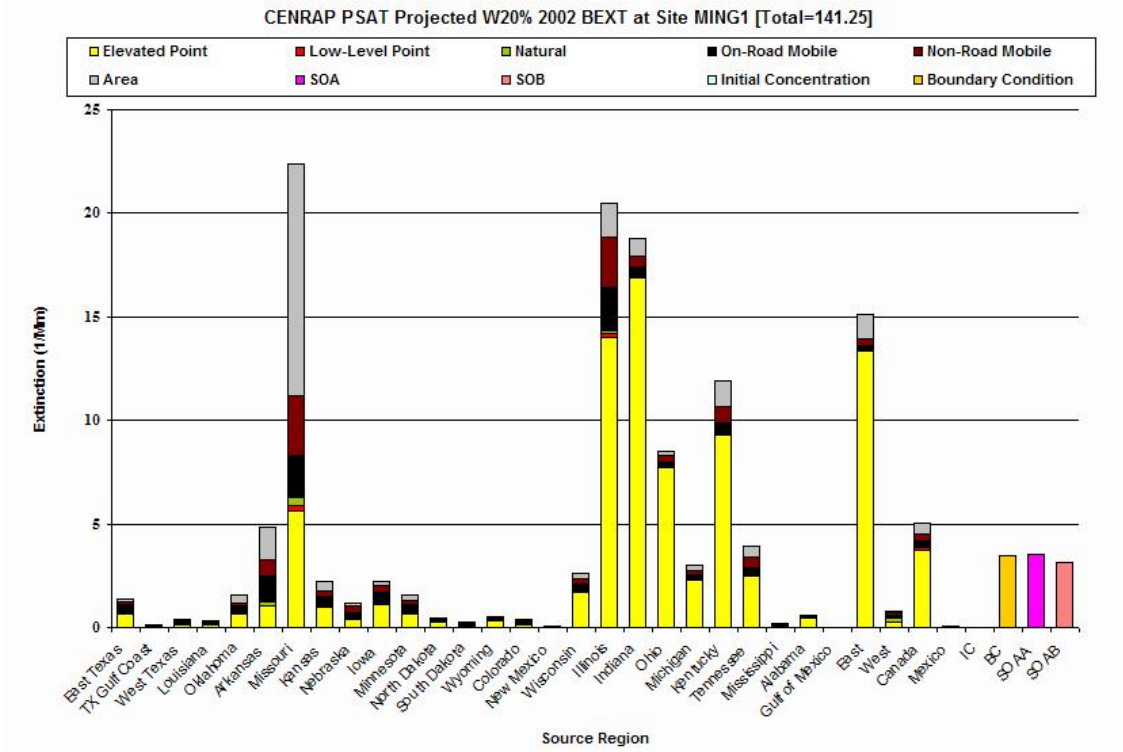



**Figure E-7c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Mingo (MING), Missouri.

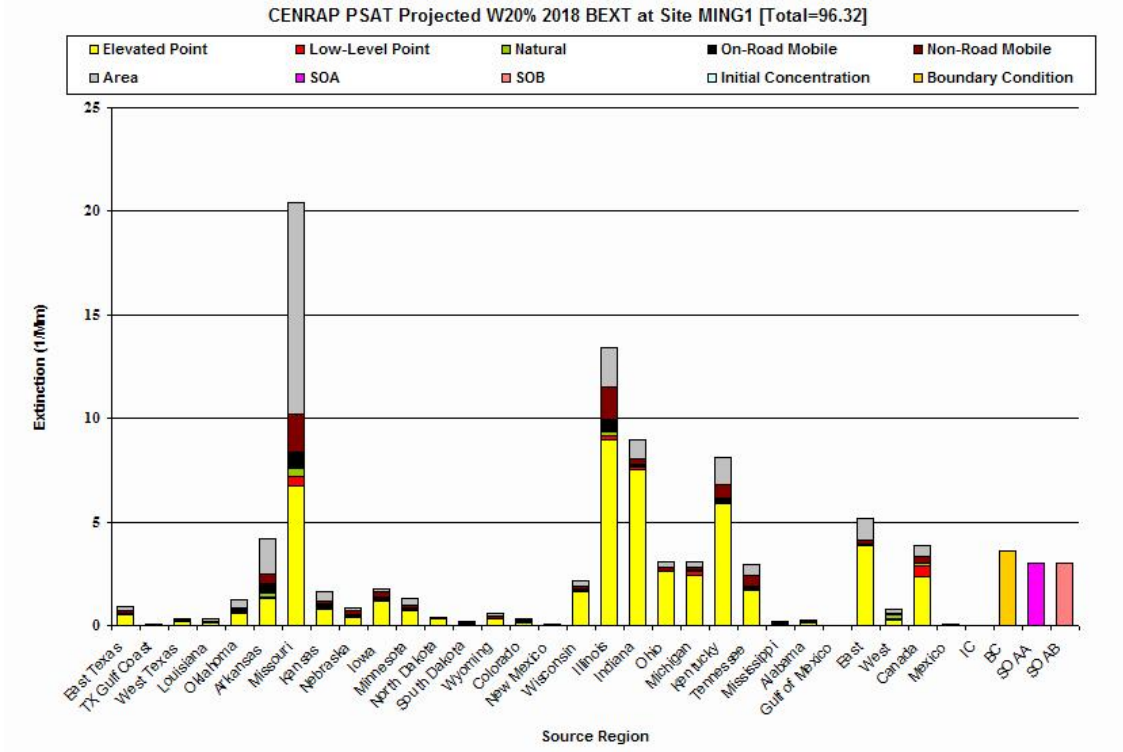



**Figure E-7d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Mingo (MING), Missouri.

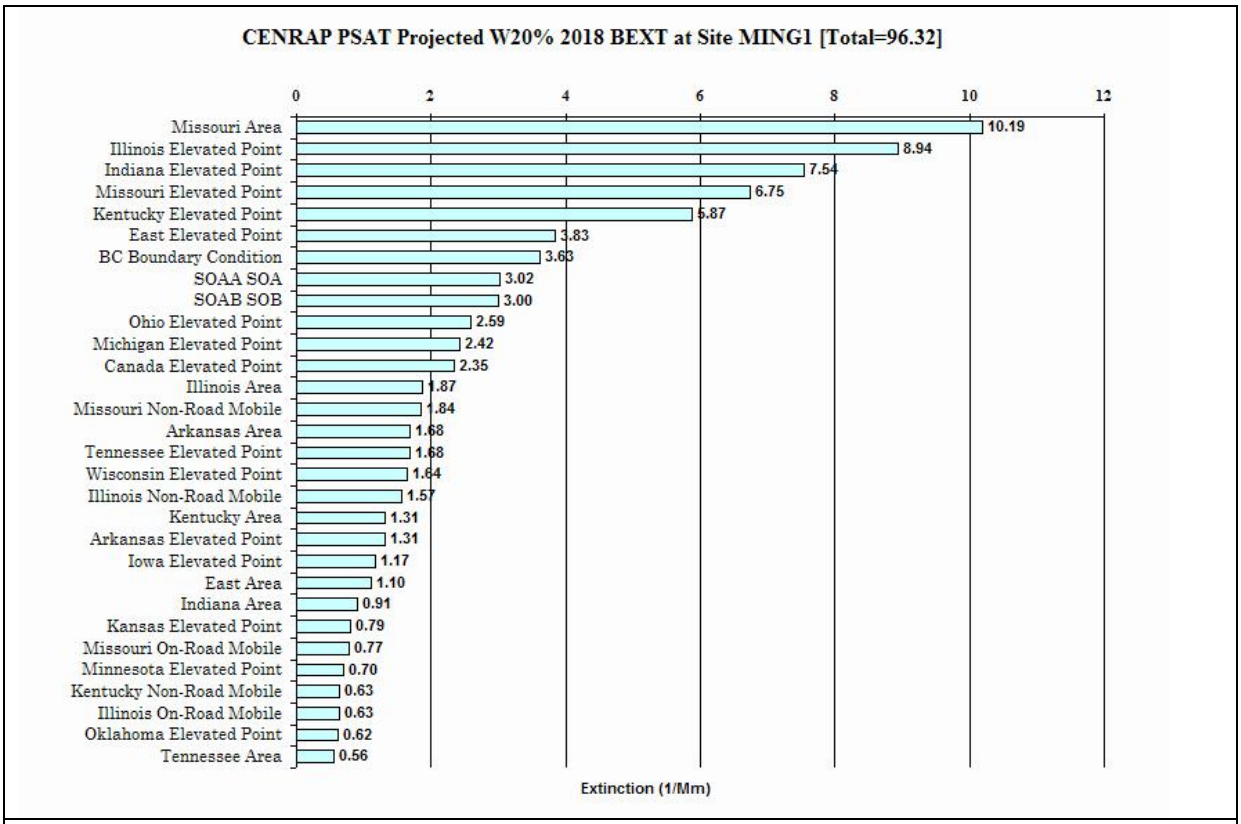



**Figure E-7e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Mingo (MING), Missouri.

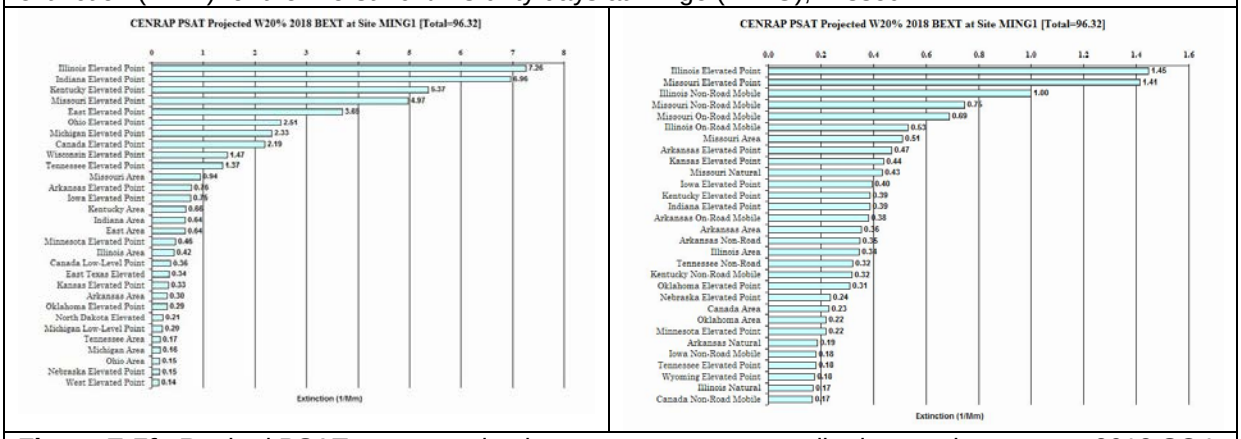



**Figure E-7f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Mingo (MING), Missouri.

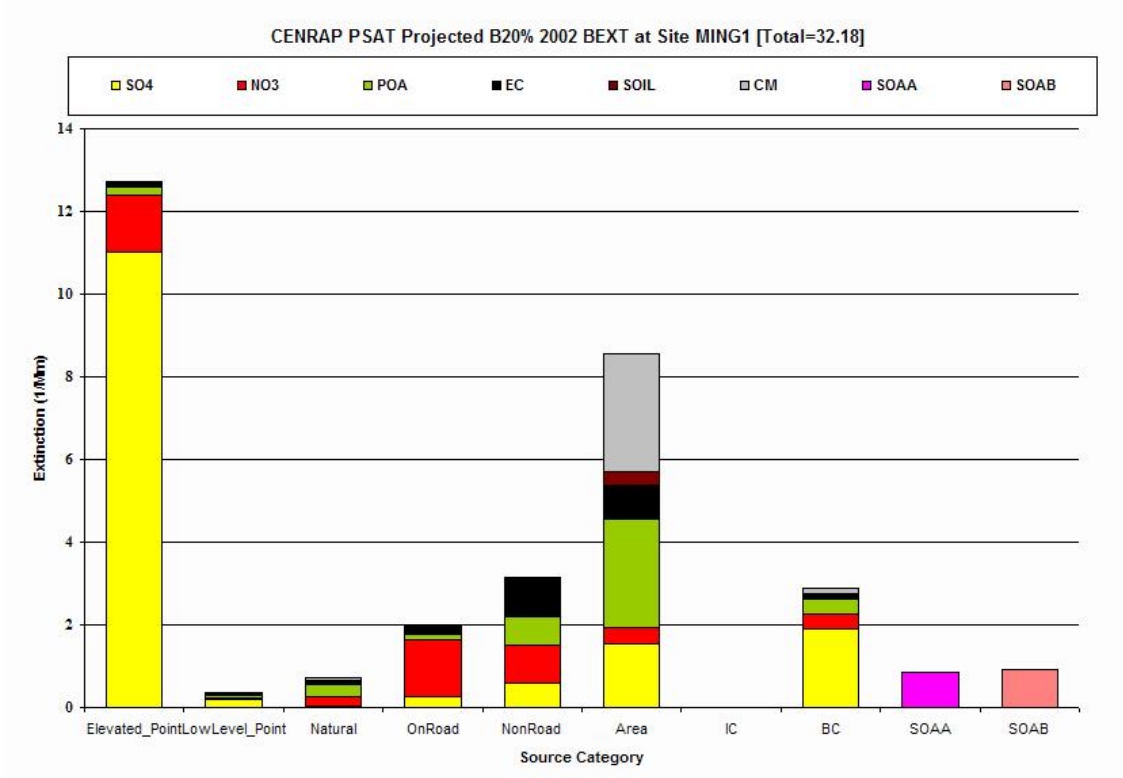



**Figure E-7g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Mingo (MING), Missouri.

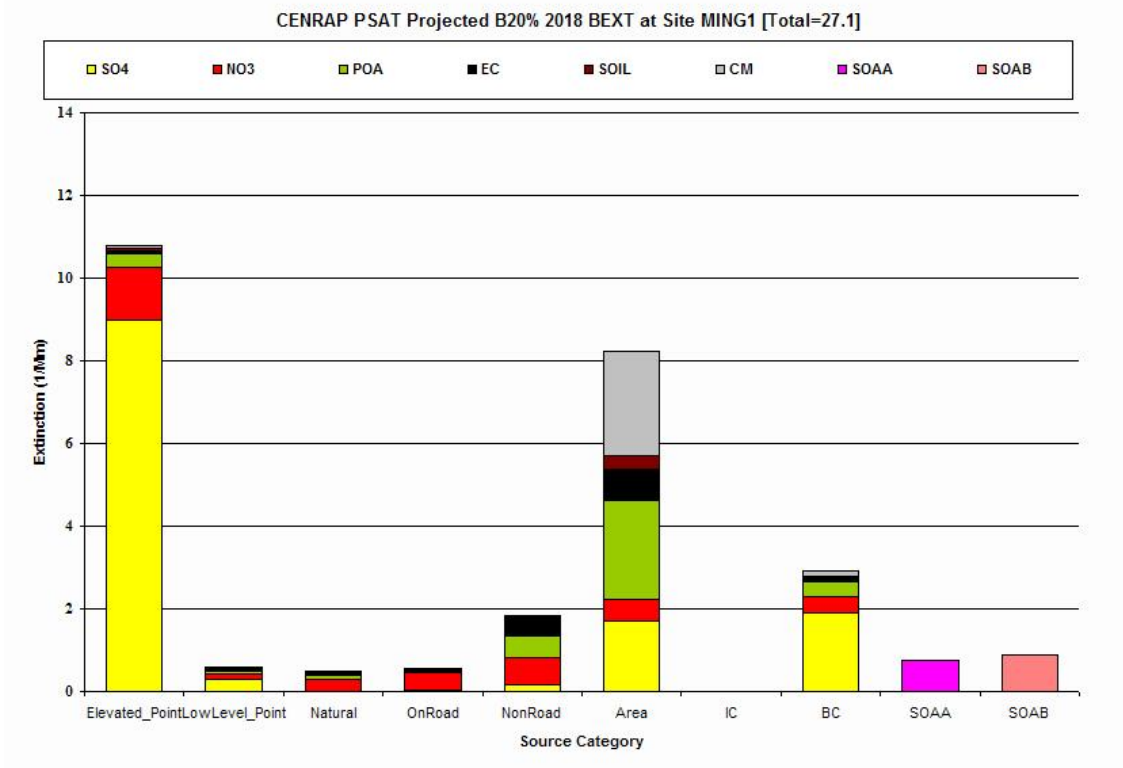



**Figure E-7h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Mingo (MING), Missouri.

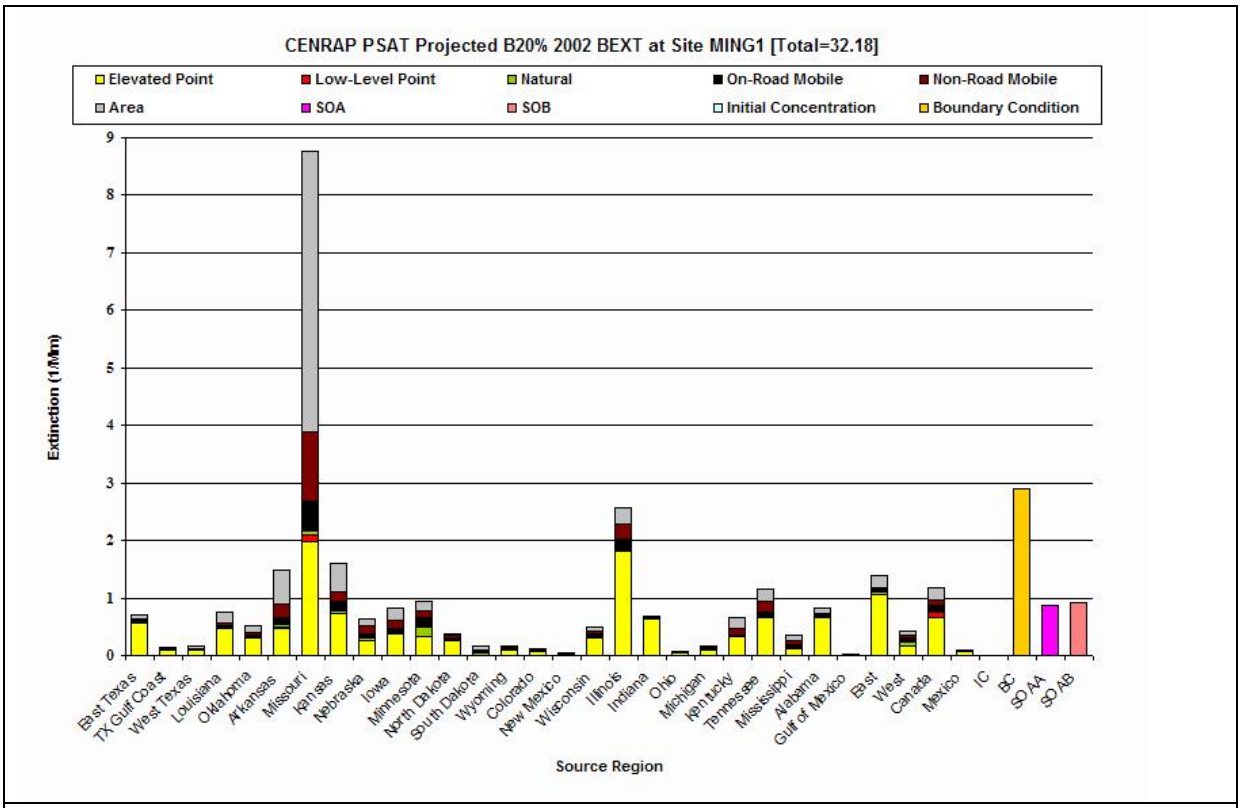



**Figure E-7i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Mingo (MING), Missouri.

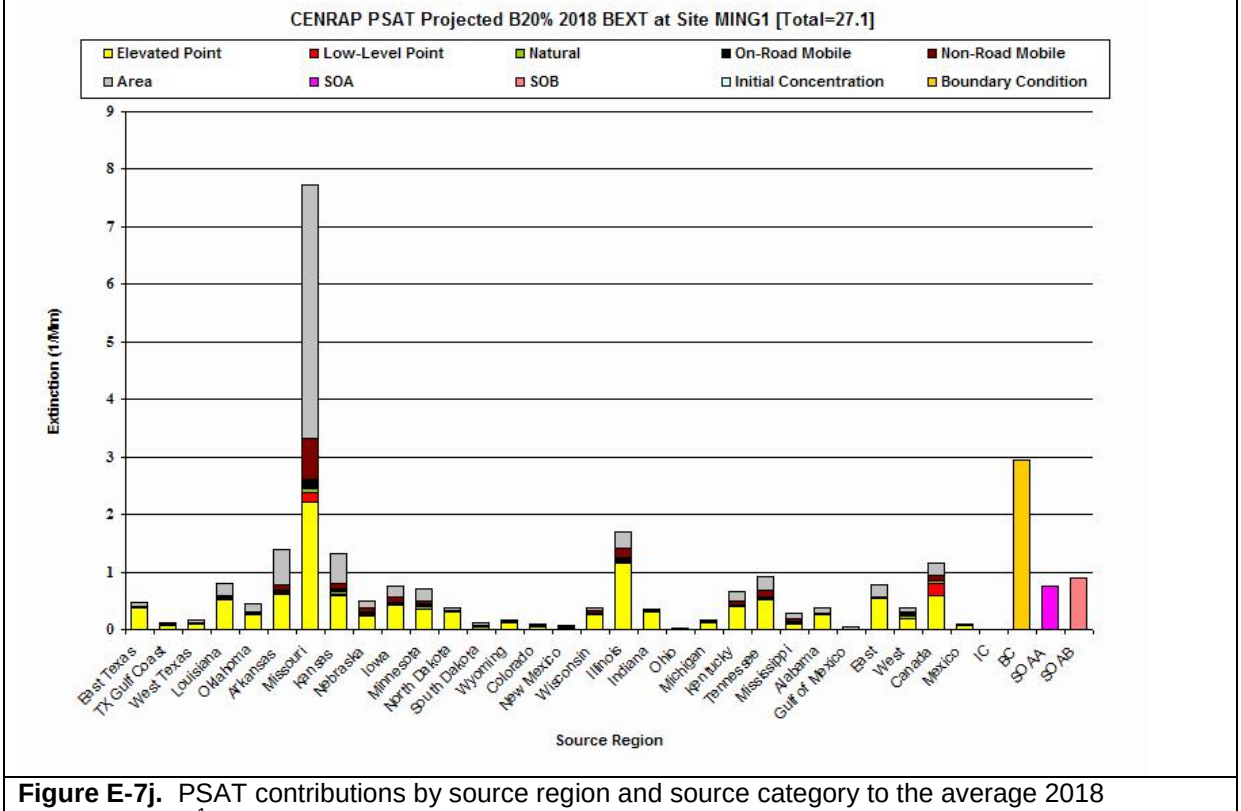



**Figure E-7j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Mingo (MING), Missouri.

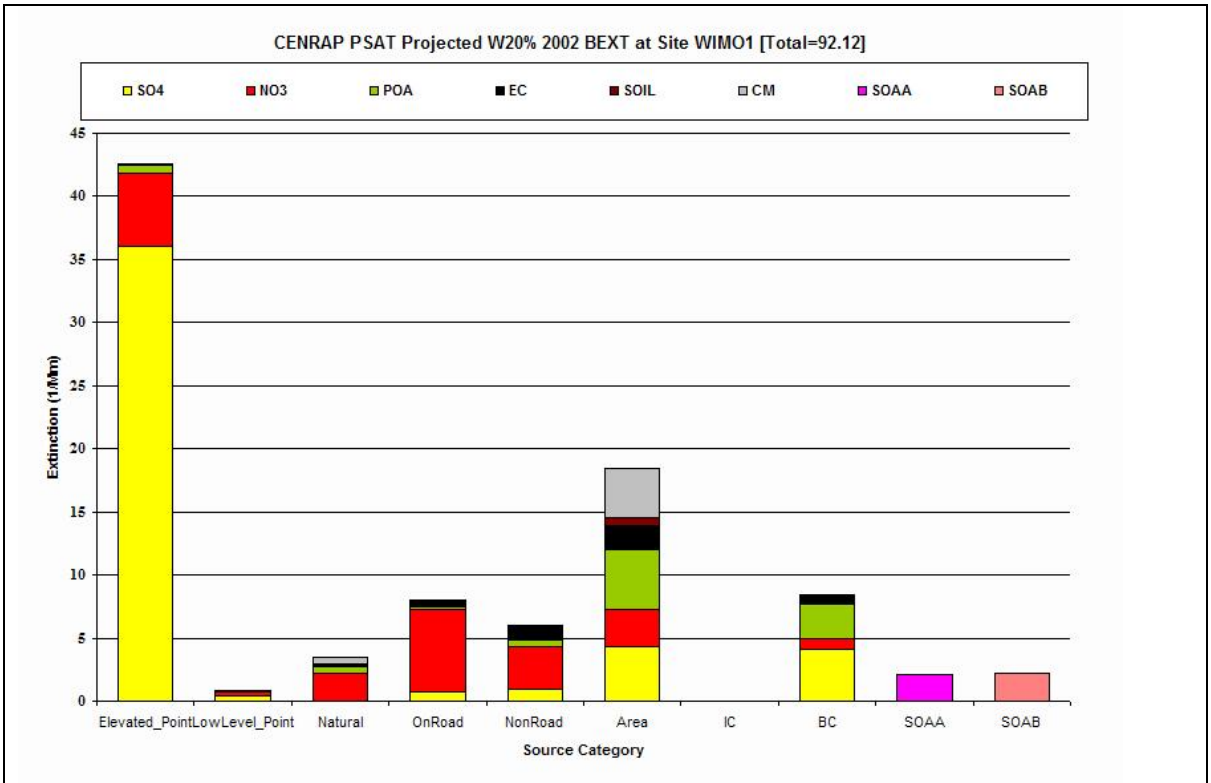



**Figure E-8a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

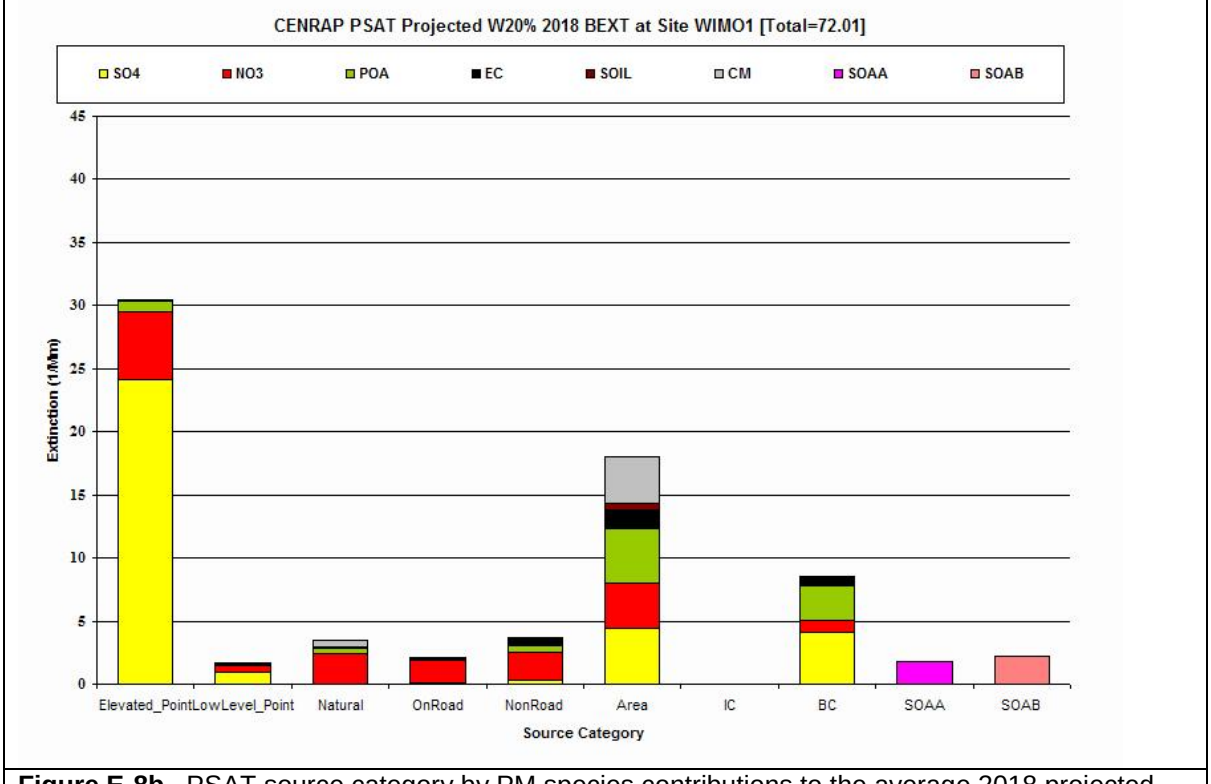



**Figure E-8b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

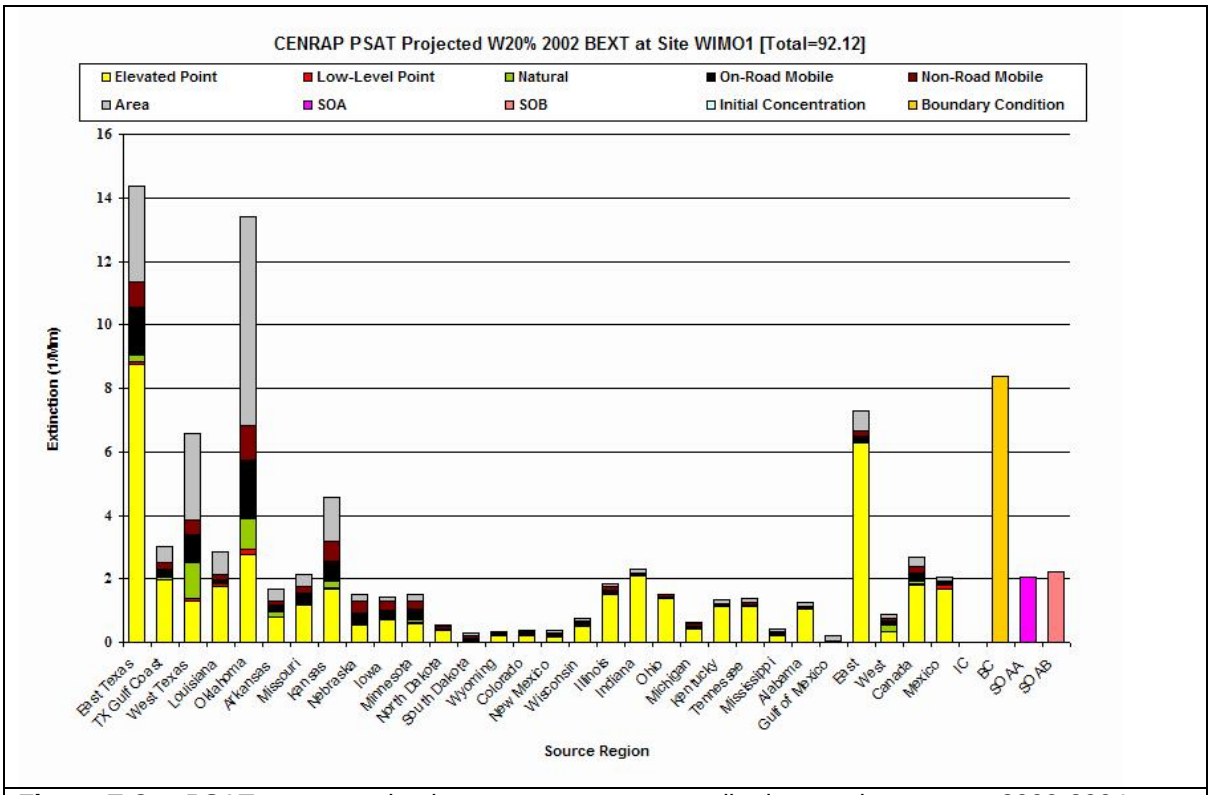



**Figure E-8c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

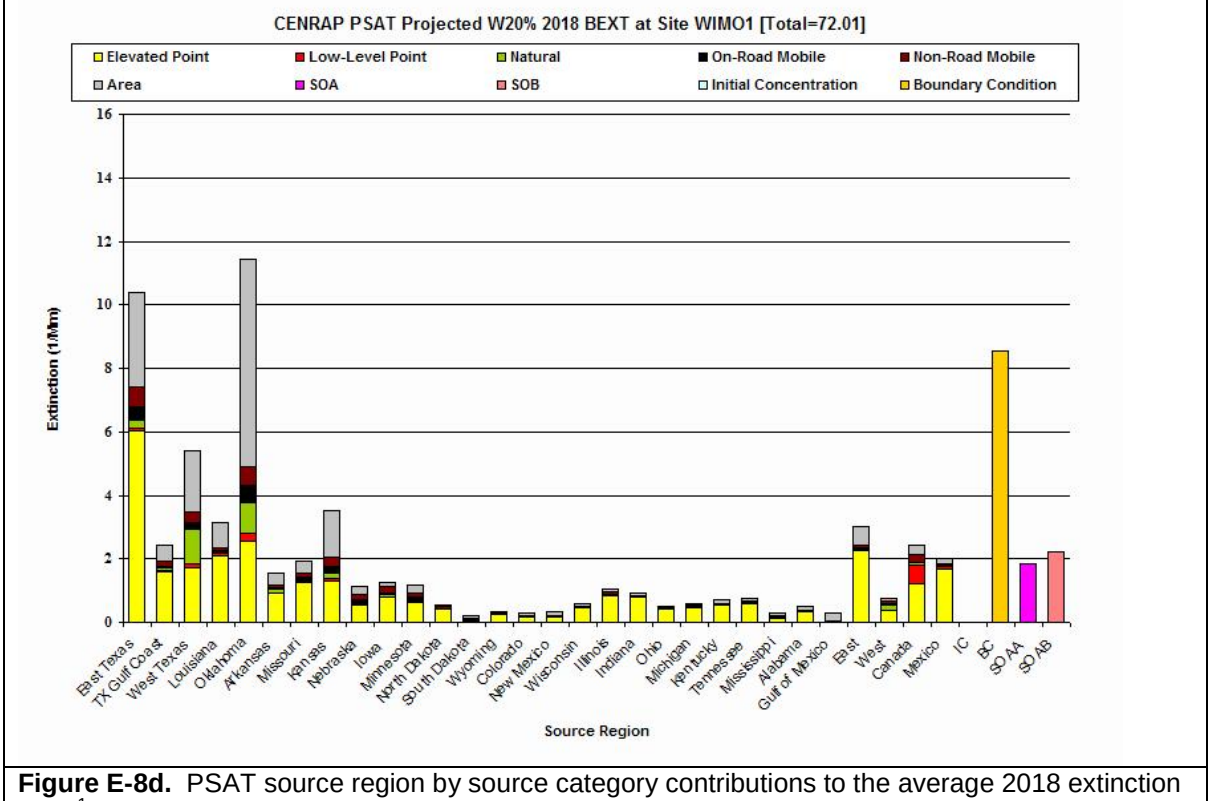



**Figure E-8d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

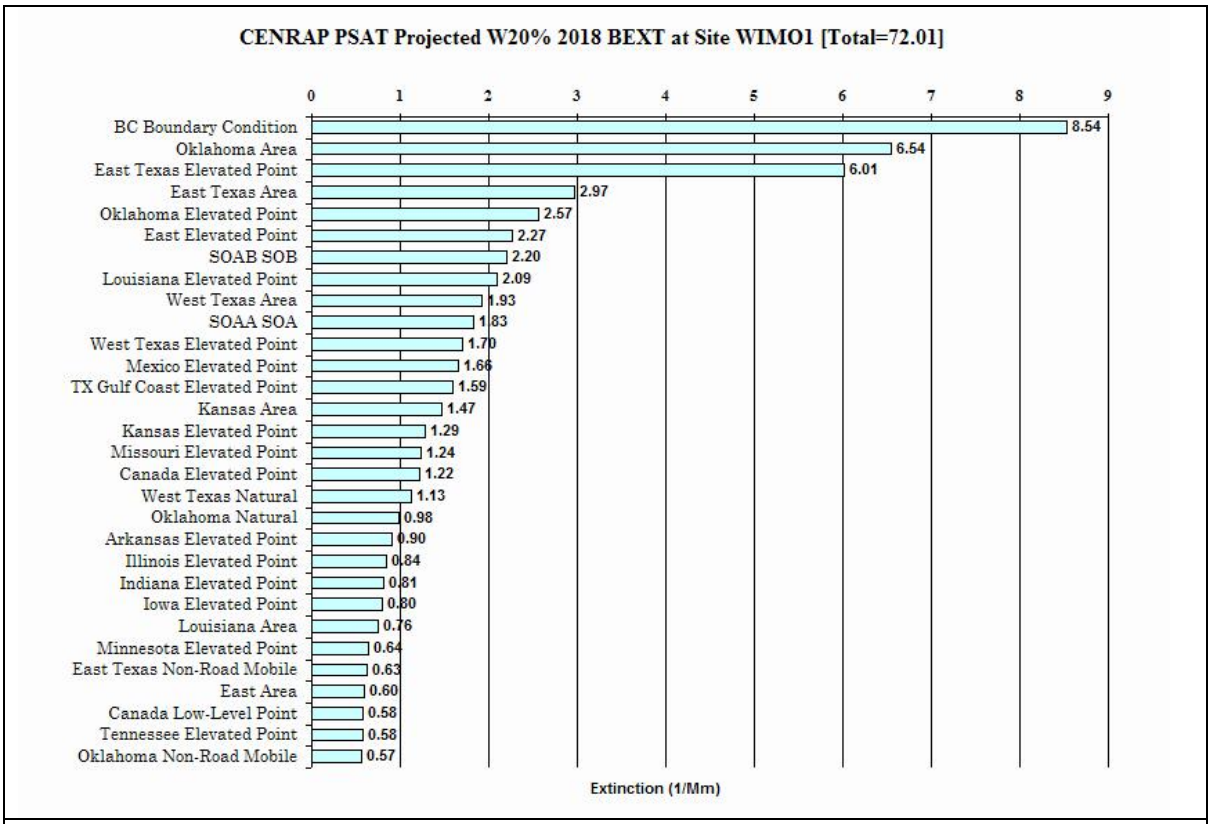



**Figure E-8e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

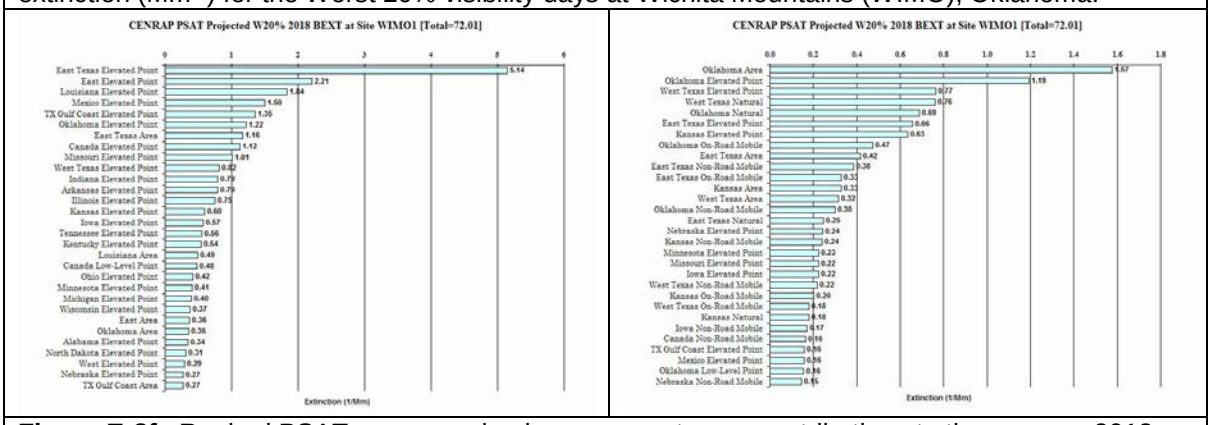



**Figure E-8f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

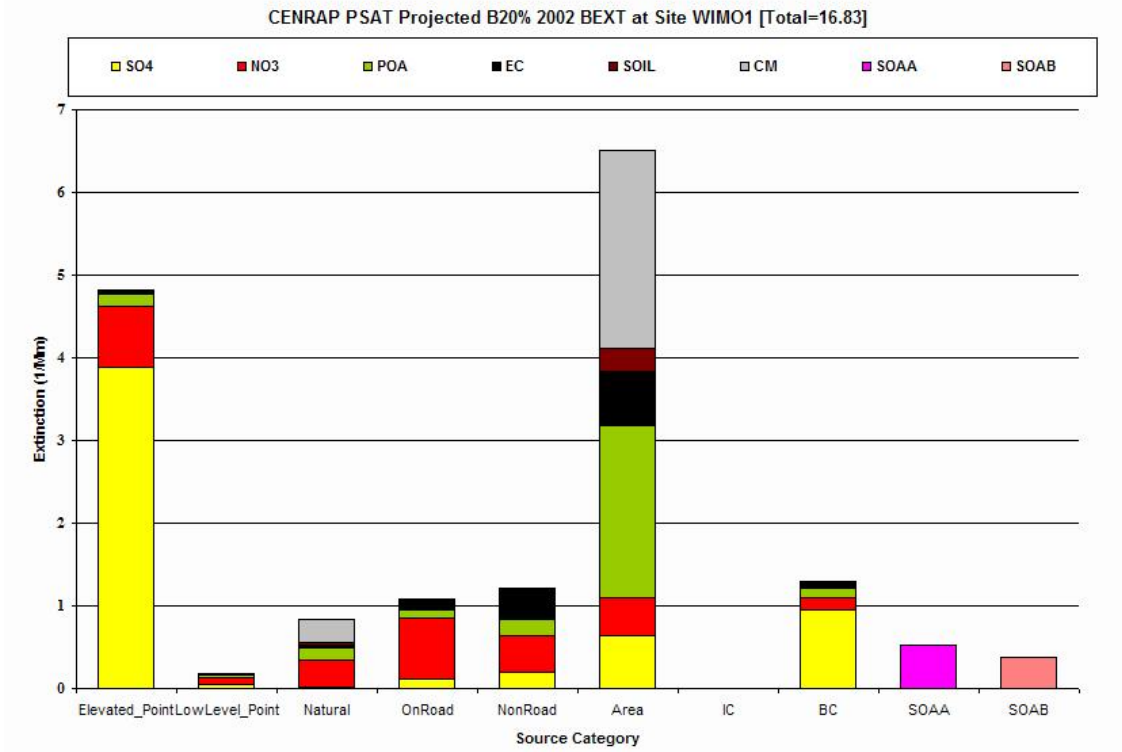



**Figure E-8g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

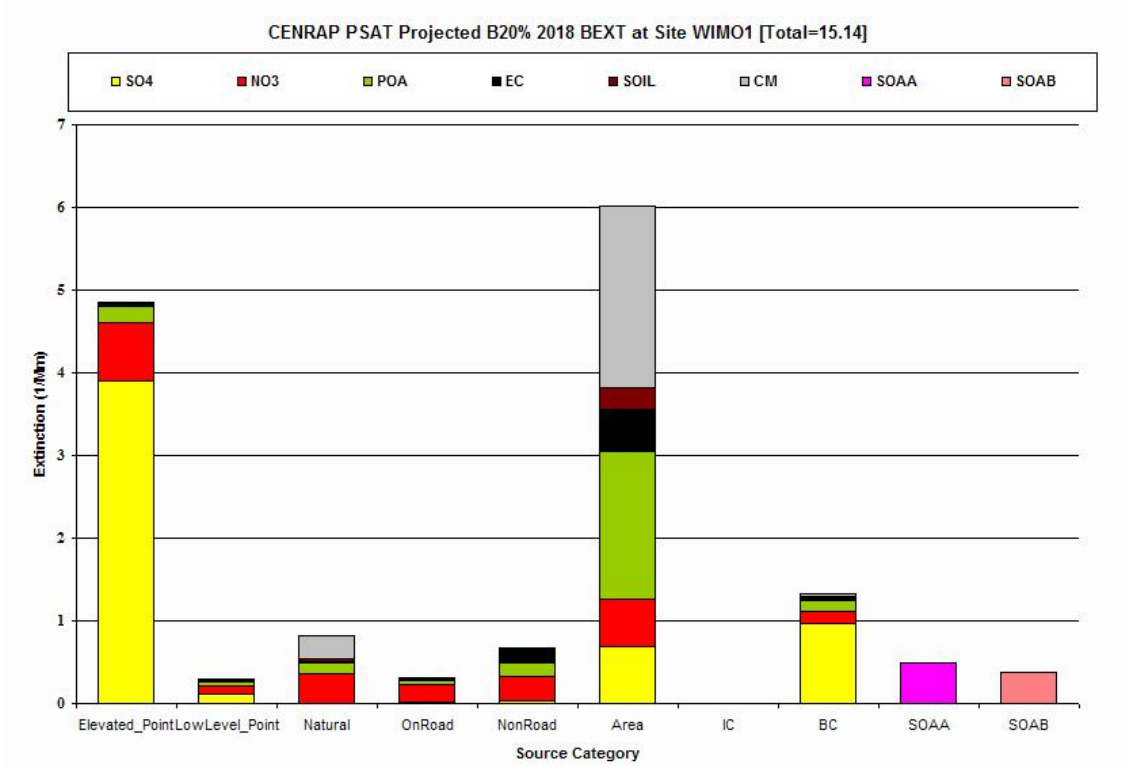



**Figure E-8h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

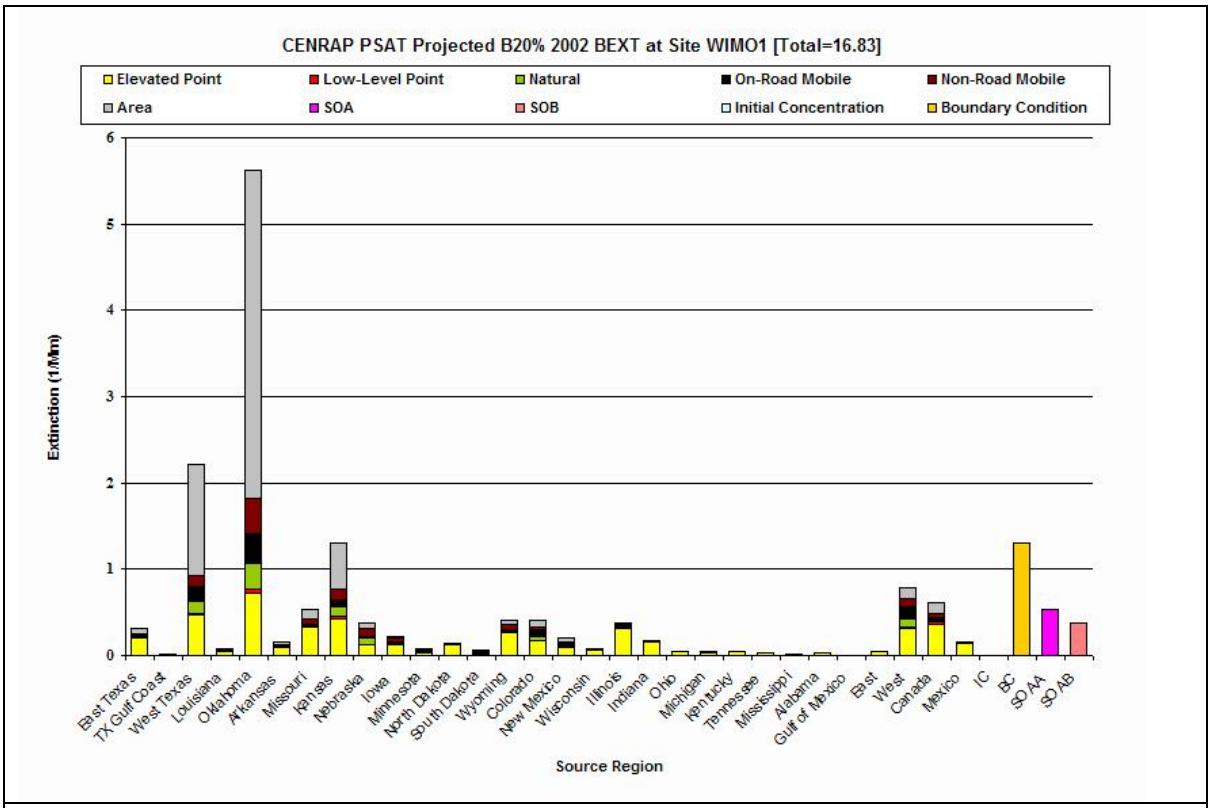



**Figure E-8i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

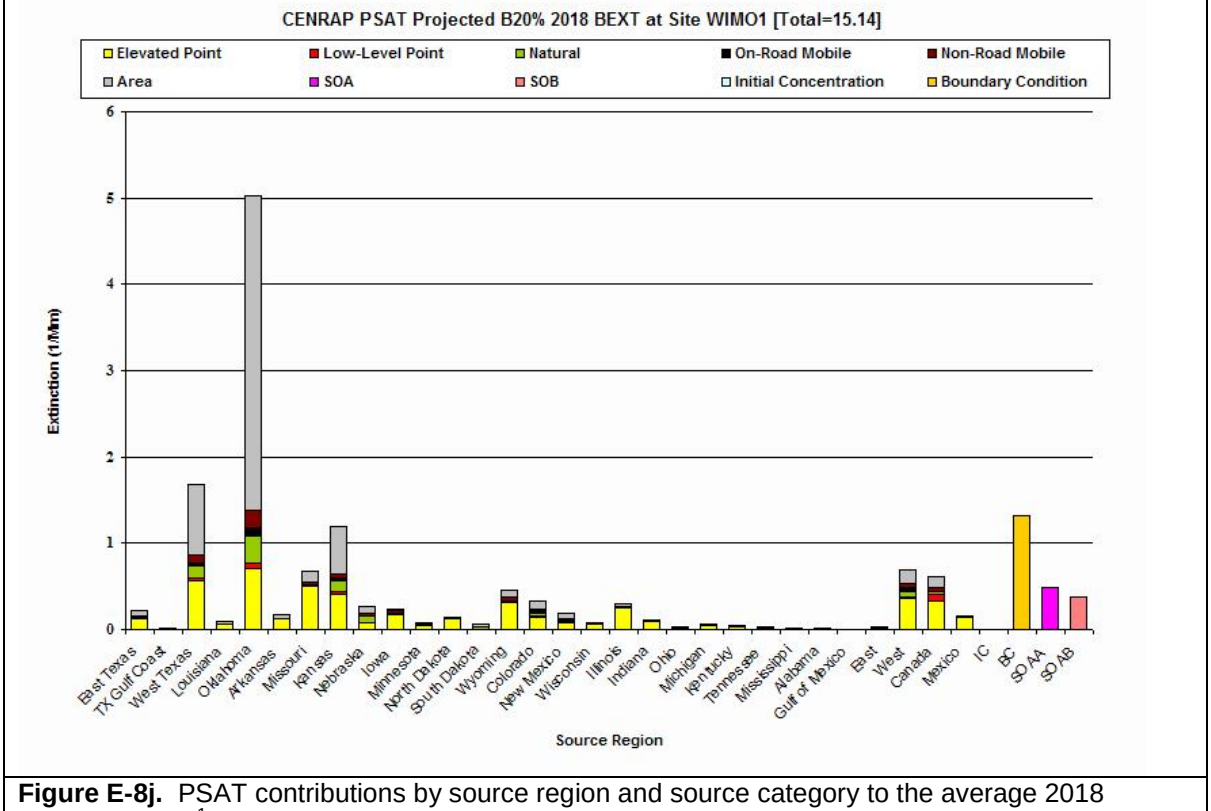



**Figure E-8j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Wichita Mountains (WIMO), Oklahoma.

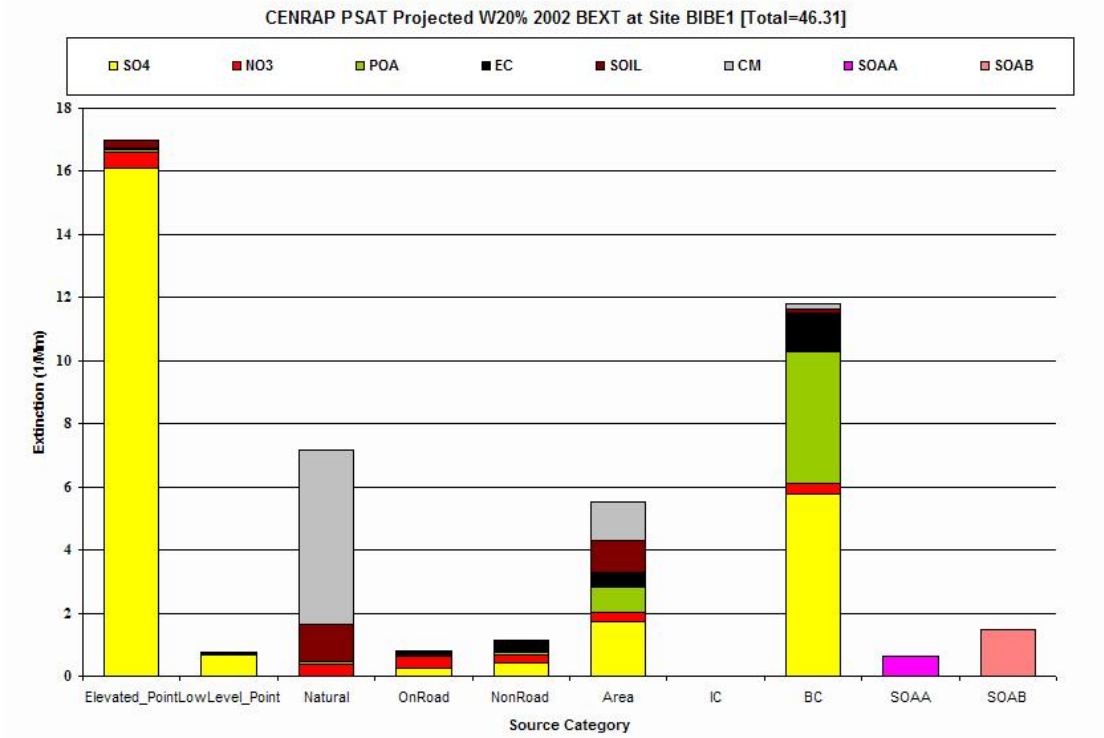



**Figure E-9a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

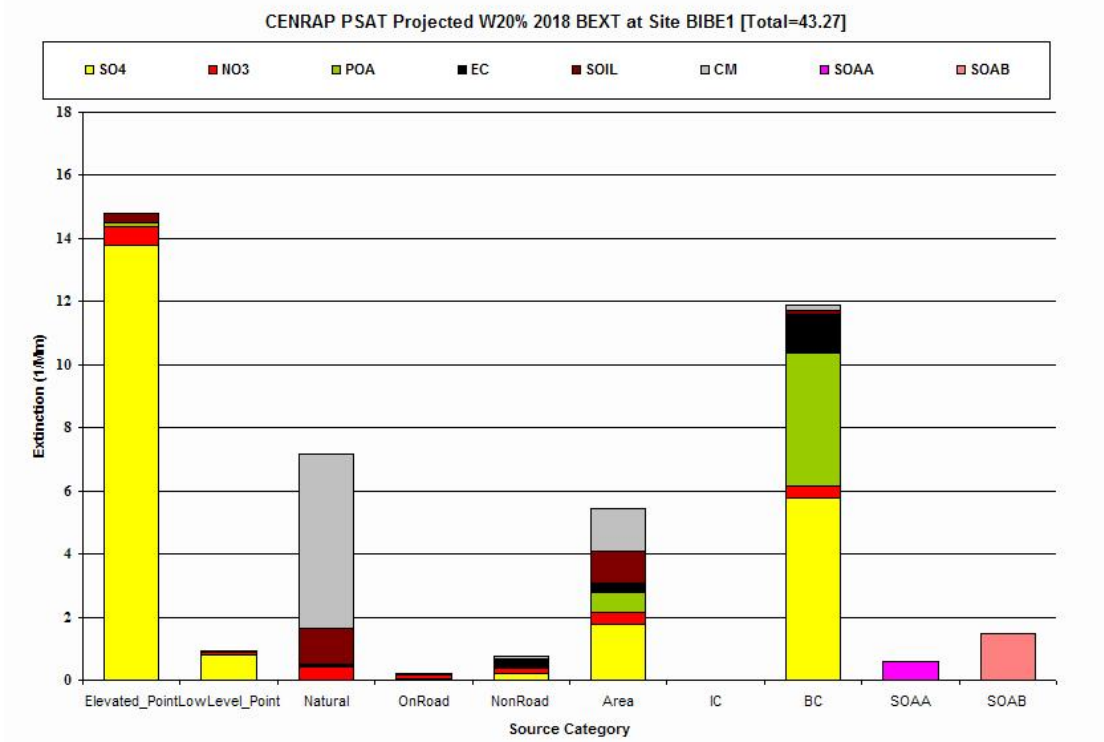



**Figure E-9b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

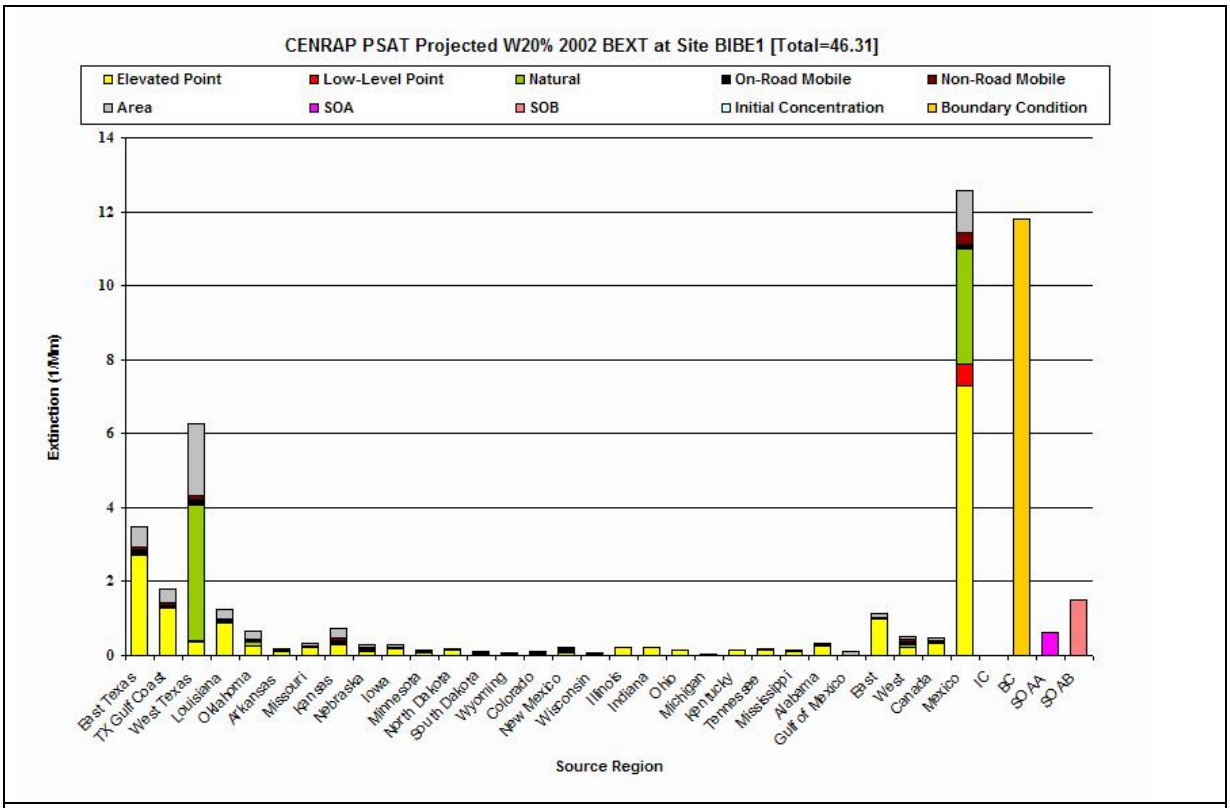



**Figure E-9c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

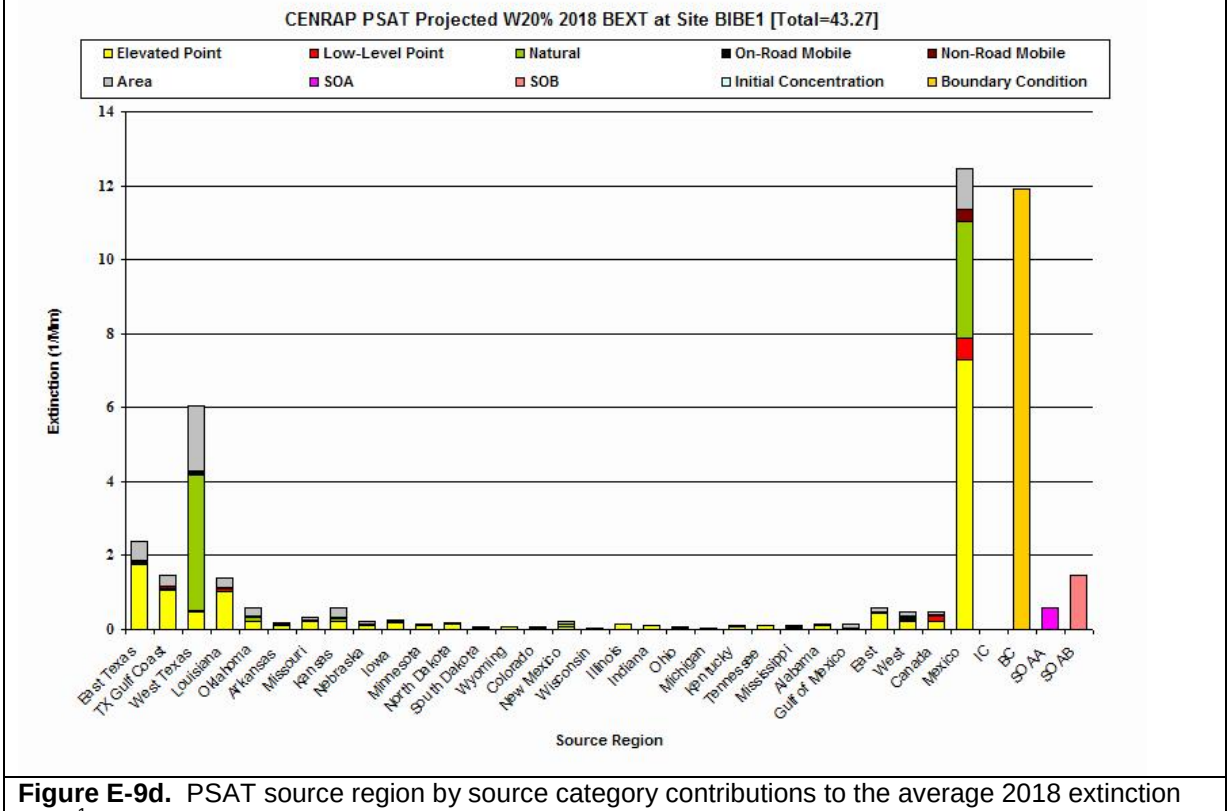



**Figure E-9d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

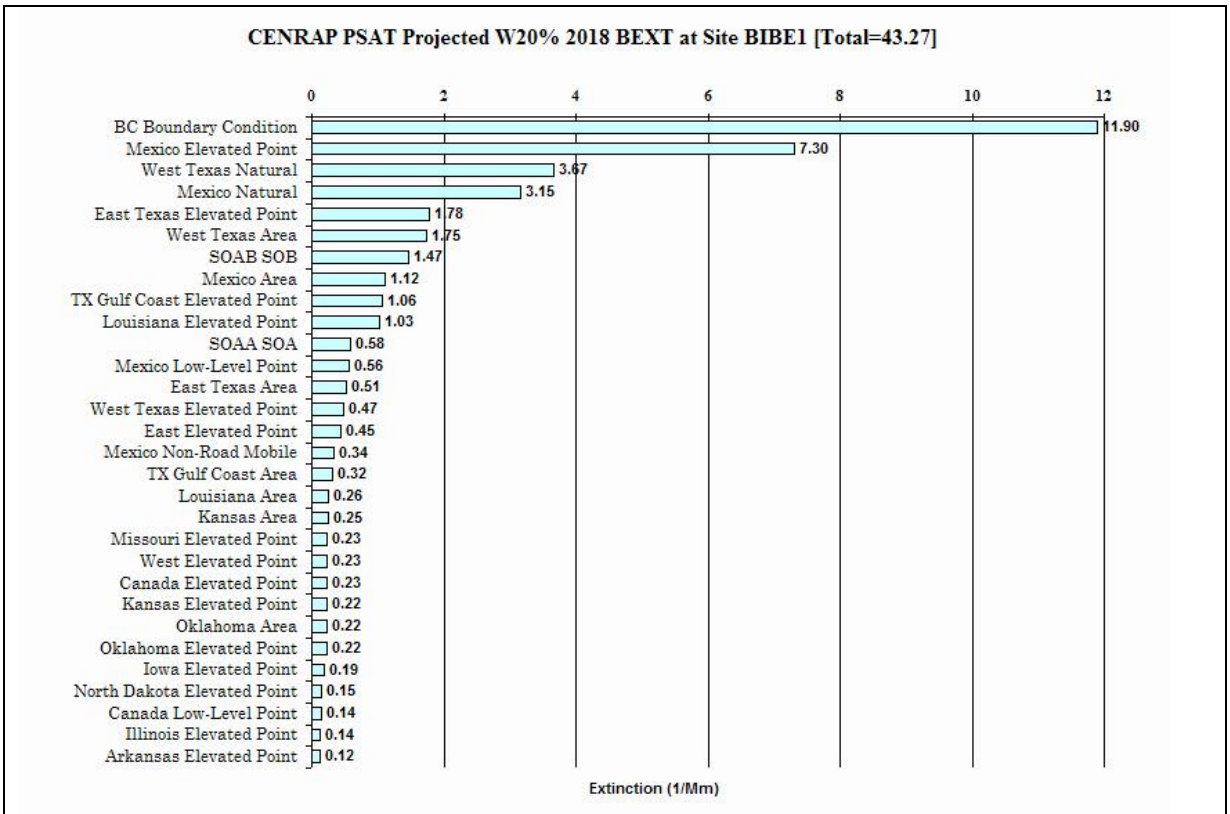



**Figure E-9e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

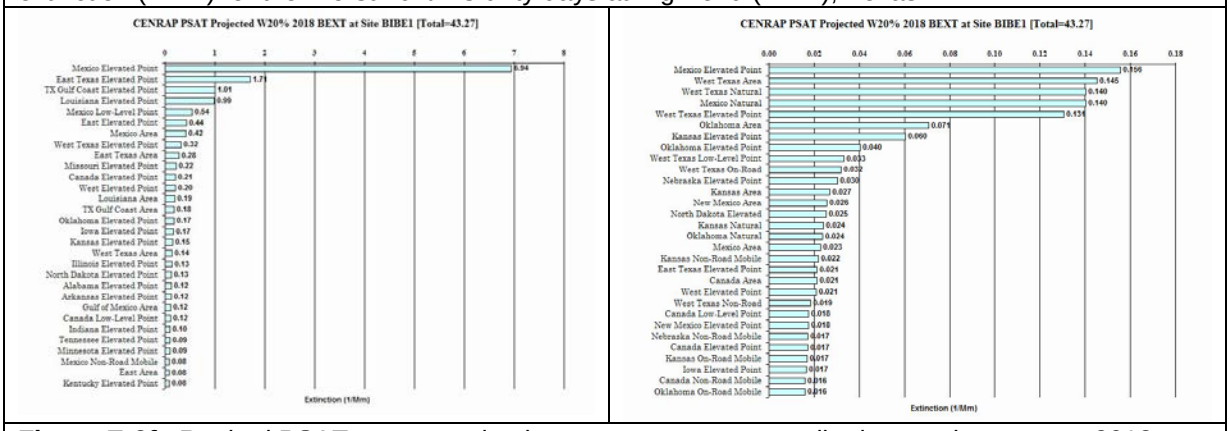



**Figure E-9f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

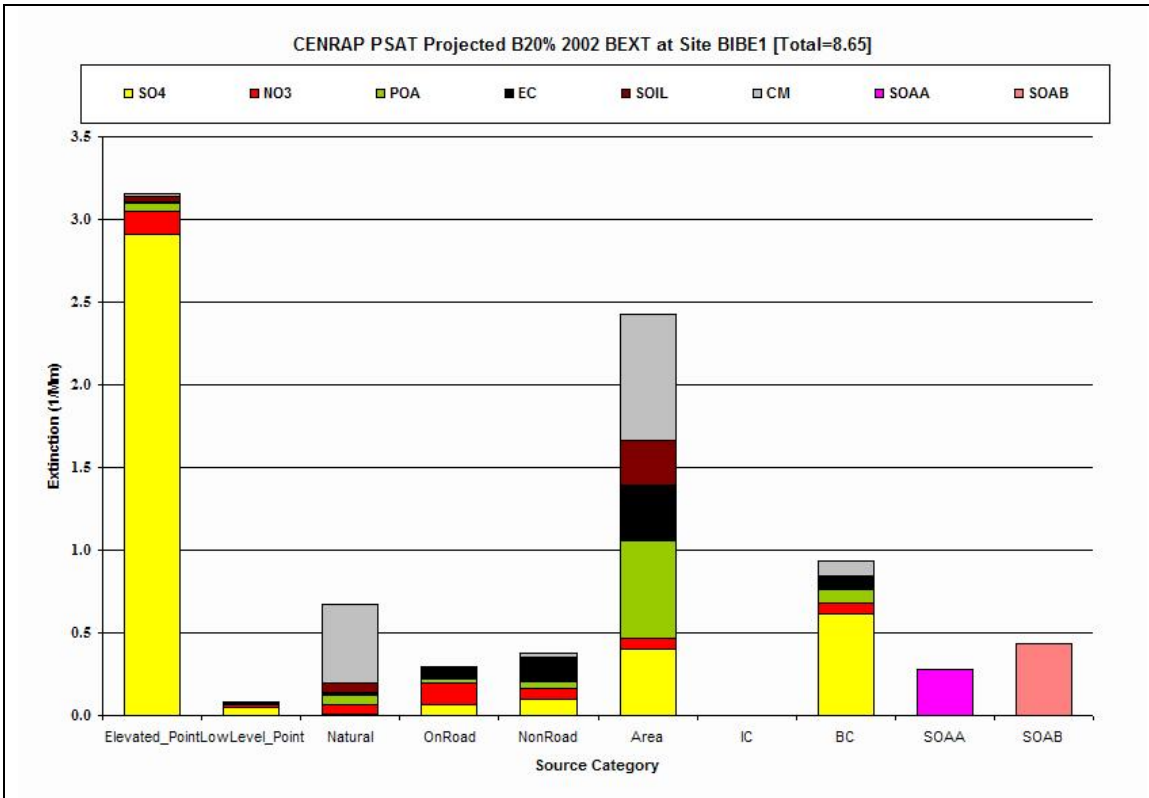



**Figure E-9g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Big Bend (BIBE), Texas.

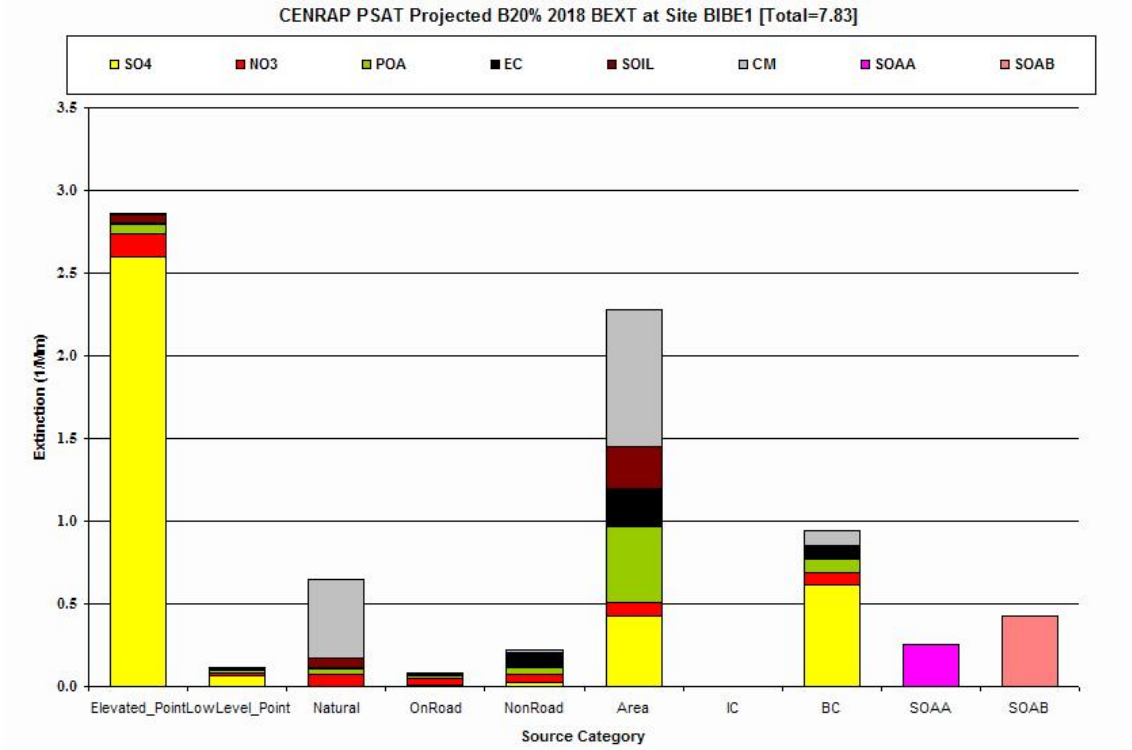



**Figure E-9h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Big Bend (BIBE), Texas.

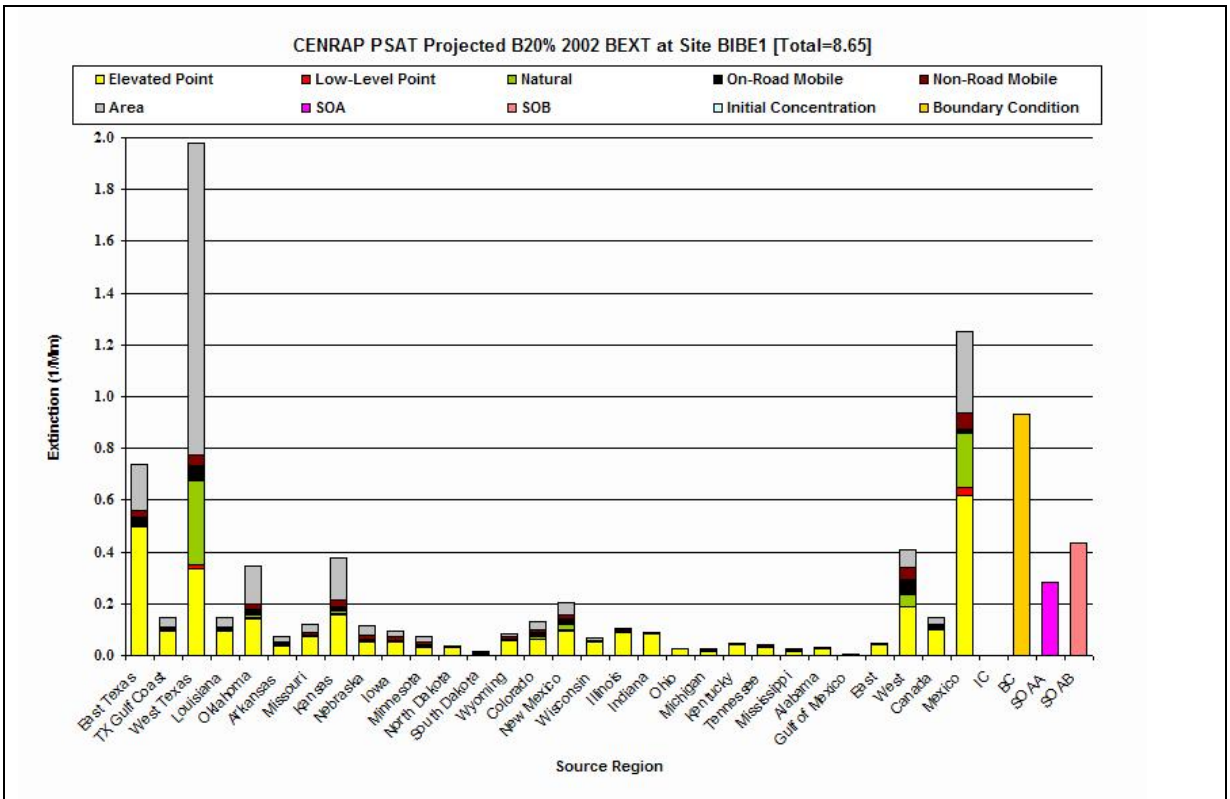



**Figure E-9i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days Big Bend (BIBE), Texas.

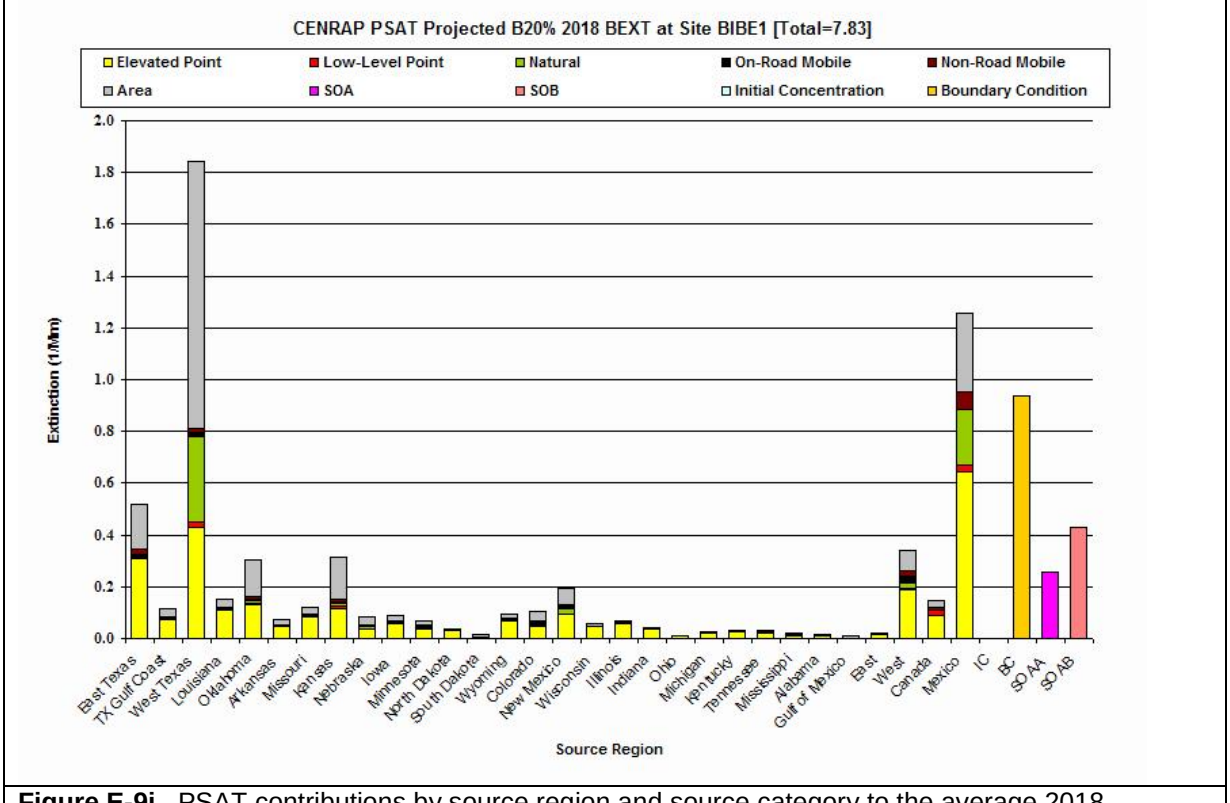



**Figure E-9j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Big Bend (BIBE), Texas.

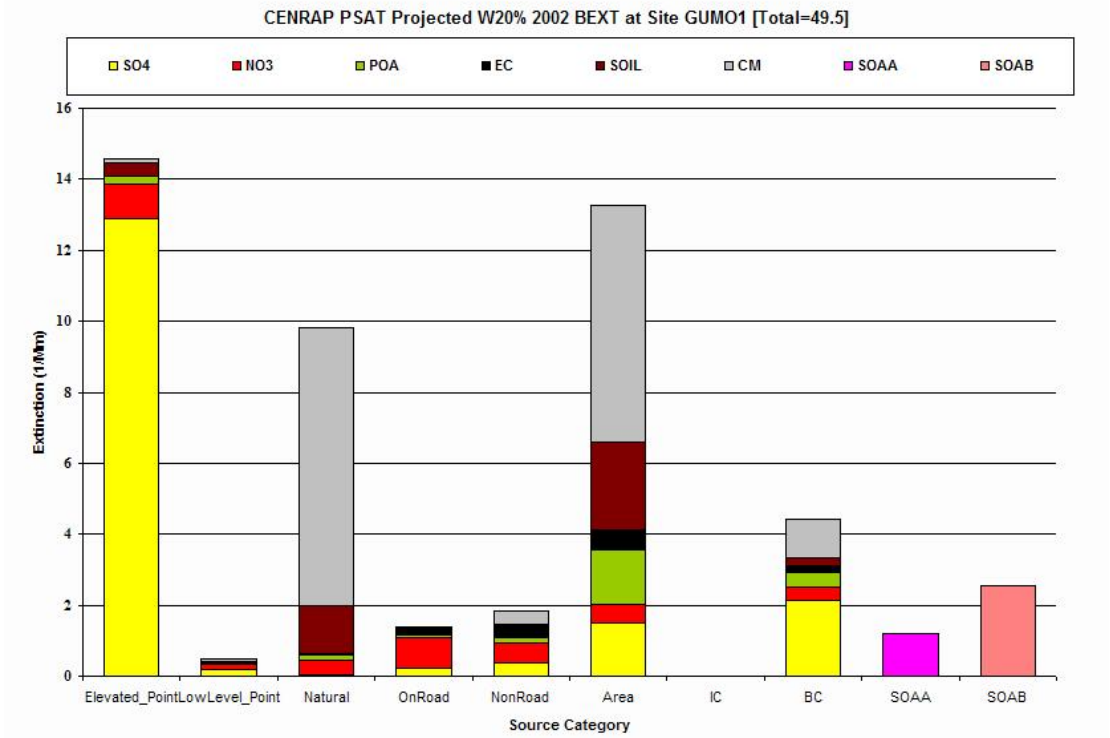



**Figure E-10a.** PSAT source categories by PM species contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

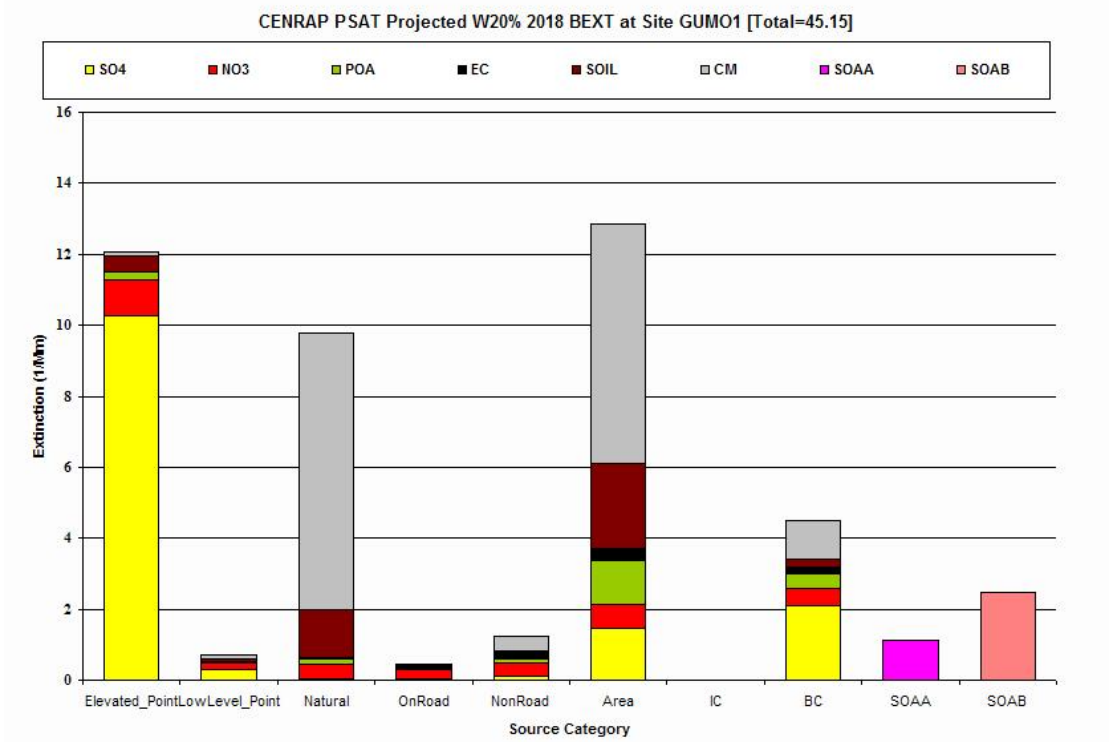



**Figure E-10b.** PSAT source category by PM species contributions to the average 2018 projected extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

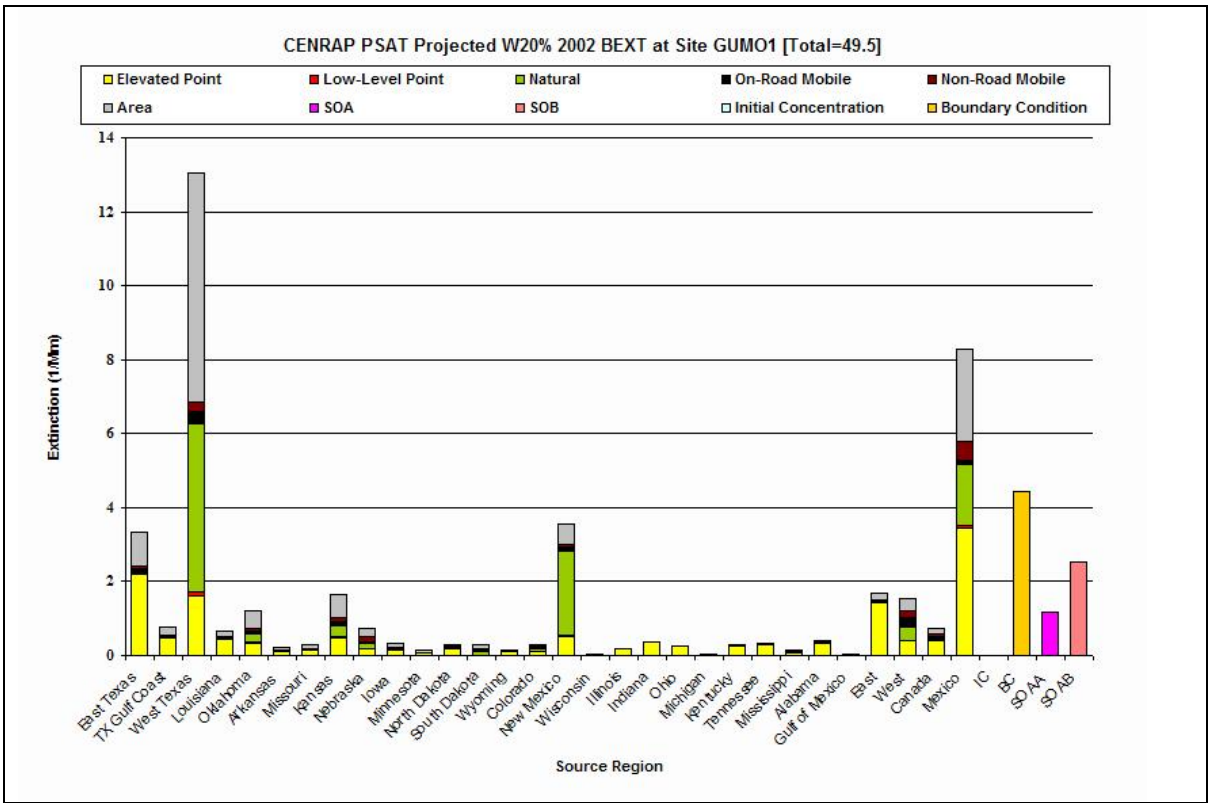



**Figure E-10c.** PSAT source region by source category contributions to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

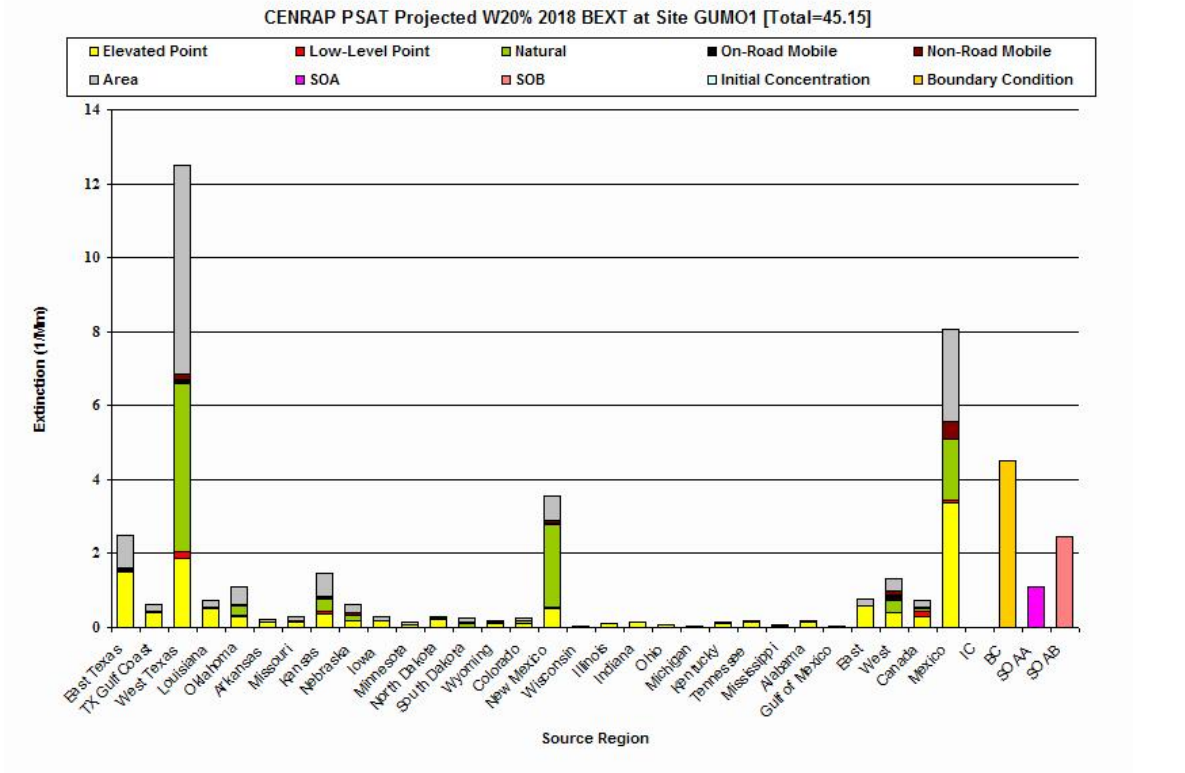



**Figure E-10d.** PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

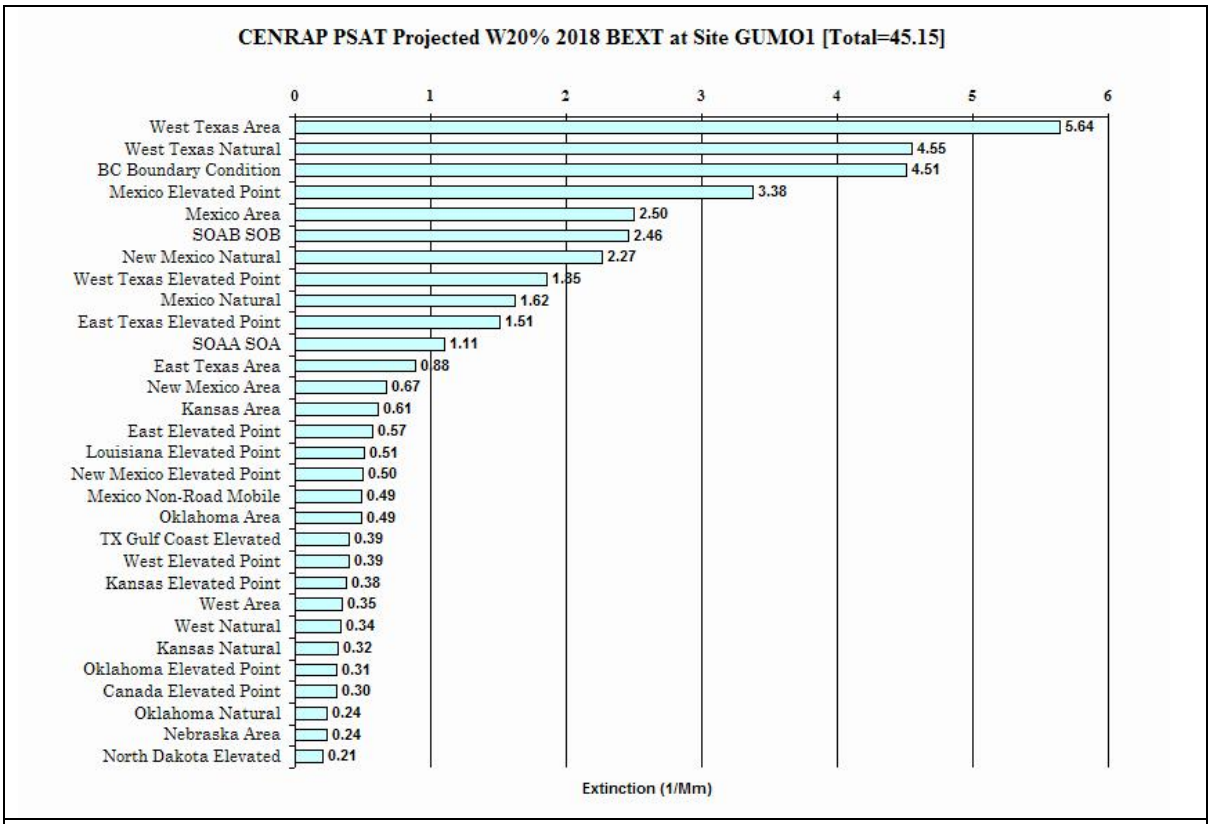



**Figure E-10e.** Ranked PSAT source region by source category contributions to the average 2018 extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

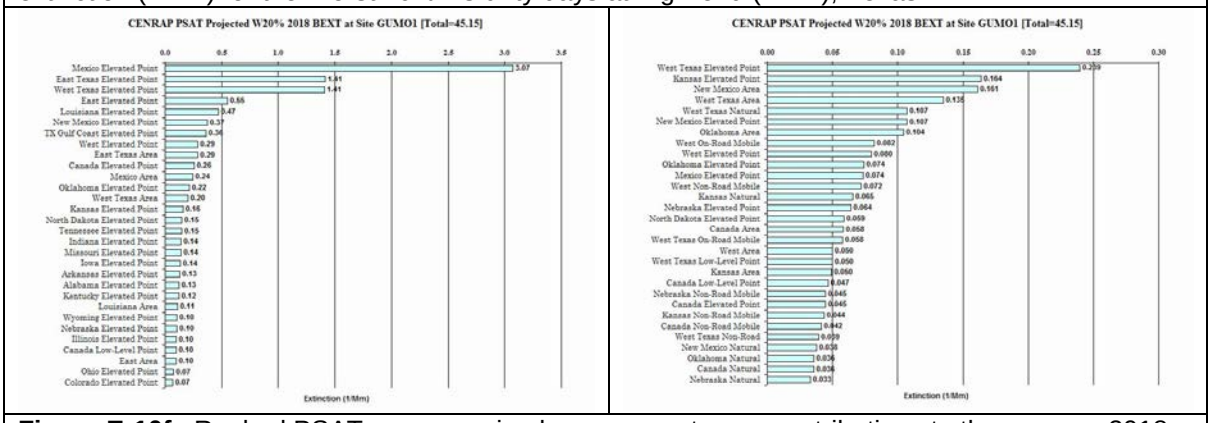



**Figure E-10f.** Ranked PSAT source region by source category contributions to the average 2018 SO4 (left) and NO3 (right) extinction ($Mm^{-1}$) for the Worst 20% visibility days at Big Bend (BIBE), Texas.

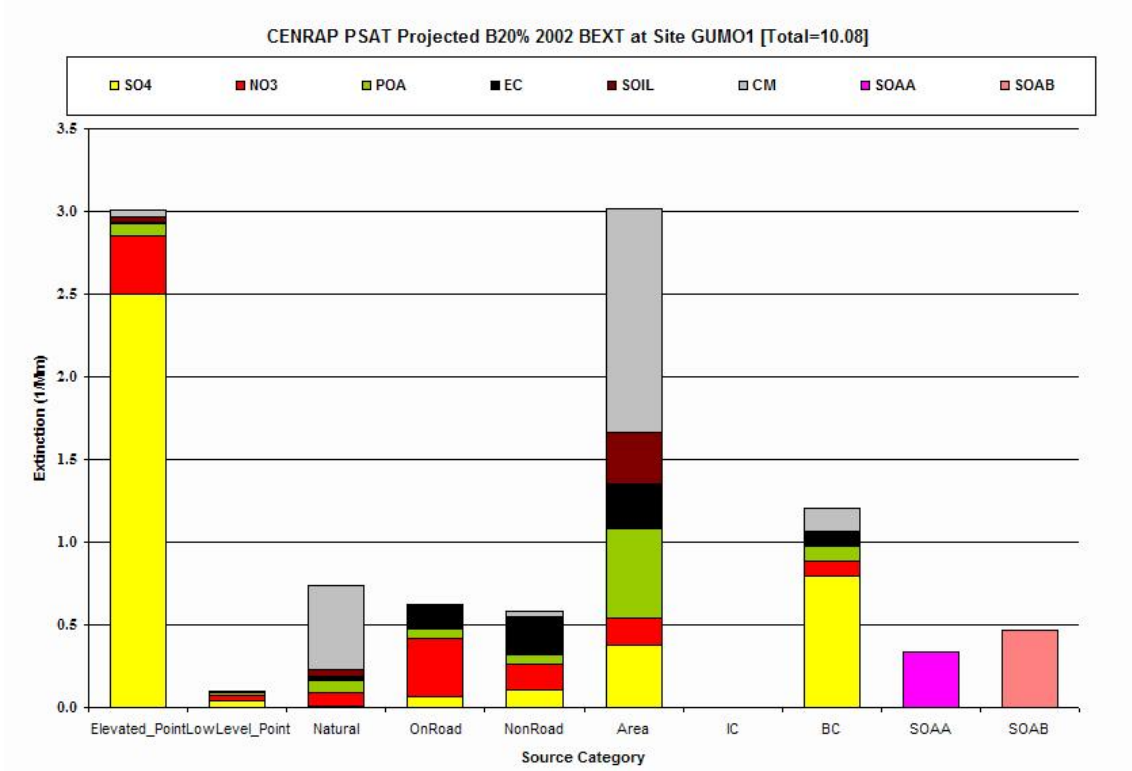



**Figure E-10g.** PSAT contributions by source category and PM species to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days at Big Bend (BIBE), Texas.

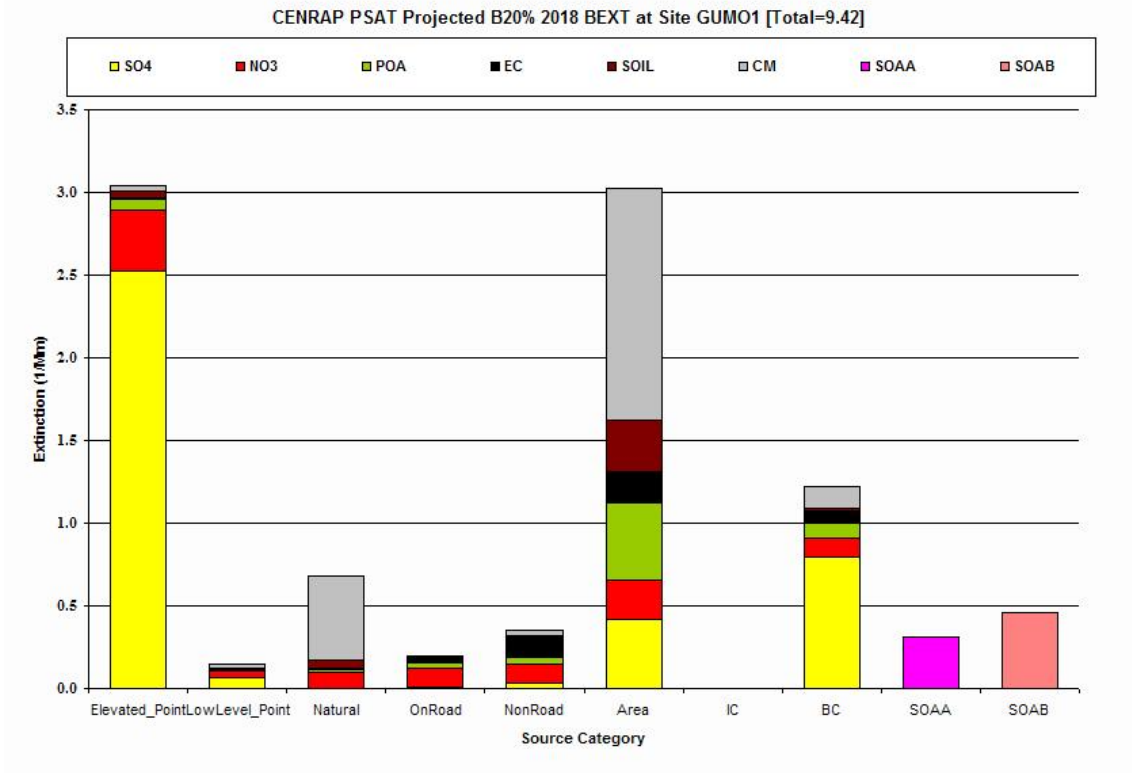



**Figure E-10h.** PSAT contributions by source category and PM species to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Big Bend (BIBE), Texas.

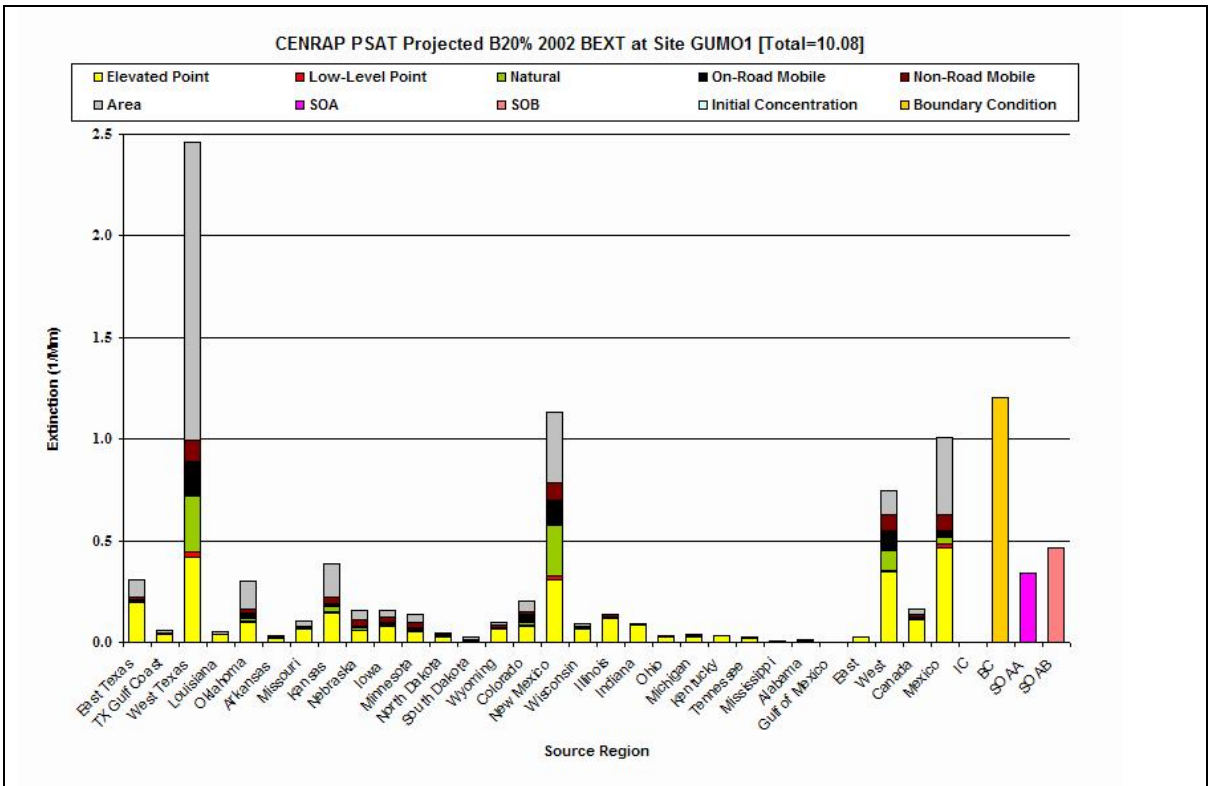



**Figure E-10i.** PSAT contributions by source region and source category to the average 2000-2004 Baseline extinction ($Mm^{-1}$) for the Best 20% visibility days Big Bend (BIBE), Texas.

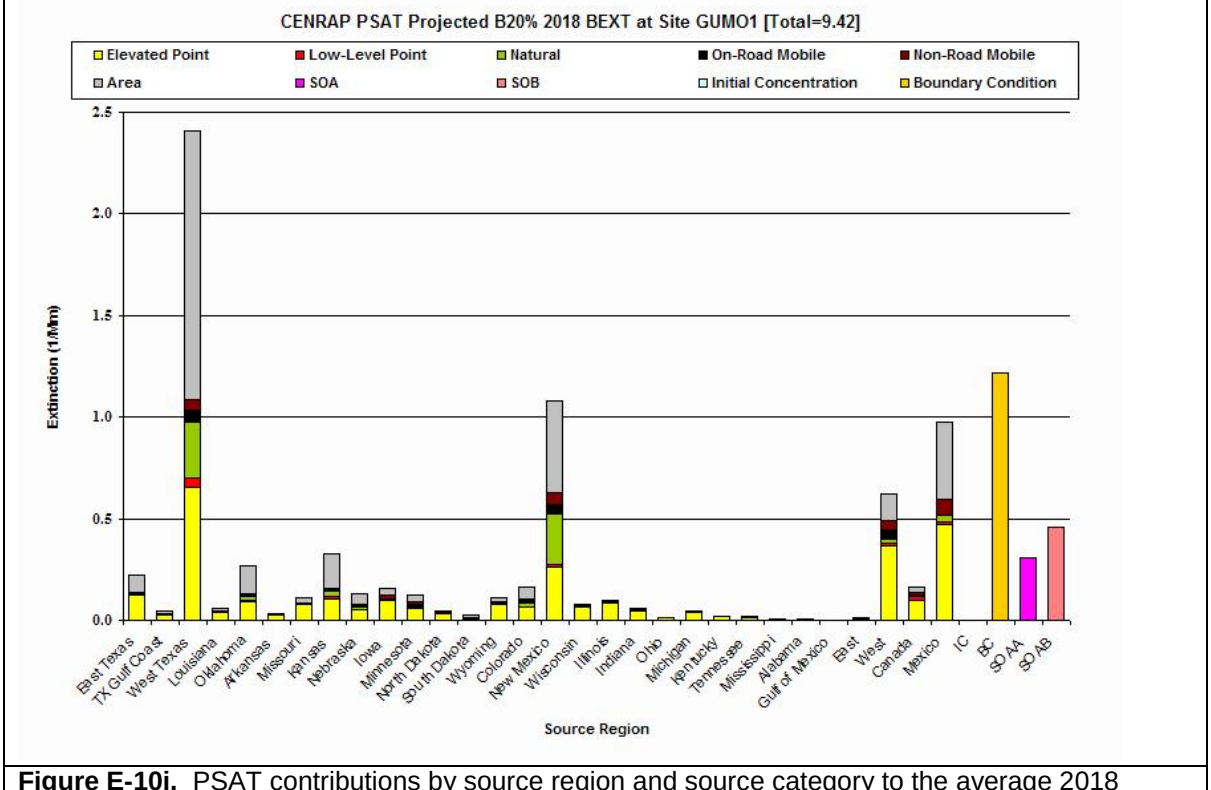



**Figure E-10j.** PSAT contributions by source region and source category to the average 2018 extinction ($Mm^{-1}$) for the Best 20% visibility days at Big Bend (BIBE), Texas.