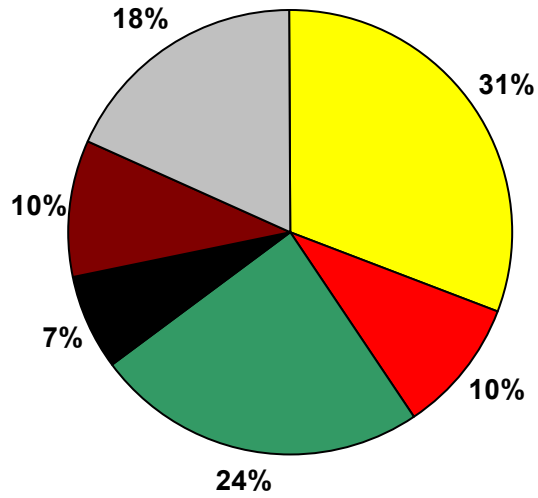


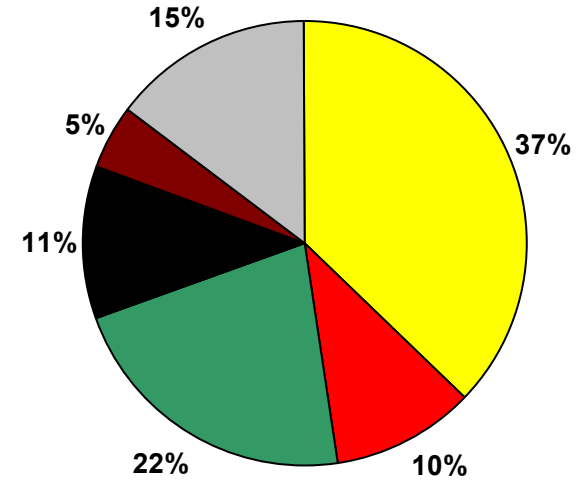
MONITORING DATA

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
INGA1 Monitoring Data (every third day)**

20% Worst Visibility Days
Aerosol Extinction* = 25 Mm-1 (21 to 36 Mm-1)

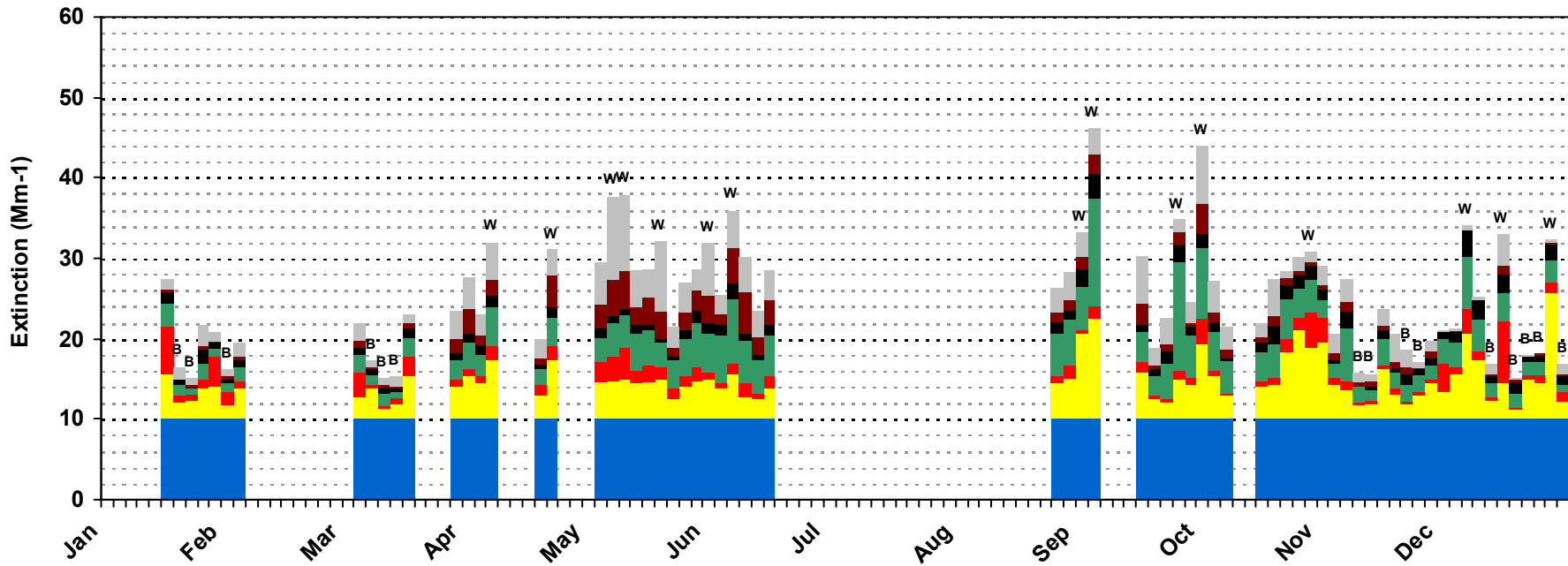


20% Best Visibility Days
Aerosol Extinction* = 7 Mm-1 (5 to 9 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

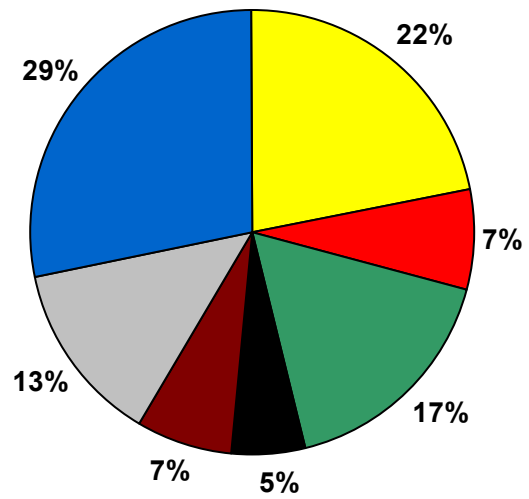
*Excludes Rayleigh Extinction



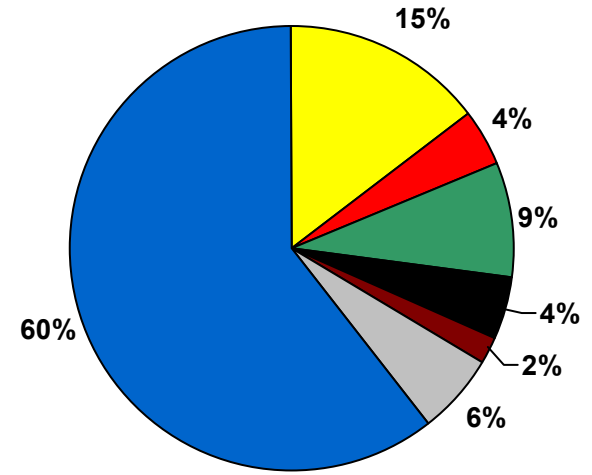
MONITORING DATA

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
INGA1 Monitoring Data (every third day)**

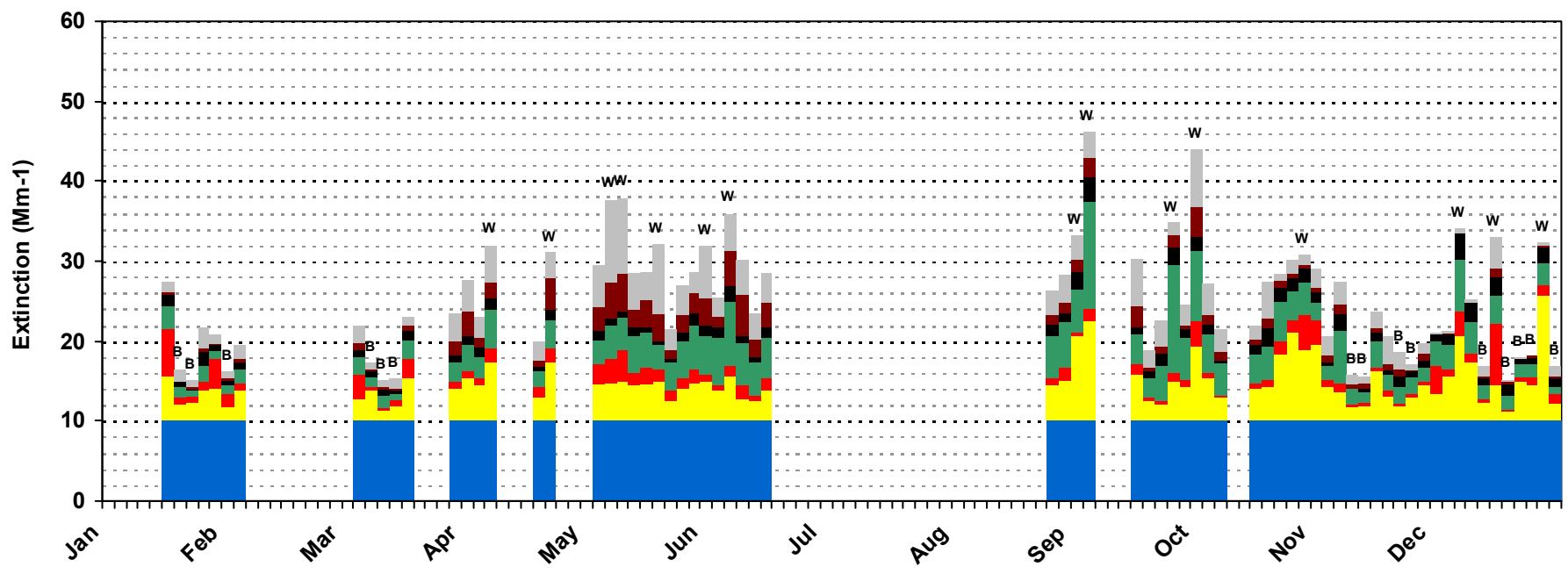
20% Worst Visibility Days
Total Extinction = 35 Mm-1 (31 to 46 Mm-1)



20% Best Visibility Days
Total Extinction = 17 Mm-1 (15 to 19 Mm-1)



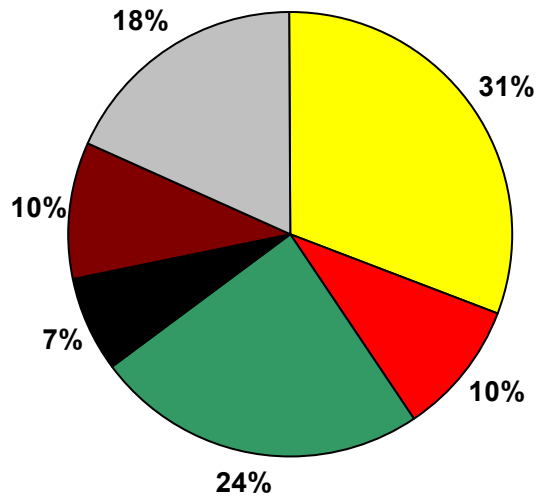
- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



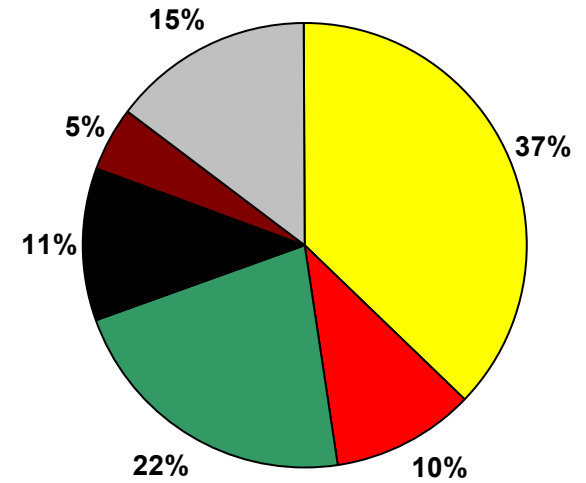
MONITORING DATA

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
INGA1 Monitoring Data (every third day)**

20% Worst Visibility Days
Aerosol Extinction* = 25 Mm-1 (21 to 36 Mm-1)

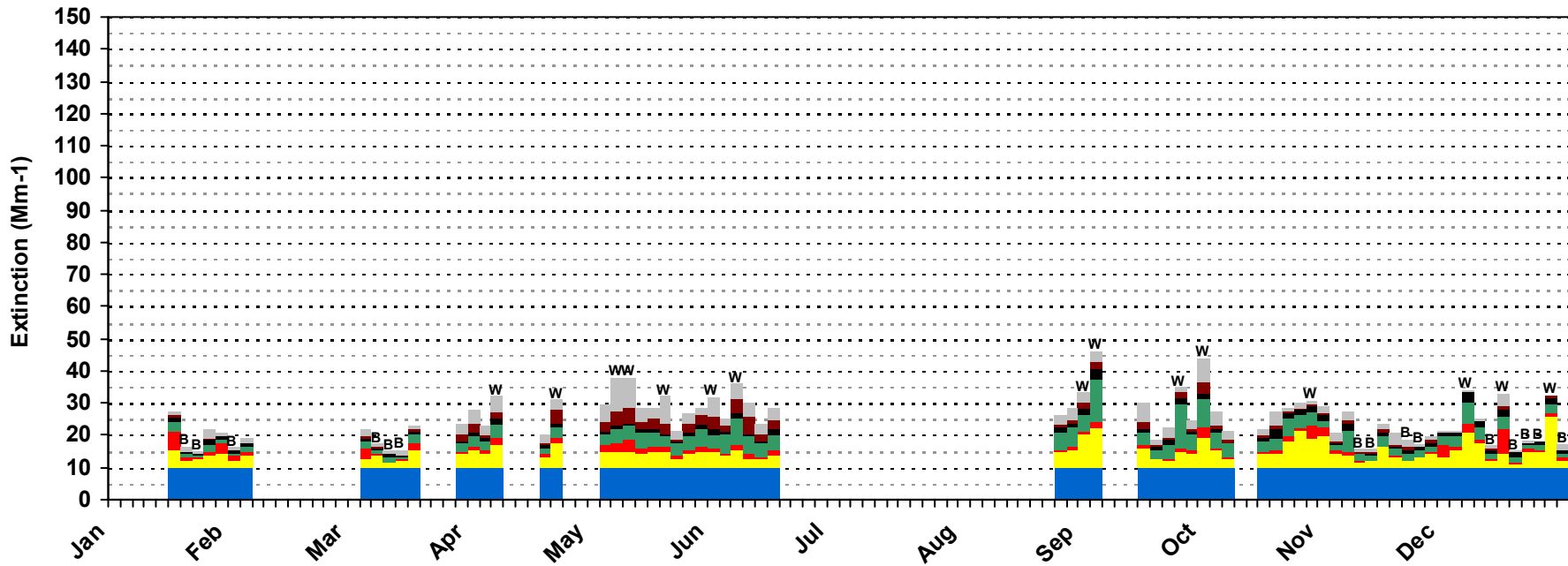


20% Best Visibility Days
Aerosol Extinction* = 7 Mm-1 (5 to 9 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

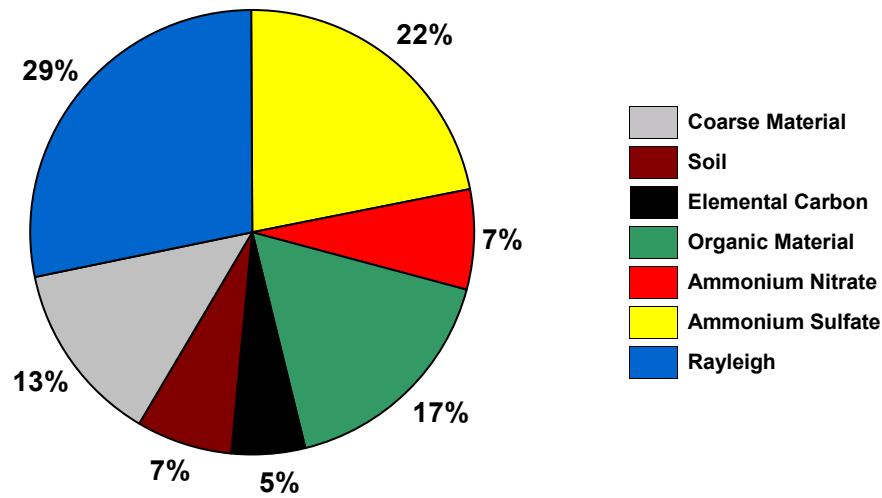
*Excludes Rayleigh Extinction



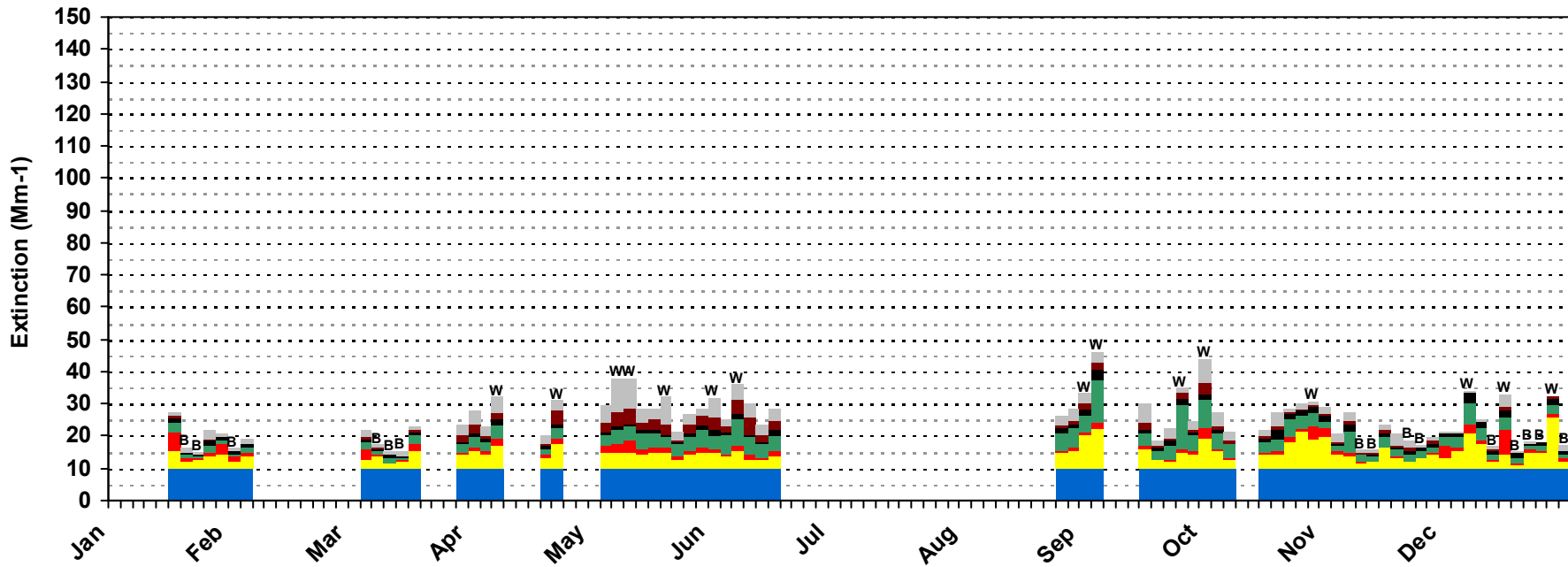
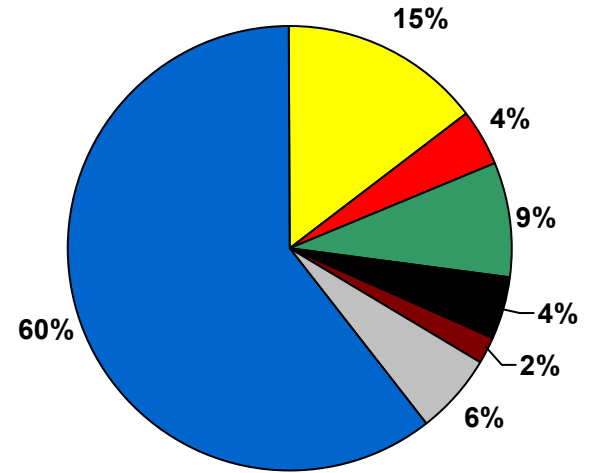
MONITORING DATA

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
INGA1 Monitoring Data (every third day)**

20% Worst Visibility Days
Total Extinction = 35 Mm-1 (31 to 46 Mm-1)



20% Best Visibility Days
Total Extinction = 17 Mm-1 (15 to 19 Mm-1)



MONITORING DATA

Grand Canyon National Park - In Canyon, AZ 2002 Reconstructed Extinction Values INGA1 Monitoring Data (every third day)

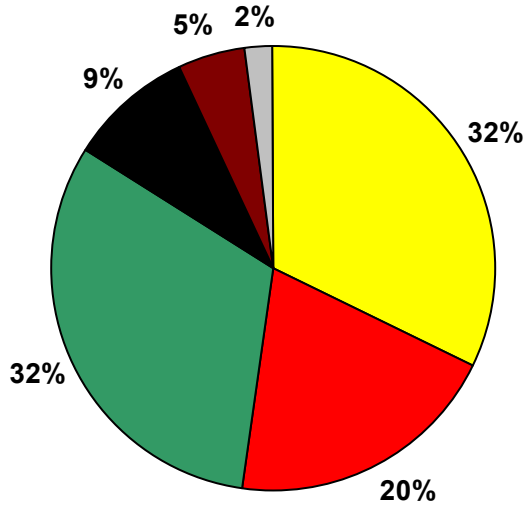
20% Worst Visibility Days			
	Average (Mm-1)	Minimum (Mm-1)	Maximum (Mm-1)
Total Extinction:	35.2 (12.6 dv)	30.8 (11.3 dv)	46.2 (15.3 dv)
Aerosol Extinction*:	25.2	20.8	36.2
	Average (Mm-1)	% of Tot. Extinction	% of Aer. Extinction
Ammonium Sulfate:	7.8	22%	31%
Ammonium Nitrate:	2.5	7%	10%
Organic Material:	6.0	17%	24%
Elemental Carbon:	1.8	5%	7%
Soil:	2.5	7%	10%
Coarse Material:	4.6	13%	18%
Rayleigh:	10.0	28%	N/A
20% Best Visibility Days			
	Average (Mm-1)	Minimum (Mm-1)	Maximum (Mm-1)
Total Extinction:	16.5 (5.0 dv)	15.0 (4.1 dv)	18.7 (6.3 dv)
Aerosol Extinction*:	6.5	5.0	8.7
	Average (Mm-1)	% of Tot. Extinction	% of Aer. Extinction
Ammonium Sulfate:	2.4	15%	37%
Ammonium Nitrate:	0.7	4%	10%
Organic Material:	1.4	9%	22%
Elemental Carbon:	0.7	4%	11%
Soil:	0.3	2%	5%
Coarse Material:	0.9	5%	14%
Rayleigh:	10.0	61%	N/A

*Excludes Rayleigh Extinction

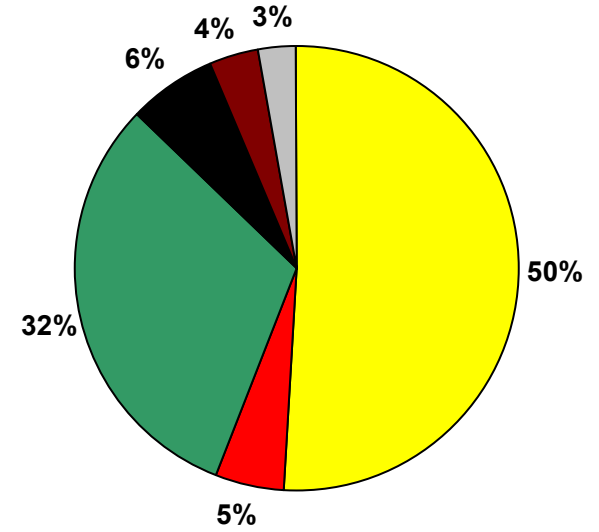
MODEL RESULTS

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
CMAQ Model Results (every day)**

20% Worst Visibility Days
Aerosol Extinction* = 20 Mm-1 (14 to 41 Mm-1)

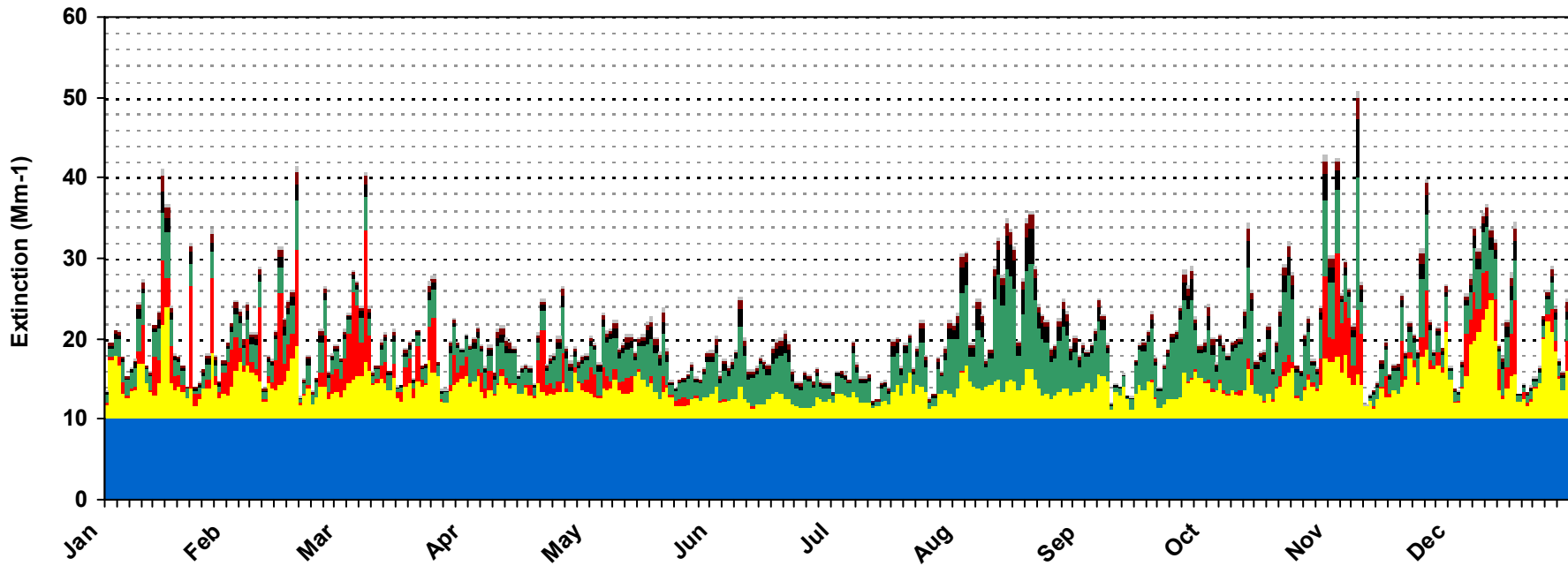


20% Best Visibility Days
Aerosol Extinction* = 4 Mm-1 (2 to 6 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

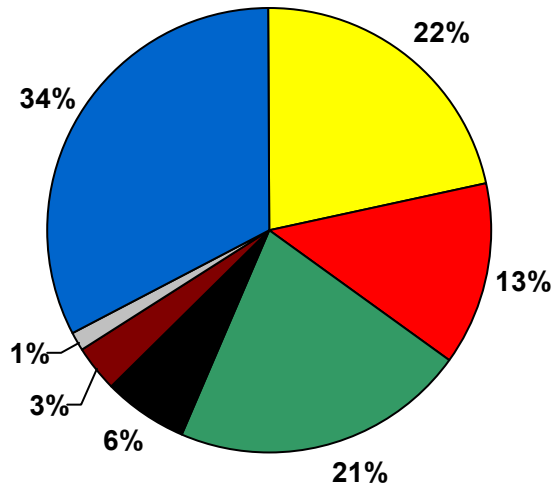
*Excludes Rayleigh Extinction



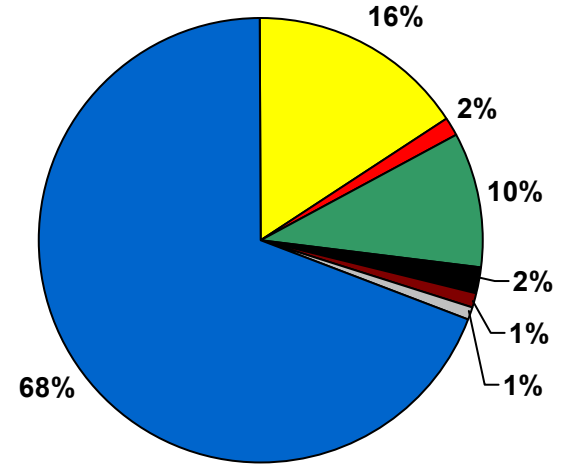
MODEL RESULTS

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
CMAQ Model Results (every day)**

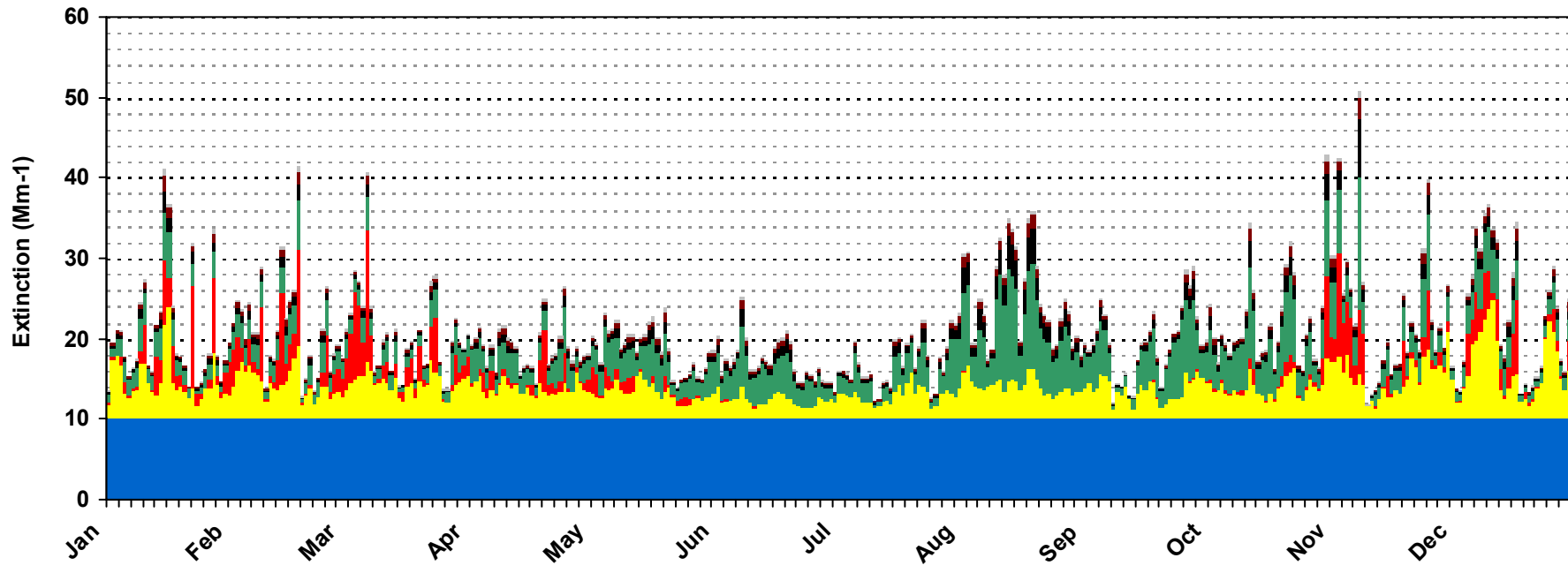
20% Worst Visibility Days
Total Extinction = 30 Mm-1 (24 to 51 Mm-1)



20% Best Visibility Days
Total Extinction = 14 Mm-1 (12 to 16 Mm-1)



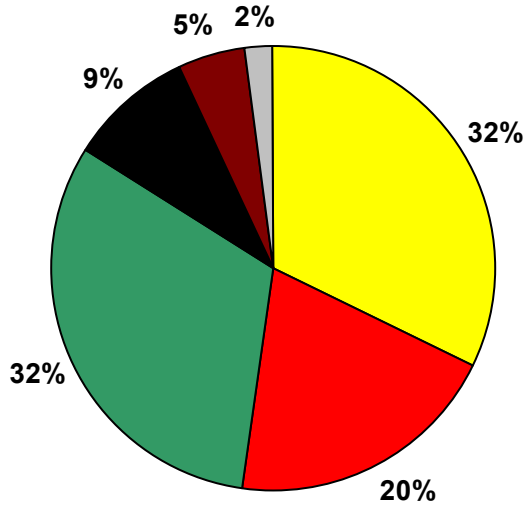
- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



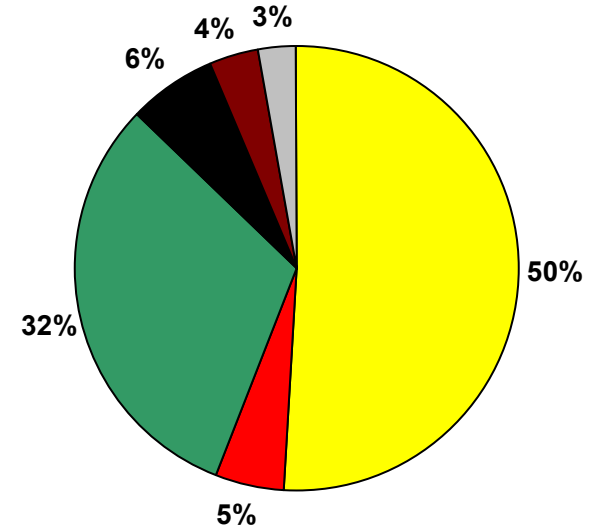
MODEL RESULTS

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
CMAQ Model Results (every day)**

20% Worst Visibility Days
Aerosol Extinction* = 20 Mm-1 (14 to 41 Mm-1)

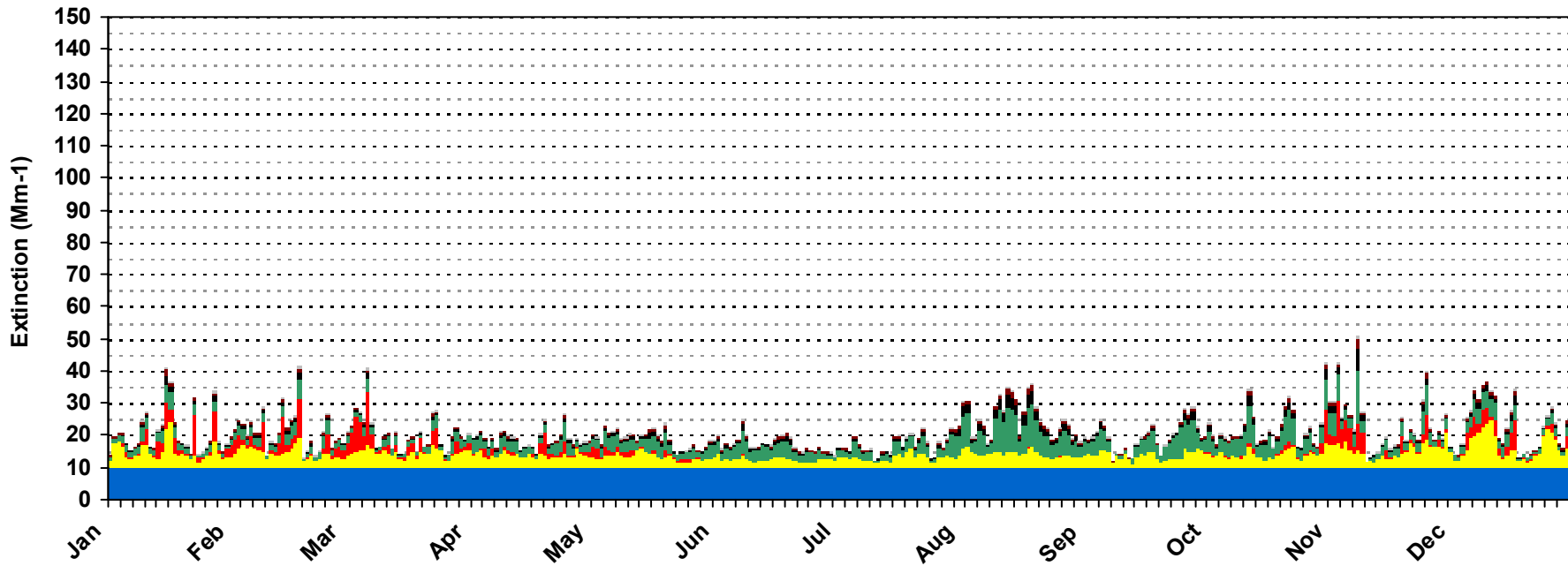


20% Best Visibility Days
Aerosol Extinction* = 4 Mm-1 (2 to 6 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

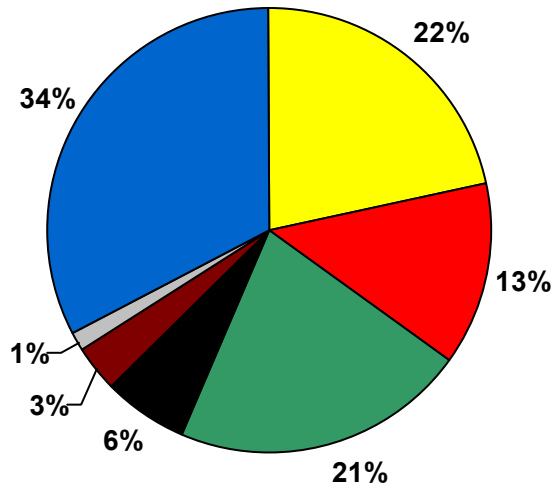
*Excludes Rayleigh Extinction



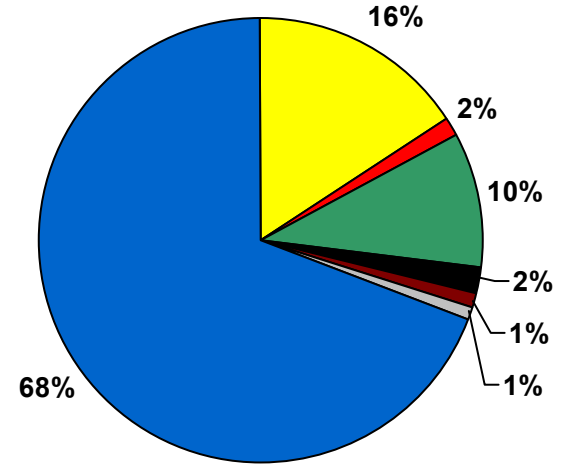
MODEL RESULTS

**Grand Canyon National Park - In Canyon, AZ
2002 Reconstructed Extinction
CMAQ Model Results (every day)**

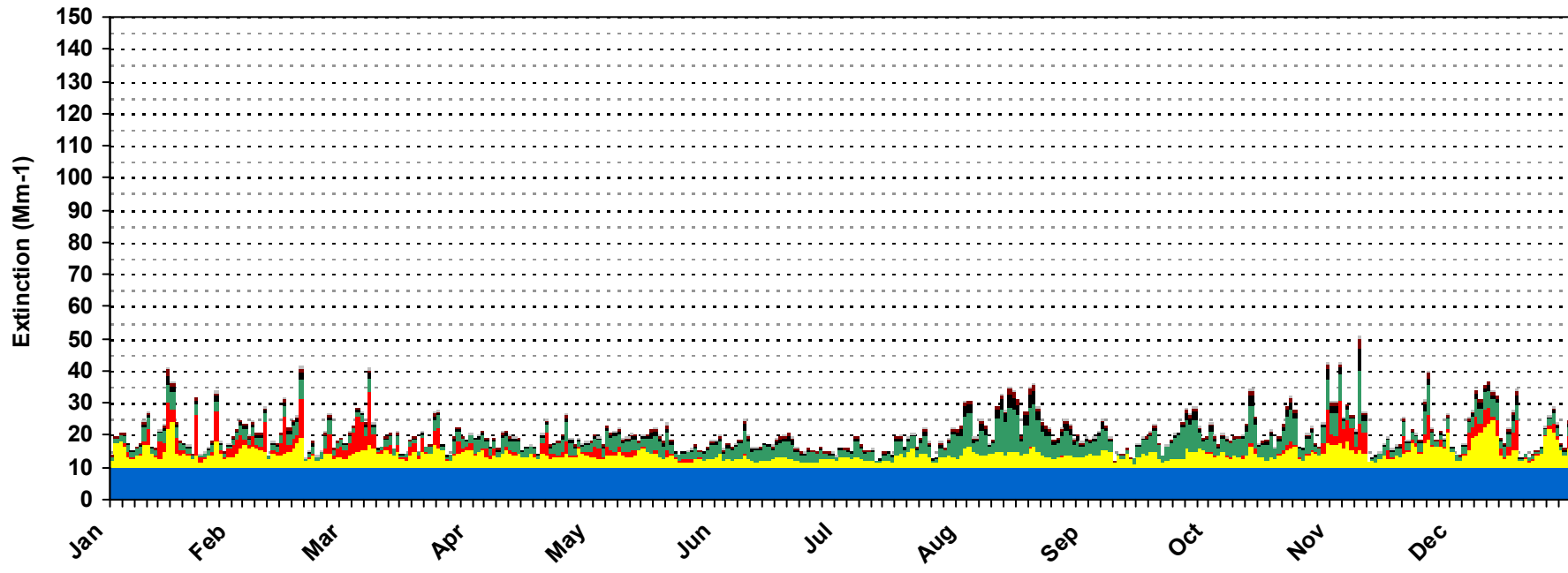
20% Worst Visibility Days
Total Extinction = 30 Mm-1 (24 to 51 Mm-1)



20% Best Visibility Days
Total Extinction = 14 Mm-1 (12 to 16 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



MODEL RESULTS

Grand Canyon National Park - In Canyon, AZ 2002 Reconstructed Extinction CMAQ Model Results (every day)

20% Worst Visibility Days			
	Average (Mm-1)	Minimum (Mm-1)	Maximum (Mm-1)
Total Extinction:	30.4 (11.1 dv)	24.3 (8.9 dv)	50.8 (16.2 dv)
Aerosol Extinction*:	20.4	14.3	40.8
	Average (Mm-1)	% of Tot. Extinction	% of Aer. Extinction
Ammonium Sulfate:	6.6	22%	32%
Ammonium Nitrate:	4.1	13%	20%
Organic Material:	6.4	21%	32%
Elemental Carbon:	1.9	6%	9%
Soil:	1.0	3%	5%
Coarse Material:	0.4	1%	2%
Rayleigh:	10.0	33%	N/A
20% Best Visibility Days			
	Average (Mm-1)	Minimum (Mm-1)	Maximum (Mm-1)
Total Extinction:	14.5 (3.7 dv)	11.7 (1.6 dv)	16.0 (4.7 dv)
Aerosol Extinction*:	4.5	1.7	6.0
	Average (Mm-1)	% of Tot. Extinction	% of Aer. Extinction
Ammonium Sulfate:	2.3	16%	51%
Ammonium Nitrate:	0.2	2%	5%
Organic Material:	1.4	10%	32%
Elemental Carbon:	0.3	2%	6%
Soil:	0.2	1%	4%
Coarse Material:	0.1	1%	3%
Rayleigh:	10.0	69%	N/A

*Excludes Rayleigh Extinction