

Natural Conditions and Trends Task Group Update

7/16/2019

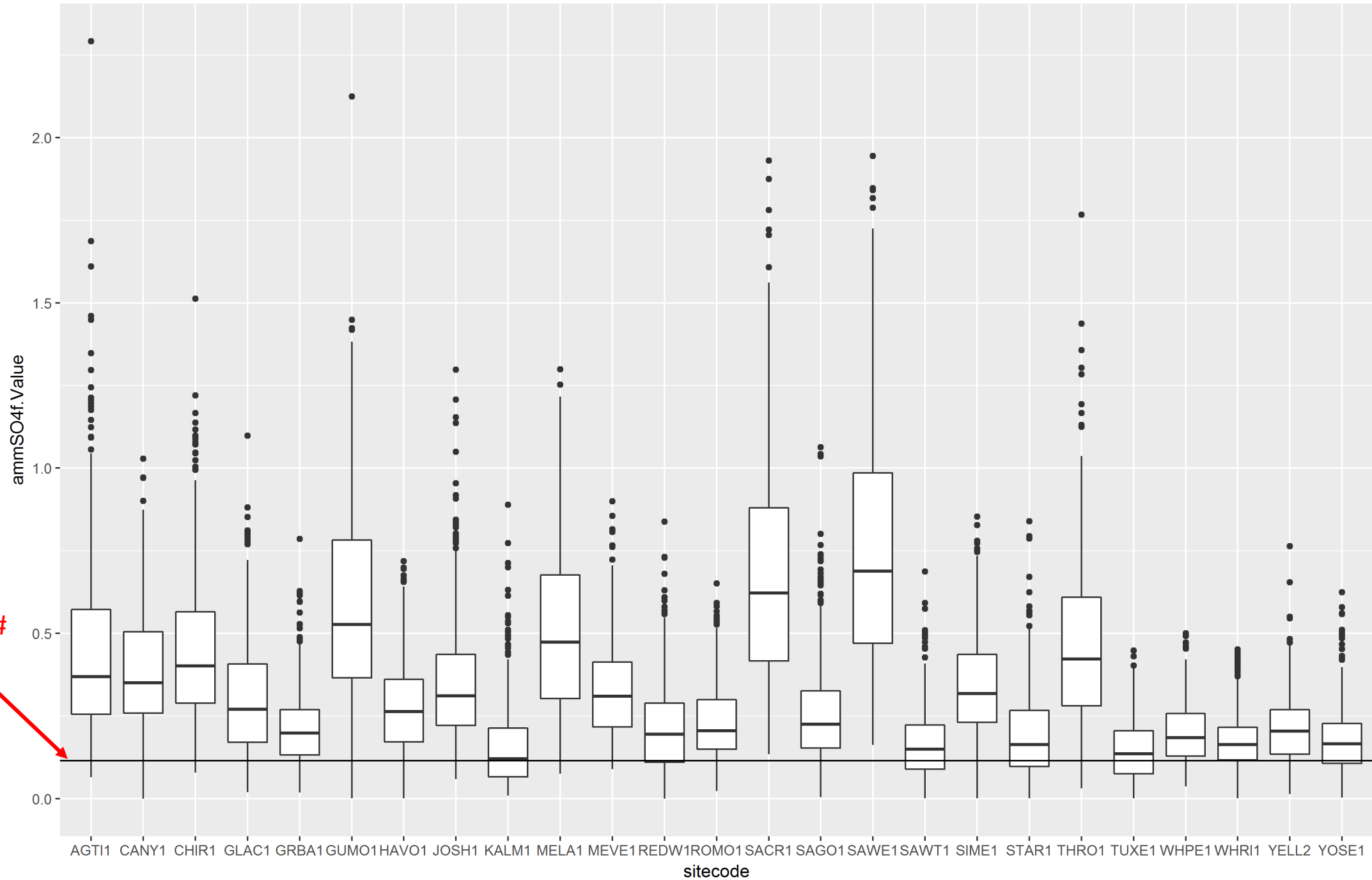
Outline

- Analysis 1 – Alternative Trijonis numbers
- Analysis 2 – Threshold Adjustment
- Analysis 3 – Future Wildfire Scenarios
- Tasks ARS is working on...

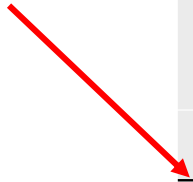
Analysis 1 – Alternative Trijonis numbers

- “Trijonis” numbers serve as basis for natural particulate contributions to haze
- From a 1990 study
- Compared 2000-2017 data to Trijonis numbers
- Looked at how changing those numbers changed the endpoints

Mass distributions on clearest days 2000-2017



Trijonis #

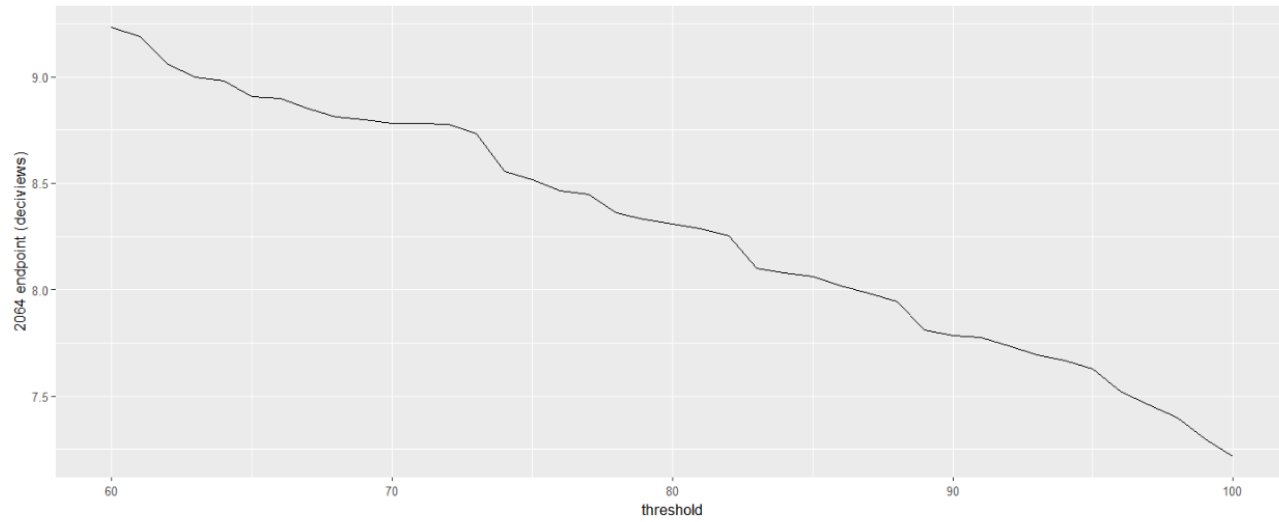


Analysis 2 – Threshold Adjustment

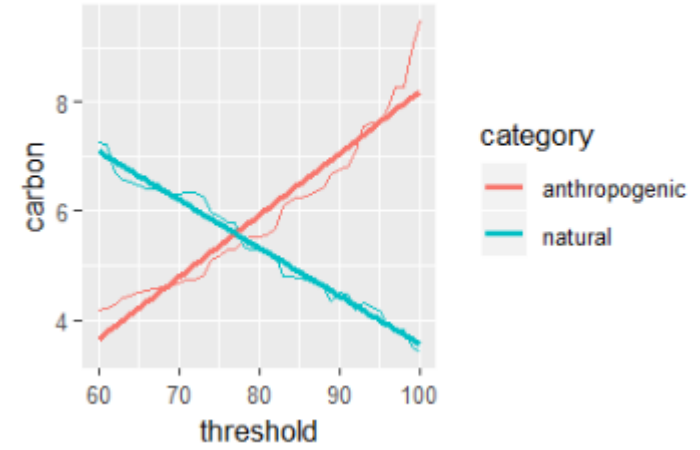
- Varied threshold percentile to see if other thresholds (not 95%-ile) were better at characterizing natural-episodic impacts
- Looked at how the threshold affected
 - 2064 endpoint
 - Natural carbon on most impaired days
 - Natural and anthropogenic species' contributions on most impaired days
 - Ratio of carbon+dust to nitrate+sulfate

AGT11 most impaired days threshold adjustment

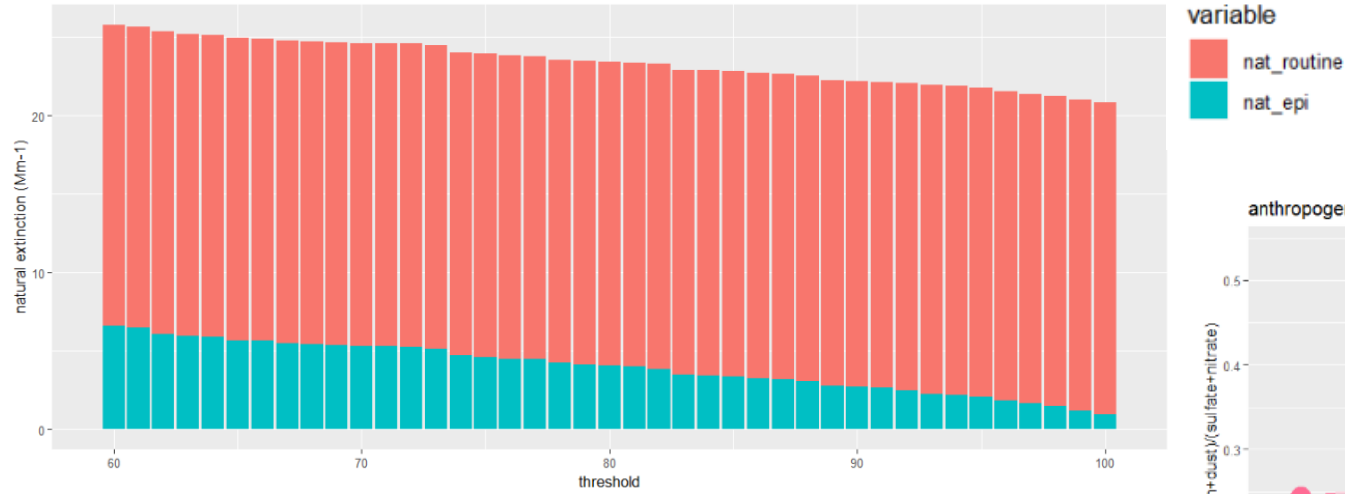
AGT11 2064 endpoint, and natural contribution to endpoint



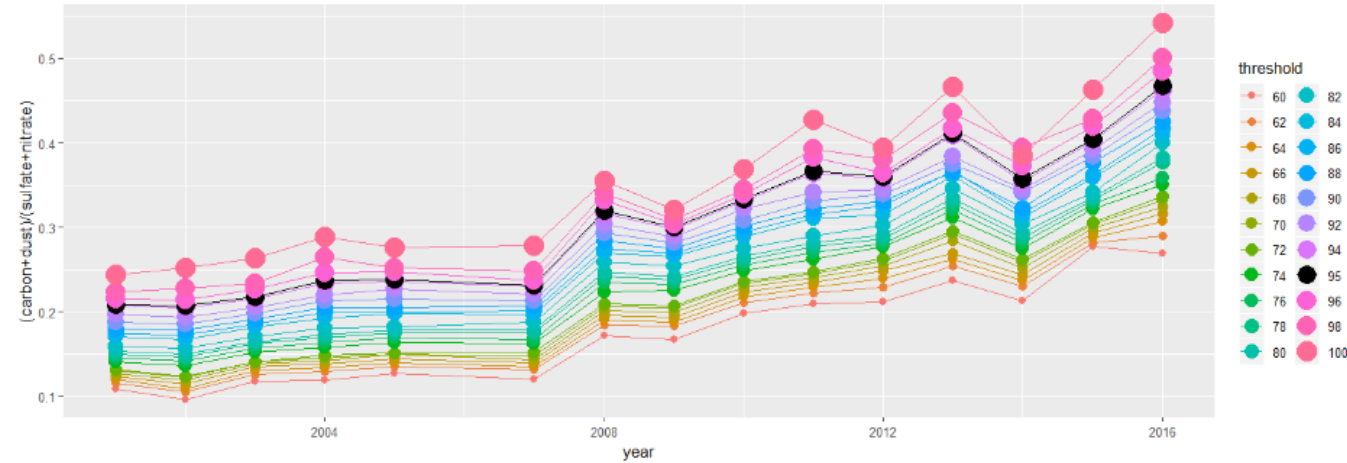
2007



Natural contribution to extinction on most impaired days, 2000-2014

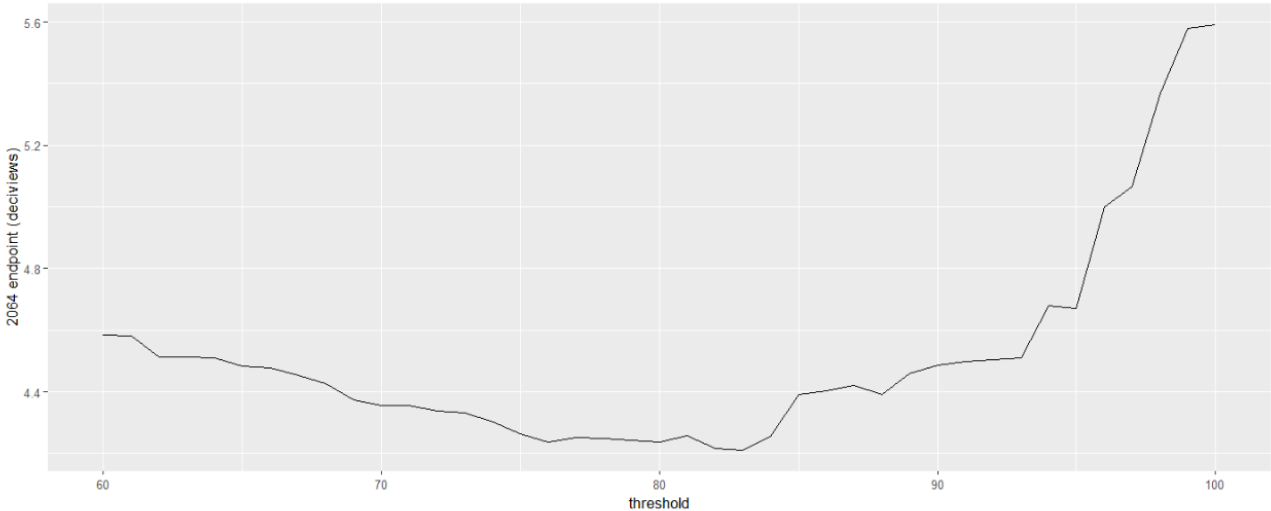


anthropogenic species contributions on most impaired days

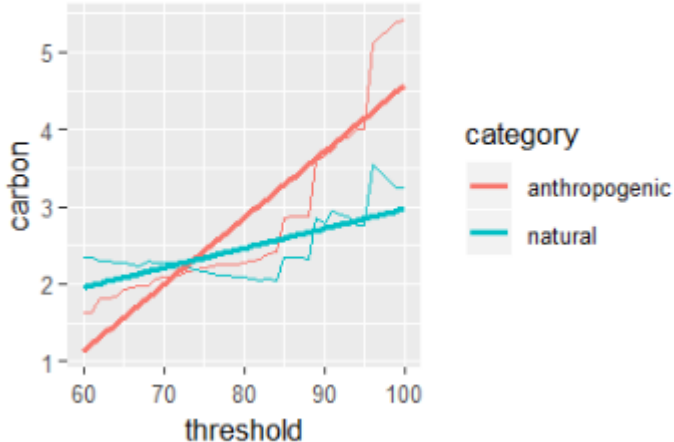


SAWT1 most impaired days threshold adjustment

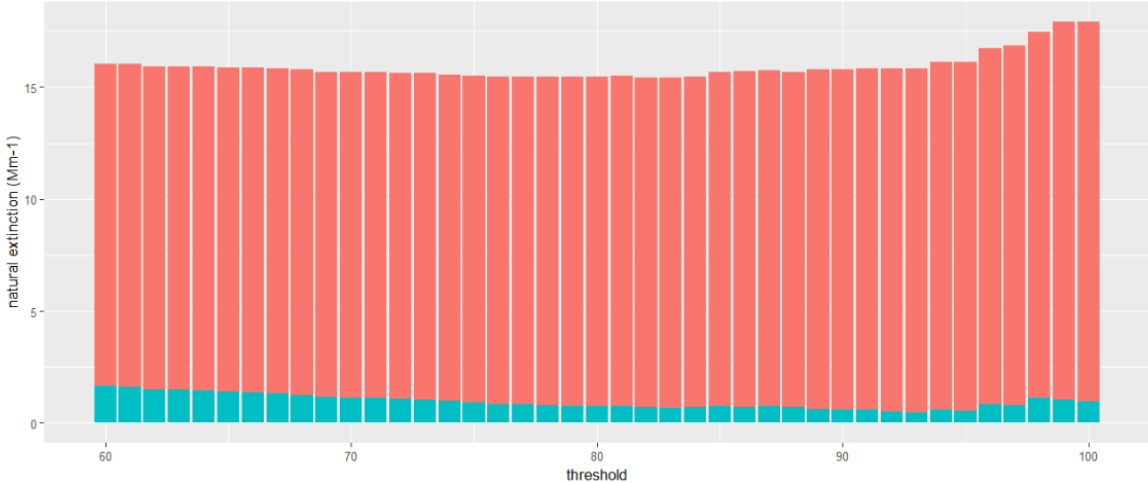
SAWT1 2064 endpoint, and natural contribution to endpoint



2011

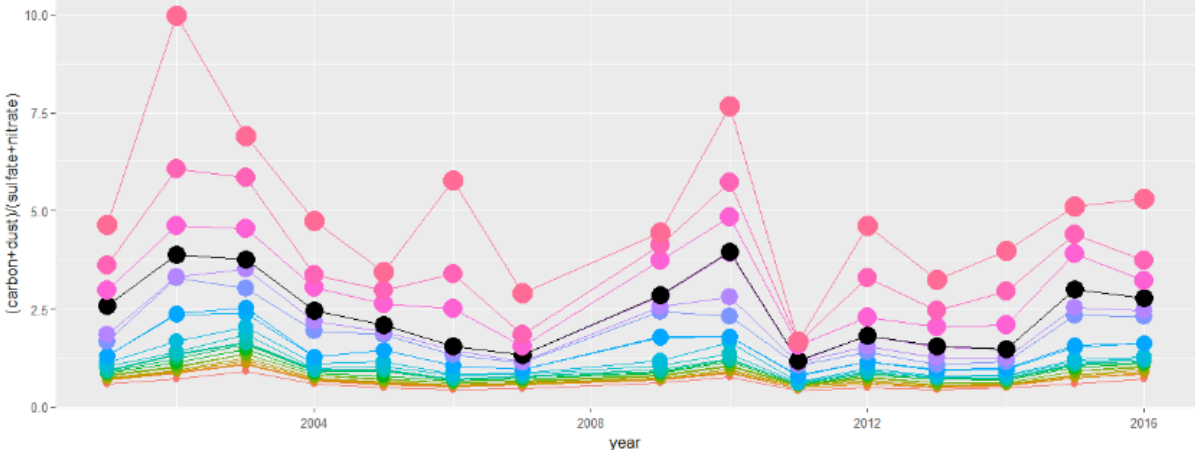


Natural contribution to extinction on most impaired days, 2000-2014



variable
 nat_routine
 nat_epi

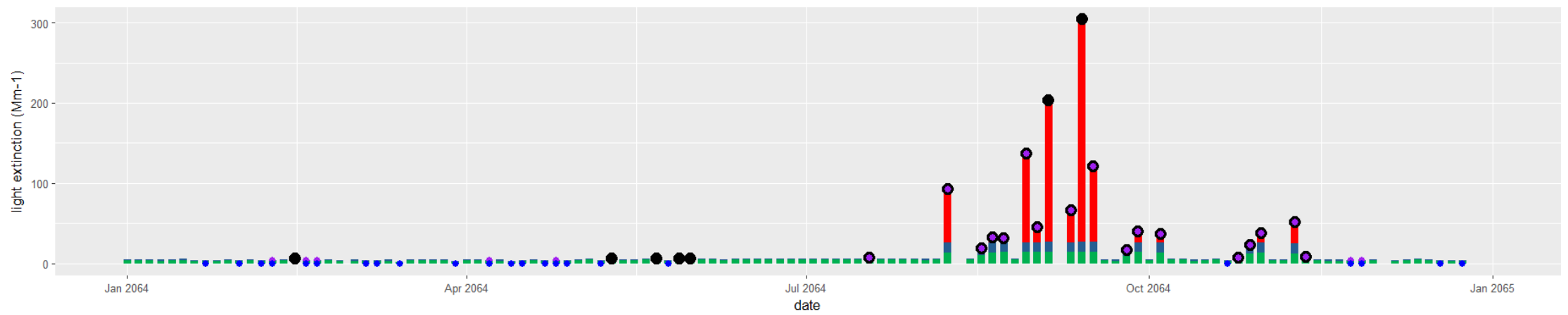
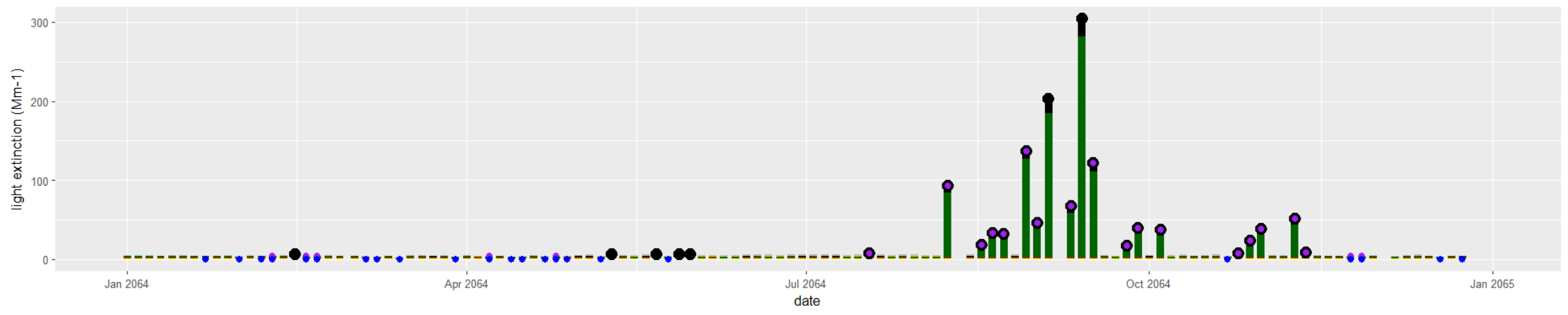
anthropogenic species contributions on most impaired days



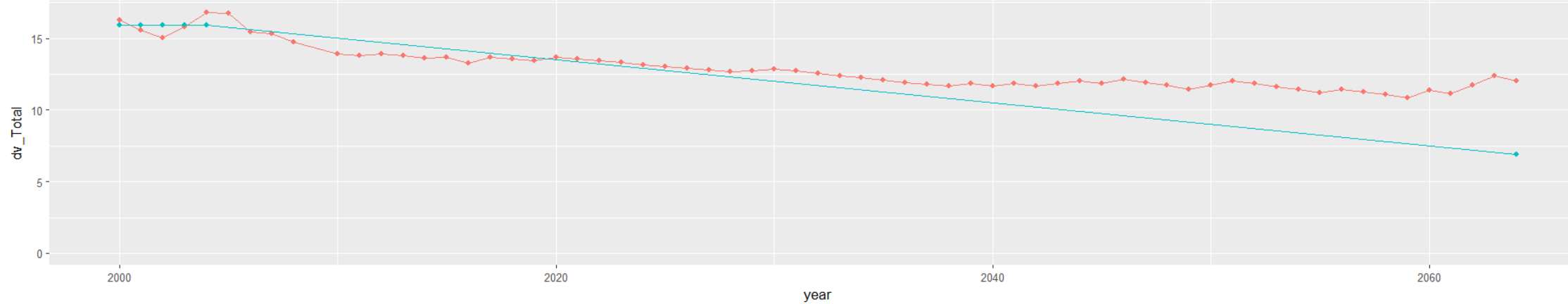
Analysis 3 – Future Wildfire Scenarios

- Assume constant rate of decrease of every species, to the NCI values in 2064
- EXCEPT for any episodic carbon, as determined by the metric in 2017
- In order to simulate elevated future episodic carbon (during fire season), while allowing all other species to gradually improve

GLAC1 - 2064 - EPA 95%-ile Method - All Days



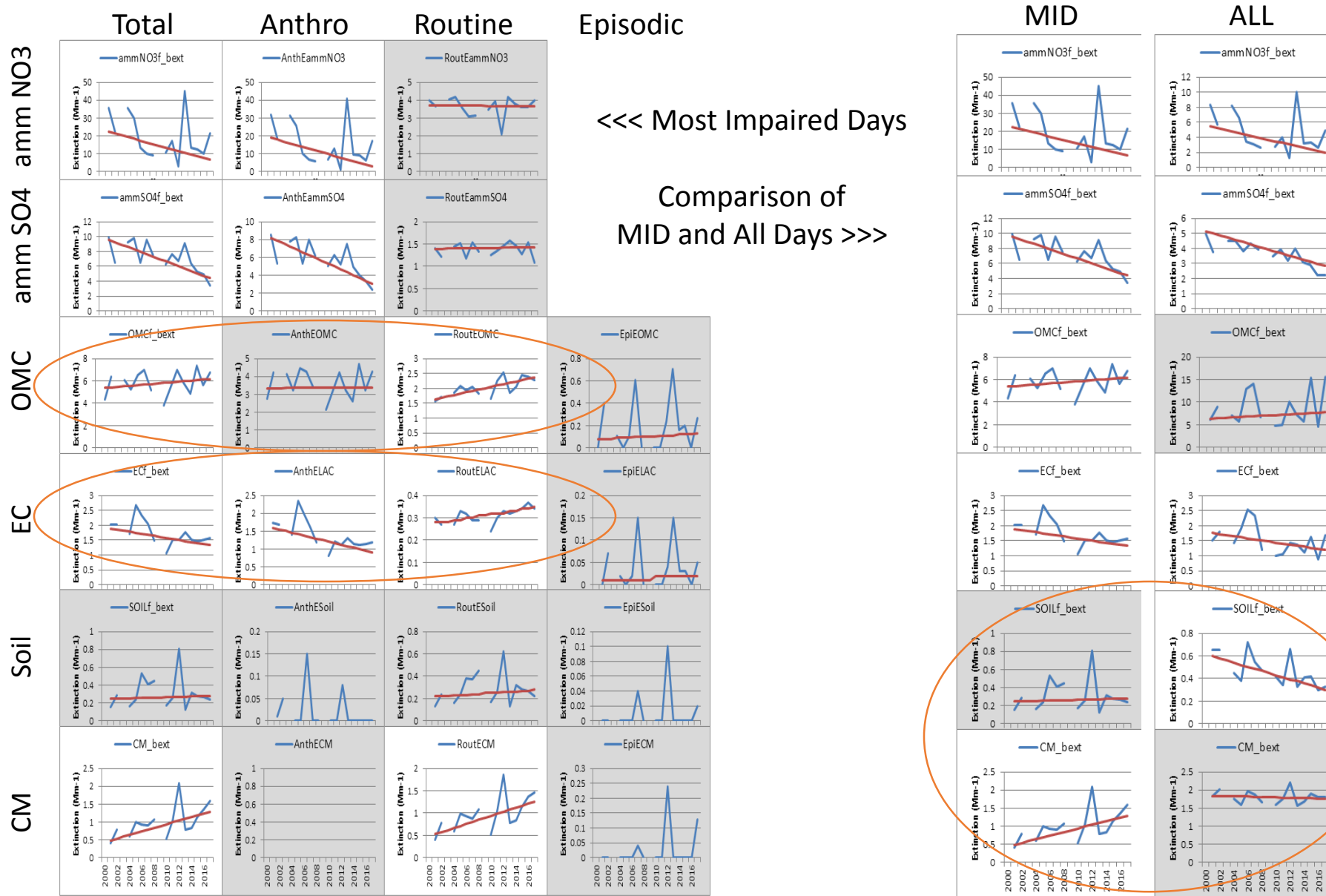
GLAC1



Tasks ARS is working on...

- Investigate trends in various components of aerosol extinction at sites with high carbon and dust and identify which trends are statistically significant
- Run trend statistics and charts for all WRAP IMPROVE sites and add tools to the TSSv2 to make these results available to users
- Provide some examples during a WRAP webinar in August (?)
- Use results to better understand the EPA revised tracking metric and implications to the URP glide path
- Consult with states on results

Example Results from Hells Canyon (HECA1)



* Gray chart means slope is not statistically significant