

APPENDIX C:

California Class I Area Monitoring Data Summary Tables and Charts

Includes the following subsections:

Subsection	IMPROVE Monitor	Class I Area(s) Represented
C.1	LABE1	Lava Beds NM and South Warner WA
C.2	LAVO1	Lassen Volcanic NP, Caribou WA, and Thousand Lakes WA
C.3	TRIN1	Marble Mountain WA and Yolla-Bolly-Middle-Eel WA
C.4	BLIS1	Desolation WA and Mokelumne WA
C.5	DOME1	Dome Land WA
C.6	HOOV1	Hoover WA
C.7	KAIS1	Kaiser WA, Ansel Adams WA, and John Muir WA
C.8	SEQU1	Sequoia NP and Kings Canyon NP
C.9	YOSE1	Yosemite NP and Emigrant WA
C.10	AGTI1	Agua Tibia WA
C.11	JOSH1	Joshua Tree NP
C.12	SAGA1	San Gabriel WA and Cucamonga WA
C.13	SAGO1	San Geronio WA and San Jacinto WA
C.14	PINN1	Pinnacles NM and Ventana WA
C.15	PORE1	Point Reyes National Seashore
C.16	RAFA1	San Rafael WA
C.17	REDW1	Redwood NP

C.1. LAVA BEDS NM AND SOUTH WARNER WA (LBE1)

The following tables and figures are presented in this section for the Lava Beds NM and South Warner WA represented by the LBE1 IMPROVE Monitor:

- **Table C.1-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.1-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.1-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.1-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.1-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.1-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.1-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.1-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.1-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.1-1
Lava Beds NM and South Warner WA, CA (LBE1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	3.6	3.1	3.0	3.1	2.9	2.4	3.6	2.6	2.5	2.5	-0.1	0.0	3.2	2.8	-0.4	-13%
Worst 20% Days	---	14.3	15.4	16.0	14.5	13.5	14.4	12.2	16.9	13.9	10.4	-0.1	0.3	15.1	14.2	-0.9	-6%
All Days	---	8.4	8.6	8.5	8.2	8.1	7.8	7.6	8.6	7.8	6.3	-0.1	0.0	8.4	8.0	-0.4	-5%
Total Extinction (Mm-1)																	
Best 20% Days	---	14.4	13.8	13.5	13.7	13.5	12.8	14.4	13.1	12.9	12.8	-0.2	0.1	13.9	13.3	-0.6	-4%
Worst 20% Days	---	42.8	50.8	57.9	45.6	39.6	43.8	34.2	58.4	47.9	28.5	-0.2	0.5	49.3	44.8	-4.5	-9%
All Days	---	25.1	26.8	27.8	25.3	24.2	24.2	22.4	27.7	25.2	19.6	-0.2	0.3	26.2	24.7	-1.5	-6%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	1.6	1.1	0.8	1.2	1.5	1.2	1.7	1.2	1.1	1.1	0.0	0.5	1.2	1.3	0.1	8%
Worst 20% Days	---	7.6	6.5	6.5	6.6	8.2	7.4	8.5	7.1	6.8	6.0	0.1	0.2	6.8	7.6	0.8	12%
All Days	---	4.6	3.9	3.4	3.7	4.8	4.1	4.3	4.1	4.0	3.3	0.0	0.5	3.9	4.3	0.4	10%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	0.6	0.7	0.4	0.5	0.4	0.3	0.5	0.4	0.4	0.2	0.0	0.0	0.6	0.4	-0.2	-33%
Worst 20% Days	---	3.0	5.3	3.1	2.4	3.2	1.7	2.3	2.2	1.7	1.8	-0.2	0.0	3.5	2.2	-1.3	-37%
All Days	---	1.6	2.1	1.4	1.3	1.5	1.0	1.2	1.0	1.0	0.9	-0.1	0.0	1.6	1.2	-0.4	-25%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	1.2	1.1	1.4	1.1	0.9	0.5	1.2	0.8	0.7	0.7	-0.1	0.0	1.2	0.8	-0.4	-33%
Worst 20% Days	---	15.0	22.5	30.8	19.8	12.3	17.8	8.4	31.8	22.7	6.5	0.1	0.5	22.0	18.6	-3.4	-16%
All Days	---	5.5	7.3	9.5	7.0	4.9	5.9	4.0	9.4	7.0	3.0	0.0	0.5	7.3	6.2	-1.1	-15%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	0.3	0.4	0.5	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.0	0.0	0.4	0.3	-0.1	-25%
Worst 20% Days	---	2.8	3.3	4.2	3.1	3.2	3.2	2.2	3.9	3.1	1.4	0.0	0.5	3.3	3.1	-0.2	-6%
All Days	---	1.3	1.4	1.7	1.2	1.4	1.3	1.1	1.4	1.2	0.8	0.0	0.4	1.4	1.3	-0.1	-7%
Soil Extinction (Mm-1)																	
Best 20% Days	---	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.5	0.1	0.1	0.0	0%
Worst 20% Days	---	1.6	0.9	0.7	0.8	0.5	0.9	0.8	0.7	1.0	0.8	0.0	0.5	1.0	0.8	-0.2	-20%
All Days	---	0.6	0.5	0.3	0.4	0.3	0.4	0.4	0.4	0.5	0.4	0.0	0.2	0.5	0.4	-0.1	-20%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	0.4	0.4	0.3	0.3	0.2	0.2	0.4	0.3	0.2	0.4	0.0	0.0	0.4	0.2	-0.2	-50%
Worst 20% Days	---	2.9	2.3	2.5	2.9	1.9	2.7	1.9	2.5	2.4	1.9	-0.1	0.2	2.6	2.3	-0.3	-12%
All Days	---	1.4	1.4	1.3	1.5	1.2	1.3	1.2	1.3	1.3	1.1	0.0	0.3	1.4	1.2	-0.2	-14%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.2	0.1	100%
Worst 20% Days	---	0.0	0.0	0.0	0.1	0.2	0.0	0.2	0.0	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0%
All Days	---	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.2	0.1	100%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.1-1
Lava Beds NM and South Warner WA, CA (LBE1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

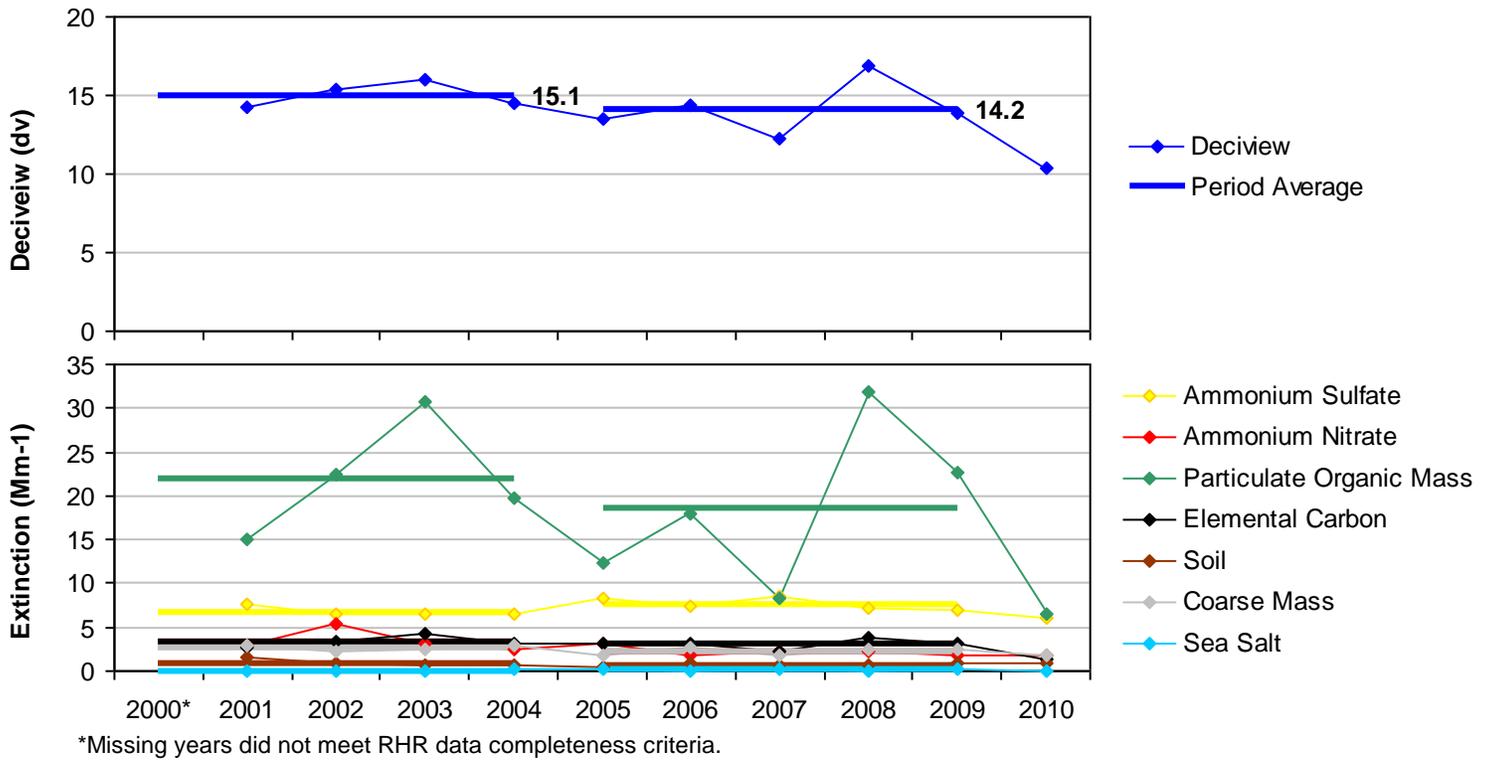


Figure C.1-2
Lava Beds NM and South Warner WA, CA (LBE1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

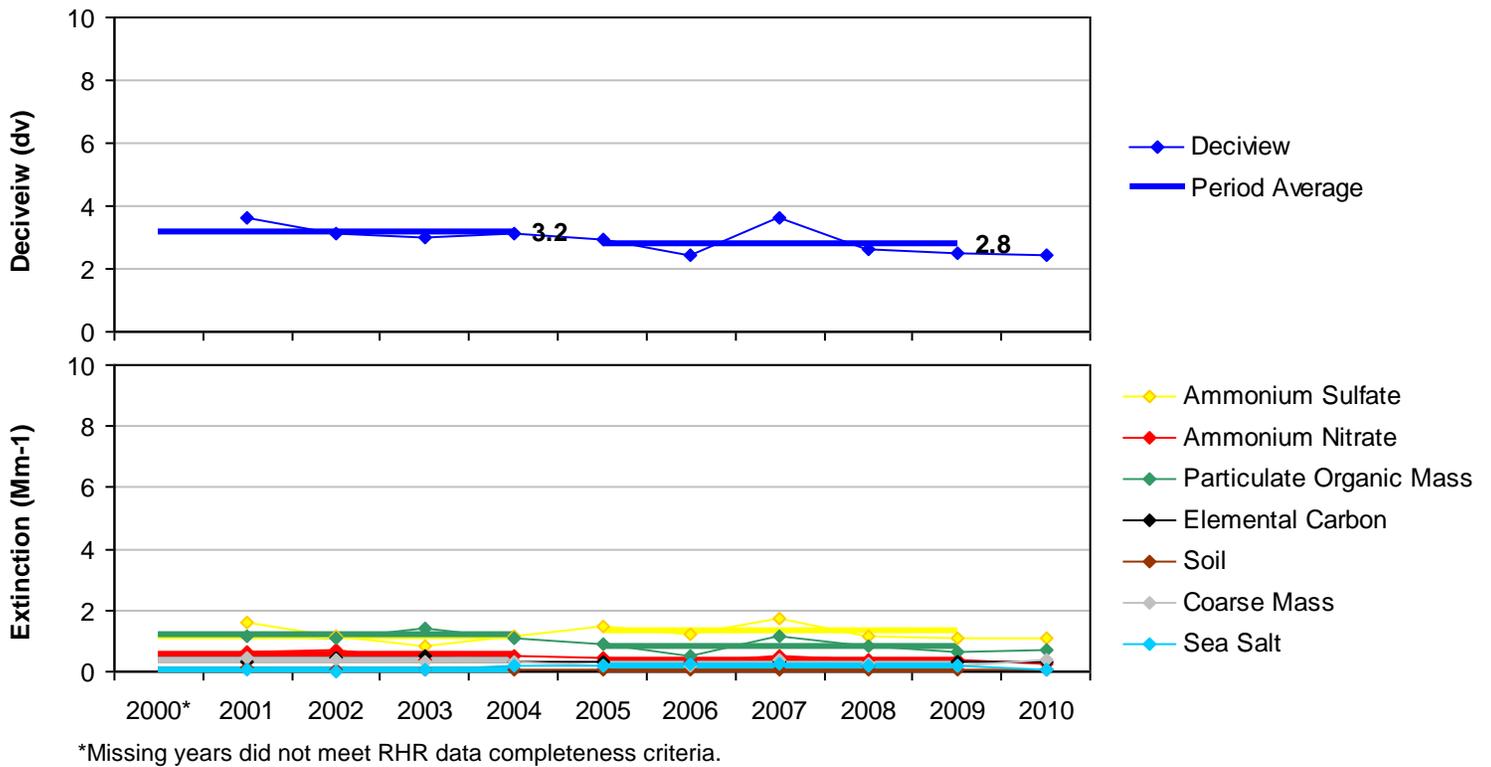
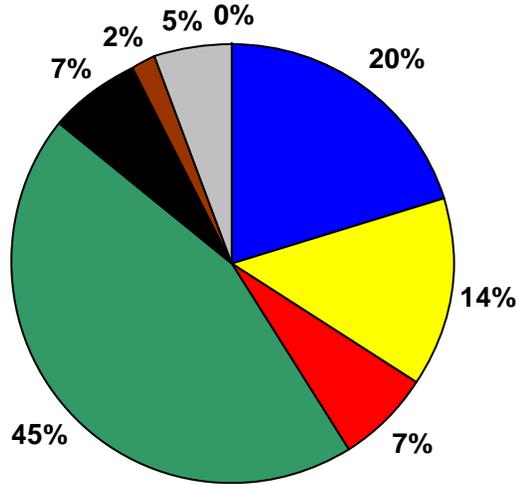
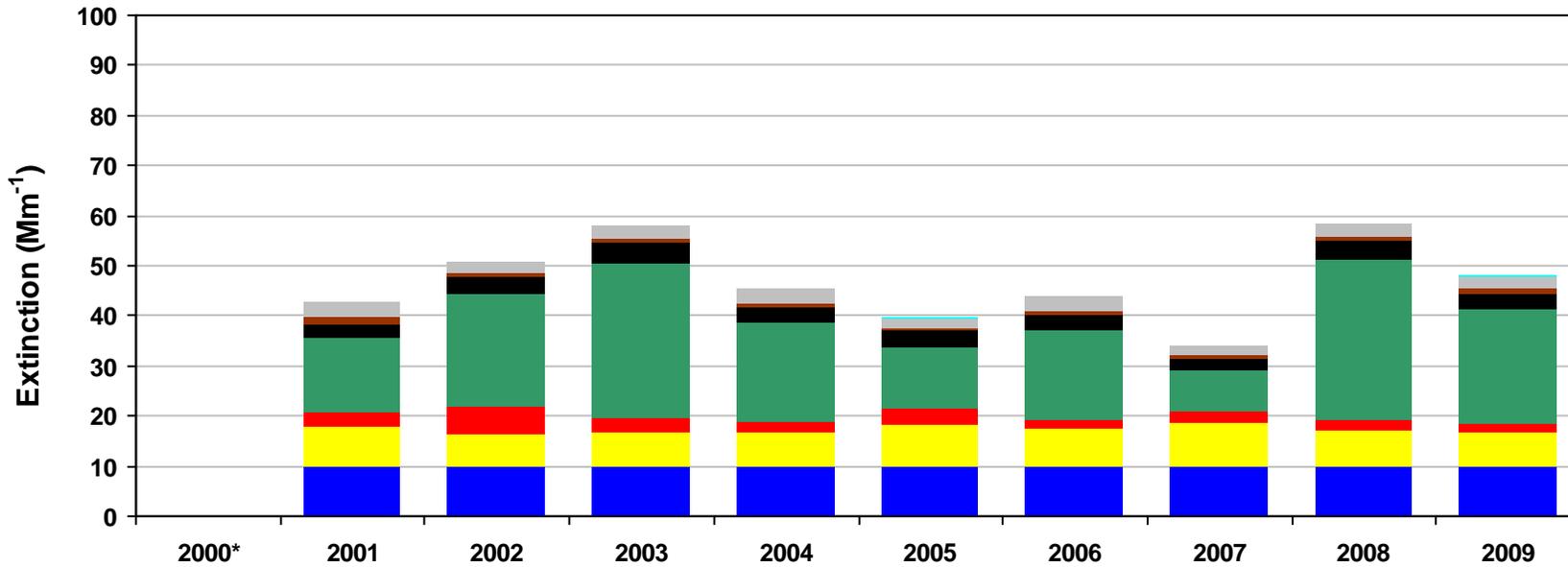
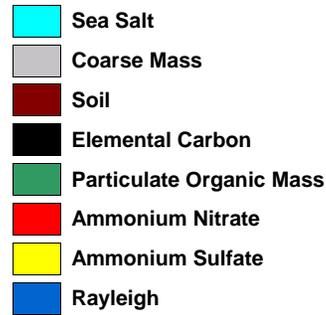
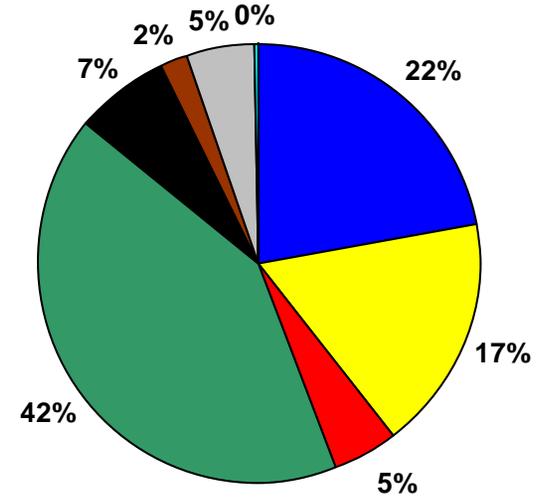


Figure C.1-3
Lava Beds NM and South Warner WA, CA (LBE1 Site)
20% Most Impaired Visibility Days

2000-2004 Baseline Average
 15.1 dv (14.3 - 16 dv)

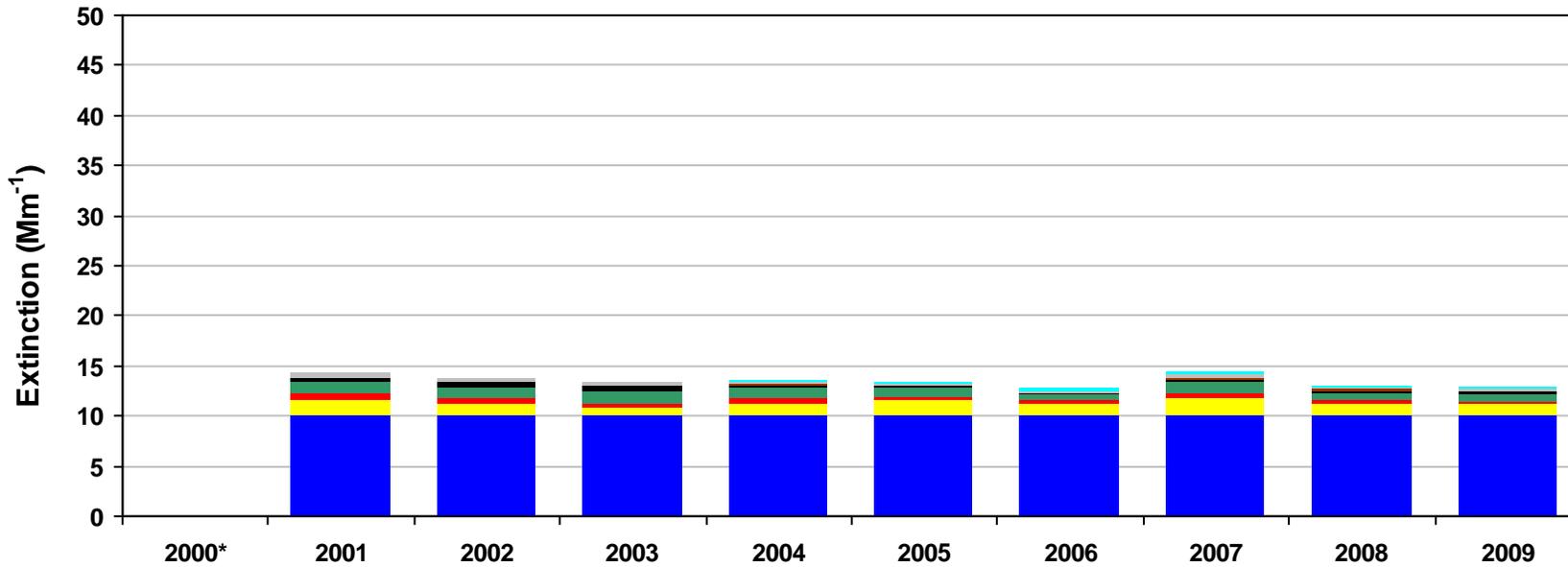
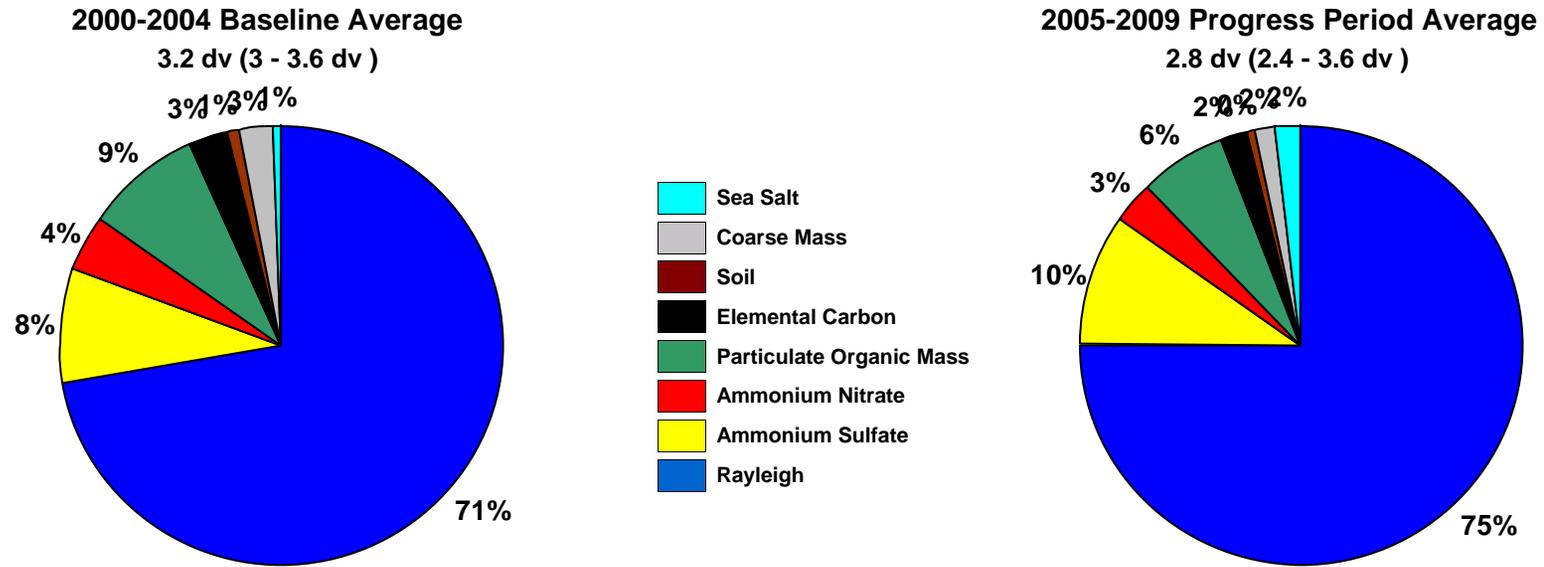


2005-2009 Progress Period Average
 14.2 dv (12.2 - 16.9 dv)



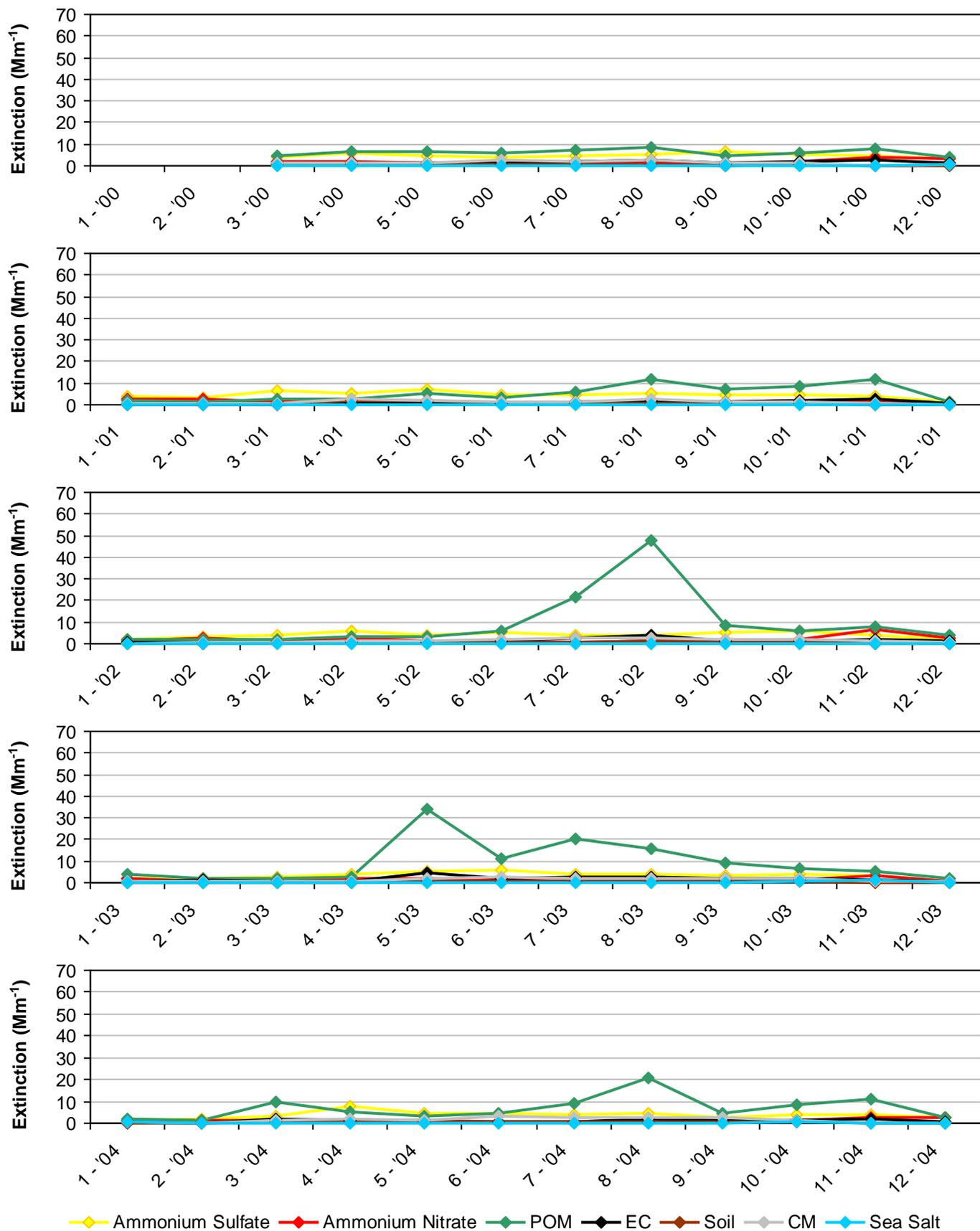
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.1-4
Lava Beds NM and South Warner WA, CA (LBE1 Site)
20% Least Impaired Visibility Days



*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.1-5
Lava Beds NM and South Warner WA, CA (LBE1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



*Note that monthly averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.1-6
Lava Beds NM and South Warner WA, CA (LBE1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

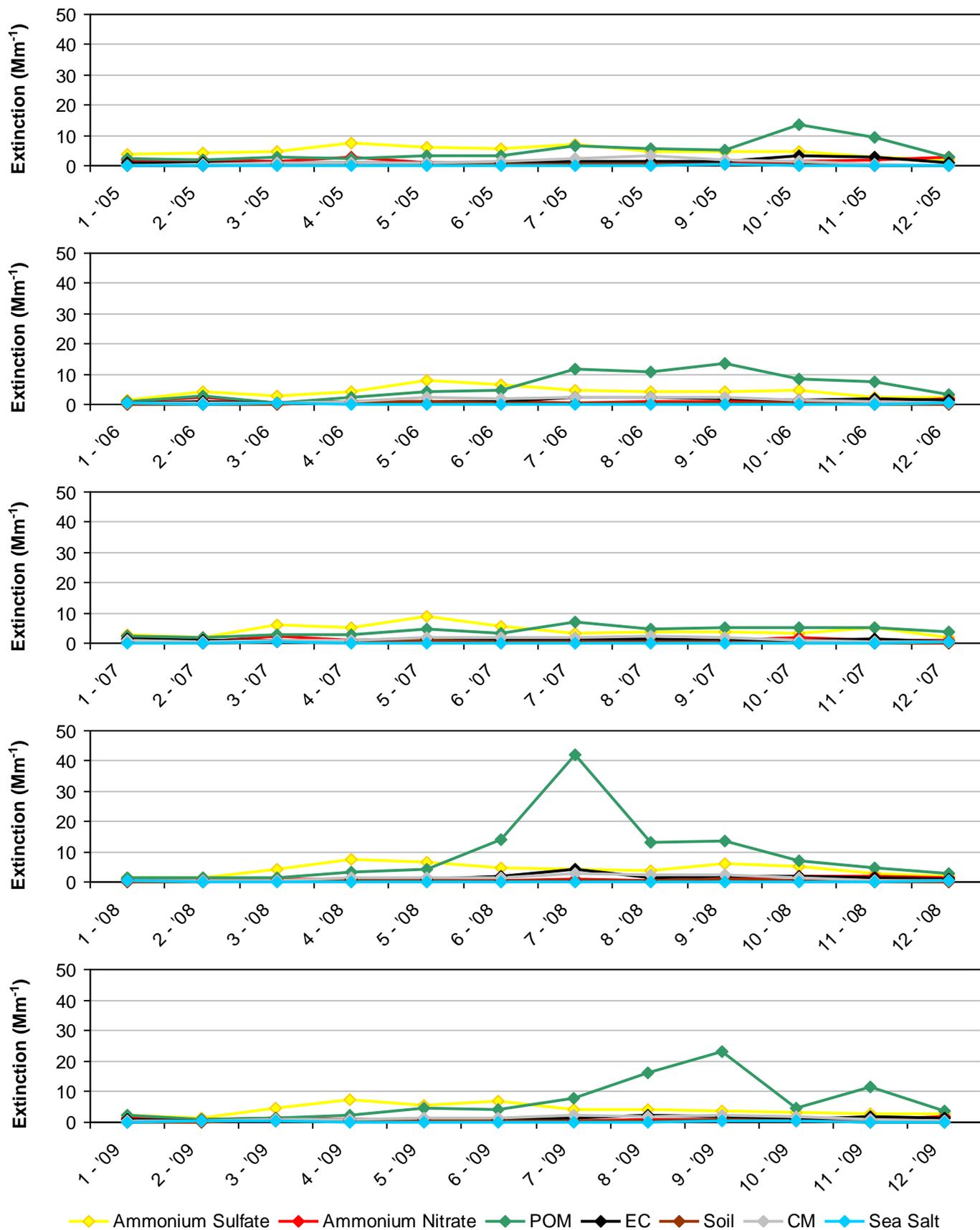
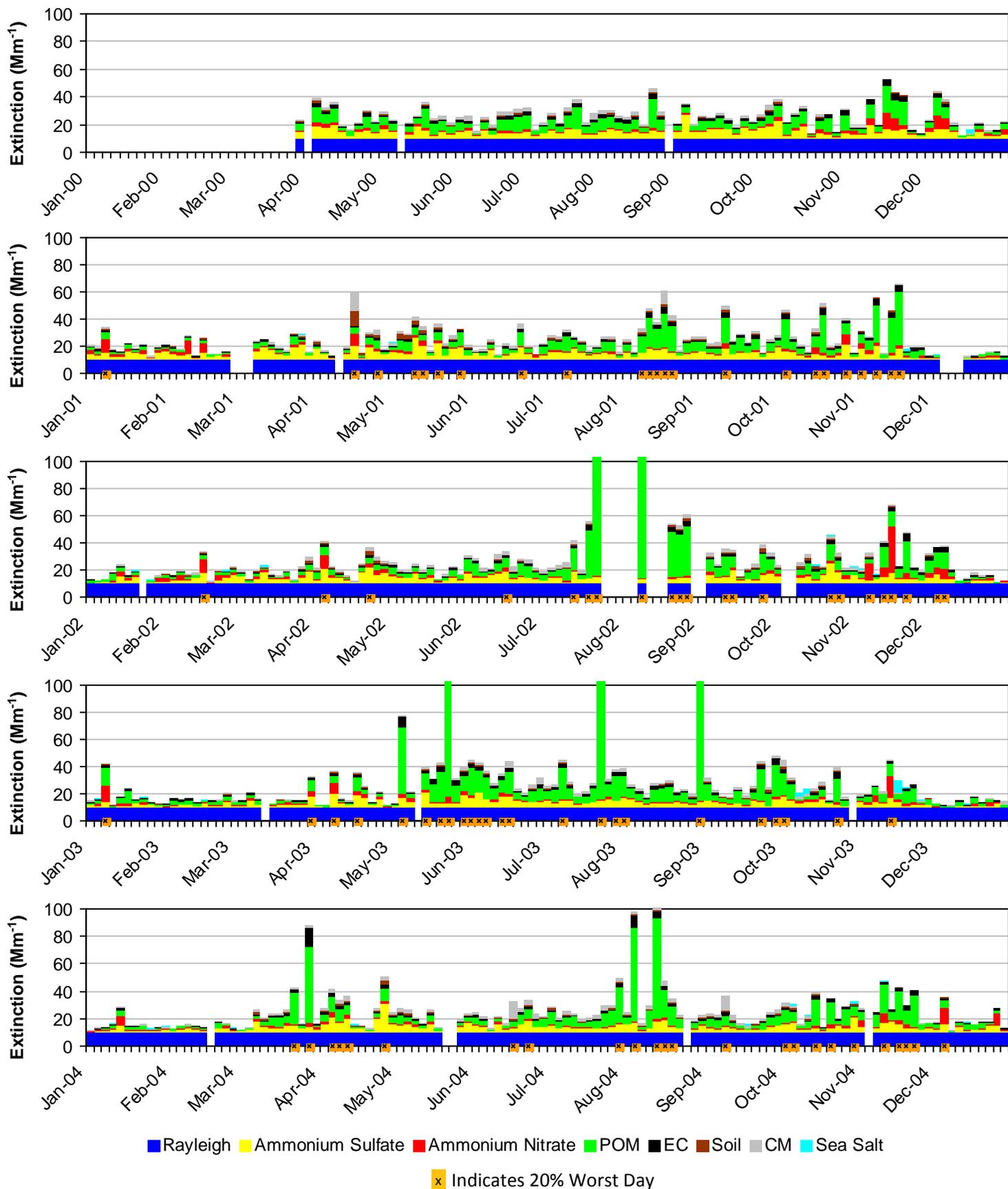
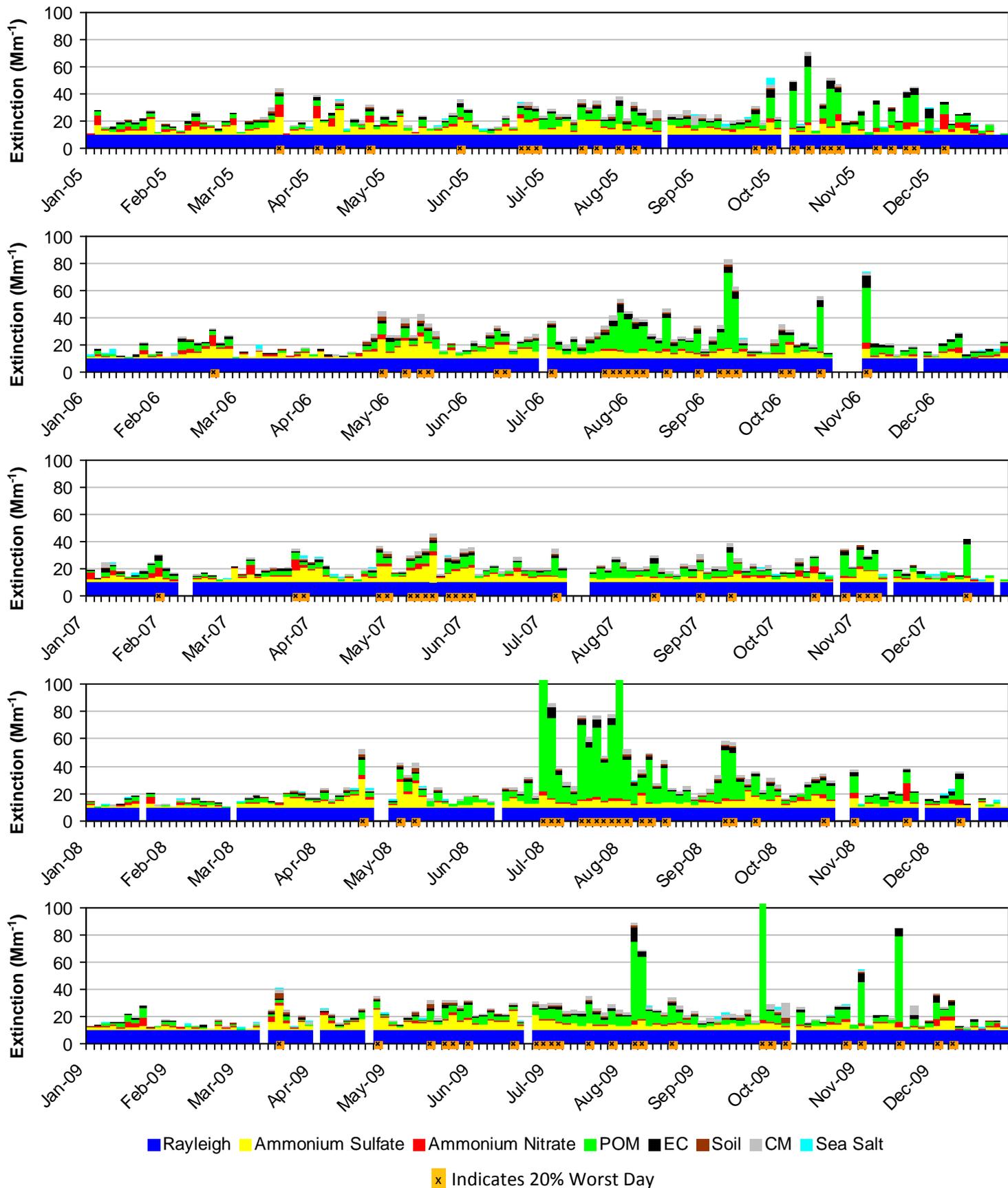


Figure C.1-7
Lava Beds NM and South Warner WA, CA (LBE1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.1-8
 Lava Beds NM and South Warner WA, CA (LBE1 Site)
 2005-2009 Progress Period Extinction, All Sampled Days



C.2. LASSEN VOLCANIC NP, CARIBOU WA, AND THOUSAND LAKES WA (LAVO1)

The following tables and figures are presented in this section for the Lassen Volcanic NP, Caribou WA, and Thousand Lakes WA represented by the LAVO1 IMPROVE Monitor:

- **Table C.2-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.2-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.2-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.2-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.2-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.2-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.2-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.2-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.2-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.2-1
Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P -B)	Percent Change
Deciview (dv)																	
Best 20% Days	3.4	2.5	2.7	2.1	2.7	2.5	2.2	2.9	2.8	2.4	1.6	0.0	0.4	2.7	2.5	-0.2	-7%
Worst 20% Days	12.5	13.8	16.8	14.0	13.7	12.4	14.1	14.1	22.4	17.1	12.8	0.3	0.1	14.1	16.0	1.9	14%
All Days	7.9	7.7	8.7	7.5	7.8	7.4	7.4	7.6	9.8	8.0	6.4	0.0	0.5	7.9	8.1	0.2	3%
Total Extinction (Mm-1)																	
Best 20% Days	14.1	12.9	13.2	12.3	13.1	13.0	12.5	13.4	13.3	12.7	11.8	-0.1	0.4	13.1	12.9	-0.2	-2%
Worst 20% Days	35.3	41.8	60.8	41.2	39.8	34.8	43.2	45.7	123.4	68.6	40.2	2.0	0.1	43.8	63.1	19.3	44%
All Days	23.4	23.9	28.5	23.2	23.6	22.4	23.5	24.1	41.4	28.6	21.5	0.2	0.1	24.5	28.0	3.5	14%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	1.5	1.1	1.0	0.8	1.3	1.3	1.1	1.4	1.4	1.1	0.9	0.0	0.4	1.2	1.3	0.1	8%
Worst 20% Days	6.3	7.3	6.1	6.6	7.5	8.4	7.1	7.9	6.6	5.9	5.6	0.0	0.4	6.8	7.2	0.4	6%
All Days	3.7	4.1	3.5	3.3	3.9	4.5	4.0	4.0	4.2	3.8	3.1	0.0	0.2	3.7	4.1	0.4	11%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	0.6	0.4	0.4	0.2	0.3	0.4	0.2	0.4	0.3	0.2	0.2	0.0	0.1	0.4	0.3	-0.1	-25%
Worst 20% Days	3.1	4.5	3.5	3.6	3.6	2.0	2.1	3.4	2.0	0.9	1.8	-0.3	0.0	3.7	2.1	-1.6	-43%
All Days	1.4	1.7	1.7	1.5	1.3	1.2	1.0	1.4	1.2	0.8	0.9	-0.1	0.0	1.5	1.1	-0.4	-27%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	1.2	0.7	0.9	0.8	0.8	0.6	0.6	0.7	0.8	0.6	0.2	0.0	0.1	0.9	0.7	-0.2	-22%
Worst 20% Days	10.0	13.4	33.3	15.9	13.3	7.9	15.9	17.8	86.9	44.2	14.7	1.6	0.1	17.2	34.5	17.3	>100%
All Days	5.1	4.9	9.6	5.9	5.5	3.5	5.1	5.6	20.2	10.8	4.4	0.2	0.1	6.2	9.0	2.8	45%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.1	0.0	0.0	0.4	0.2	-0.2	-50%
Worst 20% Days	3.2	2.9	3.6	3.2	2.6	2.5	3.5	3.3	12.1	4.5	3.1	0.1	0.2	3.1	5.2	2.1	68%
All Days	1.7	1.4	1.6	1.5	1.2	1.2	1.4	1.3	3.1	1.5	1.1	0.0	0.4	1.5	1.7	0.2	13%
Soil Extinction (Mm-1)																	
Best 20% Days	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.4	0.1	0.1	0.0	0%
Worst 20% Days	0.6	1.4	1.3	0.7	0.9	0.8	1.0	0.9	1.4	0.5	1.1	0.0	0.4	1.0	0.9	-0.1	-10%
All Days	0.4	0.7	0.7	0.4	0.5	0.4	0.5	0.4	0.6	0.4	0.5	0.0	0.4	0.5	0.5	0.0	0%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.2	0.0	0.1	0.2	0.3	0.1	50%
Worst 20% Days	2.0	2.1	2.9	1.3	1.8	3.2	3.6	2.4	4.4	2.3	3.9	0.2	0.1	2.0	3.2	1.2	60%
All Days	1.1	1.1	1.5	0.7	1.0	1.5	1.4	1.3	1.9	1.3	1.4	0.0	0.2	1.1	1.5	0.4	36%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	0.1	0.0	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.0	0.5	0.1	0.1	0.0	0%
Worst 20% Days	0.0	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0%
All Days	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.2-1
Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

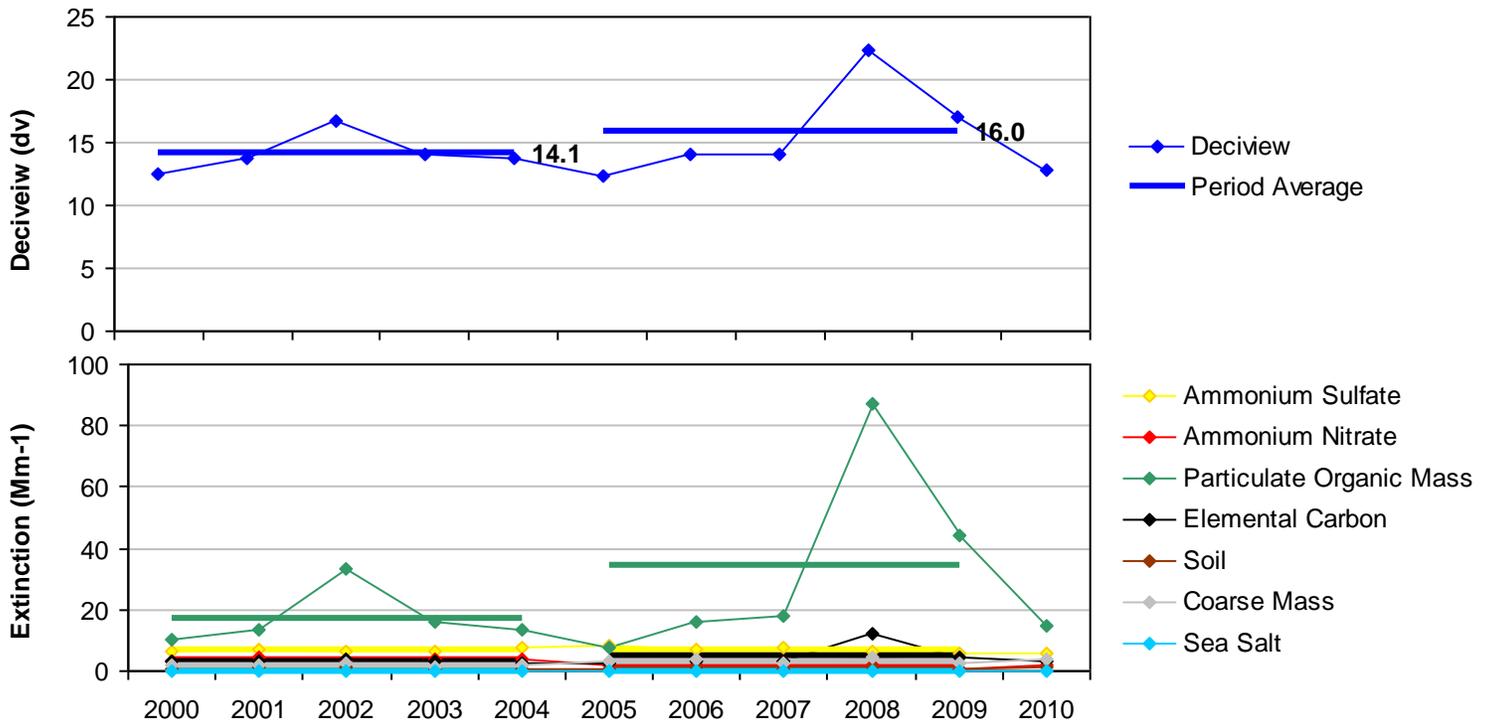


Figure C.2-2
Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

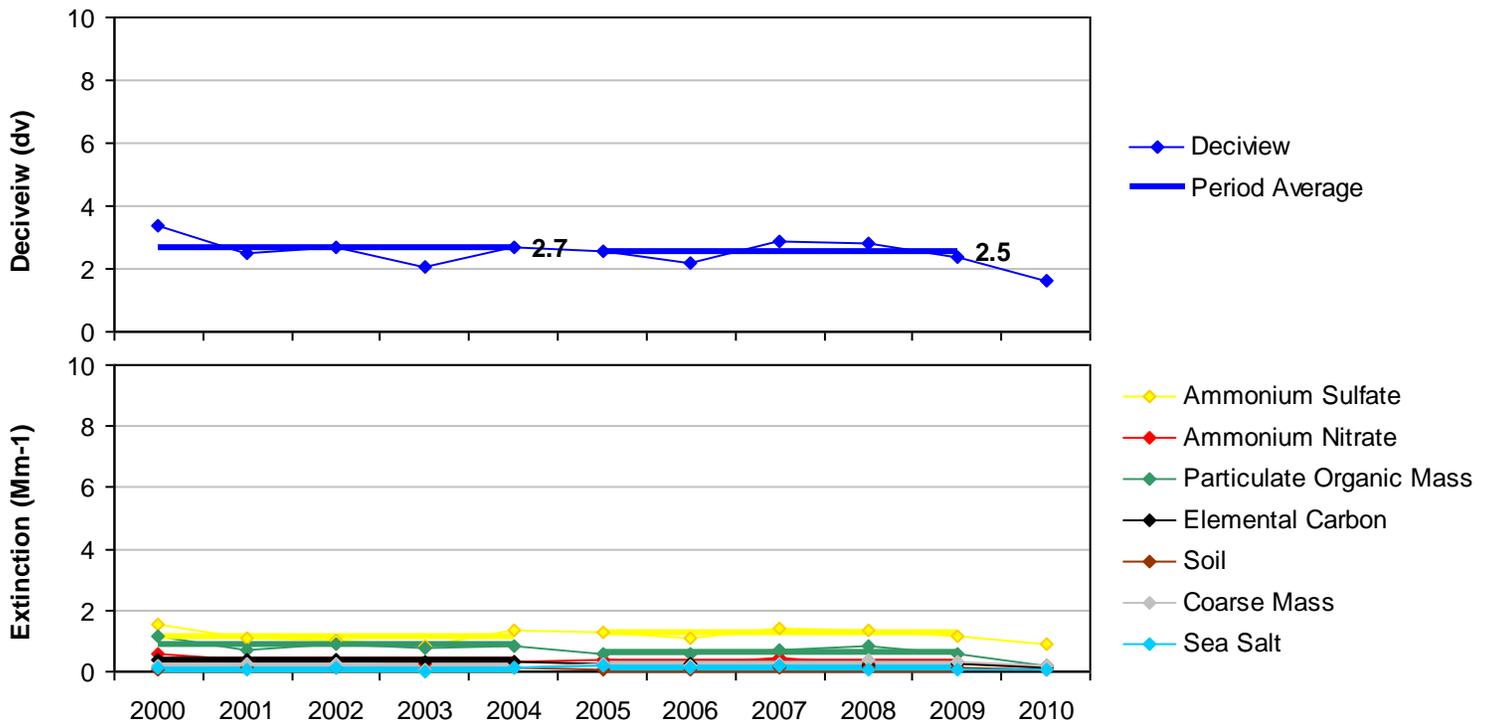


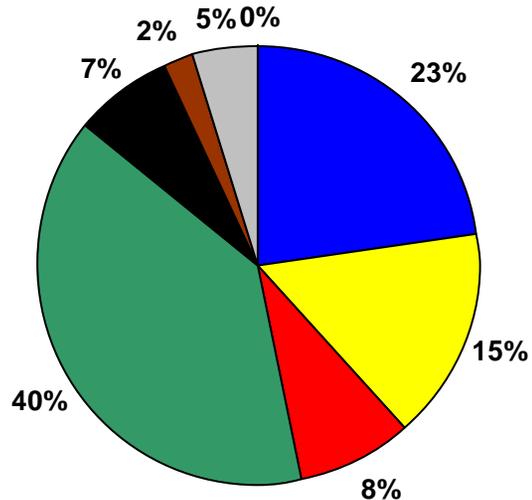
Figure C.2-3

Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)

20% Most Impaired Visibility Days

2000-2004 Baseline Average

14.1 dv (12.5 - 16.8 dv)



2005-2009 Progress Period Average

16 dv (12.4 - 22.4 dv)

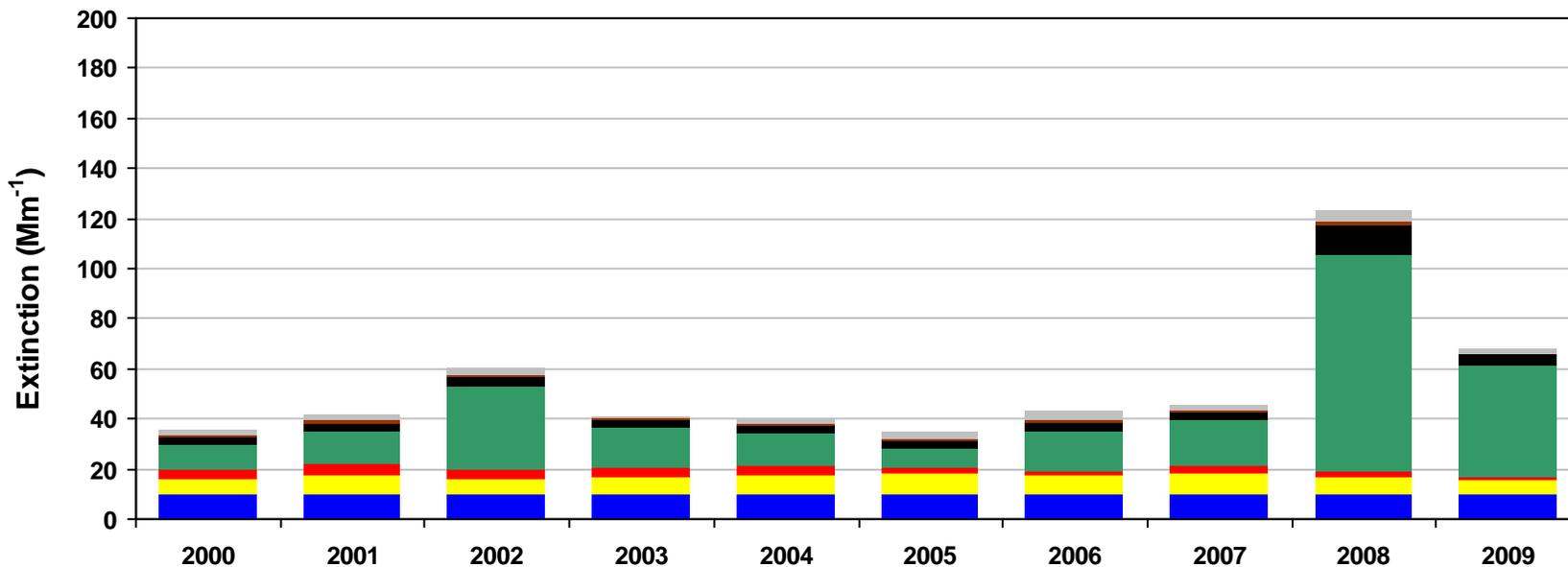
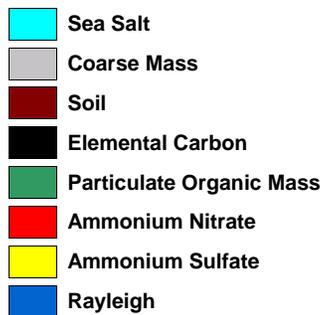
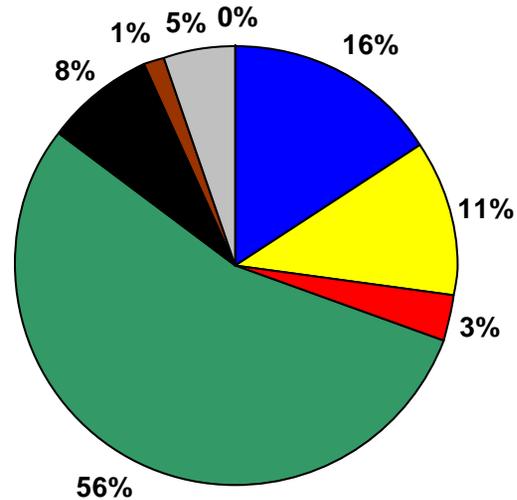


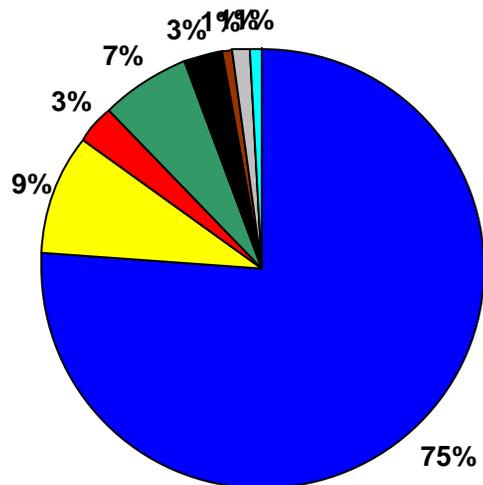
Figure C.2-4

Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)

20% Least Impaired Visibility Days

2000-2004 Baseline Average

2.7 dv (2.1 - 3.4 dv)



2005-2009 Progress Period Average

2.5 dv (2.2 - 2.9 dv)

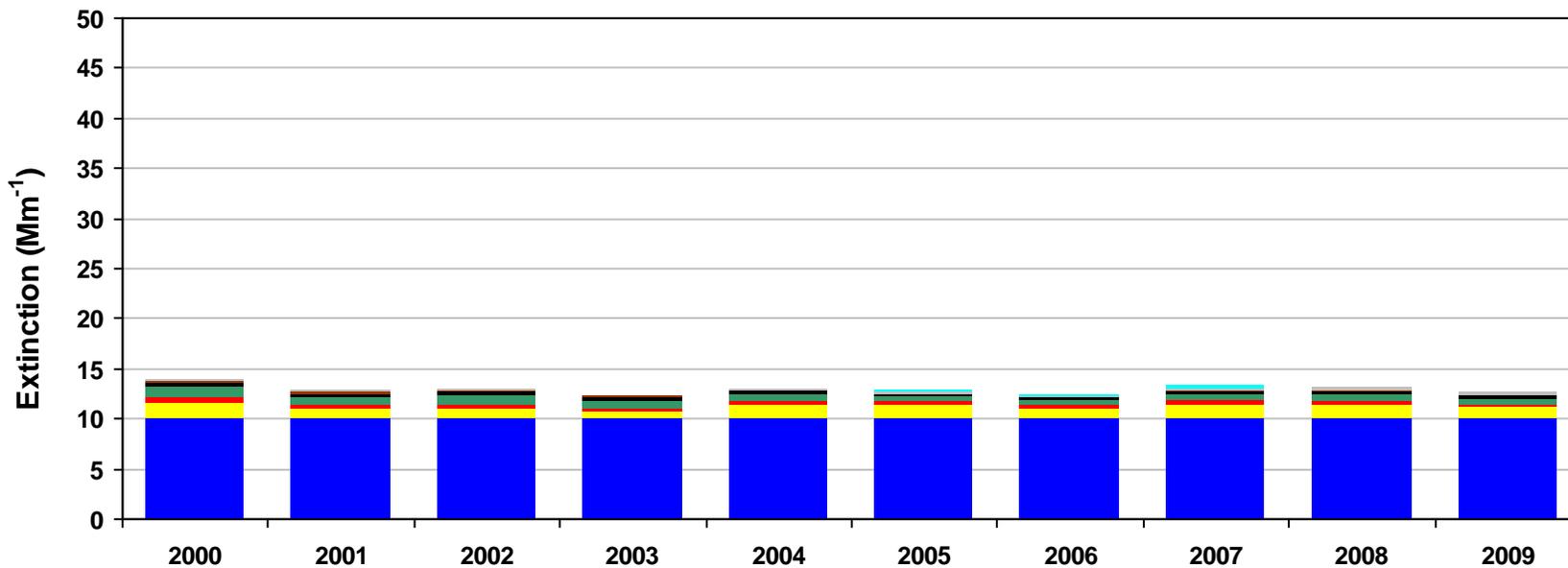
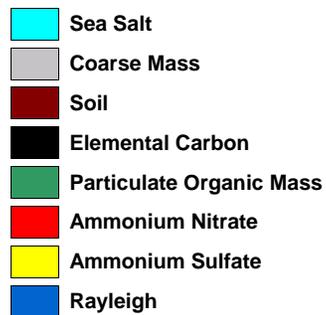
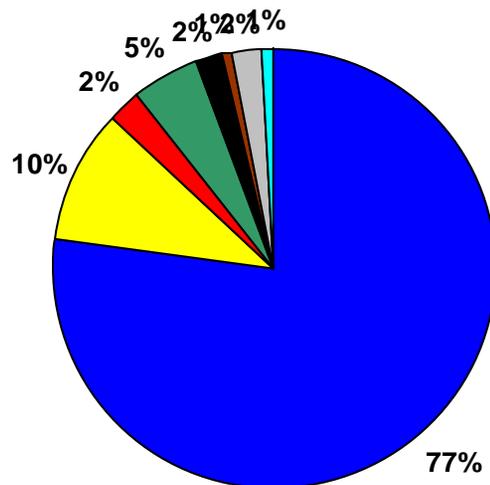


Figure C.2-5
Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days

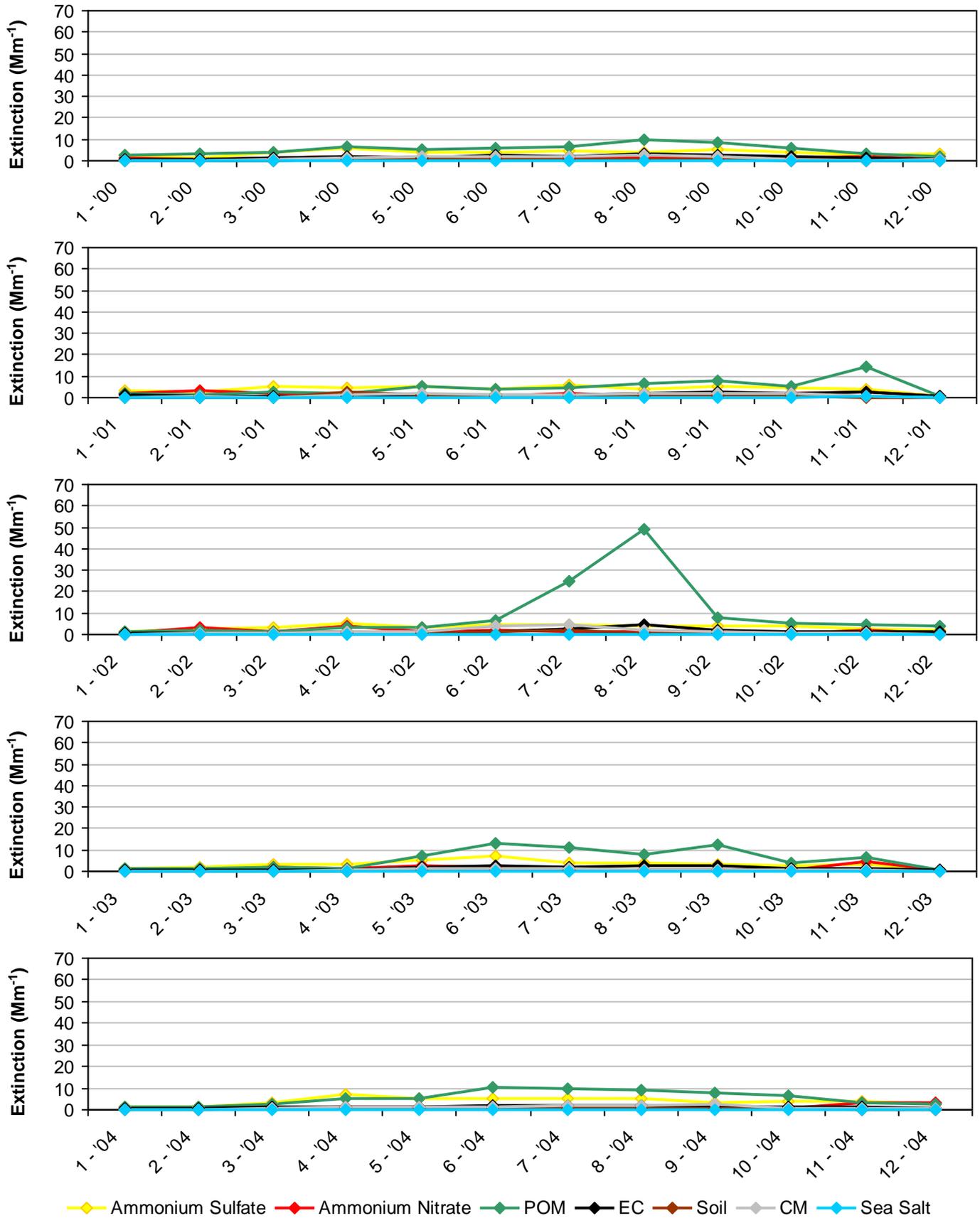


Figure C.2-6
Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

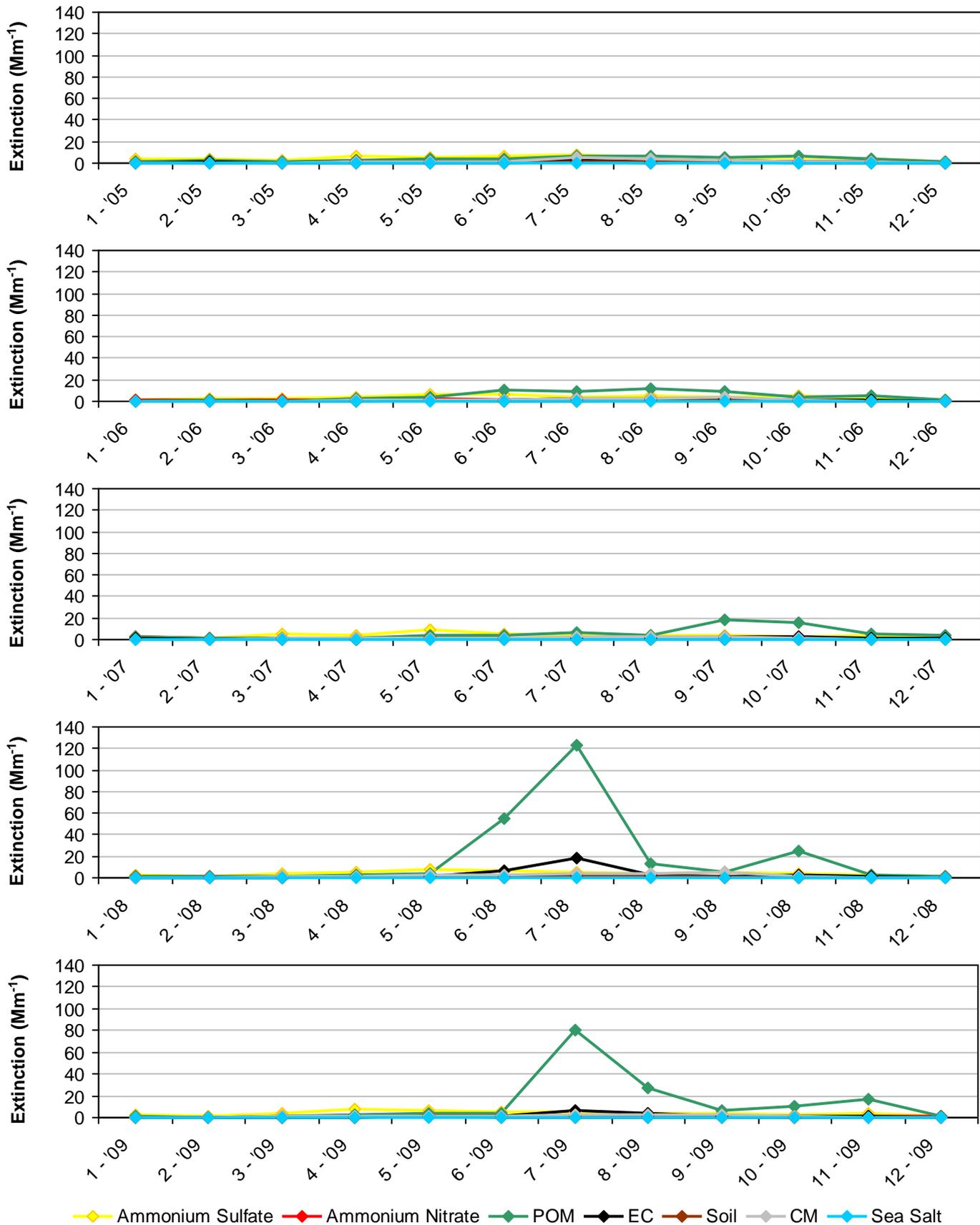


Figure C.2-7
Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)
2000-2004 Progress Period Extinction, All Sampled Days

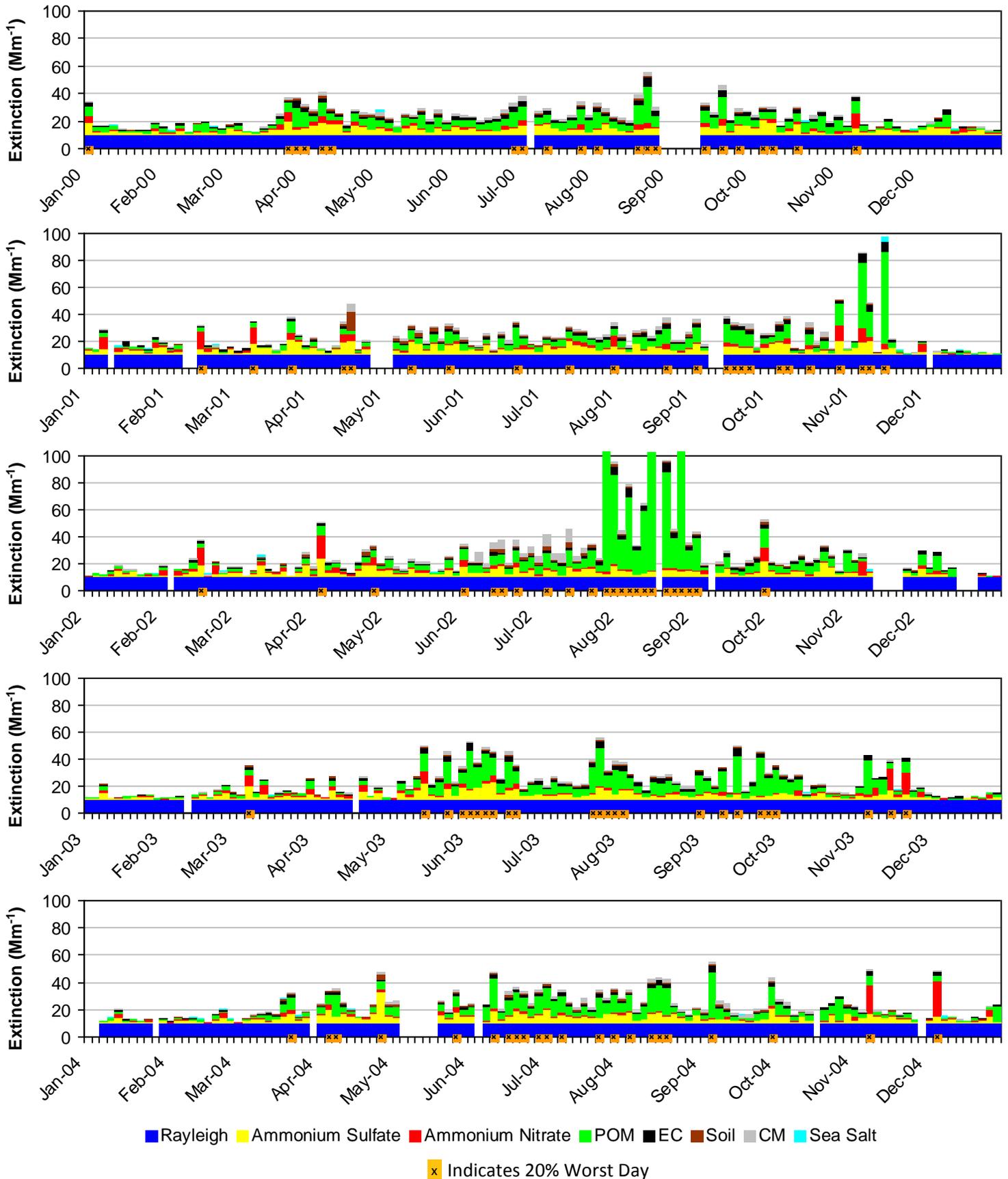
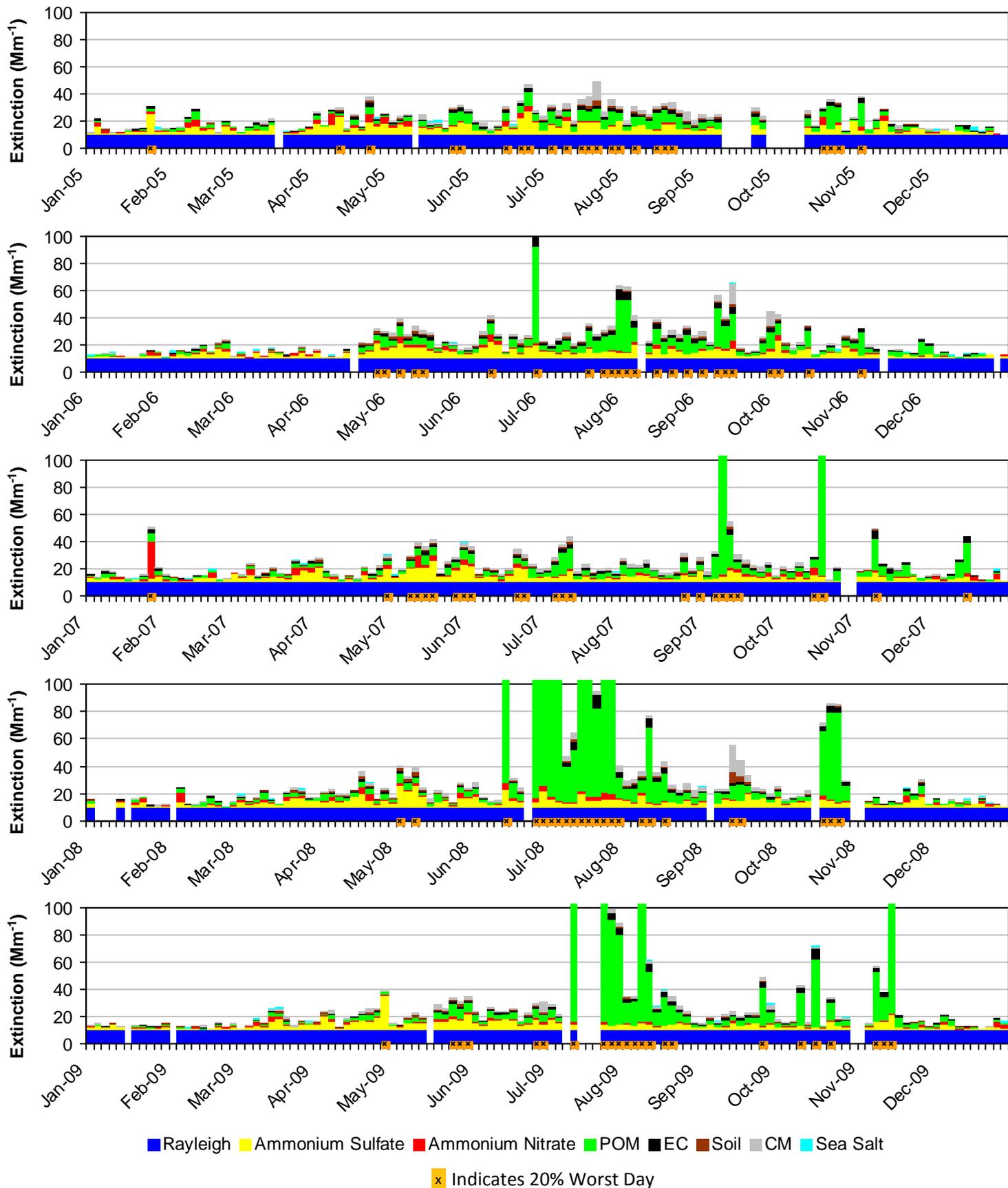


Figure C.2-8
Lassen Volcanic NP, Caribou WA and Thousand Lakes WA, CA (LAVO1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



C.3. MARBLE MOUNTAIN WA AND YOLLA-BOLLY-MIDDLE-EEL WA (TRIN1)

The following tables and figures are presented in this section for the Marble Mountain WA and Yolla-Bolly-Middle-Eel WA represented by the TRIN1 IMPROVE Monitor:

- **Table C.3-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.3-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.3-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.3-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.3-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.3-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.3-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.3-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.3-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.3-1
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P - B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	3.4	4.1	2.9	3.4	---	2.1	3.9	4.0	2.6	1.9	0.0	0.5	3.5	3.2	-0.3	-9%
Worst 20% Days	---	18.1	20.5	15.2	15.7	---	19.7	13.9	23.1	12.7	12.4	-0.5	0.3	17.3	17.3	0.0	0%
All Days	---	9.5	10.2	8.5	8.8	---	9.2	8.1	10.5	7.8	6.9	-0.2	0.2	9.2	8.9	-0.3	-3%
Total Extinction (Mm-1)																	
Best 20% Days	---	14.2	15.1	13.5	14.2	---	12.4	14.9	15.0	13.1	12.1	0.0	0.5	14.2	13.9	-0.3	-2%
Worst 20% Days	---	71.3	91.3	47.6	61.7	---	106.2	42.1	183.0	35.8	35.5	-2.6	0.4	68.0	91.8	23.8	35%
All Days	---	31.7	36.3	26.1	29.3	---	37.9	24.5	54.4	23.3	21.6	-0.5	0.4	30.9	35.0	4.1	13%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	1.5	1.5	0.9	1.2	---	0.8	2.1	2.1	1.3	0.8	0.0	0.5	1.3	1.6	0.3	23%
Worst 20% Days	---	8.6	7.8	9.0	8.1	---	9.6	9.7	10.6	9.4	7.1	0.2	0.0	8.4	9.8	1.4	17%
All Days	---	4.9	4.4	4.3	4.4	---	4.9	4.9	5.4	4.9	3.8	0.1	0.0	4.5	5.0	0.5	11%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	0.6	0.6	0.3	0.4	---	0.3	0.5	0.4	0.3	0.3	0.0	0.0	0.5	0.4	-0.1	-20%
Worst 20% Days	---	10.3	5.0	3.5	5.4	---	4.3	3.0	5.0	1.4	3.1	-0.7	0.1	6.1	3.4	-2.7	-44%
All Days	---	3.0	2.4	1.5	1.9	---	1.5	1.3	1.5	0.9	1.3	-0.2	0.0	2.2	1.3	-0.9	-41%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	1.1	1.7	1.3	1.5	---	0.6	1.0	1.4	0.9	0.6	0.0	0.2	1.4	0.9	-0.5	-36%
Worst 20% Days	---	32.8	59.0	18.0	31.2	---	67.8	11.8	139.0	8.8	6.8	-1.5	0.4	35.3	56.8	21.5	61%
All Days	---	9.7	15.3	6.9	9.7	---	16.6	4.7	31.6	4.2	3.0	-0.4	0.5	10.4	14.3	3.9	38%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	0.4	0.5	0.5	0.4	---	0.2	0.3	0.3	0.2	0.2	0.0	0.0	0.5	0.3	-0.2	-40%
Worst 20% Days	---	5.3	5.5	3.2	4.5	---	9.9	2.7	13.3	1.5	1.4	-0.3	0.4	4.6	6.9	2.3	50%
All Days	---	1.9	1.9	1.5	1.6	---	2.8	1.2	3.4	0.8	0.7	-0.1	0.4	1.7	2.1	0.4	24%
Soil Extinction (Mm-1)																	
Best 20% Days	---	0.1	0.1	0.0	0.1	---	0.0	0.1	0.1	0.1	0.0	0.0	0.6	0.1	0.1	0.0	0%
Worst 20% Days	---	1.1	0.7	0.6	1.0	---	1.0	0.8	1.0	0.7	0.8	0.0	0.4	0.8	0.9	0.1	13%
All Days	---	0.6	0.5	0.3	0.4	---	0.4	0.4	0.4	0.4	0.3	0.0	0.1	0.4	0.4	0.0	0%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	0.3	0.4	0.2	0.2	---	0.1	0.4	0.3	0.2	0.2	0.0	0.4	0.3	0.3	0.0	0%
Worst 20% Days	---	3.3	3.1	2.5	1.3	---	3.4	3.8	3.7	3.5	6.3	0.1	0.1	2.5	3.6	1.1	44%
All Days	---	1.5	1.5	1.2	0.8	---	1.3	1.6	1.6	1.6	2.1	0.0	0.1	1.2	1.5	0.3	25%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	0.1	0.3	0.2	0.4	---	0.4	0.5	0.6	0.1	0.1	0.0	0.1	0.2	0.4	0.2	100%
Worst 20% Days	---	0.0	0.3	0.7	0.2	---	0.1	0.2	0.5	0.4	0.1	0.0	0.2	0.3	0.3	0.0	0%
All Days	---	0.1	0.3	0.3	0.4	---	0.4	0.4	0.4	0.5	0.3	0.0	0.0	0.3	0.4	0.1	33%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.3-1
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

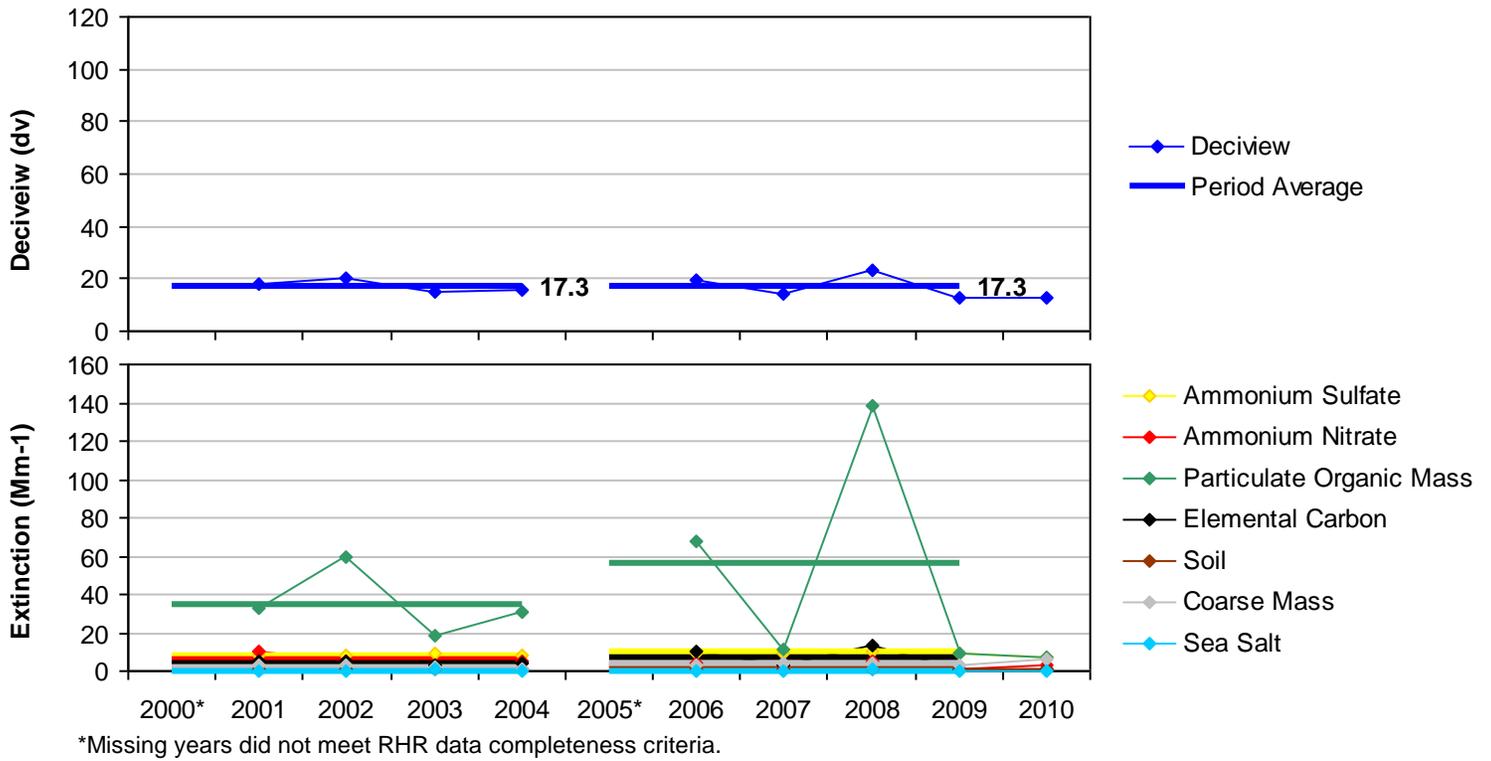


Figure C.3-2
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

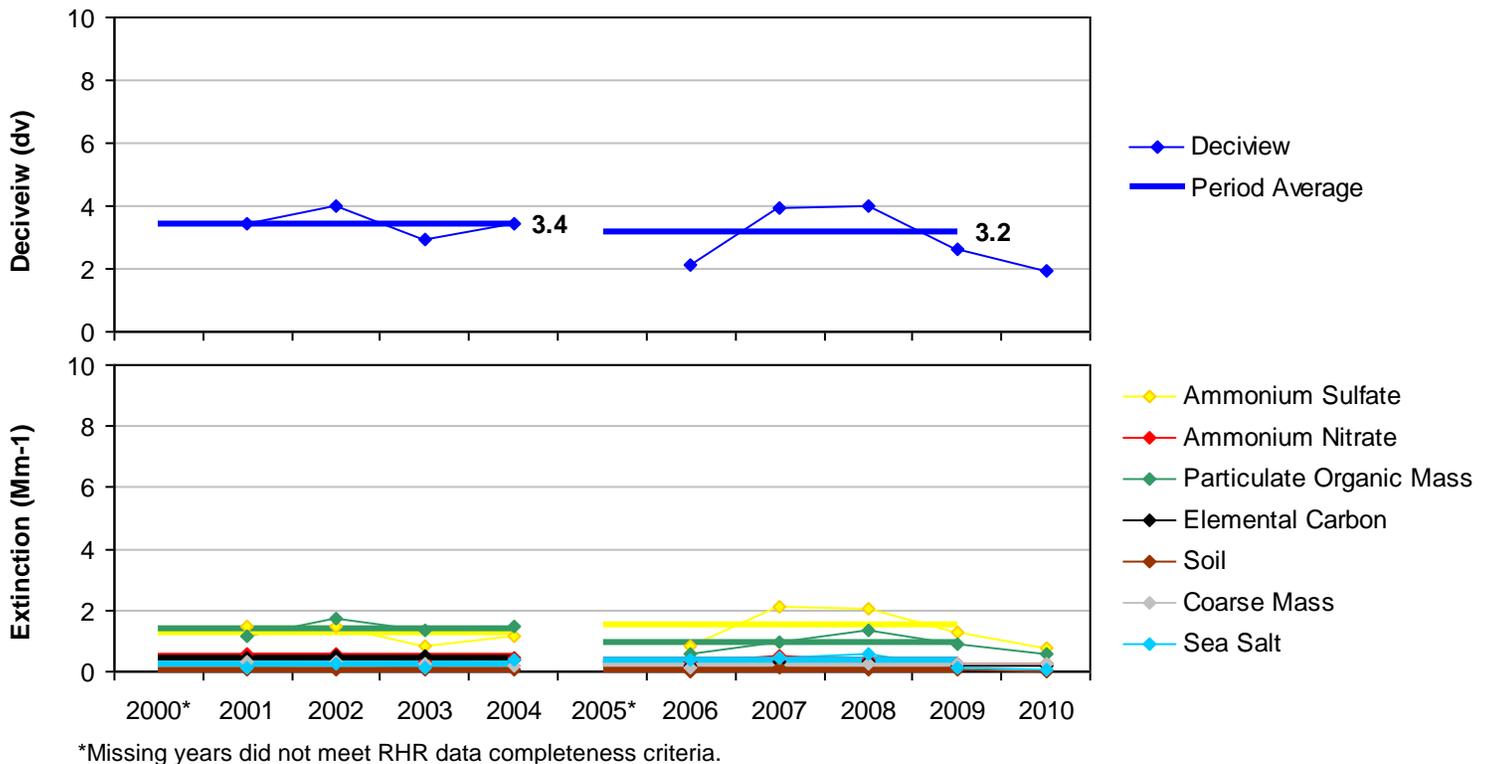
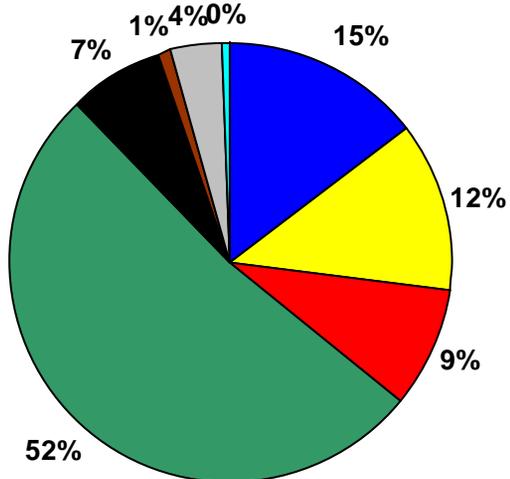
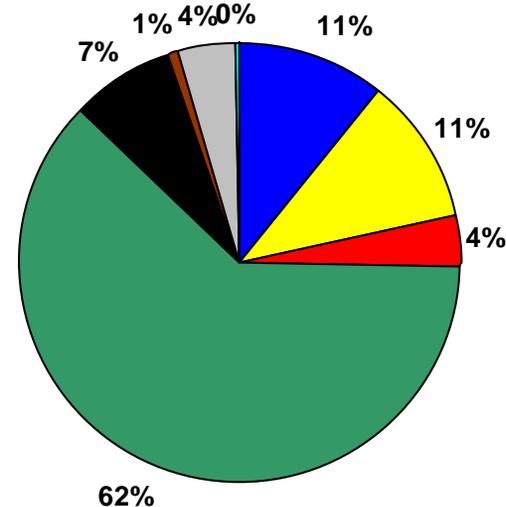


Figure C.3-3
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
20% Most Impaired Visibility Days

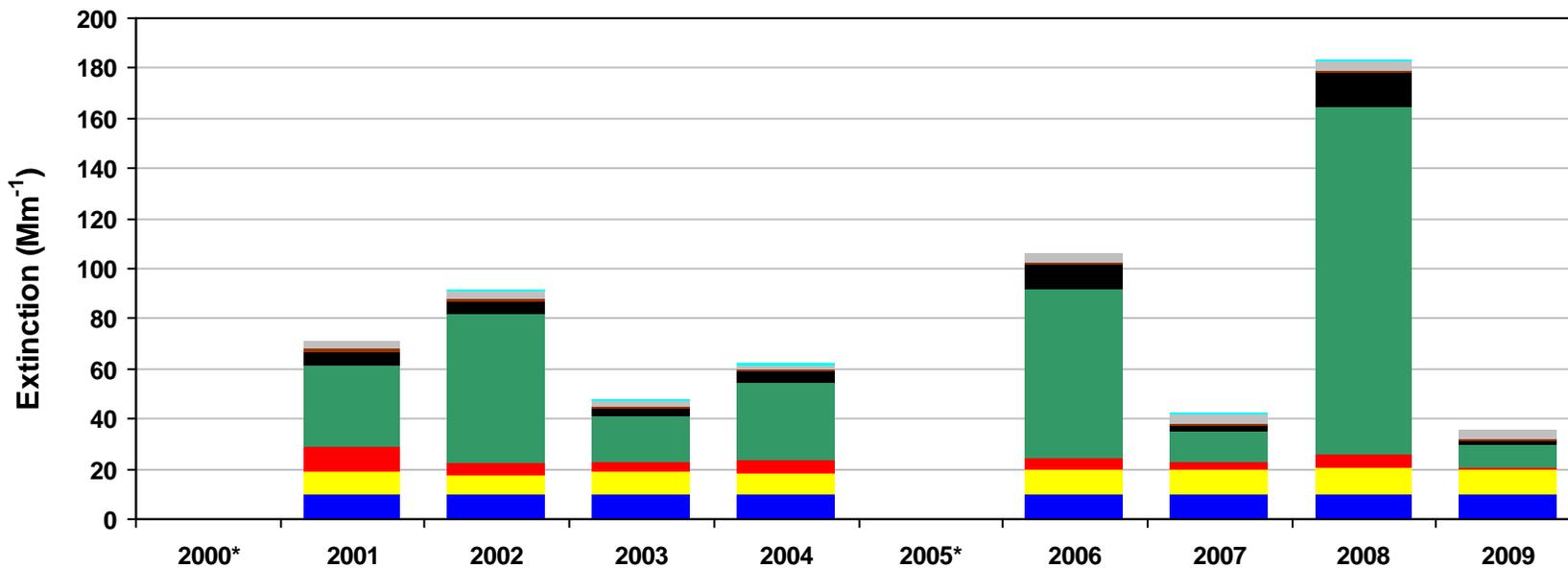
2000-2004 Baseline Average
 17.3 dv (15.2 - 20.5 dv)



2005-2009 Progress Period Average
 17.3 dv (12.7 - 23.1 dv)

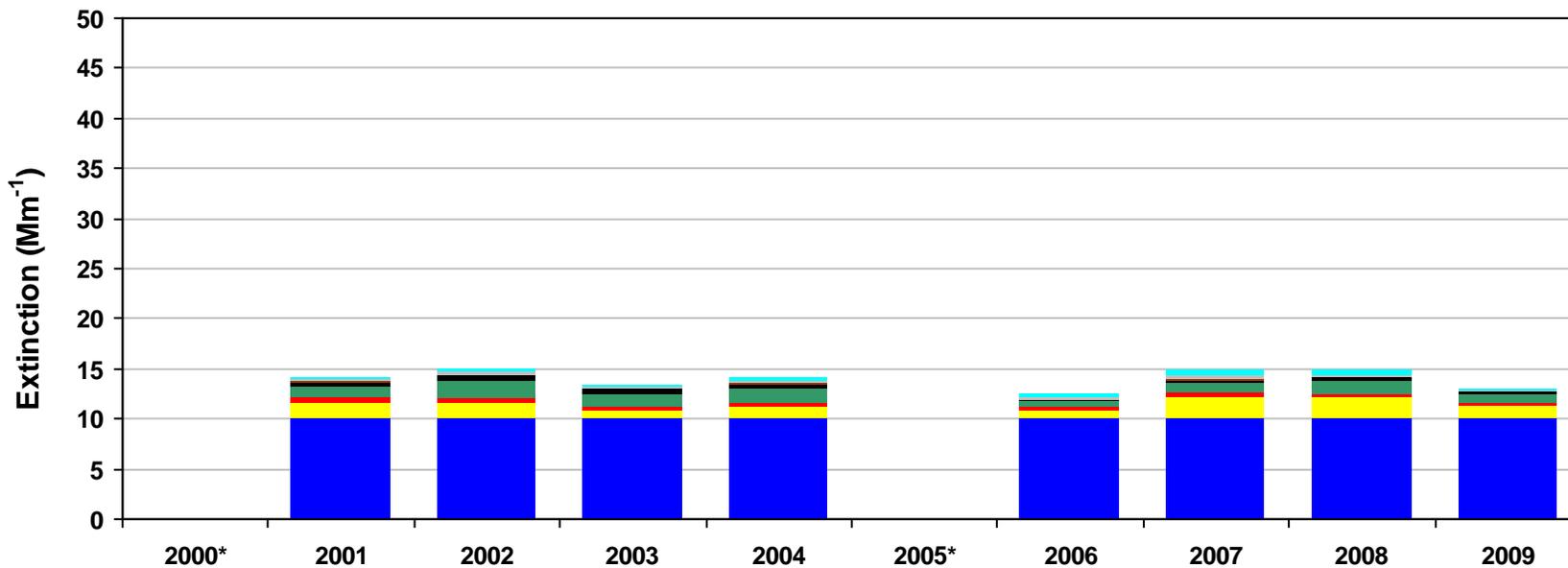
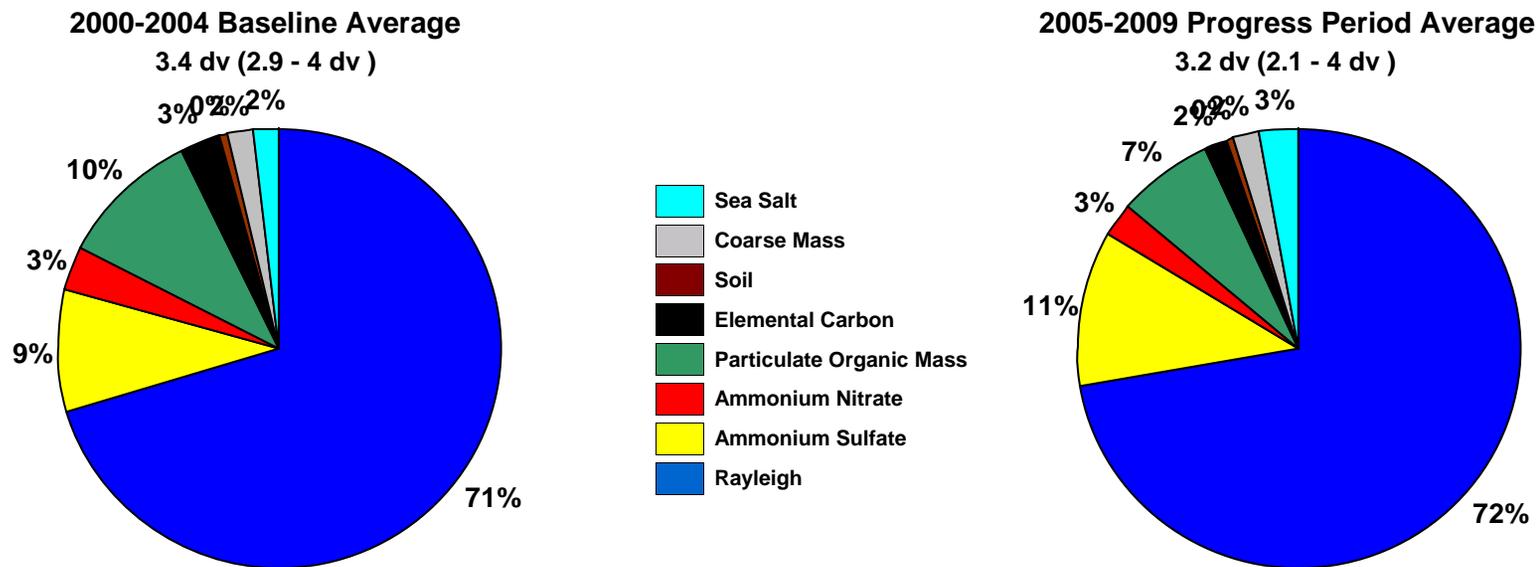


- Sea Salt
- Coarse Mass
- Soil
- Elemental Carbon
- Particulate Organic Mass
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



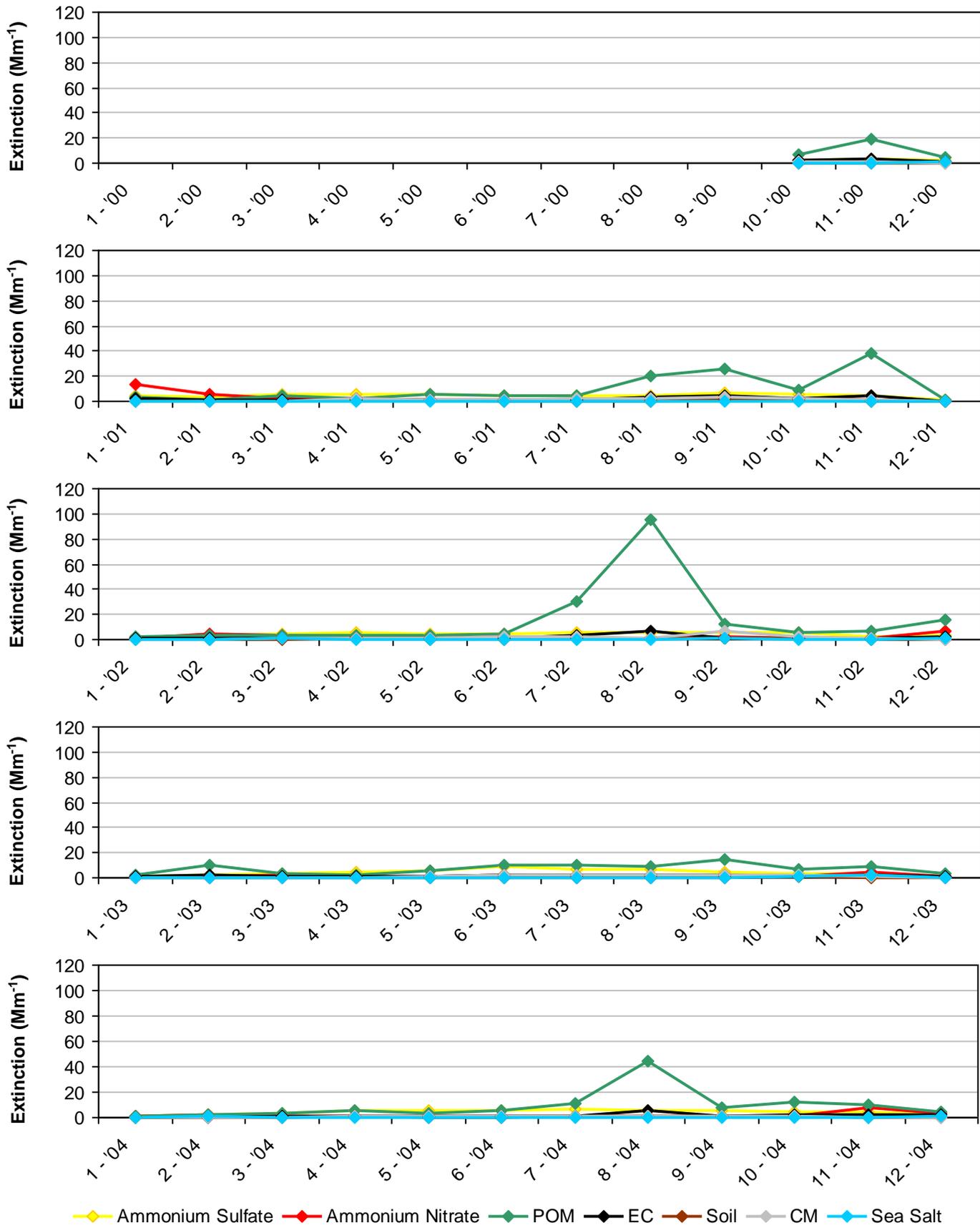
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.3-4
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
20% Least Impaired Visibility Days



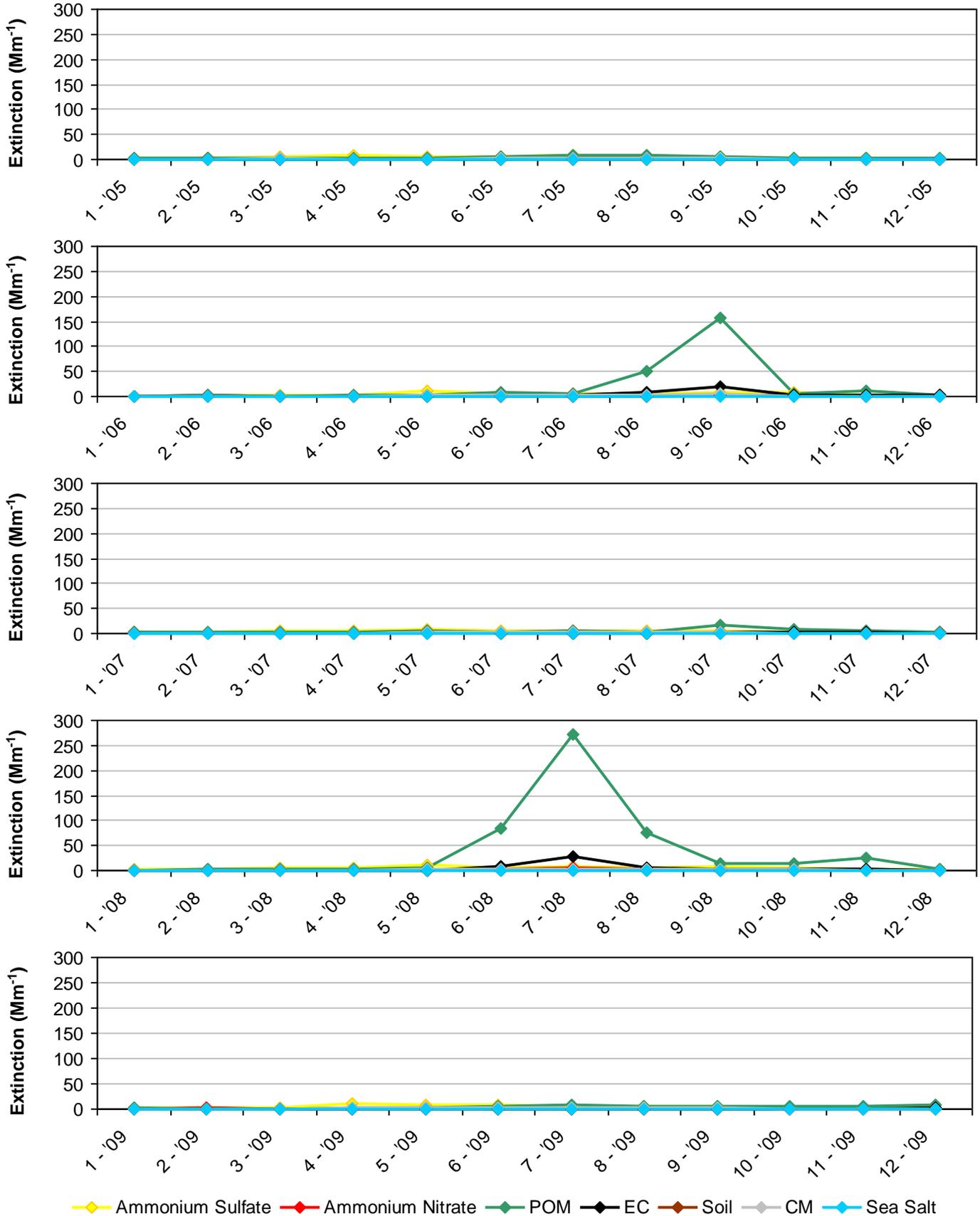
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.3-5
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



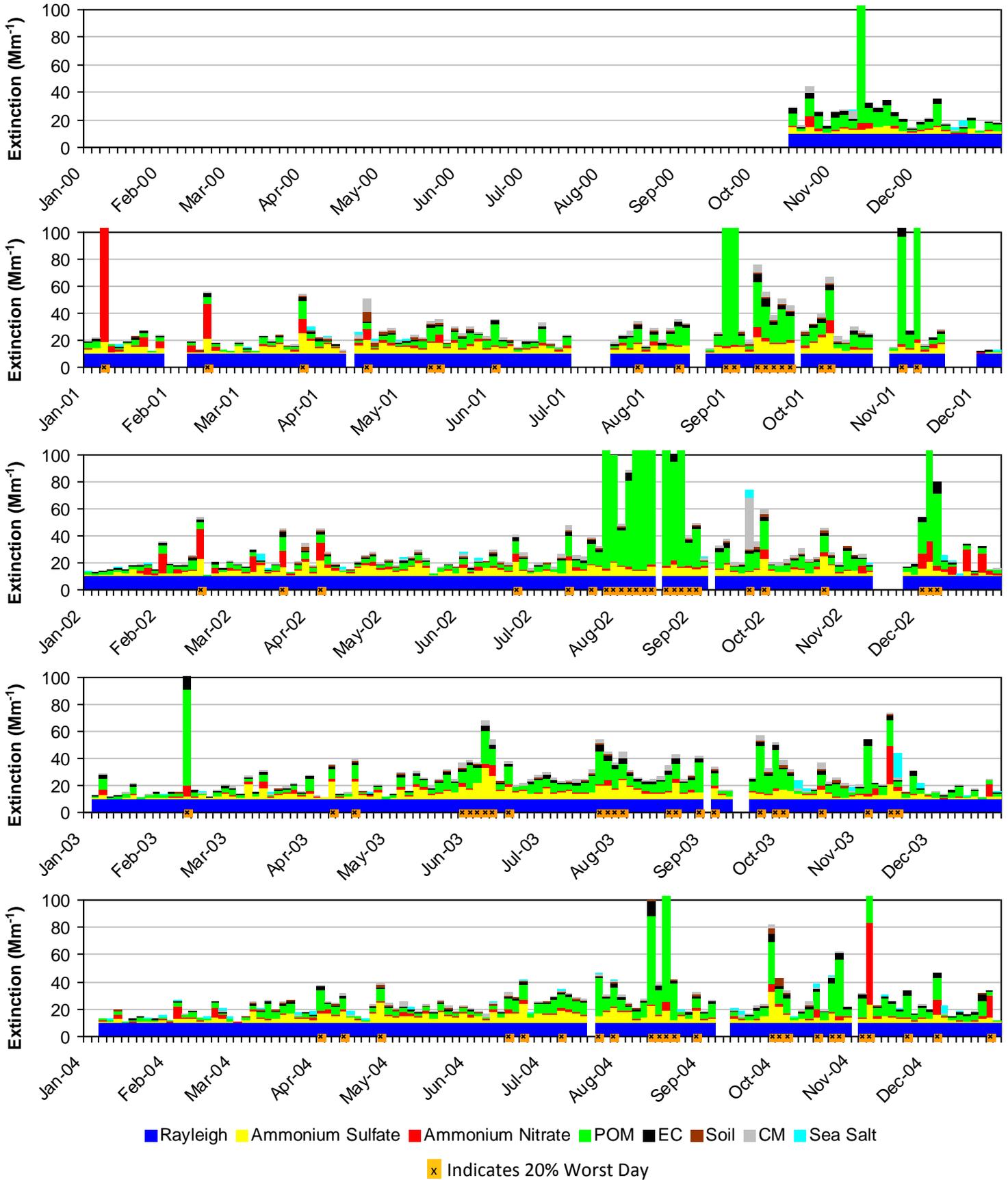
*Note that monthly averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.3-6
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days



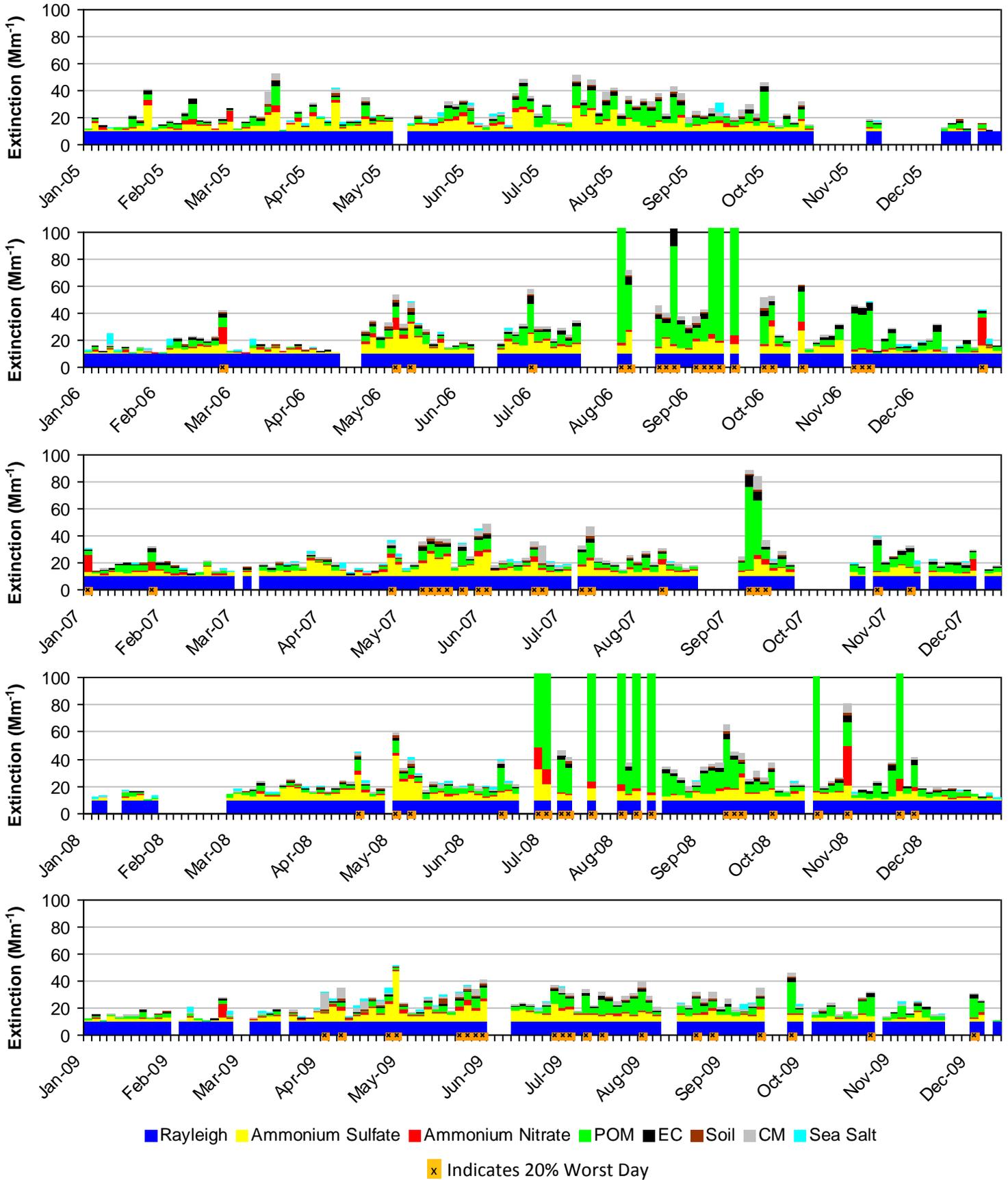
*Note that monthly averages for the year 2005 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.3-7
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.3-8
Marble Mountain WA and Yolla-Bolly-Middle-Eel WA, CA (TRIN1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2005 are shown here, but this year did not meet RHR data completeness criteria.

C.4. DESOLATION WA AND MOKELUMNE WA (BLIS1)

The following tables and figures are presented in this section for the Desolation WA and Mokelumne WA represented by the BLIS1 IMPROVE Monitor:

- **Table C.4-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.4-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.4-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.4-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.4-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.4-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.4-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.4-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.4-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.4-1
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	3.5	2.3	2.2	2.1	---	2.1	2.0	2.7	2.2	1.9	1.6	-0.1	0.0	2.5	2.2	-0.3	-12%
Worst 20% Days	11.6	13.4	13.4	12.2	---	12.0	12.5	14.8	16.8	12.0	10.0	0.1	0.2	12.6	13.6	1.0	8%
All Days	7.9	7.3	7.6	6.7	---	7.0	7.2	7.7	8.4	6.9	5.5	0.0	0.5	7.4	7.4	0.0	0%
Total Extinction (Mm-1)																	
Best 20% Days	14.3	12.7	12.5	12.4	---	12.4	12.3	13.1	12.5	12.1	11.7	-0.1	0.0	13.0	12.5	-0.5	-4%
Worst 20% Days	32.1	41.0	39.3	34.1	---	34.5	37.3	48.1	76.2	34.2	27.7	0.8	0.2	36.6	46.1	9.5	26%
All Days	22.9	22.9	23.2	21.0	---	21.5	22.5	24.7	30.9	21.3	18.3	0.1	0.4	22.5	24.2	1.7	8%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	1.6	1.2	1.2	1.1	---	1.4	1.4	1.5	1.2	1.1	0.9	0.0	0.2	1.3	1.3	0.0	0%
Worst 20% Days	5.3	4.9	4.6	5.5	---	6.9	6.3	5.8	6.3	4.9	4.5	0.1	0.3	5.1	6.0	0.9	18%
All Days	3.5	3.3	3.0	2.9	---	3.9	3.7	3.5	3.7	3.3	2.7	0.0	0.3	3.2	3.6	0.4	13%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	0.7	0.6	0.4	0.4	---	0.4	0.3	0.5	0.3	0.3	0.3	0.0	0.0	0.5	0.4	-0.1	-20%
Worst 20% Days	3.6	2.7	2.2	1.1	---	1.8	1.4	3.7	2.1	1.7	2.3	-0.1	0.2	2.4	2.1	-0.3	-13%
All Days	1.8	1.5	1.4	1.0	---	1.2	1.0	1.5	1.2	1.0	0.9	-0.1	0.0	1.4	1.2	-0.2	-14%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	1.7	0.8	0.9	1.1	---	0.9	0.7	1.1	1.0	0.8	0.7	0.0	0.2	1.1	0.9	-0.2	-18%
Worst 20% Days	9.5	15.8	17.4	13.6	---	11.3	14.4	22.7	49.2	13.5	7.0	0.9	0.2	14.1	22.3	8.2	58%
All Days	5.4	5.4	6.4	5.5	---	4.4	5.6	7.0	12.9	5.1	3.1	0.1	0.2	5.7	7.0	1.3	23%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	0.6	0.5	0.4	0.4	---	0.3	0.3	0.3	0.2	0.3	0.2	0.0	0.0	0.5	0.3	-0.2	-40%
Worst 20% Days	2.8	3.5	3.3	2.4	---	3.1	2.8	3.9	6.3	2.4	1.6	0.0	0.5	3.0	3.7	0.7	23%
All Days	1.8	1.6	1.6	1.3	---	1.5	1.4	1.6	2.0	1.1	0.8	0.0	0.2	1.5	1.5	0.0	0%
Soil Extinction (Mm-1)																	
Best 20% Days	0.1	0.1	0.1	0.1	---	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.1	0.1	0.0	0%
Worst 20% Days	0.5	1.9	1.0	0.6	---	0.5	0.9	0.8	0.9	0.7	1.1	0.0	0.5	1.0	0.8	-0.2	-20%
All Days	0.4	0.7	0.5	0.3	---	0.3	0.5	0.5	0.5	0.5	0.5	0.0	0.4	0.5	0.4	-0.1	-20%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	0.4	0.3	0.4	0.3	---	0.3	0.4	0.5	0.5	0.4	0.5	0.0	0.1	0.4	0.4	0.0	0%
Worst 20% Days	1.5	3.2	1.9	1.8	---	1.9	2.4	2.2	2.3	2.0	2.1	0.0	0.2	2.1	2.1	0.0	0%
All Days	1.0	1.3	1.3	1.0	---	1.1	1.3	1.5	1.5	1.3	1.3	0.0	0.1	1.1	1.3	0.2	18%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	0.2	0.2	0.1	0.0	---	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.5	0.1	0.1	0.0	0%
Worst 20% Days	0.0	0.0	0.0	0.1	---	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0%
All Days	0.1	0.1	0.1	0.0	---	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.4	0.1	0.1	0.0	0%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.4-1
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

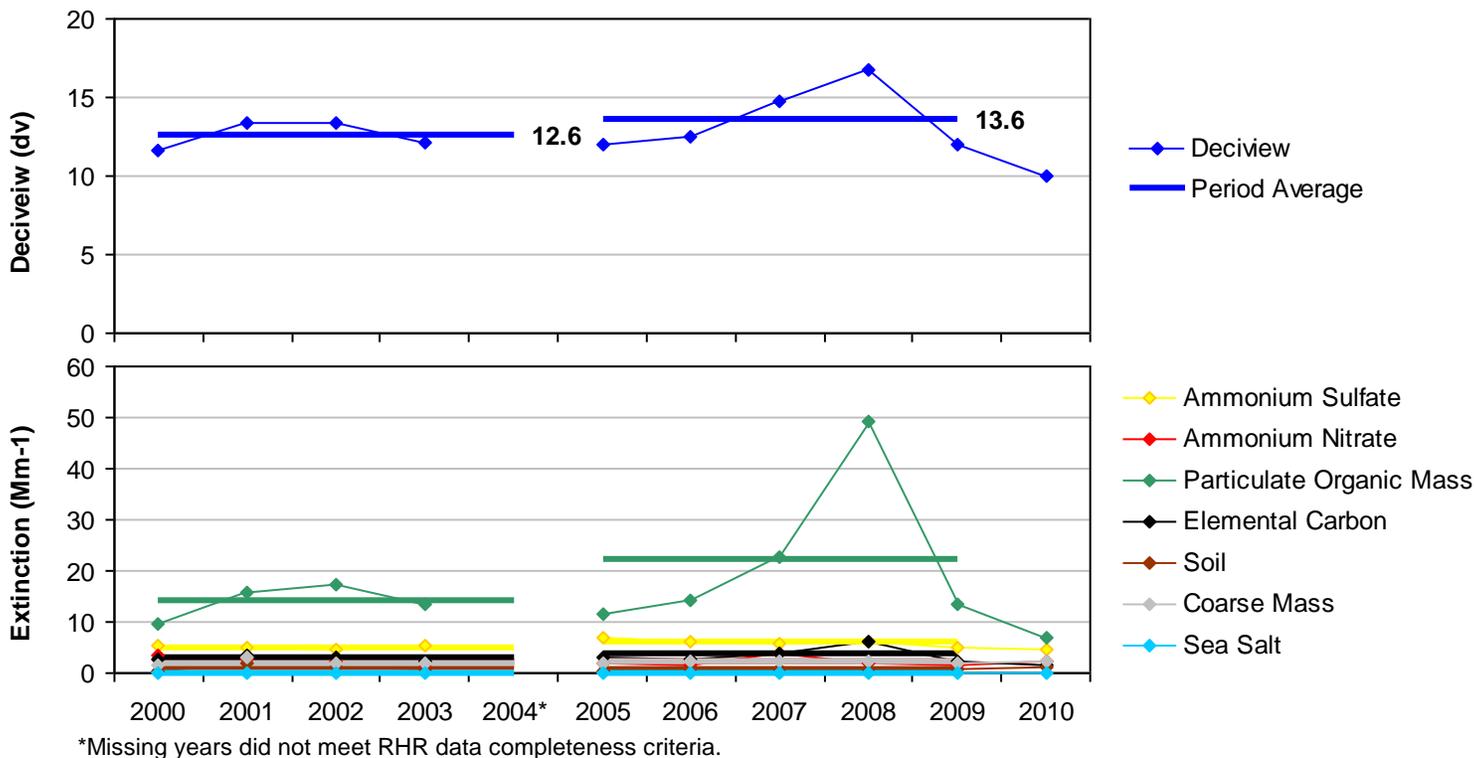


Figure C.4-2
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

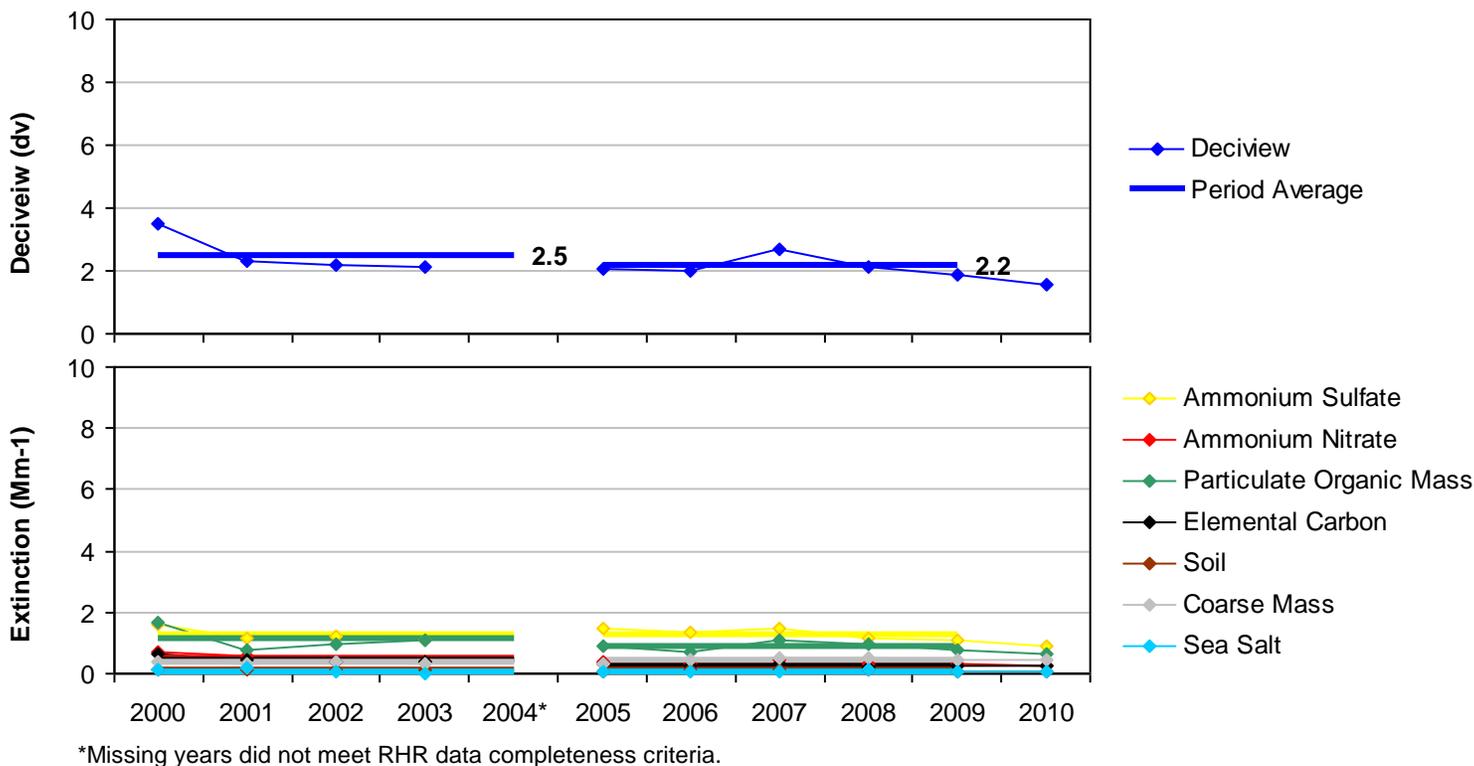
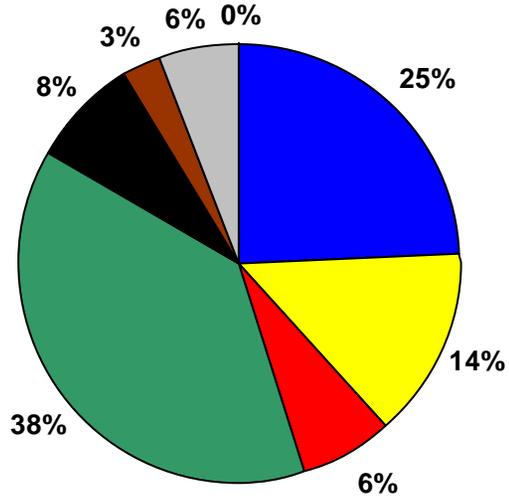
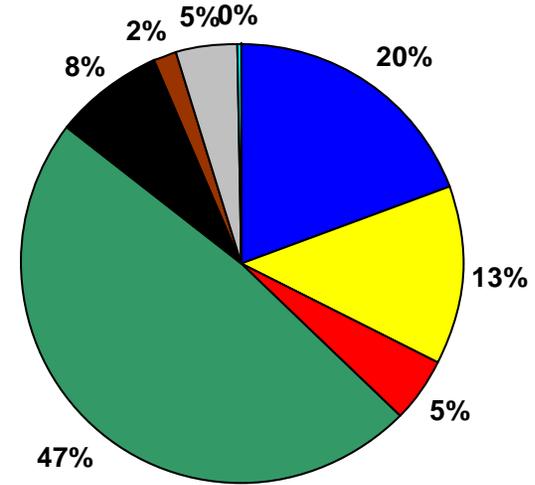


Figure C.4-3
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
20% Most Impaired Visibility Days

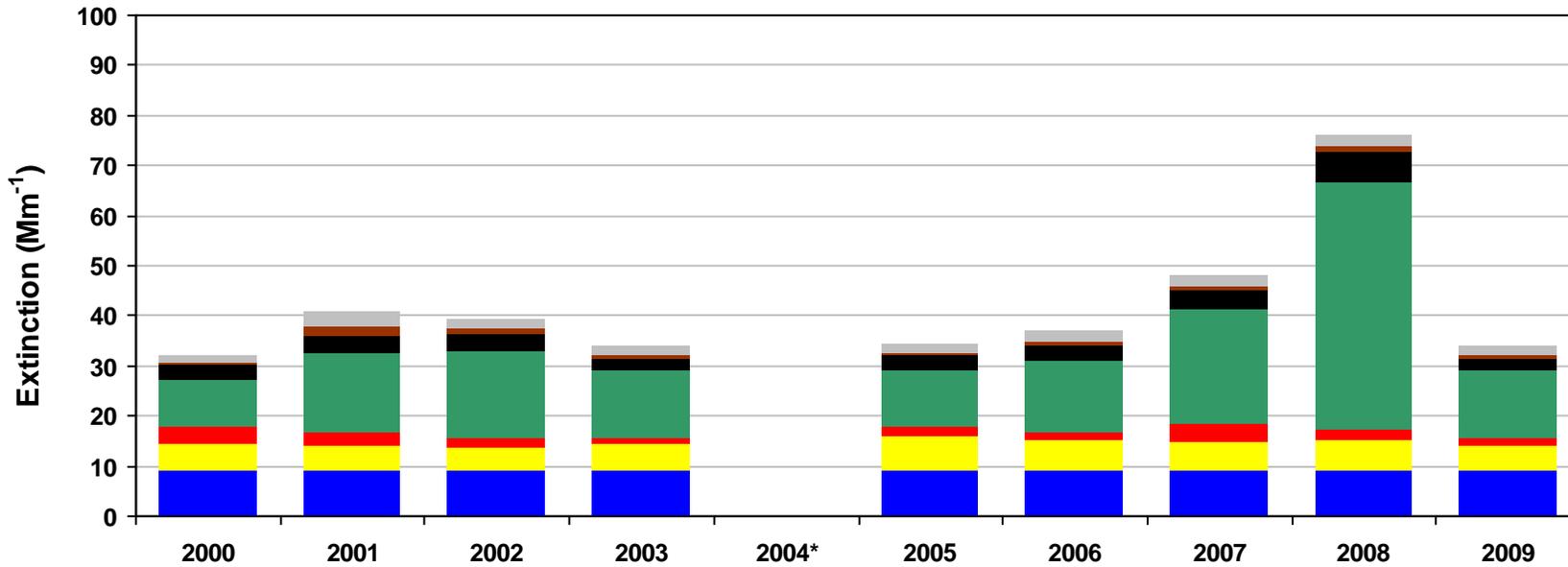
2000-2004 Baseline Average
 12.6 dv (11.6 - 13.4 dv)



2005-2009 Progress Period Average
 13.6 dv (12 - 16.8 dv)

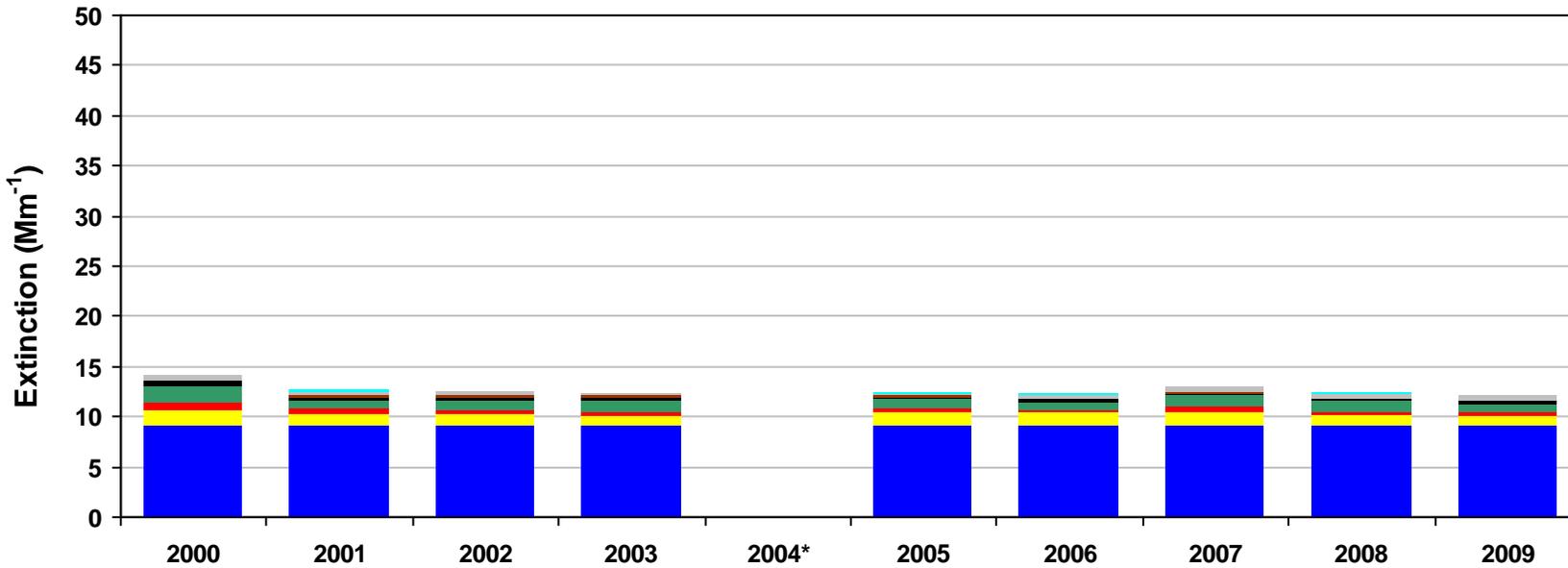
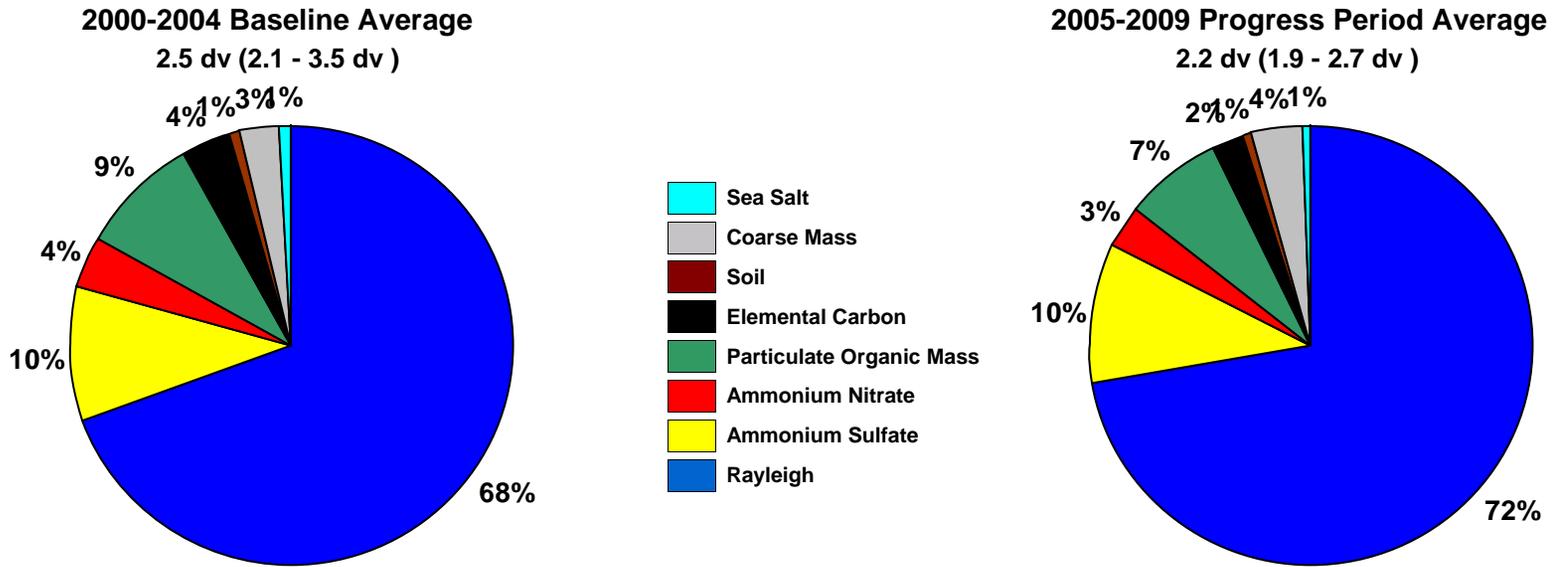


- Sea Salt
- Coarse Mass
- Soil
- Elemental Carbon
- Particulate Organic Mass
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



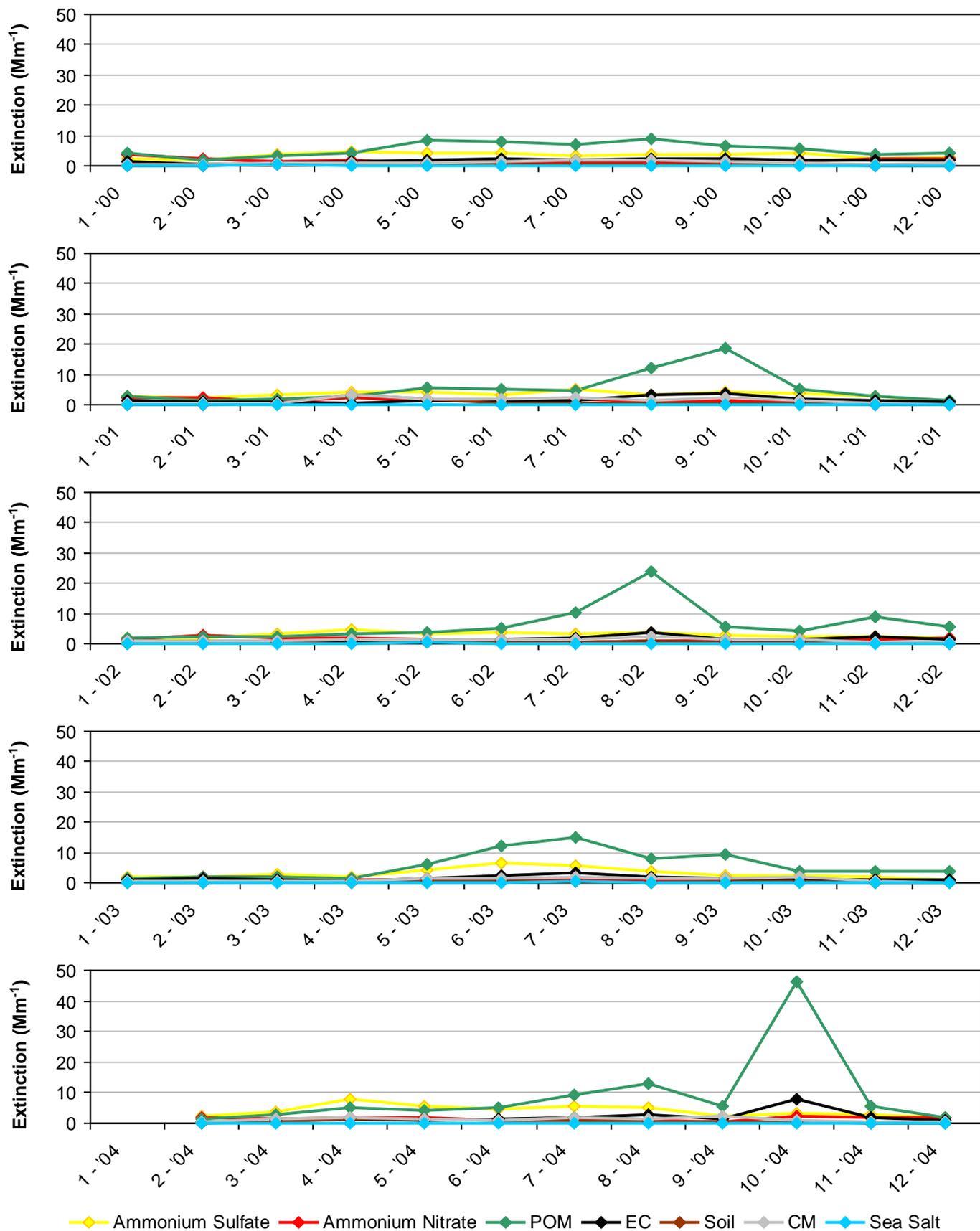
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.4-4
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
20% Least Impaired Visibility Days



*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.4-5
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



*Note that monthly averages for the year 2004 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.4-6
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

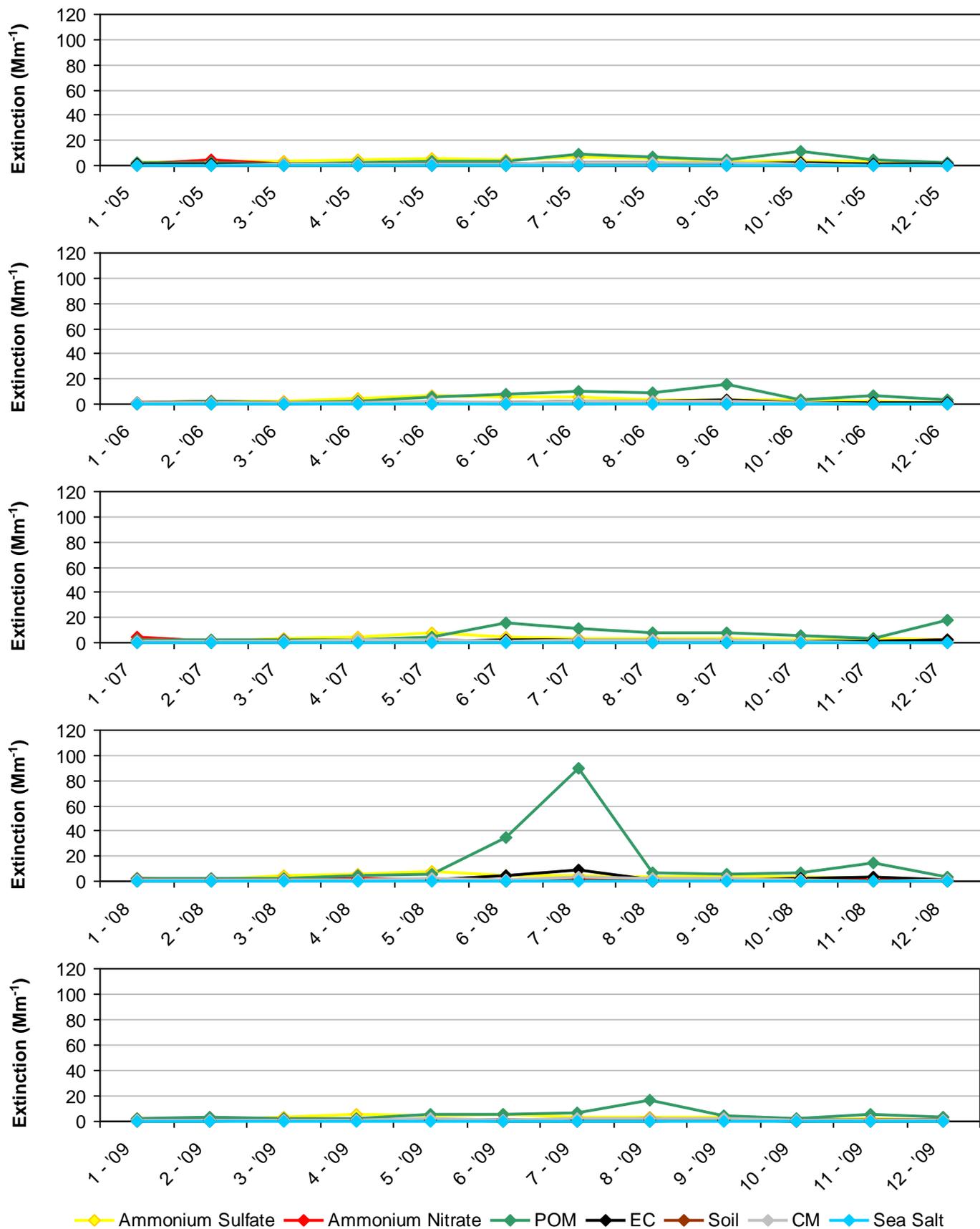
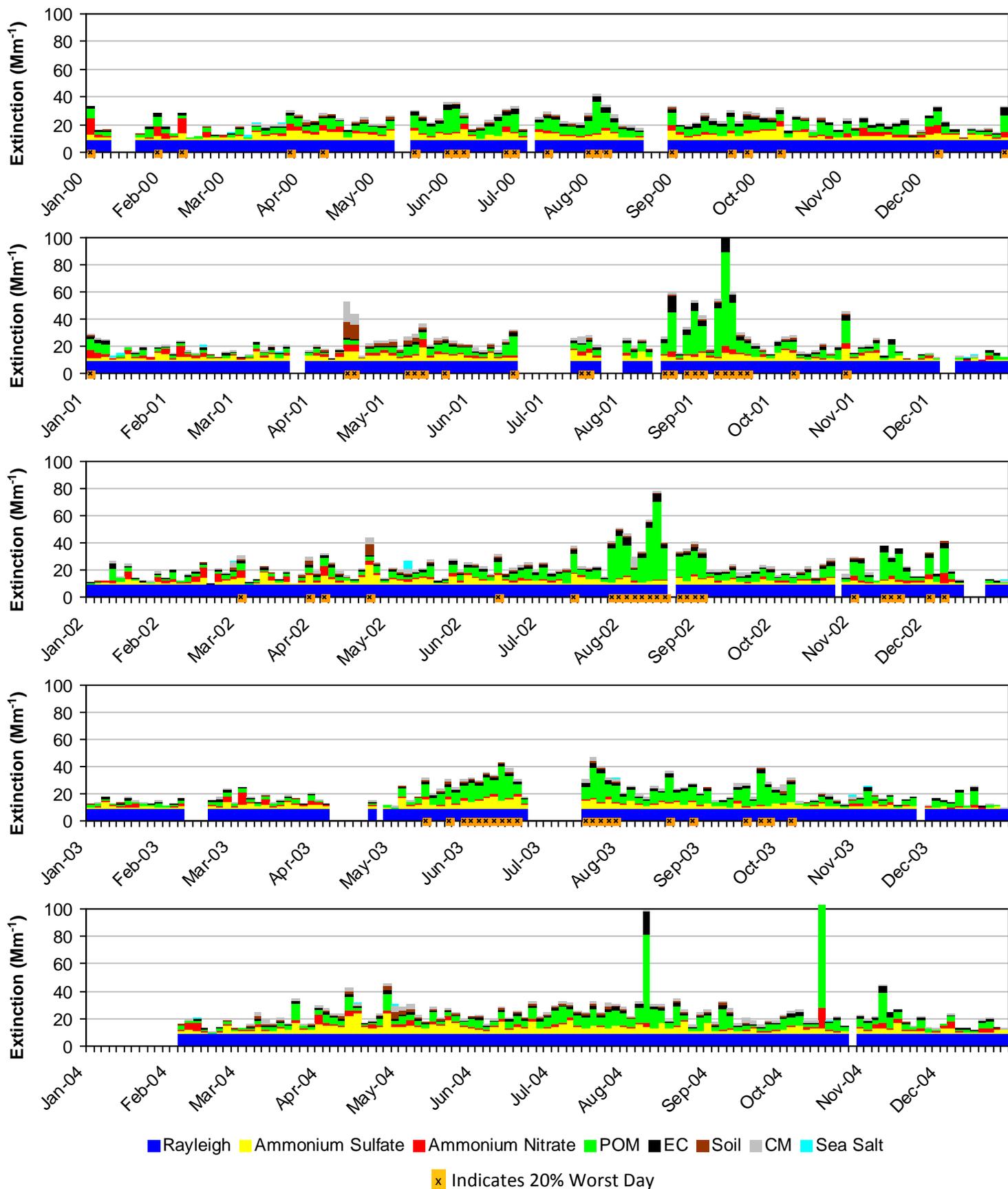
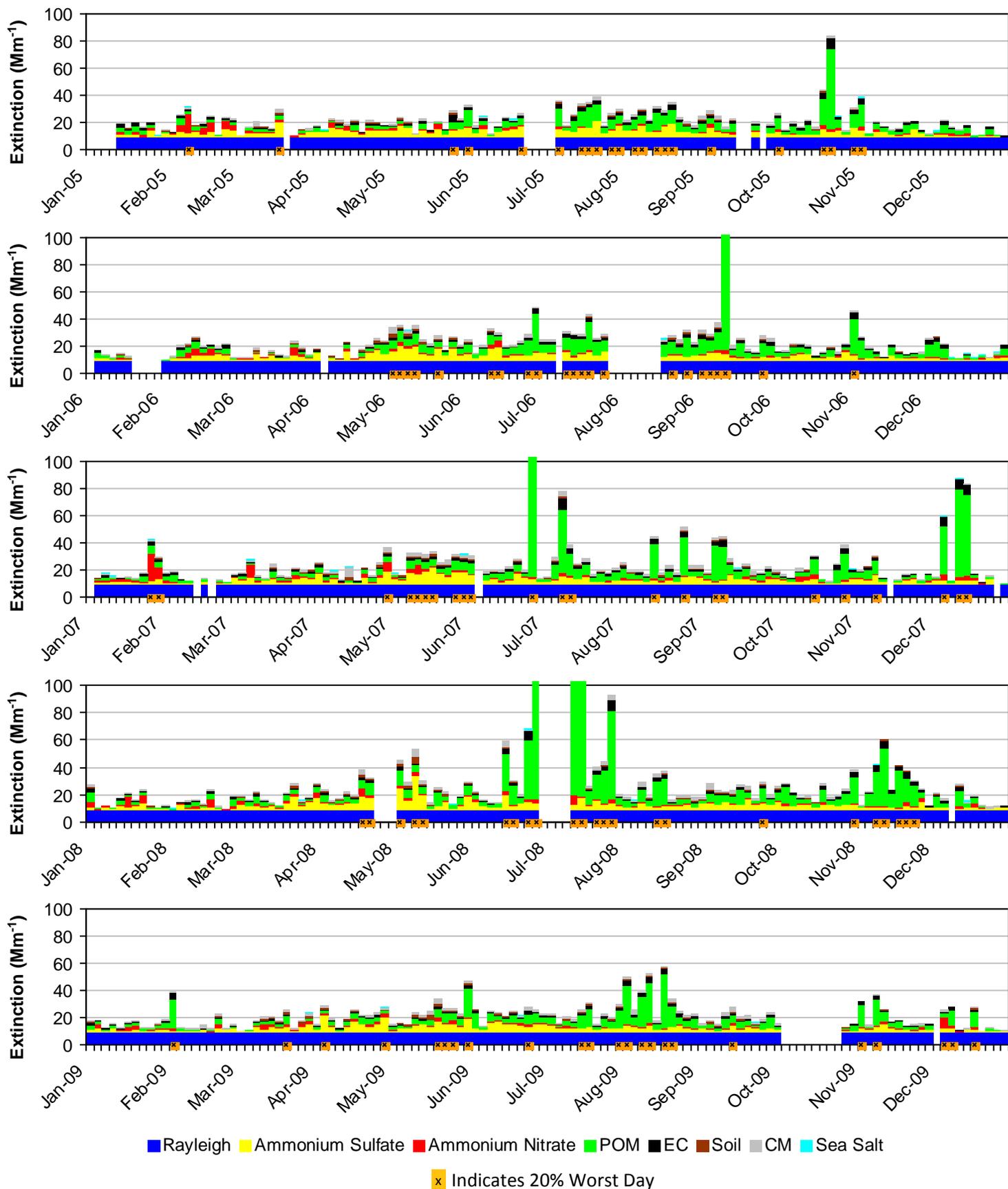


Figure C.4-7
Desolation WA and Mokelumne WA, CA (BLIS1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2004 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.4-8
 Desolation WA and Mokelumne WA, CA (BLIS1 Site)
 2005-2009 Progress Period Extinction, All Sampled Days



C.5. DOME LAND WA (DOME1)

The following tables and figures are presented in this section for the Dome Land WA represented by the DOME1 IMPROVE Monitor:

- **Table C.5-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.5-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.5-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.5-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.5-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.5-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.5-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.5-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.5-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.5-1
Dome Land WA, CA (DOME1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P - B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	5.6	4.5	5.7	4.4	---	---	5.7	4.9	4.8	3.9	0.0	0.4	5.1	5.1	0.0	0%
Worst 20% Days	---	18.4	21.0	19.3	19.1	---	---	20.9	19.3	17.6	16.7	-0.1	0.3	19.4	19.2	-0.2	-1%
All Days	---	12.0	12.8	12.8	12.4	---	---	13.2	12.2	11.4	10.2	-0.1	0.3	12.5	12.3	-0.2	-2%
Total Extinction (Mm-1)																	
Best 20% Days	---	17.6	15.8	17.9	15.7	---	---	17.8	16.4	16.2	14.8	-0.1	0.4	16.7	16.8	0.1	1%
Worst 20% Days	---	64.2	84.4	69.9	68.1	---	---	96.7	73.1	60.2	58.3	-0.5	0.5	71.7	76.7	5.0	7%
All Days	---	37.0	43.2	40.2	39.7	---	---	46.2	39.4	35.2	31.9	-0.2	0.3	40.0	40.2	0.2	1%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	2.1	1.6	1.9	1.5	---	---	2.0	1.5	1.5	1.2	-0.1	0.0	1.8	1.6	-0.2	-11%
Worst 20% Days	---	11.7	9.8	12.8	13.8	---	---	15.0	11.4	12.0	11.3	0.3	0.3	12.0	12.8	0.8	7%
All Days	---	7.1	6.3	6.8	7.3	---	---	7.5	6.6	6.2	5.6	-0.1	0.4	6.9	6.8	-0.1	-1%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	1.2	0.7	1.3	0.6	---	---	1.2	1.0	0.7	0.4	0.0	0.3	0.9	0.9	0.0	0%
Worst 20% Days	---	17.2	20.9	13.5	12.1	---	---	19.6	13.9	14.1	6.8	-0.4	0.4	15.9	15.8	-0.1	-1%
All Days	---	6.5	8.1	6.4	5.6	---	---	8.1	5.5	4.6	3.2	-0.2	0.0	6.7	6.1	-0.6	-9%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	2.4	1.5	2.3	1.8	---	---	1.8	2.0	1.7	1.7	-0.1	0.3	2.0	1.8	-0.2	-10%
Worst 20% Days	---	12.3	24.0	18.5	13.7	---	---	31.4	20.5	10.2	18.5	-0.3	0.5	17.1	20.7	3.6	21%
All Days	---	6.7	9.4	8.9	7.2	---	---	10.8	8.2	5.8	6.9	-0.1	0.4	8.0	8.3	0.3	4%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	1.0	0.9	0.9	0.6	---	---	0.7	0.7	0.8	0.6	0.0	0.1	0.8	0.7	-0.1	-13%
Worst 20% Days	---	3.5	4.7	4.1	3.4	---	---	5.4	3.3	2.4	3.2	-0.1	0.1	3.9	3.7	-0.2	-5%
All Days	---	2.2	2.4	2.4	2.0	---	---	2.4	1.8	1.5	1.5	-0.1	0.1	2.2	1.9	-0.3	-14%
Soil Extinction (Mm-1)																	
Best 20% Days	---	0.1	0.2	0.2	0.1	---	---	0.3	0.1	0.2	0.1	0.0	0.2	0.1	0.2	0.1	100%
Worst 20% Days	---	1.7	1.9	1.1	1.3	---	---	1.9	1.7	1.4	1.4	0.0	0.5	1.5	1.7	0.2	13%
All Days	---	0.9	1.0	0.6	0.8	---	---	1.0	1.1	1.0	0.8	0.0	0.1	0.8	1.0	0.2	25%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	0.7	0.8	1.3	0.9	---	---	1.6	0.8	1.3	0.6	0.1	0.1	0.9	1.2	0.3	33%
Worst 20% Days	---	7.5	13.1	9.8	13.6	---	---	13.3	12.0	9.8	6.8	0.1	0.5	11.0	11.7	0.7	6%
All Days	---	3.5	5.9	5.0	6.6	---	---	6.3	6.0	5.8	3.8	0.1	0.3	5.3	6.0	0.7	13%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	0.1	0.1	0.0	0.1	---	---	0.2	0.3	0.1	0.1	0.0	0.1	0.1	0.2	0.1	100%
Worst 20% Days	---	0.4	0.0	0.1	0.2	---	---	0.1	0.2	0.4	0.2	0.0	0.1	0.2	0.2	0.0	0%
All Days	---	0.2	0.1	0.1	0.1	---	---	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.2	0.1	100%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.5-1
Dome Land WA, CA (DOME1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

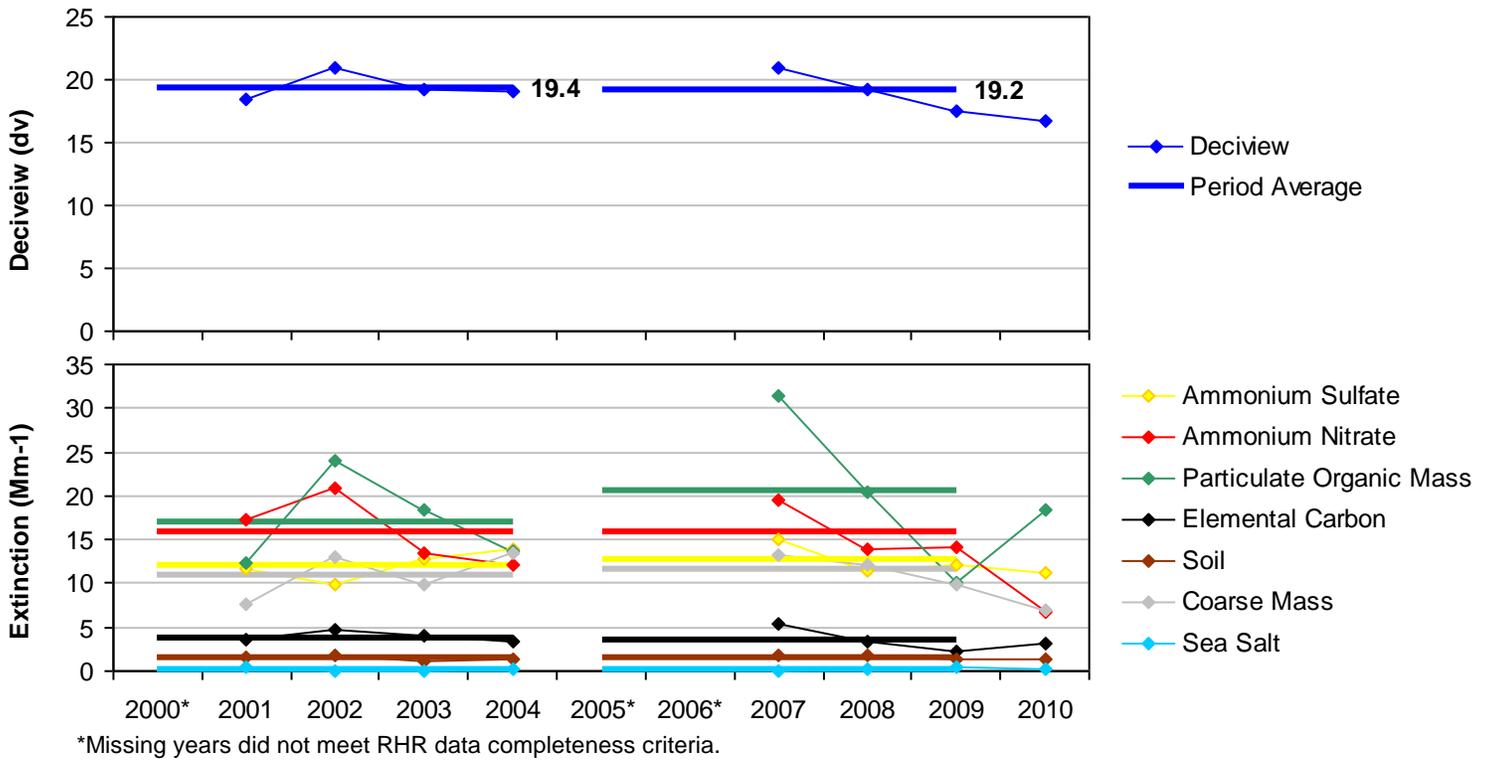


Figure C.5-2
Dome Land WA, CA (DOME1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

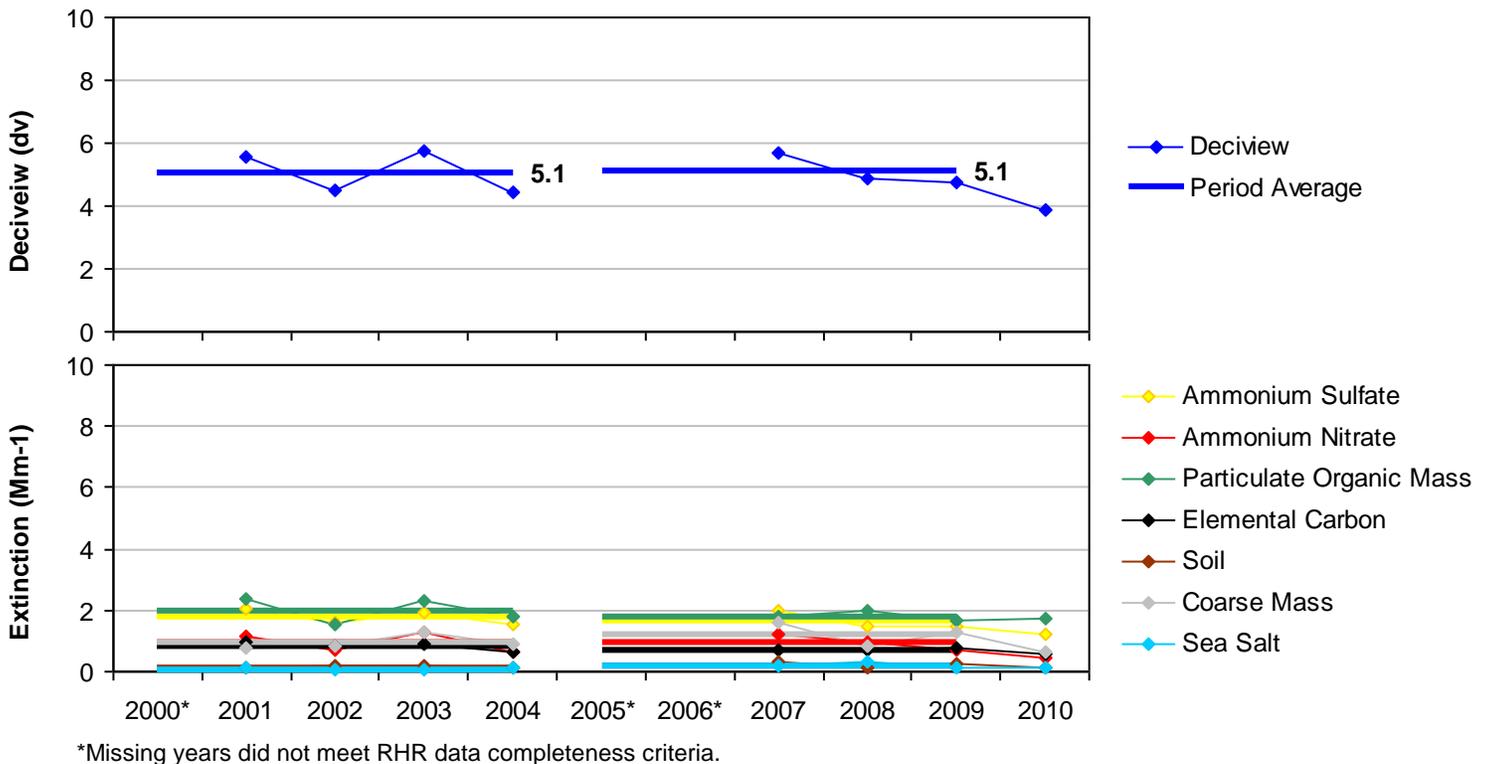
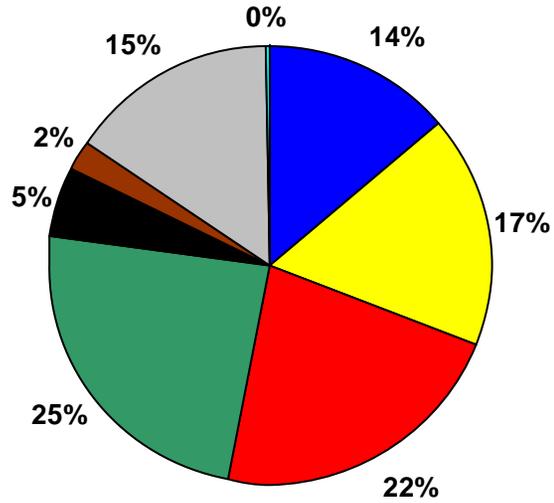
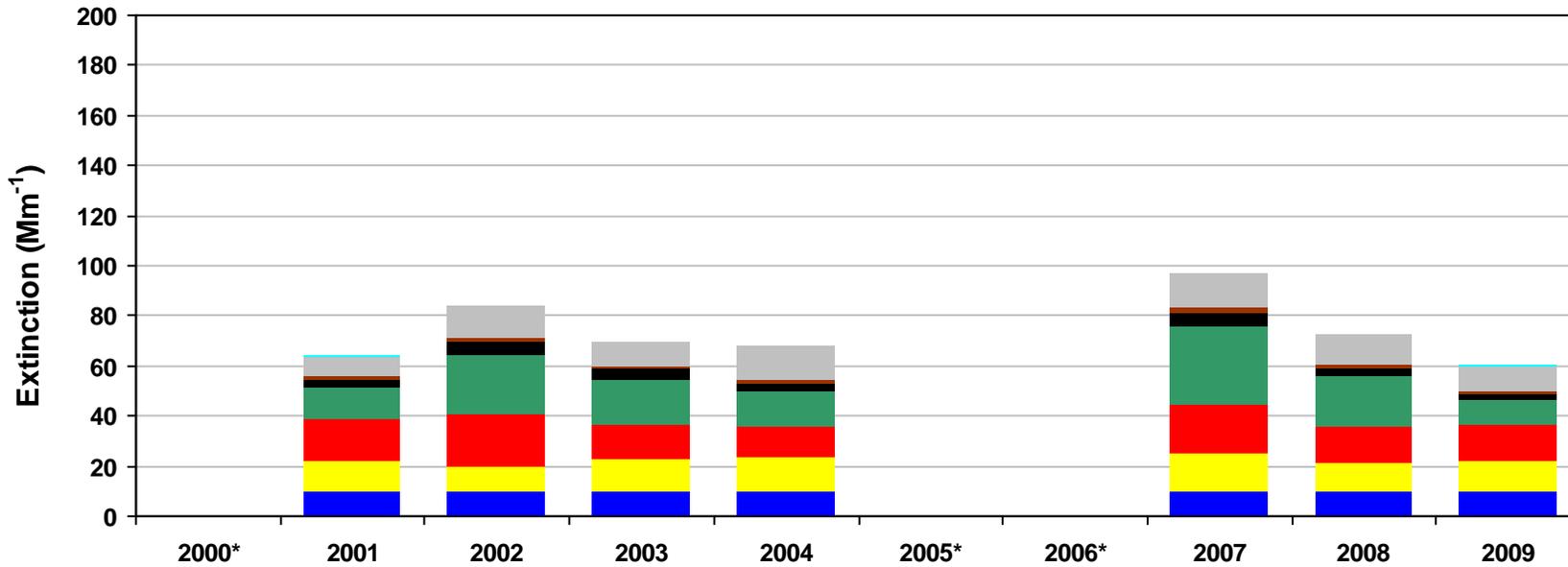
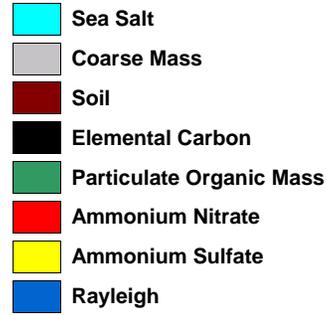
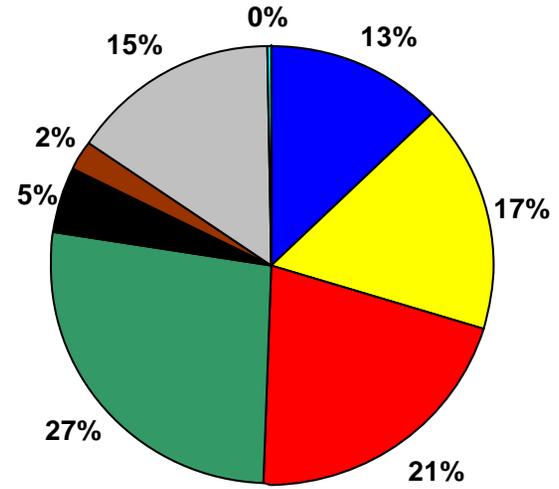


Figure C.5-3
Dome Land WA, CA (DOME1 Site)
20% Most Impaired Visibility Days

2000-2004 Baseline Average
 19.4 dv (18.4 - 21 dv)

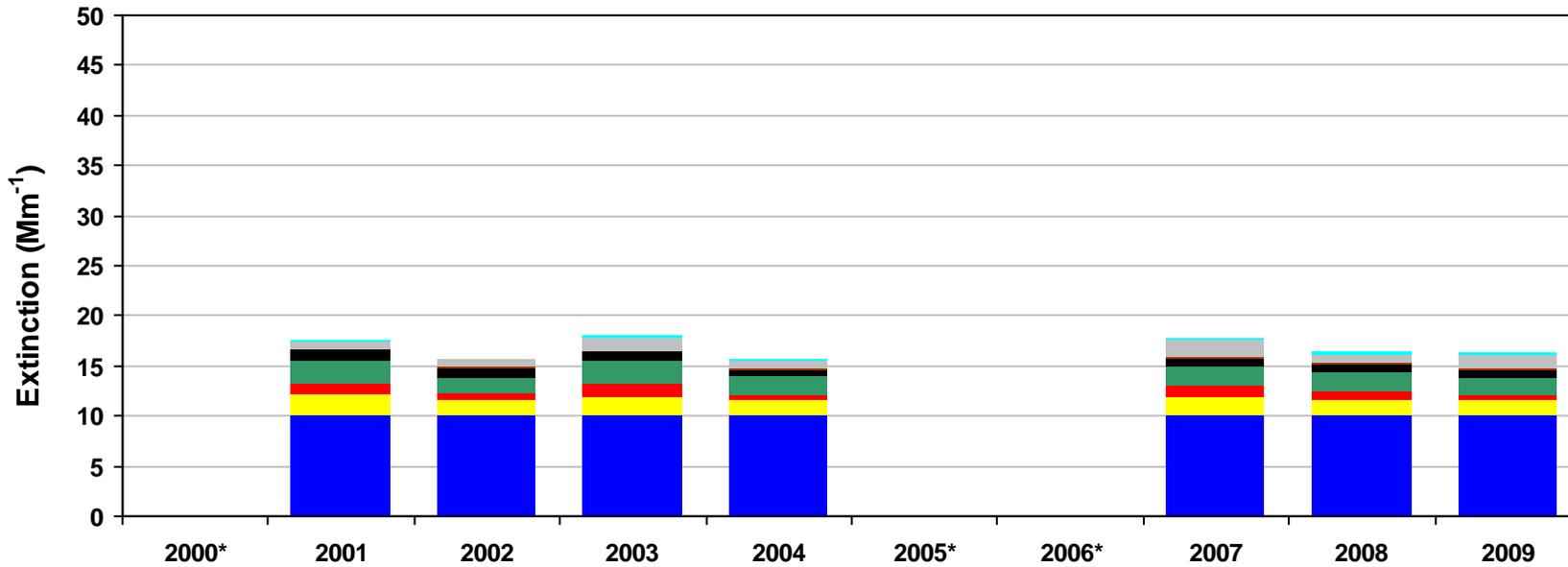
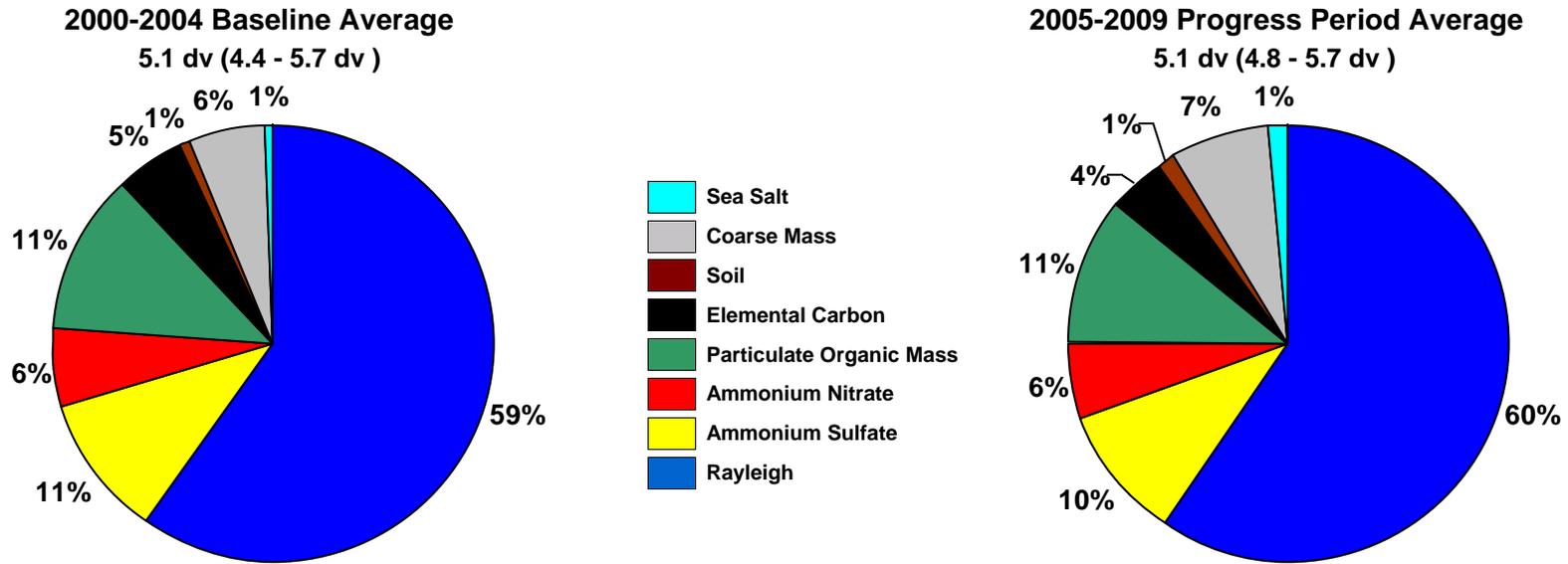


2005-2009 Progress Period Average
 19.2 dv (17.6 - 20.9 dv)



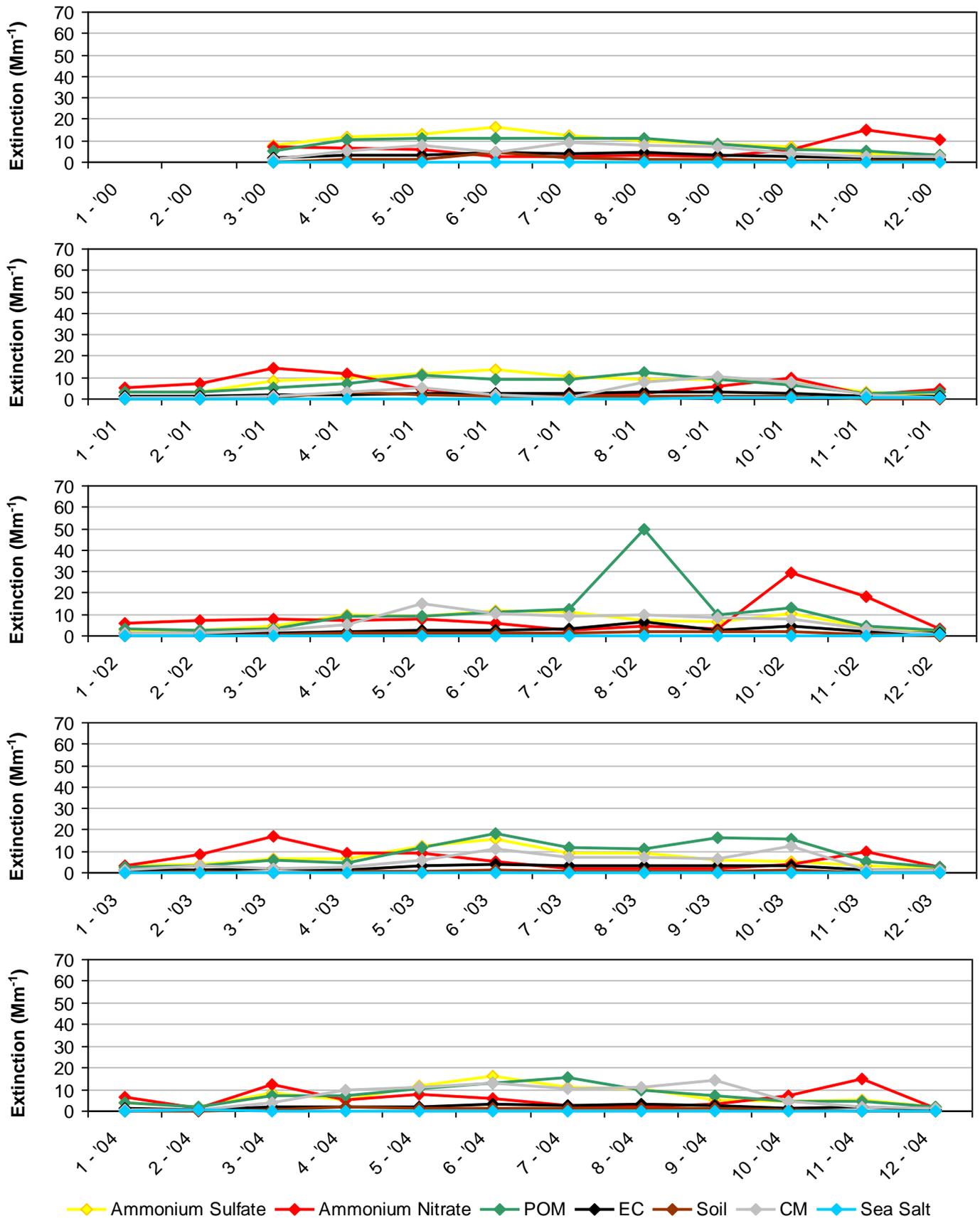
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.5-4
Dome Land WA, CA (DOME1 Site)
20% Least Impaired Visibility Days



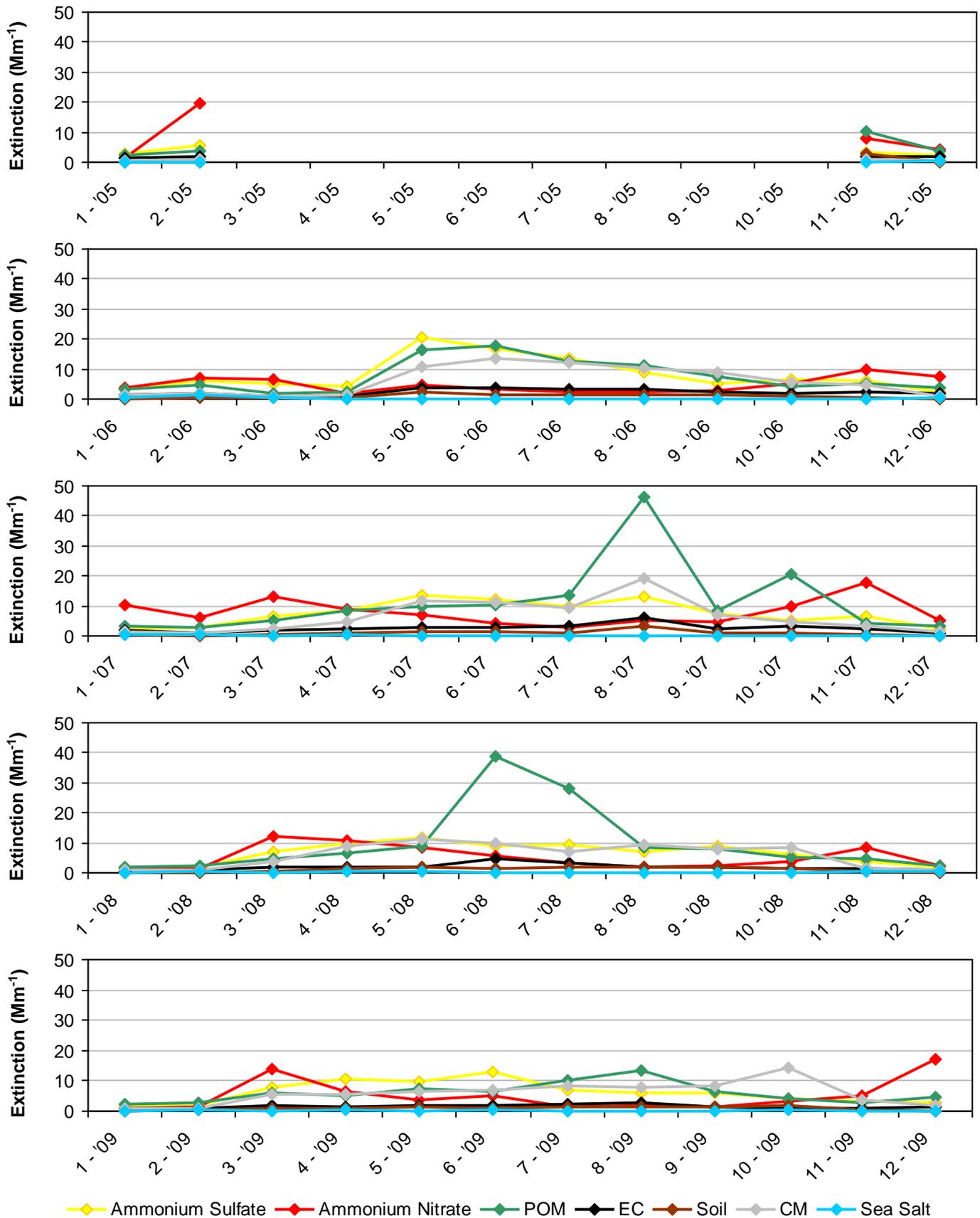
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.5-5
Dome Land WA, CA (DOME1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



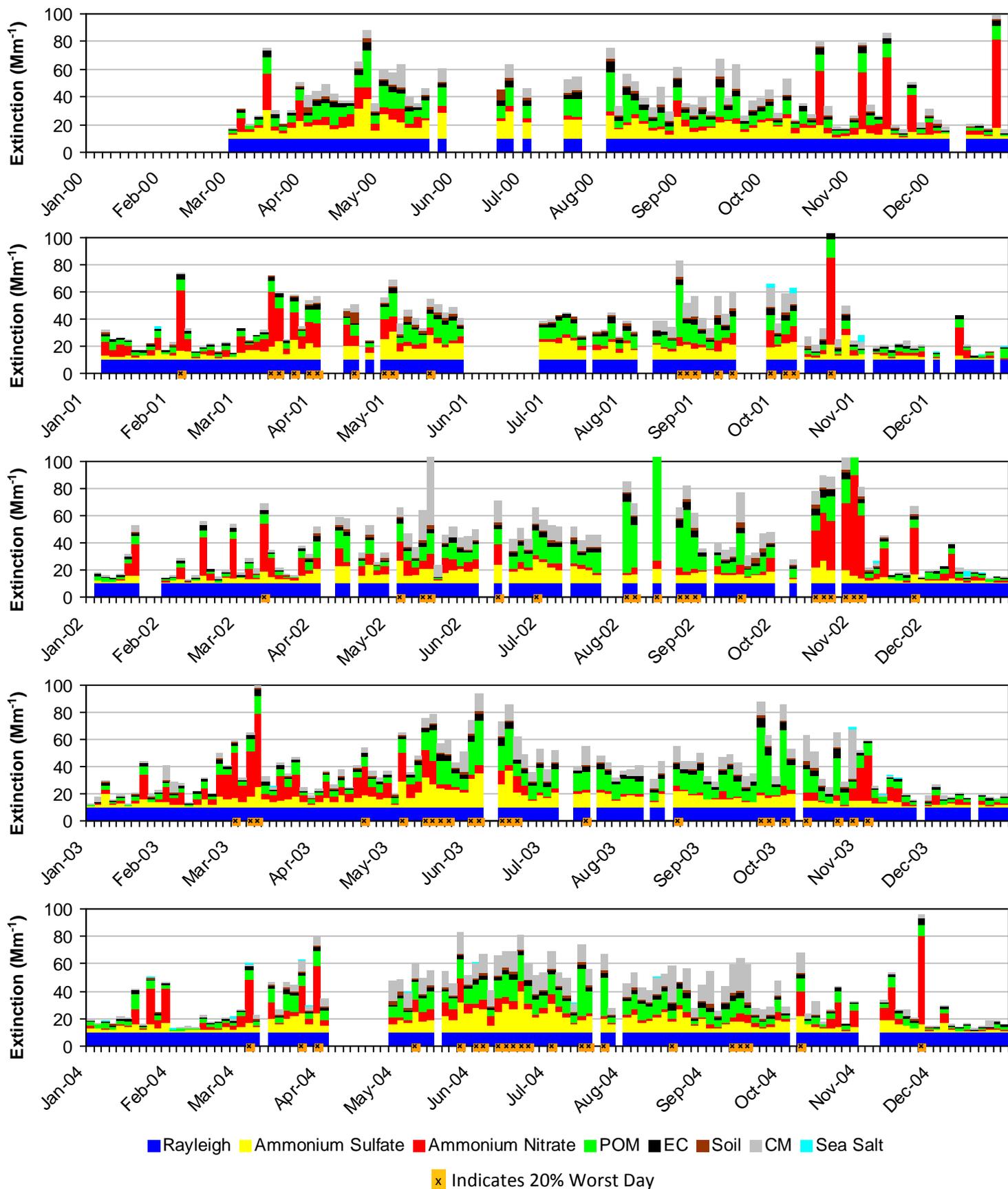
*Note that monthly averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.5-6
Dome Land WA, CA (DOME1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days



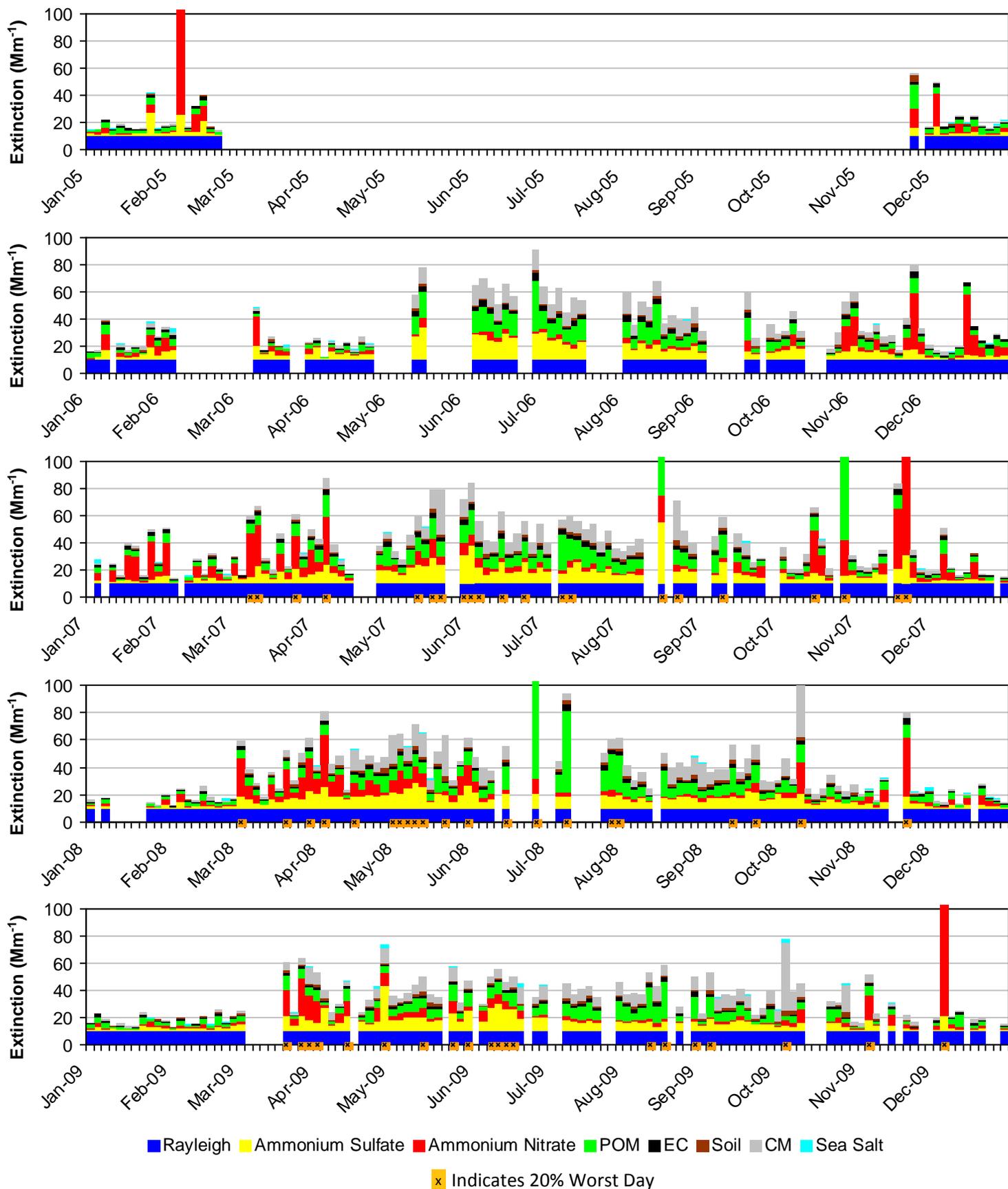
*Note that monthly averages for the years 2005 and 2006 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.5-7
Dome Land WA, CA (DOME1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.5-8
Dome Land WA, CA (DOME1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



*Note that daily averages for the years 2005 and 2006 are shown here, but these years did not meet RHR data completeness criteria.

C.6. HOOVER WA (HOOV1)

The following tables and figures are presented in this section for the Hoover Wilderness Area represented by the HOOV1 IMPROVE Monitor:

- **Table C.6-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.6-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.6-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.6-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.6-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.6-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.6-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.6-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.6-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.6-1
Hoover WA, CA (HOOV1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	---	1.8	1.1	1.4	1.1	1.3	1.7	1.2	1.1	0.9	0.0	0.1	1.4	1.3	-0.1	-7%
Worst 20% Days	---	---	14.1	11.7	12.9	10.4	10.5	12.6	15.5	12.0	8.8	0.0	0.6	12.9	12.2	-0.7	-5%
All Days	---	---	6.8	5.7	6.5	5.7	5.8	6.3	7.1	5.6	4.6	0.0	0.4	6.3	6.1	-0.2	-3%
Total Extinction (Mm-1)																	
Best 20% Days	---	---	12.0	11.2	11.5	11.2	11.5	11.9	11.3	11.2	11.0	0.0	0.2	11.6	11.4	-0.2	-2%
Worst 20% Days	---	---	44.4	32.9	42.3	28.4	29.2	40.6	62.6	36.4	24.2	0.0	0.6	39.9	39.4	-0.5	-1%
All Days	---	---	22.4	19.1	22.0	18.6	18.9	21.5	26.3	19.6	16.5	0.0	0.6	21.2	21.0	-0.2	-1%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	---	1.1	0.8	0.9	0.9	1.2	1.1	1.0	1.0	0.8	0.0	0.3	0.9	1.1	0.2	22%
Worst 20% Days	---	---	4.2	4.5	6.3	5.7	5.1	5.2	5.8	4.9	3.9	0.1	0.3	5.0	5.4	0.4	8%
All Days	---	---	2.6	2.4	3.2	3.3	3.1	3.2	3.4	2.8	2.3	0.0	0.2	2.8	3.2	0.4	14%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	---	0.3	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.3	0.2	-0.1	-33%
Worst 20% Days	---	---	2.2	1.2	1.5	1.7	1.1	2.3	1.7	1.7	0.9	0.0	0.4	1.6	1.7	0.1	6%
All Days	---	---	1.1	0.8	1.2	0.9	0.8	1.1	0.8	0.8	0.6	0.0	0.2	1.1	0.9	-0.2	-18%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	---	0.4	0.5	0.5	0.5	0.3	0.8	0.5	0.3	0.3	0.0	0.5	0.5	0.5	0.0	0%
Worst 20% Days	---	---	17.9	10.4	17.8	7.1	7.9	16.6	36.6	15.2	5.3	0.4	0.6	15.4	16.7	1.3	8%
All Days	---	---	5.3	3.7	5.1	2.9	3.1	5.1	9.4	4.3	2.2	0.1	0.5	4.7	5.0	0.3	6%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	---	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.2	0.2	0.0	0%
Worst 20% Days	---	---	2.7	2.2	2.4	1.8	2.3	4.2	5.4	2.3	1.2	0.1	0.4	2.4	3.2	0.8	33%
All Days	---	---	1.1	0.9	0.9	0.9	1.0	1.3	1.5	0.8	0.5	0.0	0.6	1.0	1.1	0.1	10%
Soil Extinction (Mm-1)																	
Best 20% Days	---	---	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0%
Worst 20% Days	---	---	2.4	1.0	1.3	0.8	1.0	1.1	1.4	1.0	1.2	0.0	0.3	1.6	1.0	-0.6	-38%
All Days	---	---	0.9	0.5	0.7	0.4	0.5	0.6	0.8	0.6	0.6	0.0	0.6	0.7	0.6	-0.1	-14%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	---	0.7	0.3	0.4	0.3	0.4	0.4	0.2	0.4	0.4	0.0	0.3	0.5	0.3	-0.2	-40%
Worst 20% Days	---	---	5.6	4.7	4.0	2.3	2.7	2.1	2.8	2.2	2.5	-0.5	0.0	4.7	2.4	-2.3	-49%
All Days	---	---	2.2	1.7	1.9	1.2	1.4	1.2	1.3	1.3	1.3	-0.1	0.1	2.0	1.3	-0.7	-35%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0%
Worst 20% Days	---	---	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.0	-0.1	-100%
All Days	---	---	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.6-1
Hoover WA, CA (HOOV1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

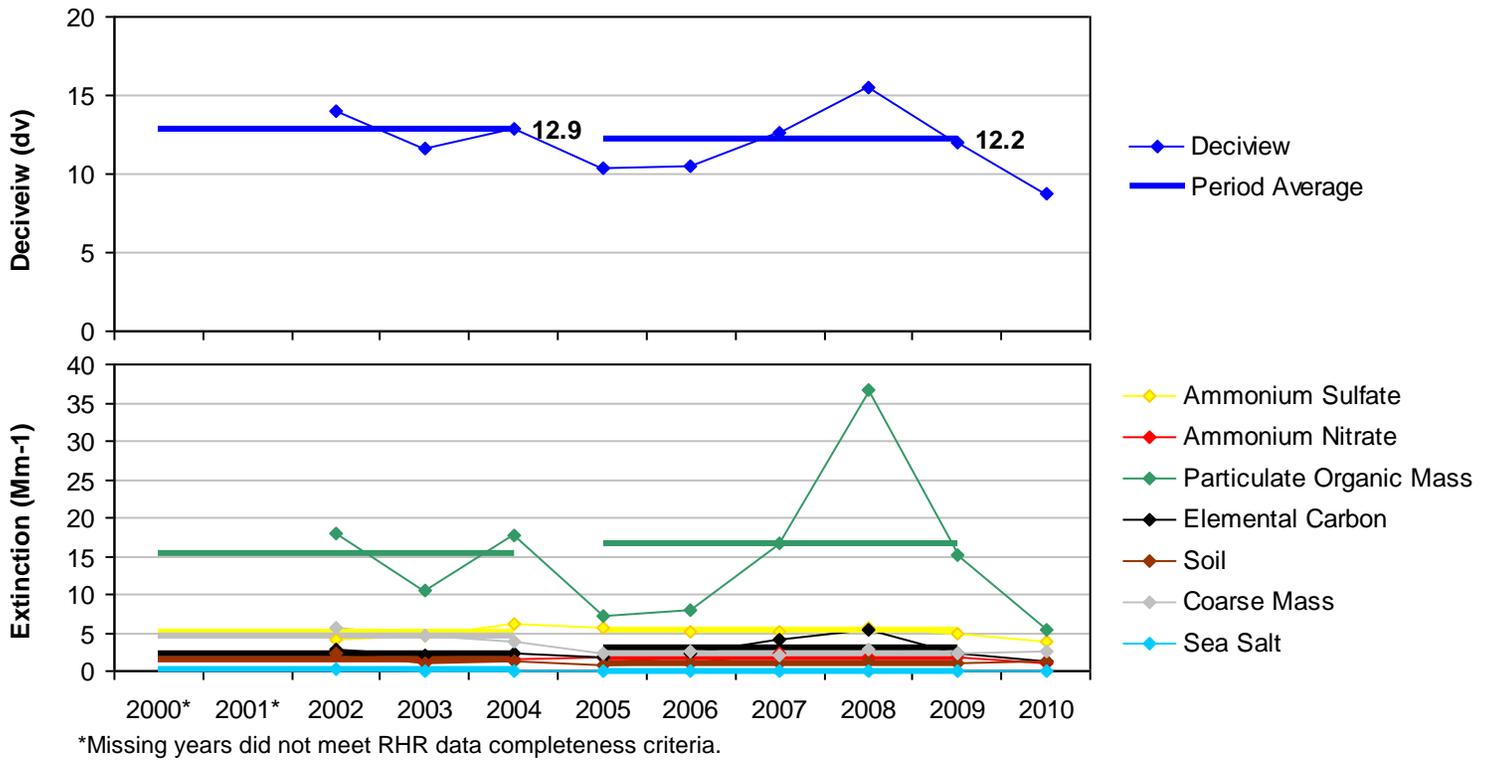


Figure C.6-2
Hoover WA, CA (HOOV1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

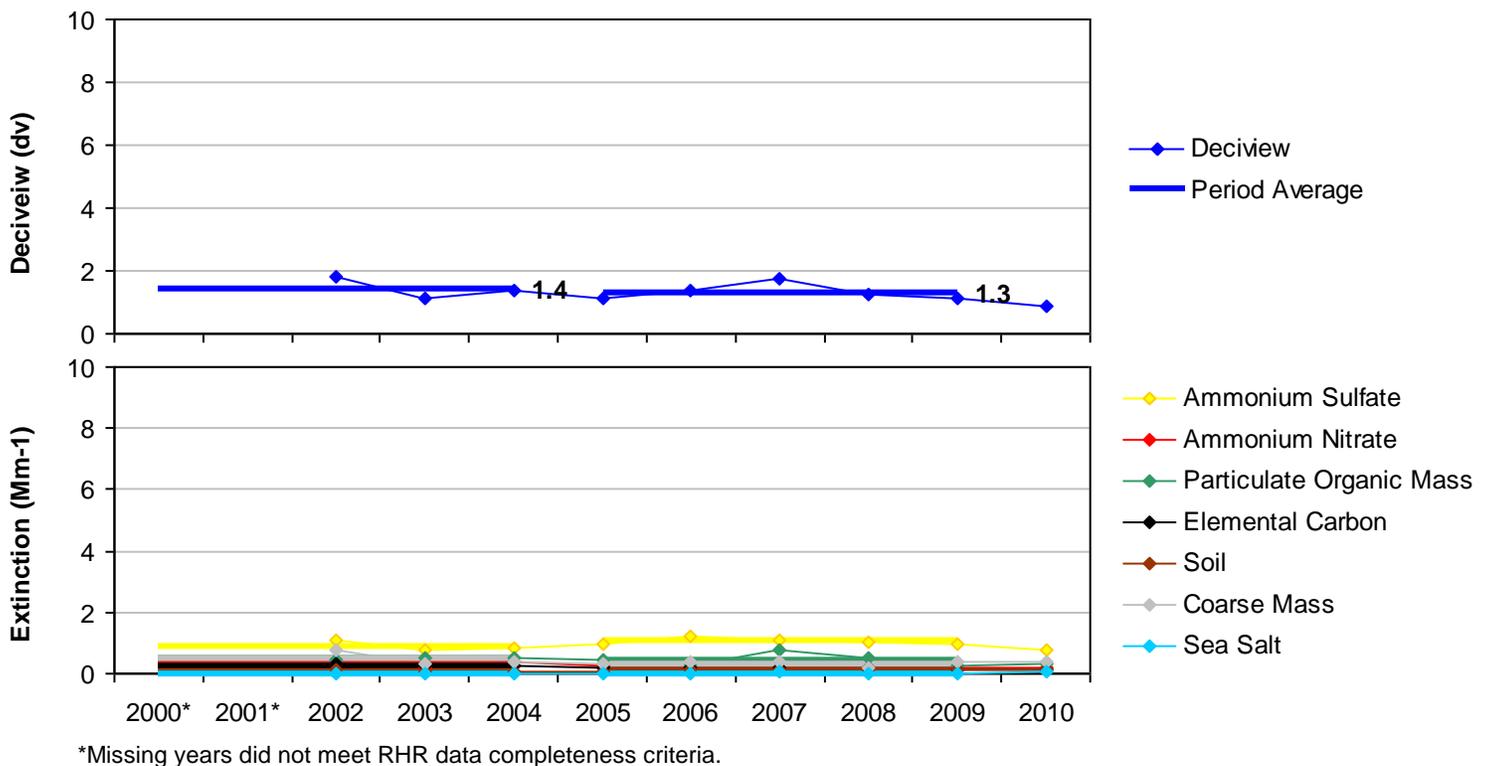
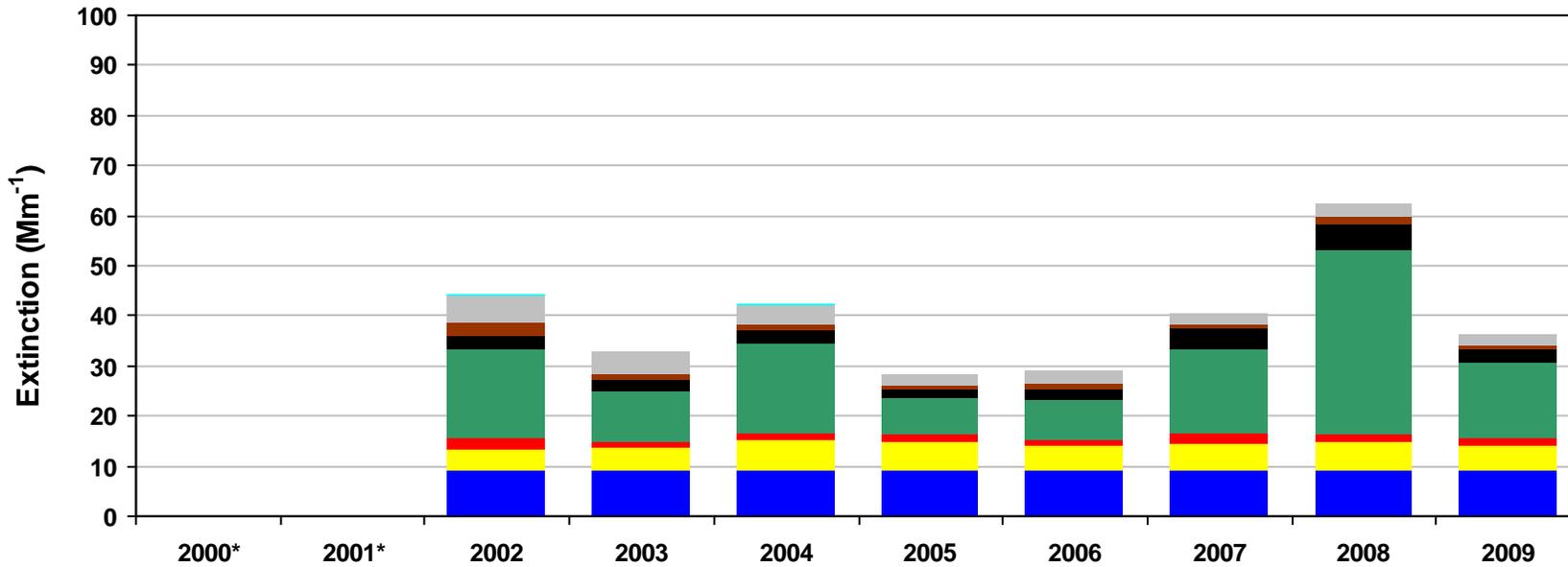
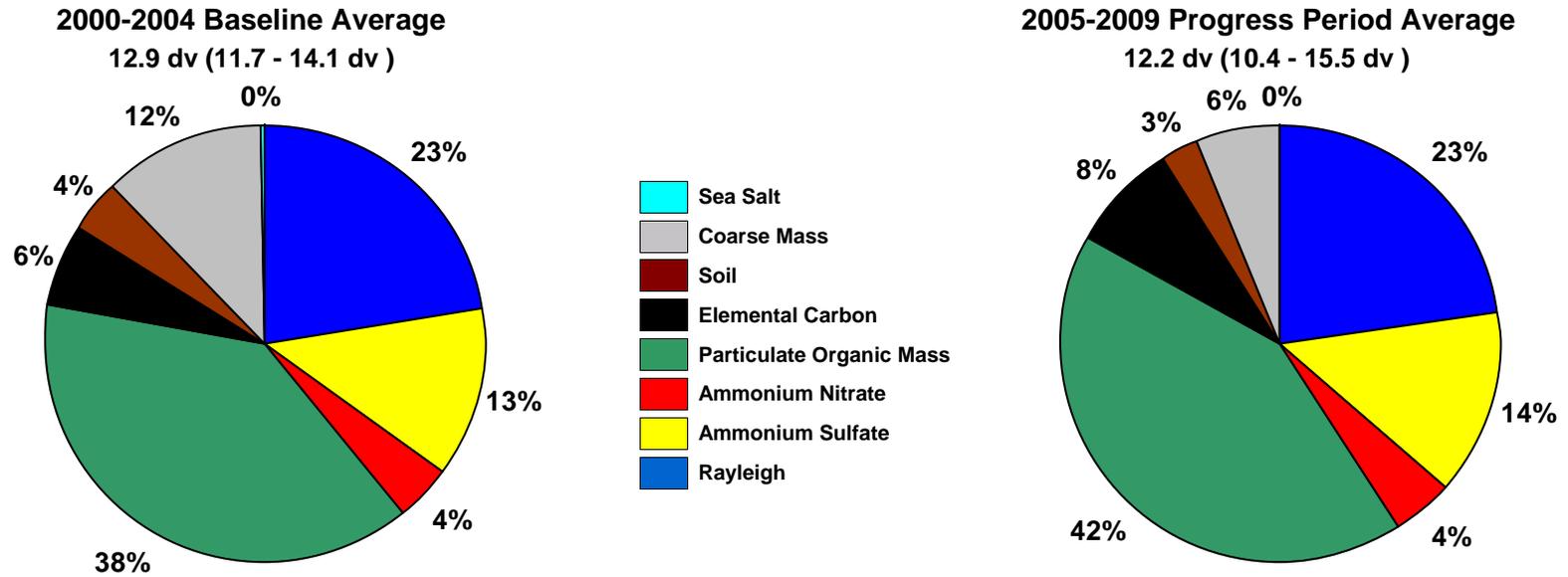


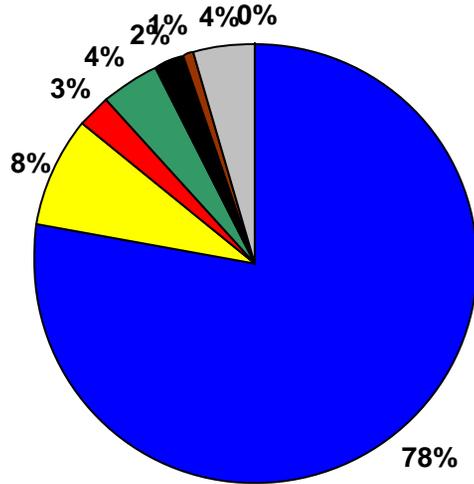
Figure C.6-3
Hoover WA, CA (HOOV1 Site)
20% Most Impaired Visibility Days



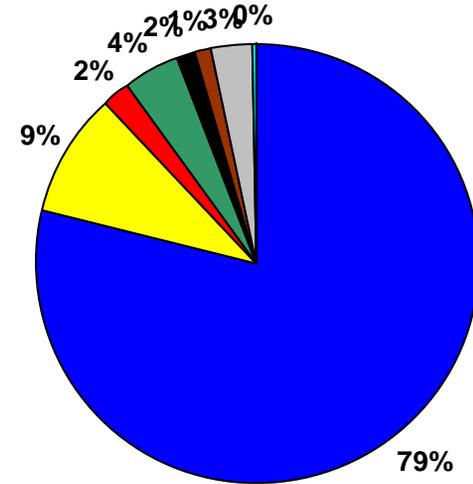
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.6-4
Hoover WA, CA (HOOV1 Site)
20% Least Impaired Visibility Days

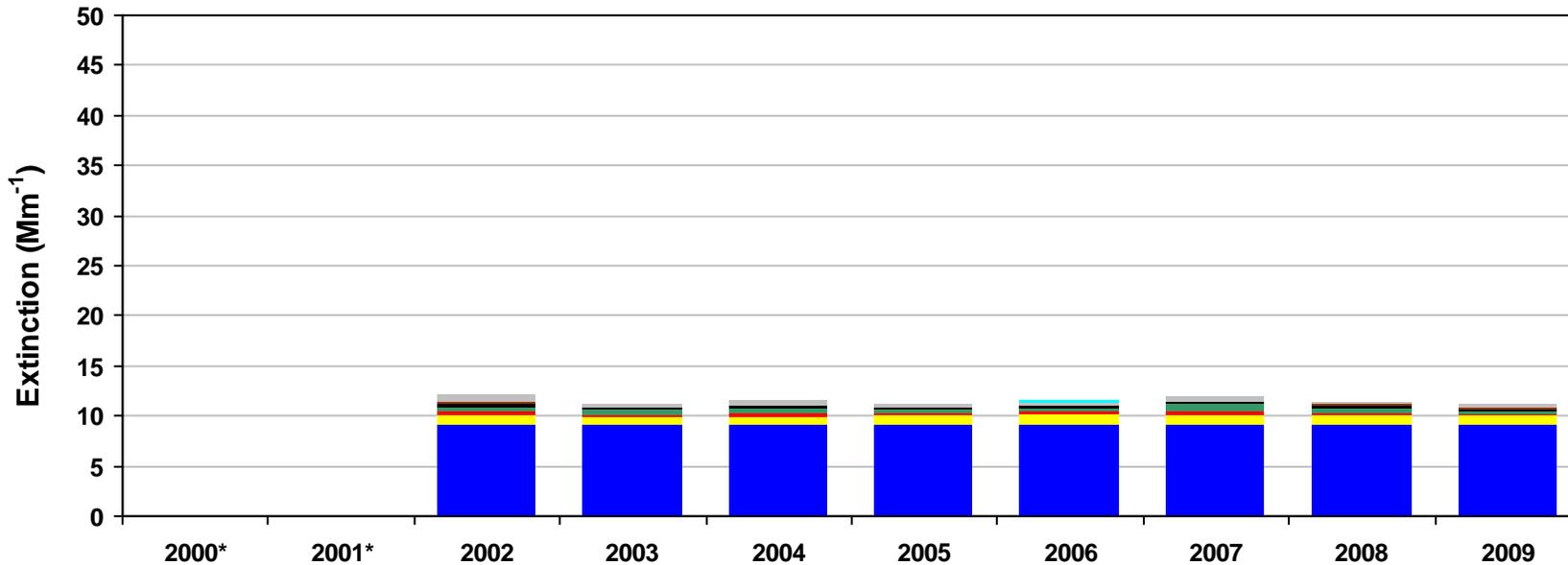
2000-2004 Baseline Average
 1.4 dv (1.1 - 1.8 dv)



2005-2009 Progress Period Average
 1.3 dv (1.1 - 1.7 dv)

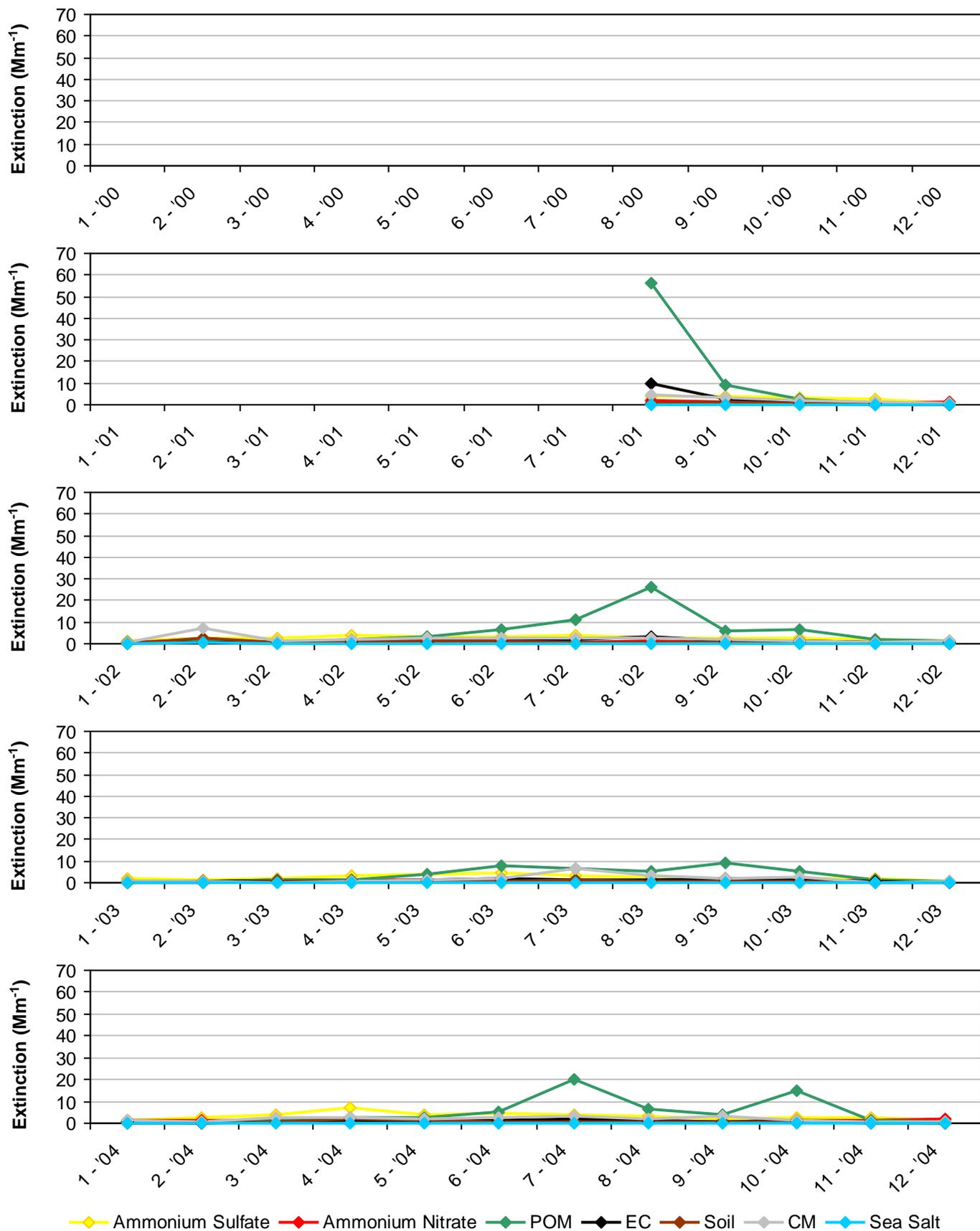


- Sea Salt
- Coarse Mass
- Soil
- Elemental Carbon
- Particulate Organic Mass
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.6-5
Hoover WA, CA (HOOV1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



*Note that monthly averages for the years 2000 and 2001 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.6-6
Hoover WA, CA (HOOV1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

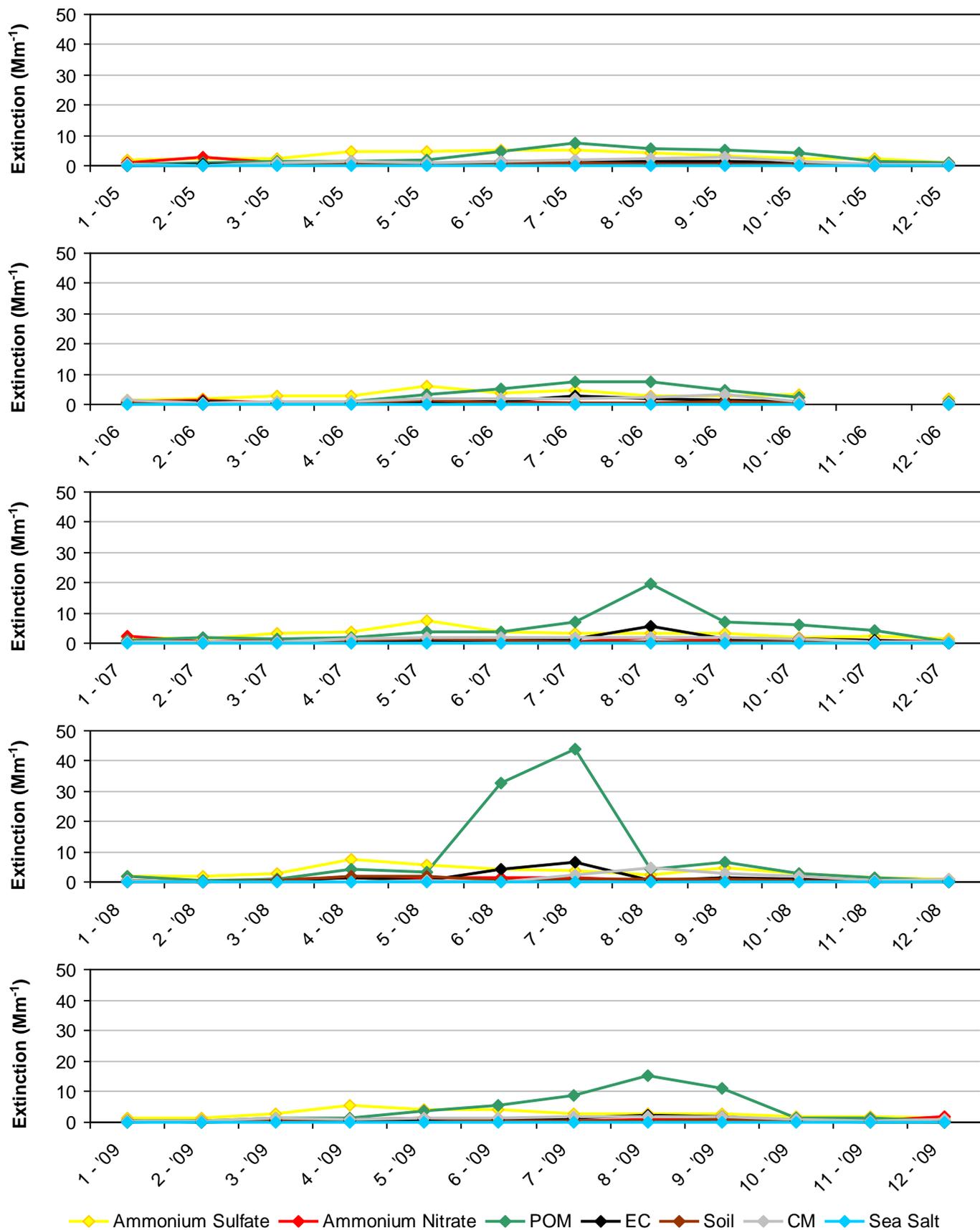
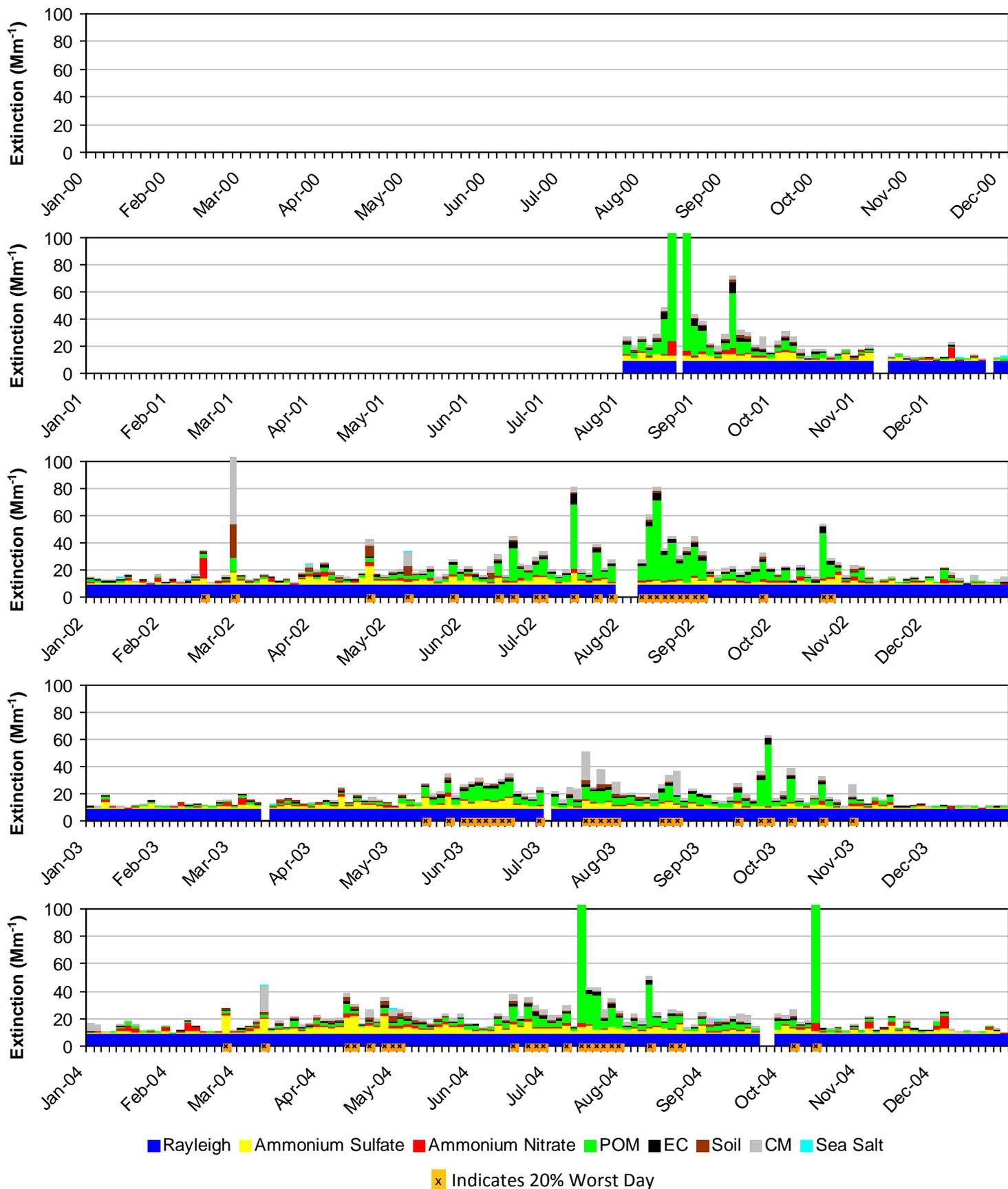
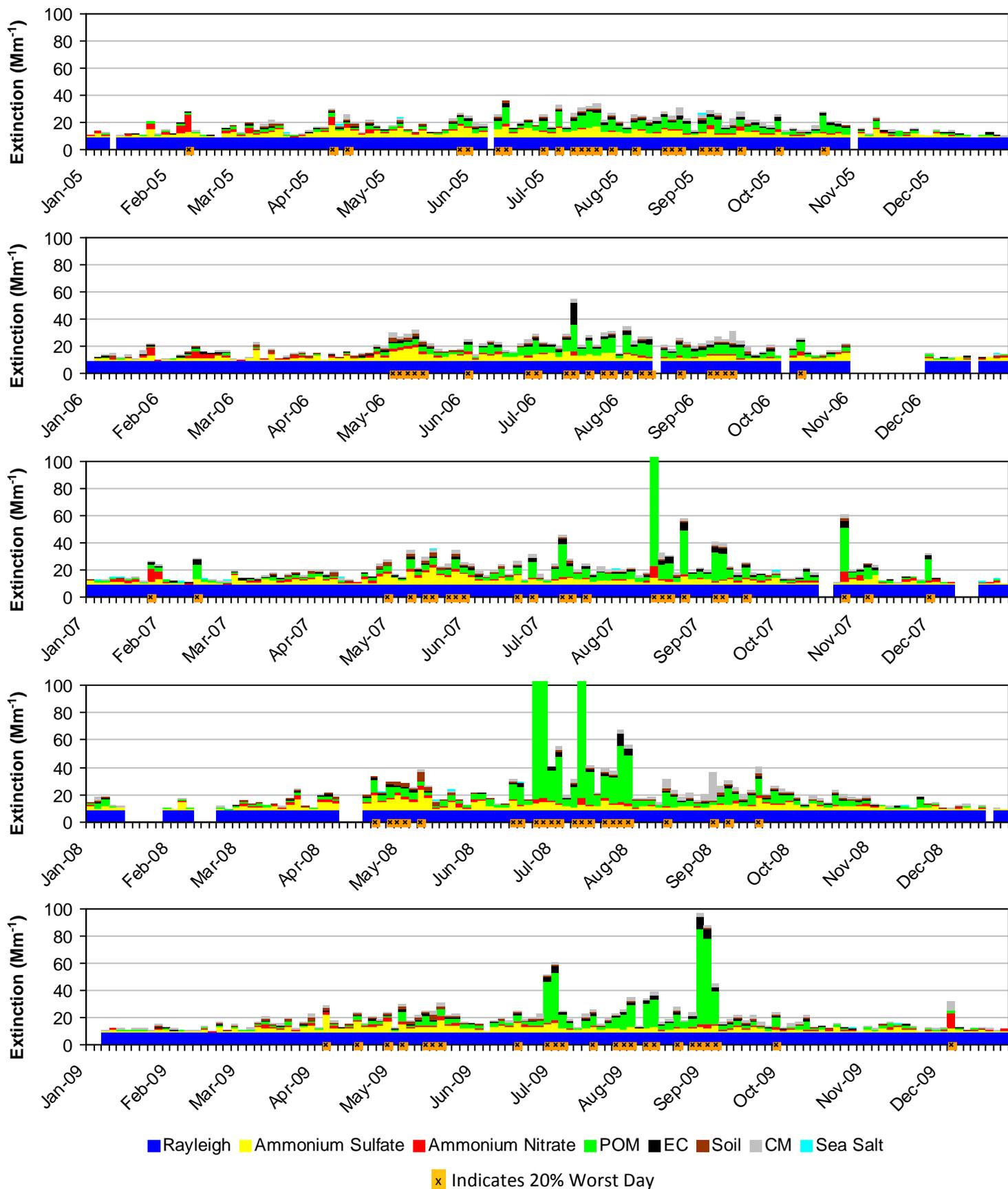


Figure C.6-7
Hoover WA, CA (HOOV1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the years 2000 and 2001 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.6-8
Hoover WA, CA (HOOV1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



C.7. KAISER WA, ANSEL ADAMS WA, AND JOHN MUIR WA (KAIS1)

The following tables and figures are presented in this section for the Kaiser WA, Ansel Adams WA, and John Muir WA represented by the KAIS1 IMPROVE Monitor:

- **Table C.7-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.7-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.7-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.7-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.7-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.7-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.7-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.7-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.7-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.7-1
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	---	2.6	2.1	2.3	1.2	---	1.8	1.4	1.8	1.1	-0.1	0.1	2.3	1.6	-0.7	-30%
Worst 20% Days	---	---	17.1	14.2	15.3	15.3	---	16.2	17.4	14.1	13.1	0.0	0.5	15.5	15.7	0.2	1%
All Days	---	---	9.3	7.9	8.7	8.4	---	8.3	8.9	7.8	6.7	-0.1	0.2	8.6	8.3	-0.3	-4%
Total Extinction (Mm-1)																	
Best 20% Days	---	---	13.0	12.3	12.6	11.3	---	12.0	11.5	12.0	11.2	-0.2	0.1	12.6	11.7	-0.9	-7%
Worst 20% Days	---	---	58.1	41.7	48.3	46.6	---	54.7	66.3	41.9	37.9	0.0	0.5	49.3	52.4	3.1	6%
All Days	---	---	29.6	24.4	26.9	26.3	---	27.1	30.3	24.0	21.5	-0.1	0.5	27.0	26.9	-0.1	0%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	---	1.1	1.0	1.0	0.8	---	1.0	1.0	1.1	0.9	0.0	0.5	1.0	1.0	0.0	0%
Worst 20% Days	---	---	7.0	6.1	9.8	11.3	---	8.9	7.8	7.1	7.1	0.0	0.5	7.6	8.8	1.2	16%
All Days	---	---	3.9	3.5	4.8	5.4	---	4.4	4.4	4.0	3.6	0.0	0.5	4.1	4.5	0.4	10%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	---	0.3	0.2	0.4	0.2	---	0.3	0.2	0.2	0.1	0.0	0.2	0.3	0.2	-0.1	-33%
Worst 20% Days	---	---	7.9	6.1	6.9	6.8	---	9.4	4.3	6.2	4.2	-0.2	0.3	7.0	6.7	-0.3	-4%
All Days	---	---	3.5	2.6	2.9	2.6	---	3.2	2.2	2.4	1.6	-0.1	0.1	3.0	2.6	-0.4	-13%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	---	1.1	1.1	0.8	0.5	---	0.7	0.5	0.5	0.6	-0.1	0.0	1.0	0.5	-0.5	-50%
Worst 20% Days	---	---	22.8	13.7	14.0	11.4	---	17.9	35.1	12.2	9.7	-0.2	0.5	16.8	19.2	2.4	14%
All Days	---	---	7.9	5.7	5.6	5.0	---	6.0	10.1	4.7	3.9	-0.2	0.3	6.4	6.5	0.1	2%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	---	0.7	0.6	0.8	0.4	---	0.4	0.2	0.5	0.3	-0.1	0.1	0.7	0.4	-0.3	-43%
Worst 20% Days	---	---	5.2	2.9	2.3	2.9	---	3.5	4.3	2.2	1.8	-0.1	0.4	3.4	3.2	-0.2	-6%
All Days	---	---	2.0	1.5	1.5	1.5	---	1.4	1.6	1.1	0.9	-0.1	0.1	1.7	1.4	-0.3	-18%
Soil Extinction (Mm-1)																	
Best 20% Days	---	---	0.1	0.1	0.1	0.1	---	0.1	0.1	0.1	0.1	0.0	0.4	0.1	0.1	0.0	0%
Worst 20% Days	---	---	1.4	0.7	1.3	0.8	---	1.3	1.3	1.1	1.6	0.0	0.5	1.1	1.1	0.0	0%
All Days	---	---	0.7	0.4	0.7	0.5	---	0.6	0.7	0.6	0.7	0.0	0.5	0.6	0.6	0.0	0%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	---	0.6	0.3	0.3	0.2	---	0.4	0.4	0.7	0.3	0.0	0.3	0.4	0.4	0.0	0%
Worst 20% Days	---	---	4.9	3.1	4.9	4.4	---	4.5	4.4	3.9	4.4	-0.1	0.3	4.3	4.3	0.0	0%
All Days	---	---	2.5	1.6	2.4	2.2	---	2.4	2.3	2.2	1.8	0.0	0.3	2.2	2.2	0.0	0%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	---	0.1	0.0	0.1	0.1	---	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0%
Worst 20% Days	---	---	0.0	0.2	0.2	0.1	---	0.1	0.1	0.2	0.2	0.0	0.4	0.1	0.1	0.0	0%
All Days	---	---	0.1	0.1	0.2	0.1	---	0.1	0.1	0.1	0.1	0.0	0.5	0.1	0.1	0.0	0%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.7-1
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

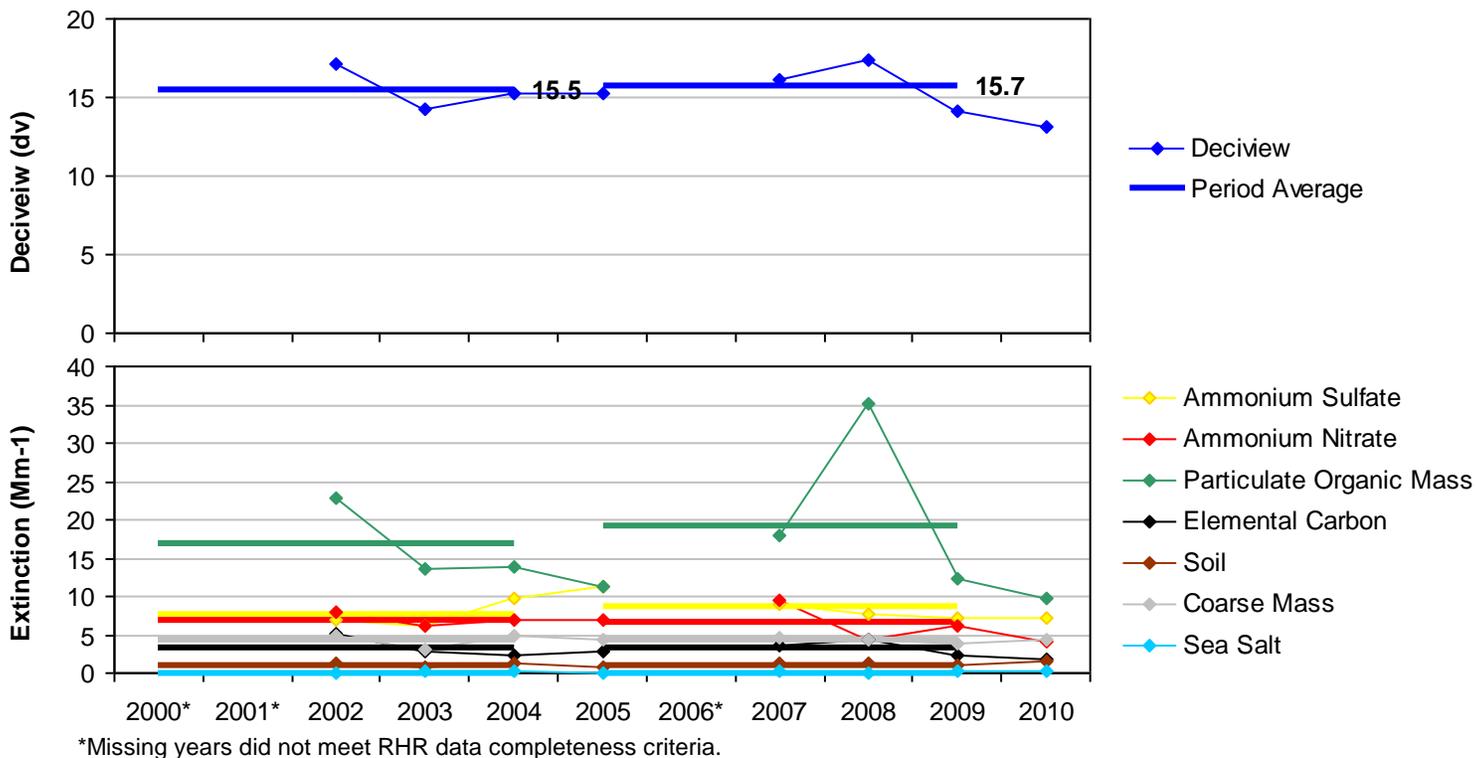


Figure C.7-2
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

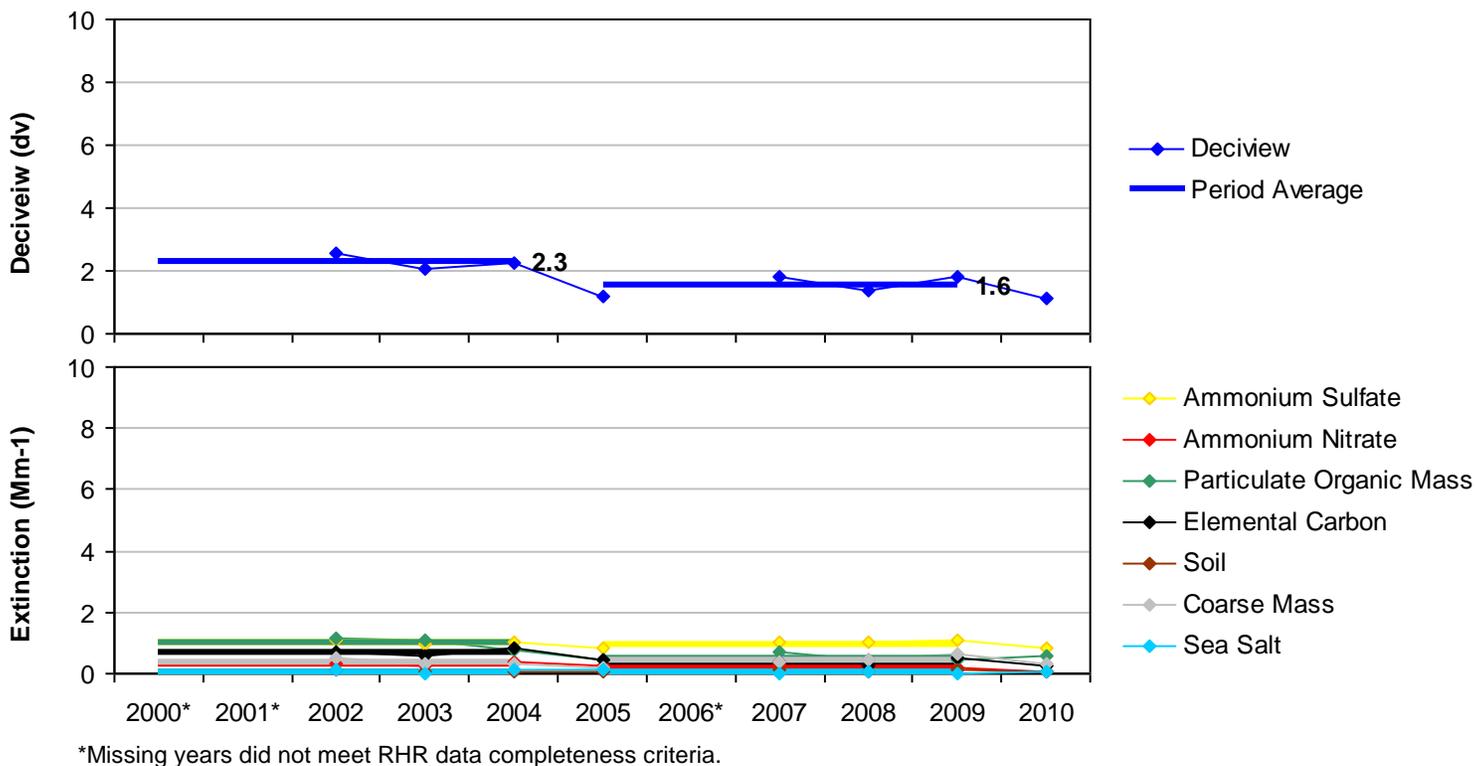
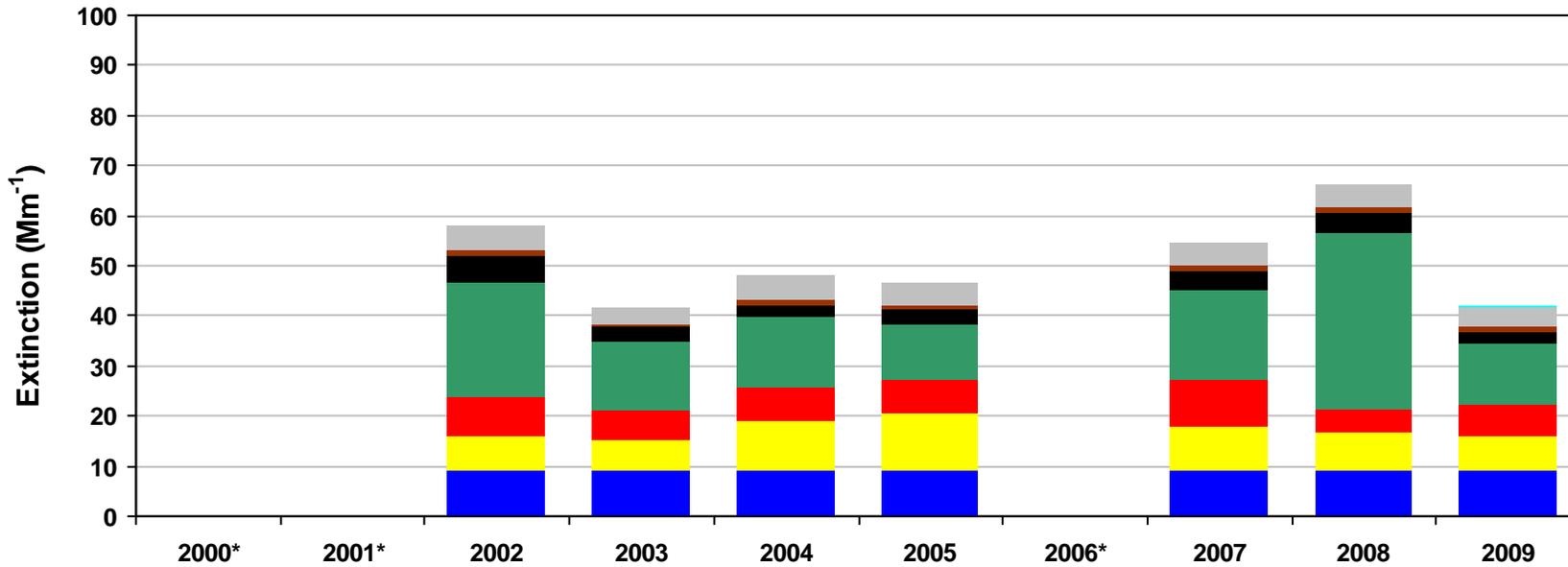
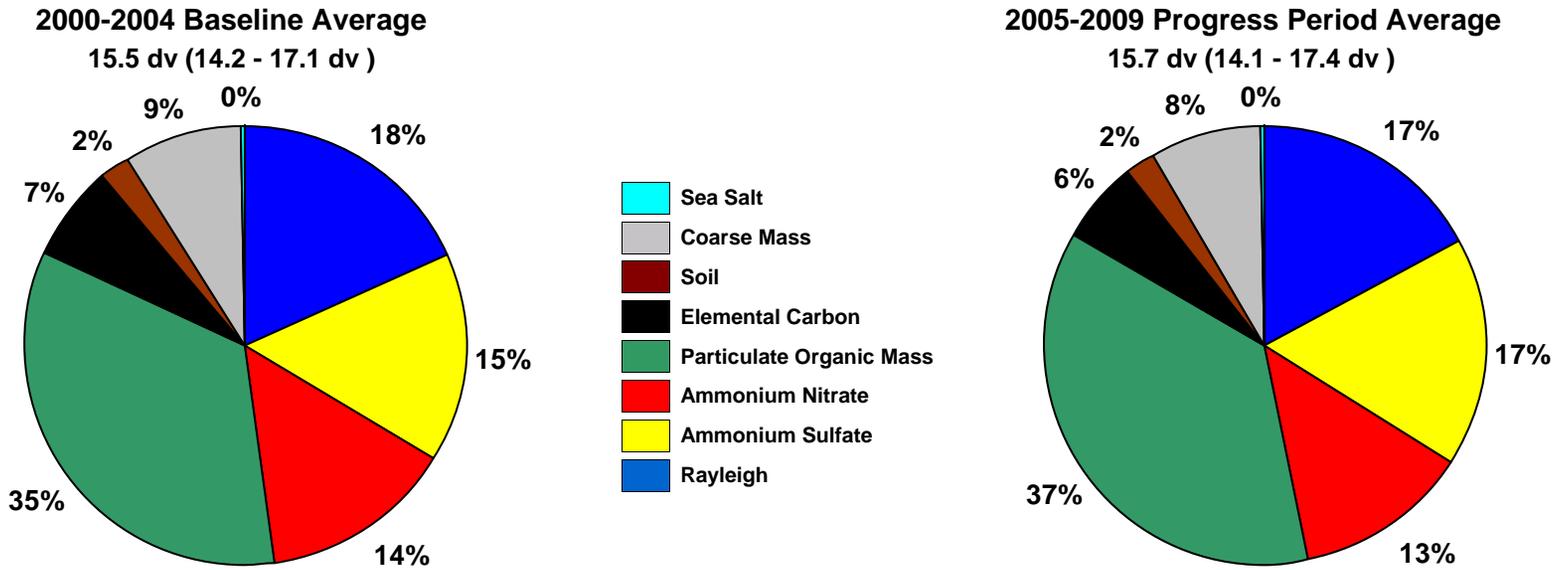
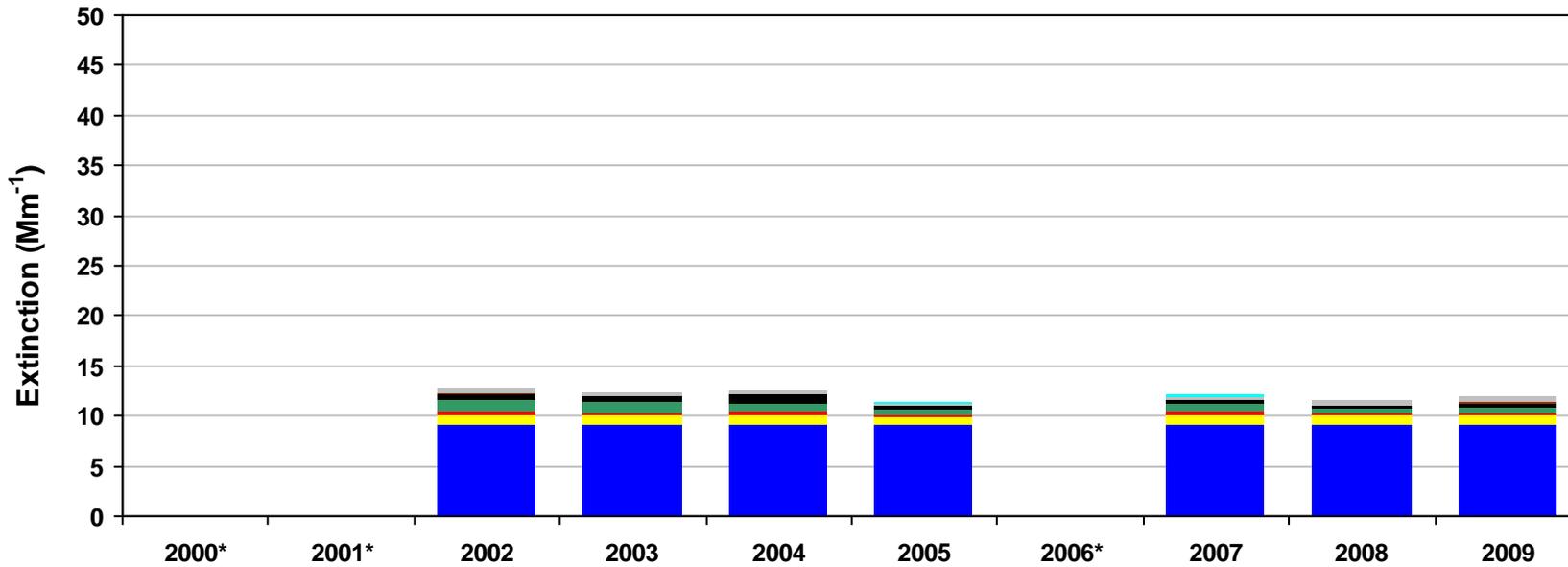
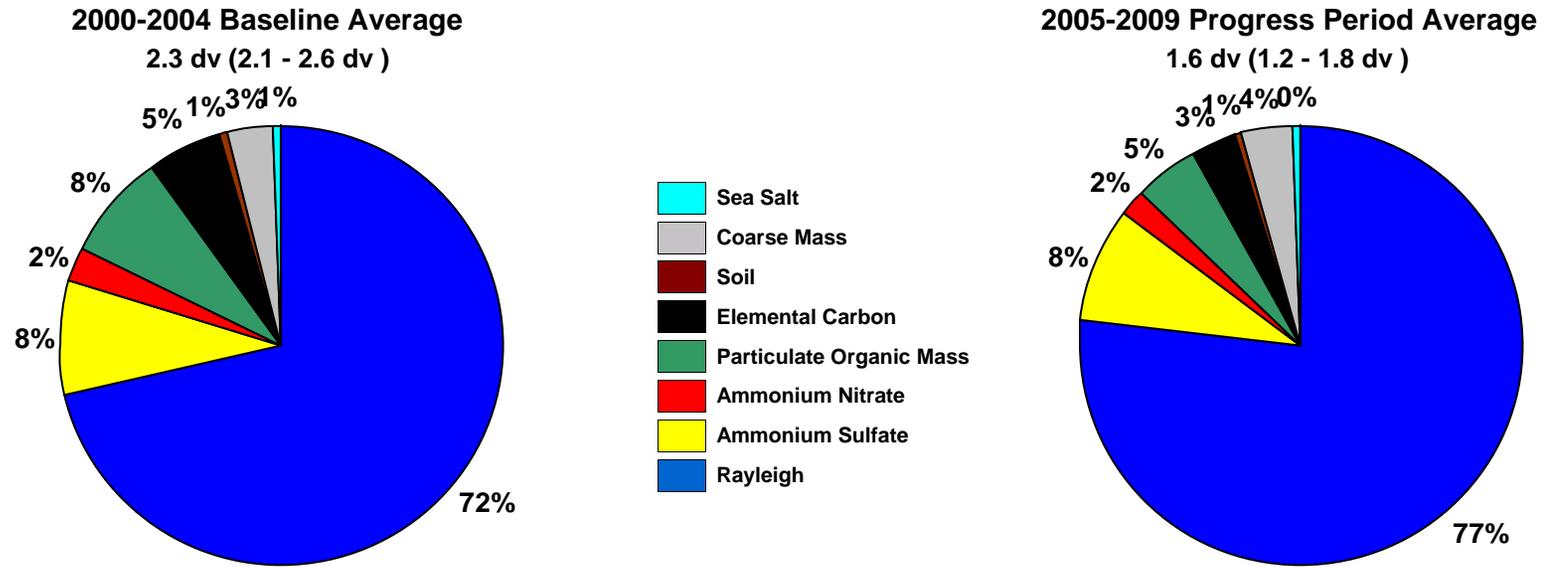


Figure C.7-3
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
20% Most Impaired Visibility Days



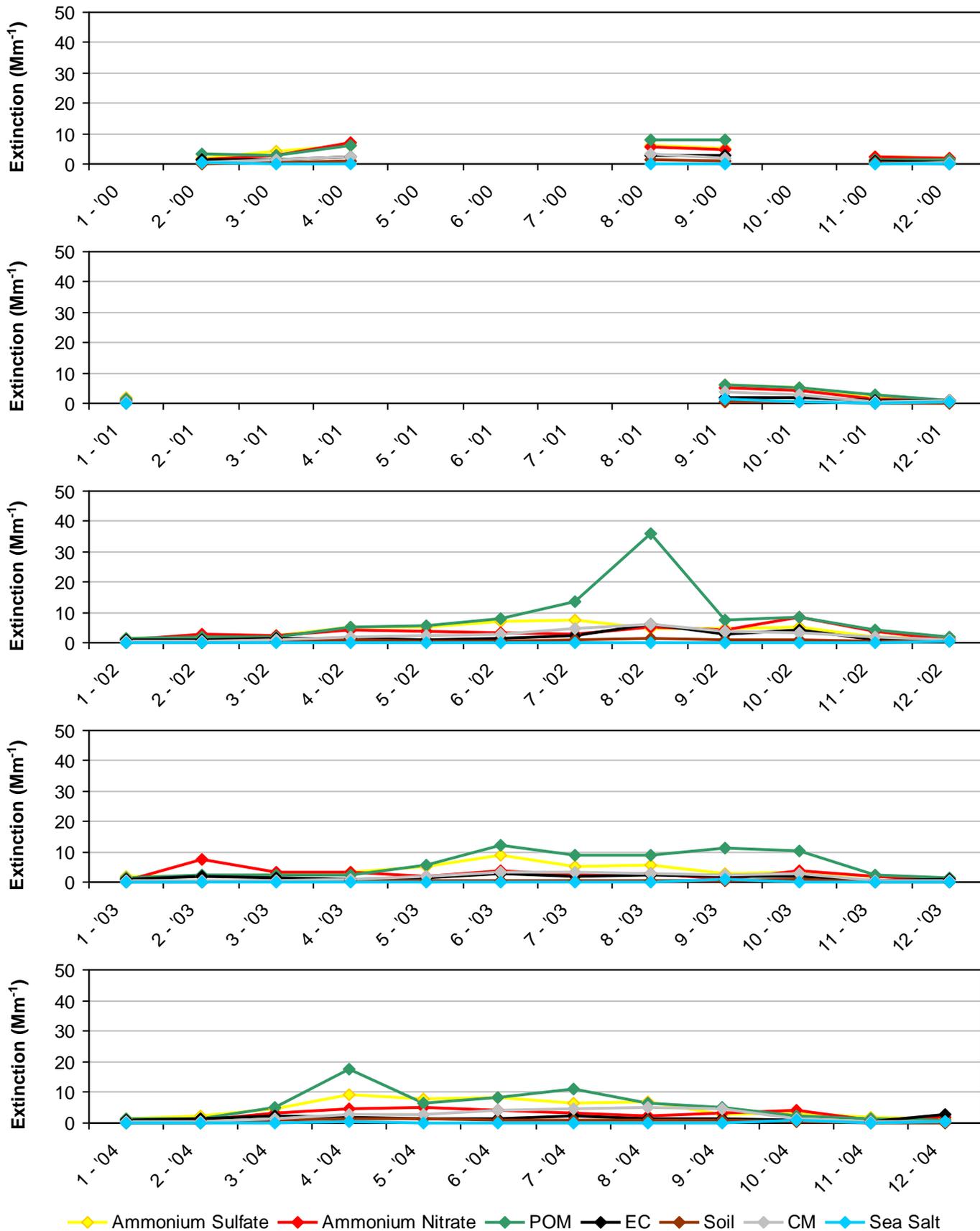
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.7-4
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
20% Least Impaired Visibility Days



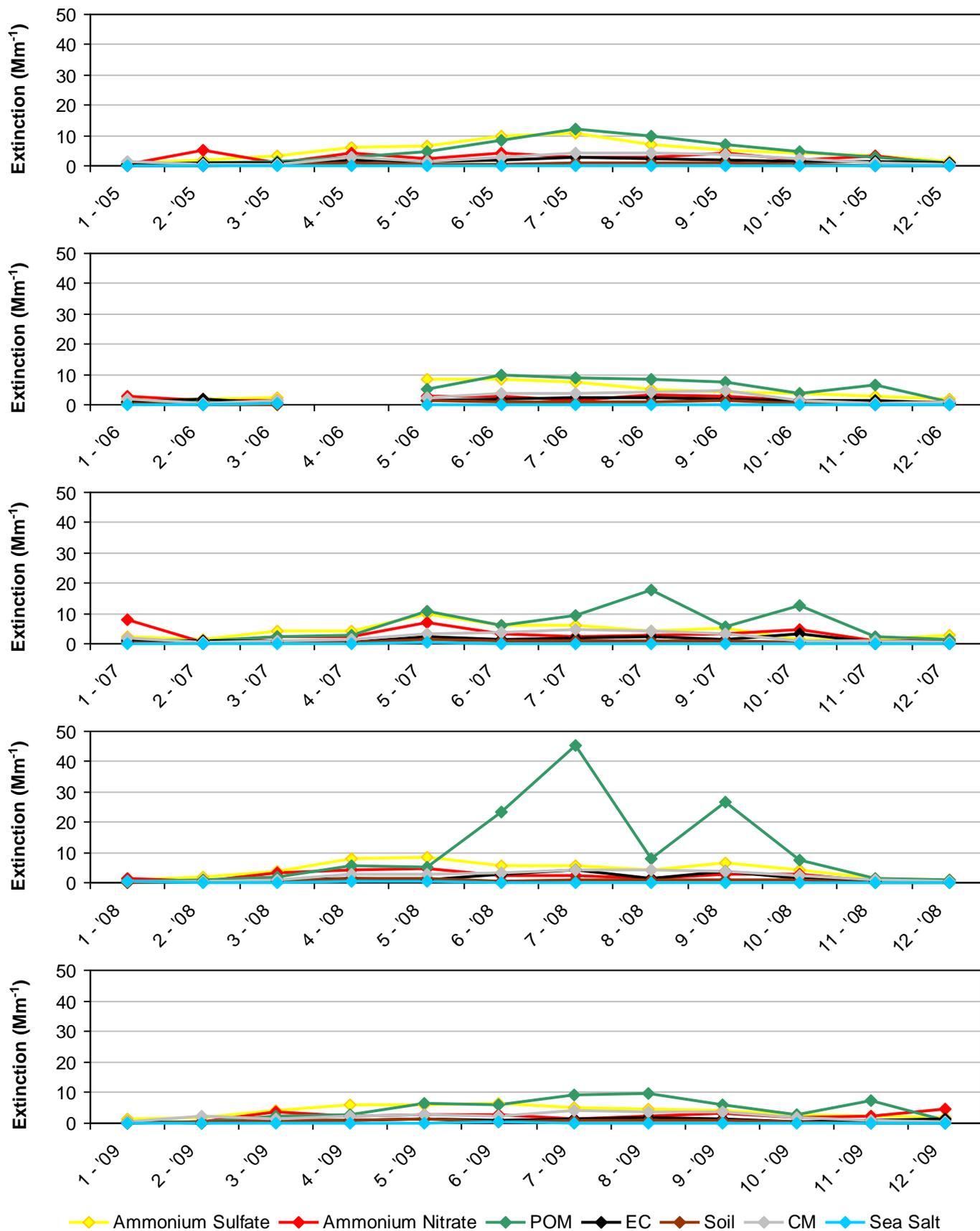
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.7-5
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



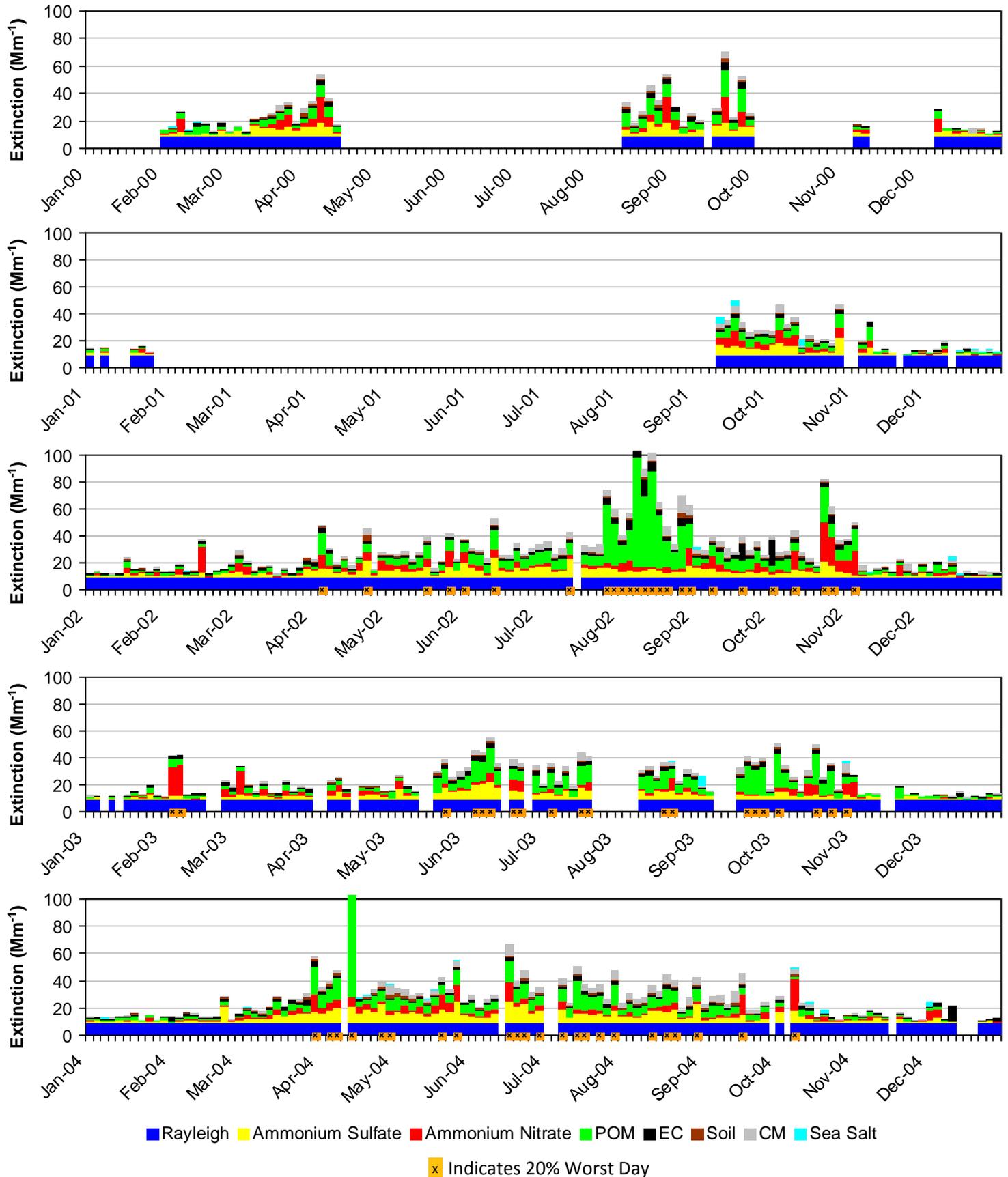
*Note that monthly averages for the years 2000 and 2001 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.7-6
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days



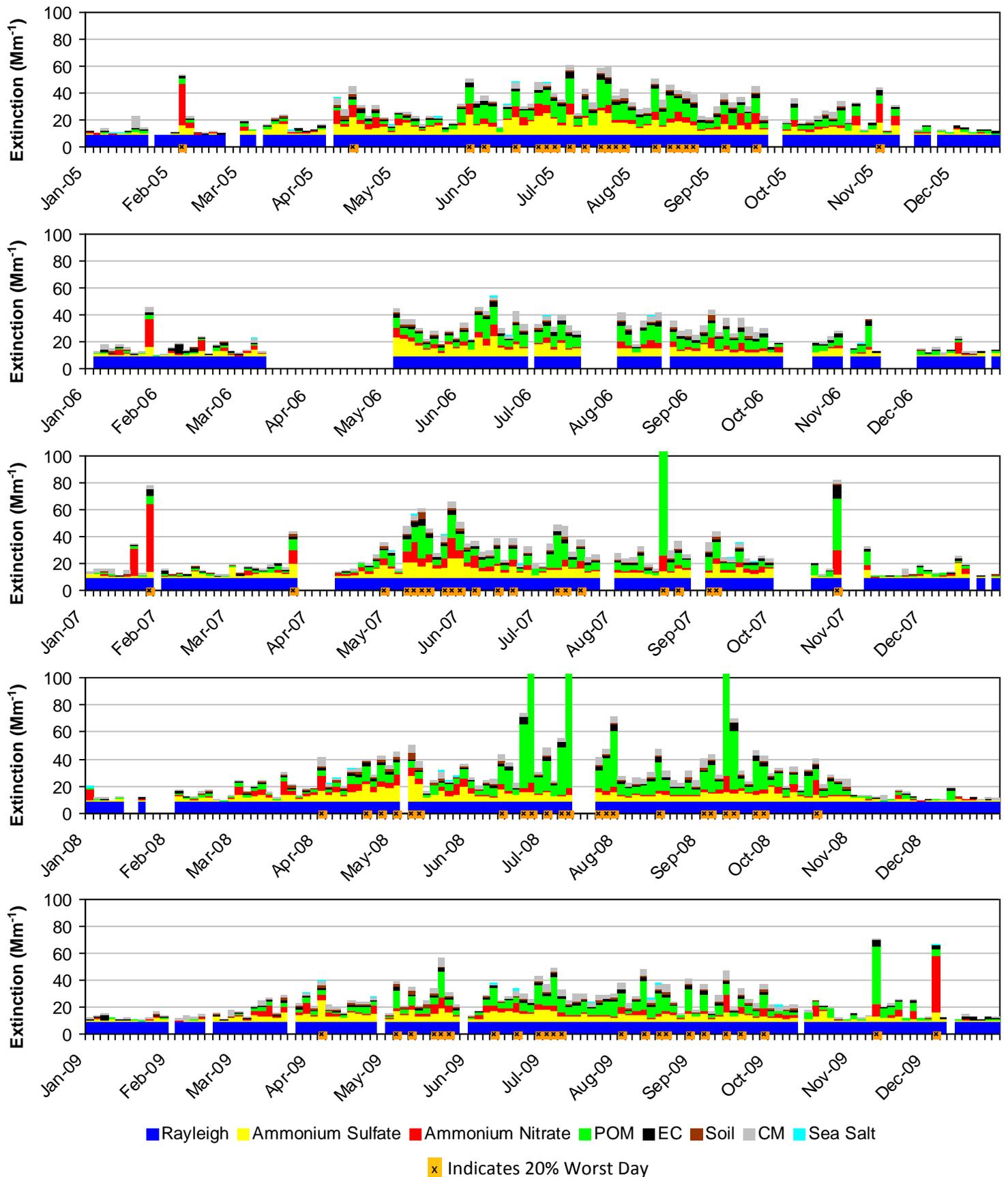
*Note that monthly averages for the year 2006 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.7-7
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the years 2000 and 2001 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.7-8
Kaiser WA, Ansel Adams WA and John Muir WA, CA (KAIS1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2006 are shown here, but this year did not meet RHR data completeness criteria.

C.8. SEQUOIA NP AND KINGS CANYON NP (SEQU1)

The following tables and figures are presented in this section for the Sequoia NP and Kings Canyon NP represented by the SEQU1 IMPROVE Monitor:

- **Table C.8-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.8-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.8-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.8-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.8-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.8-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.8-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.8-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.8-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

Table C.8-1
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
Annual Averages, 5-Year Period Averages and Trends

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	9.7	7.8	9.0	8.7	8.9	7.2	7.7	9.2	9.3	6.2	5.7	-0.2	0.2	8.8	7.9	-0.9	-10%
Worst 20% Days	25.7	24.5	27.0	26.0	23.7	23.1	23.4	24.7	24.7	21.0	20.1	-0.4	0.1	25.4	23.4	-2.0	-8%
All Days	18.0	16.6	17.9	17.5	16.8	16.0	16.4	16.9	16.9	14.4	13.4	-0.2	0.1	17.3	16.1	-1.2	-7%
Total Extinction (Mm-1)																	
Best 20% Days	27.2	22.3	25.3	24.6	24.8	21.0	22.1	25.5	26.4	18.8	17.9	-0.3	0.2	24.9	22.7	-2.2	-9%
Worst 20% Days	148.2	123.5	154.2	141.2	116.0	104.3	111.7	126.8	129.1	92.6	76.9	-3.9	0.1	136.6	112.9	-23.7	-17%
All Days	73.3	62.7	73.3	69.5	62.2	57.4	60.4	63.4	64.3	49.5	43.5	-1.5	0.1	68.2	59.0	-9.2	-14%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	3.3	2.8	3.2	2.8	2.8	3.1	3.6	3.4	3.5	2.2	2.1	0.0	0.4	3.0	3.2	0.2	7%
Worst 20% Days	20.1	14.5	14.2	15.7	18.2	20.0	22.3	14.8	14.2	13.7	14.2	-0.2	0.2	16.5	17.0	0.5	3%
All Days	12.5	9.9	10.3	10.3	11.0	11.0	11.9	9.9	9.7	8.5	8.1	-0.2	0.2	10.8	10.2	-0.6	-6%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	3.7	2.5	4.0	3.6	3.7	1.6	2.5	3.9	4.3	1.2	1.1	0.0	0.4	3.5	2.7	-0.8	-23%
Worst 20% Days	76.1	63.5	66.7	43.3	54.0	40.5	44.9	66.5	34.2	42.0	18.3	-3.7	0.0	60.7	45.6	-15.1	-25%
All Days	23.2	18.6	21.6	16.2	16.8	14.0	15.8	20.9	14.0	12.9	6.8	-0.8	0.0	19.3	15.5	-3.8	-20%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	5.0	2.9	3.8	4.0	3.7	2.4	2.6	3.5	4.1	2.0	1.8	-0.1	0.1	3.9	2.9	-1.0	-26%
Worst 20% Days	26.8	20.6	43.9	51.6	19.2	20.6	21.3	21.2	54.3	14.7	20.2	-0.5	0.4	32.4	26.4	-6.0	-19%
All Days	15.8	12.5	19.6	21.0	12.5	12.4	12.4	11.5	19.9	8.9	9.5	-0.4	0.1	16.3	13.0	-3.3	-20%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	2.0	1.1	1.4	1.5	1.4	1.1	0.9	1.3	1.1	0.7	0.6	-0.1	0.0	1.5	1.0	-0.5	-33%
Worst 20% Days	7.9	5.8	7.7	8.9	4.7	5.9	5.6	6.0	7.5	3.7	4.4	-0.3	0.2	7.0	5.7	-1.3	-19%
All Days	5.0	3.5	4.1	4.6	3.2	3.7	3.5	3.5	3.5	2.3	2.2	-0.2	0.0	4.1	3.3	-0.8	-20%
Soil Extinction (Mm-1)																	
Best 20% Days	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.3	0.3	0.2	0.1	0.0	0.2	0.2	0.2	0.0	0%
Worst 20% Days	0.8	0.8	1.1	1.4	1.2	0.6	1.1	0.9	1.3	1.1	1.2	0.0	0.2	1.1	1.0	-0.1	-9%
All Days	0.7	0.8	0.9	0.8	1.1	0.5	0.9	0.8	1.0	0.9	0.8	0.0	0.2	0.9	0.8	-0.1	-11%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	1.9	1.5	1.6	1.5	1.7	1.3	1.1	1.9	1.7	1.3	1.2	0.0	0.2	1.6	1.4	-0.2	-13%
Worst 20% Days	5.6	7.0	9.4	9.2	7.1	5.5	5.1	6.1	6.4	5.8	7.4	-0.2	0.2	7.7	5.8	-1.9	-25%
All Days	5.0	6.1	5.8	5.6	6.2	4.5	4.7	5.6	4.9	4.7	4.8	-0.1	0.2	5.7	4.9	-0.8	-14%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	0.2	0.3	0.1	0.0	0.2	0.2	0.3	0.3	0.4	0.1	0.2	0.0	0.1	0.1	0.3	0.2	>100%
Worst 20% Days	0.1	0.2	0.3	0.1	0.5	0.2	0.4	0.3	0.2	0.5	0.2	0.0	0.2	0.2	0.3	0.1	50%
All Days	0.1	0.3	0.1	0.1	0.4	0.2	0.3	0.2	0.3	0.3	0.2	0.0	0.1	0.2	0.3	0.1	50%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

"---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.8-1
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

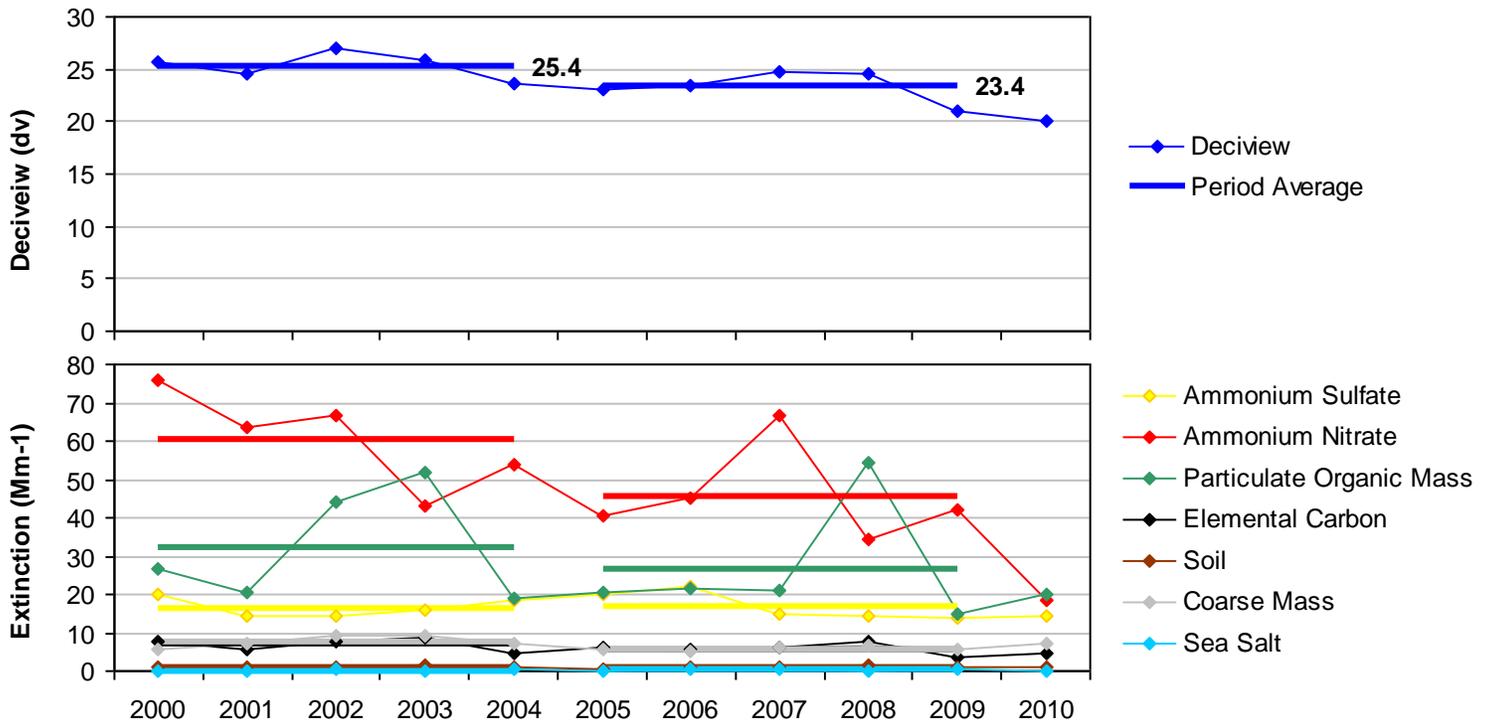


Figure C.8-2
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

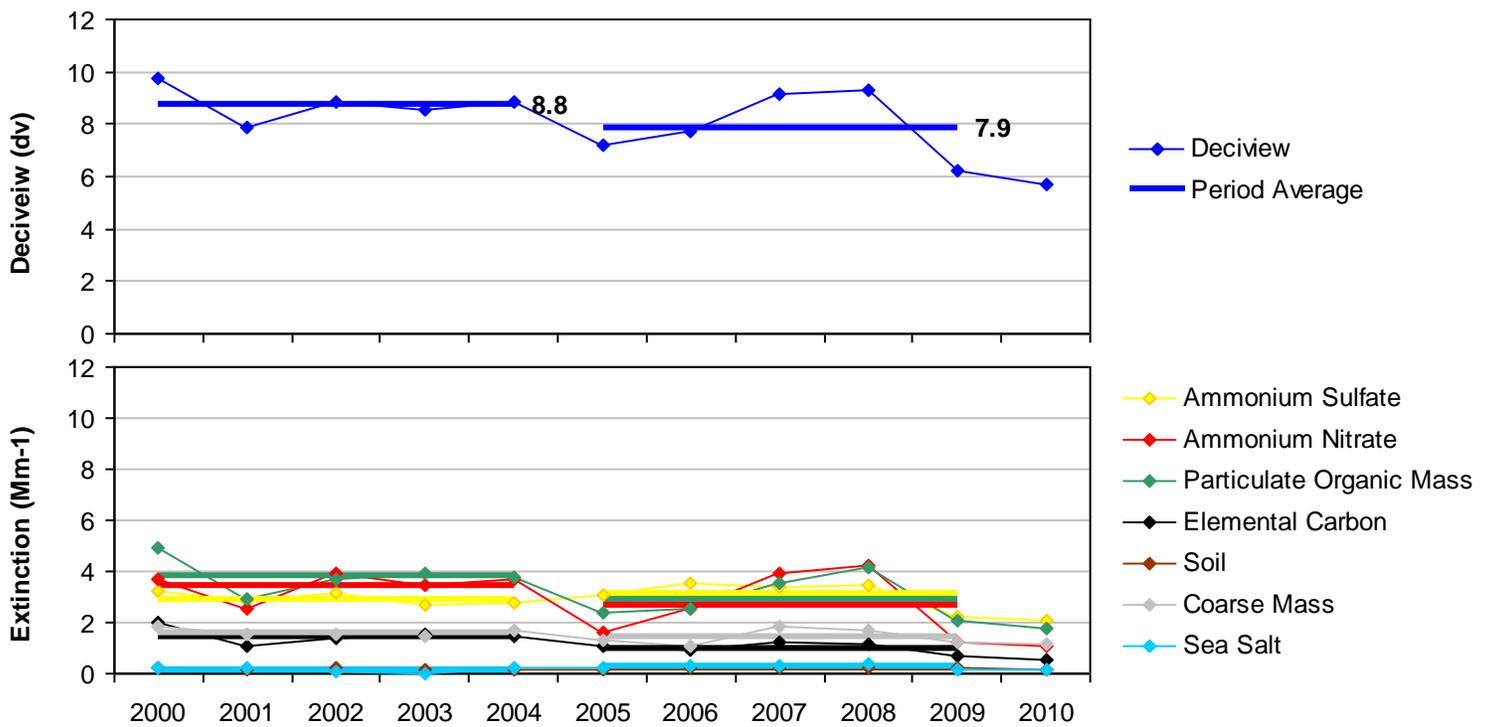


Figure C.8-3
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
20% Most Impaired Visibility Days

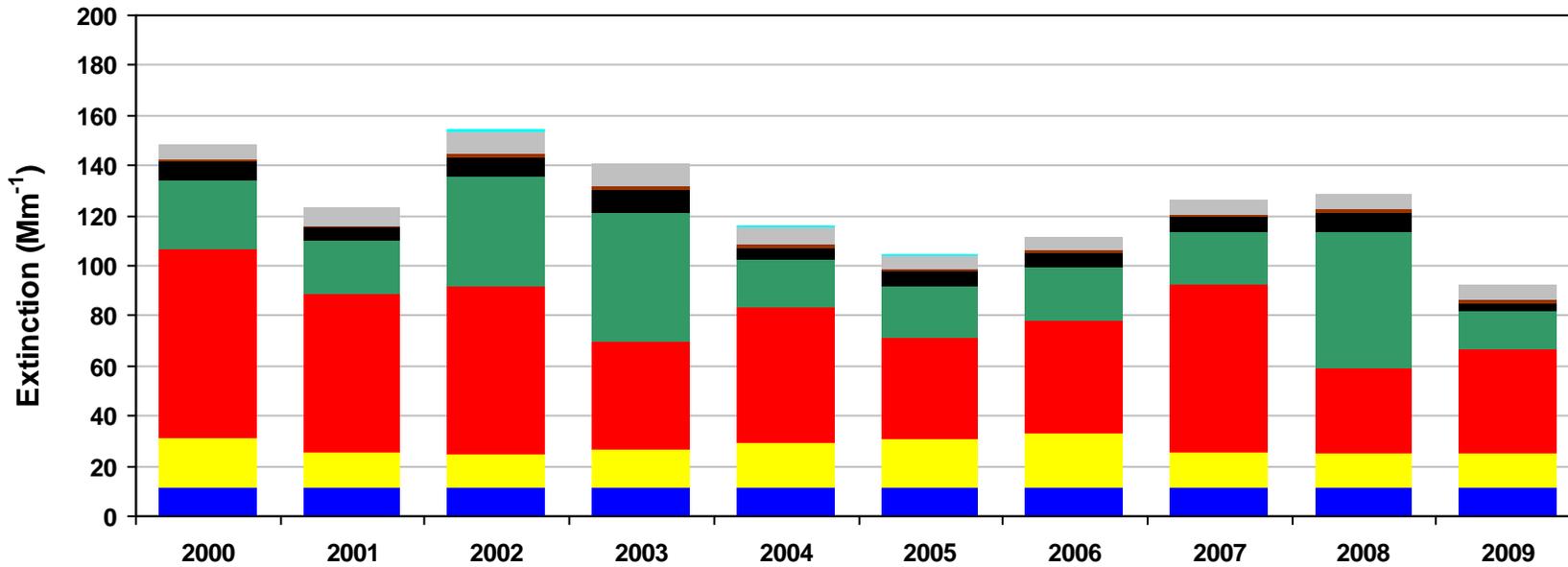
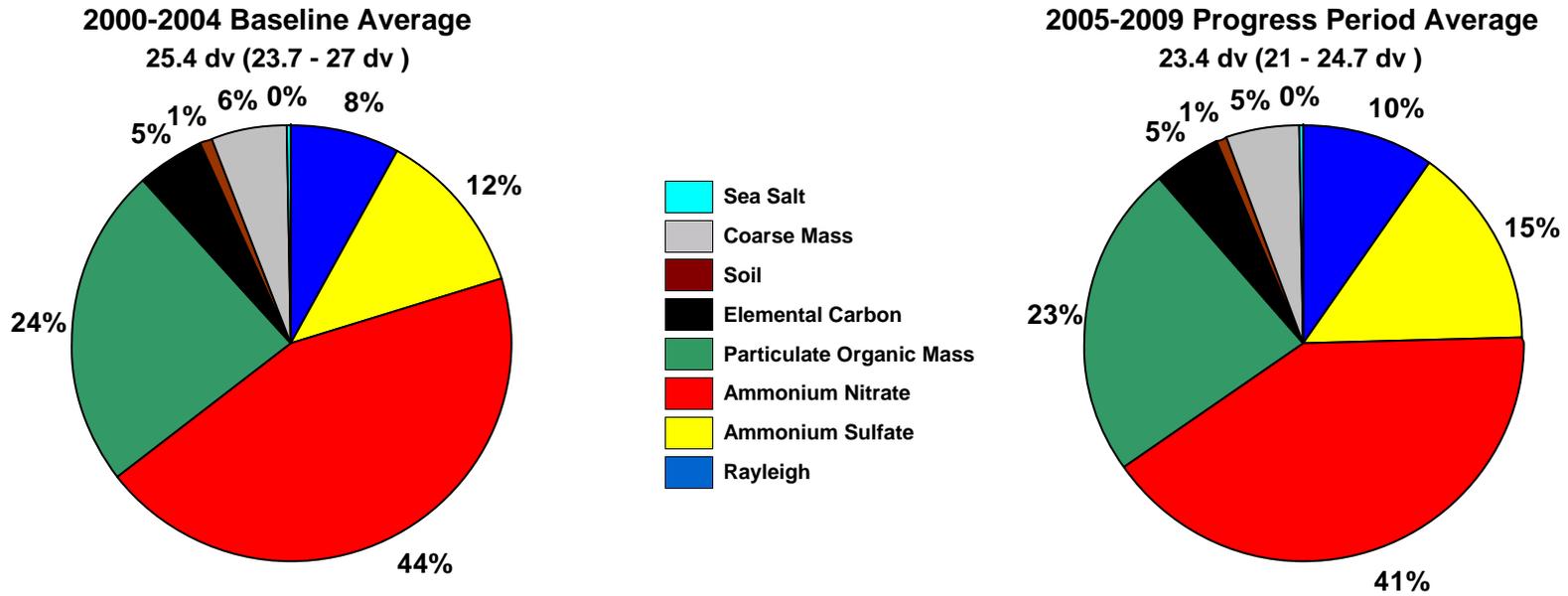


Figure C.8-4
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
20% Least Impaired Visibility Days

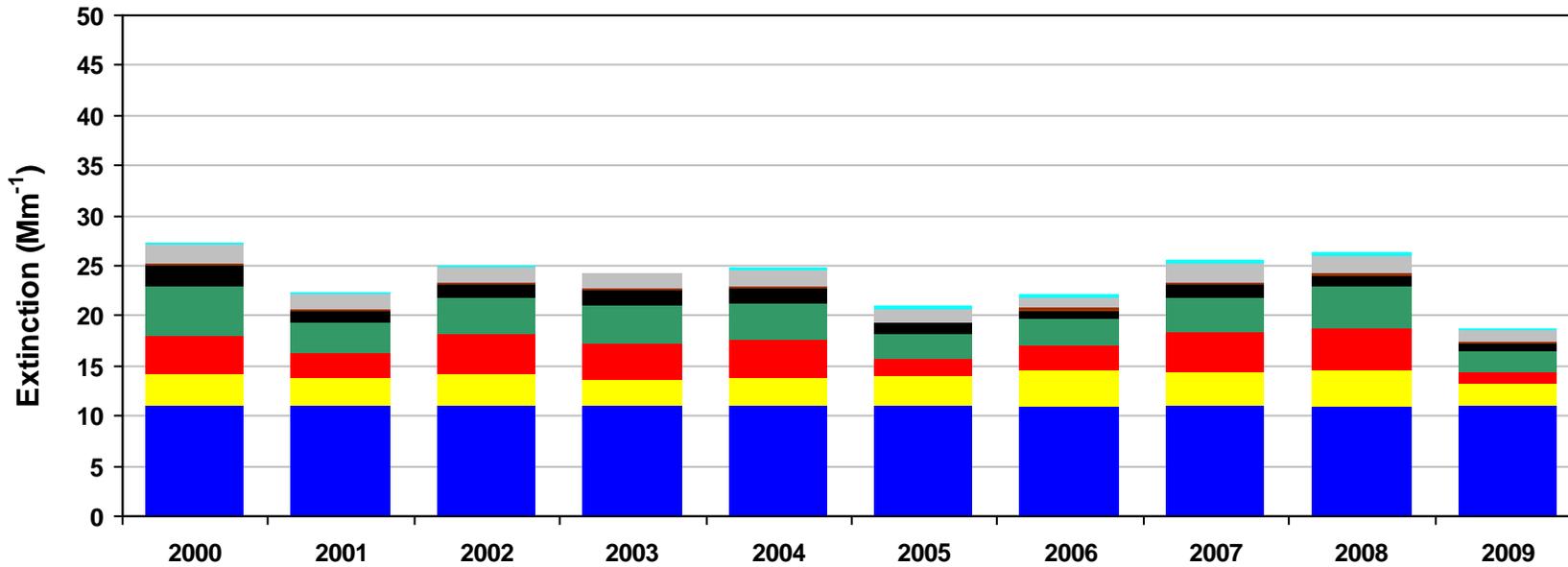
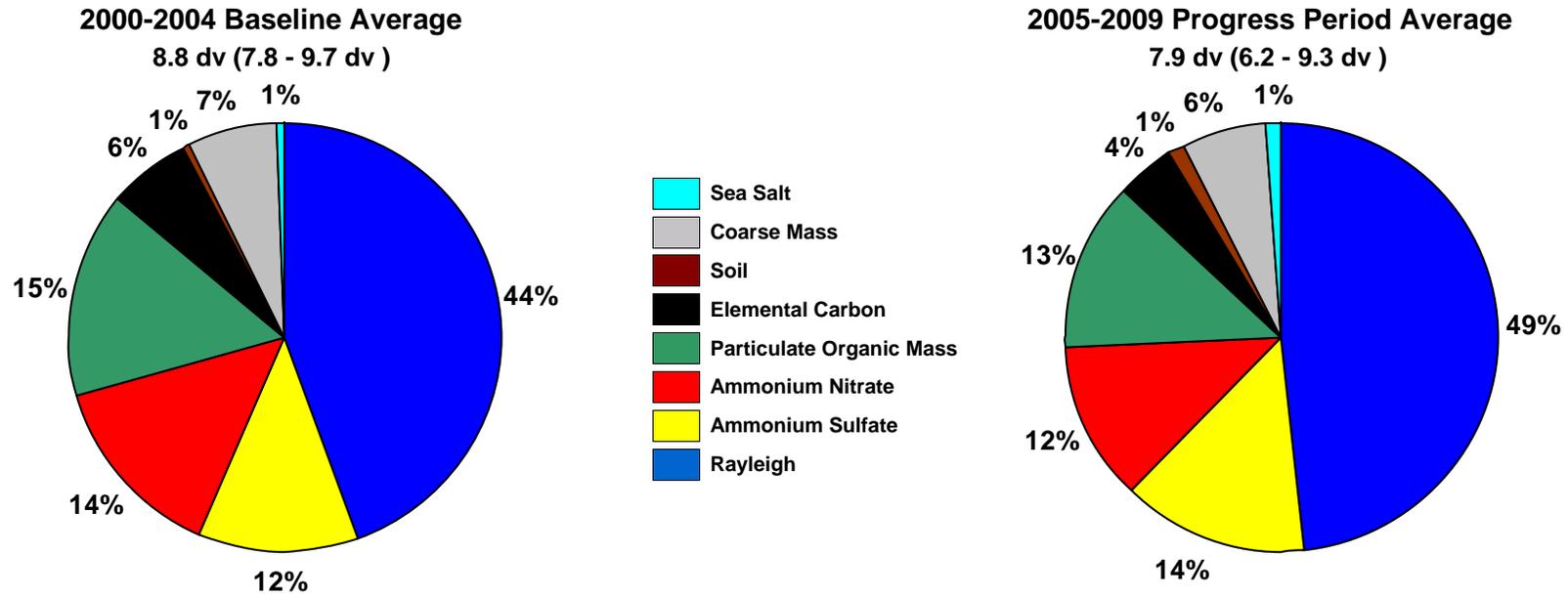


Figure C.8-5
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days

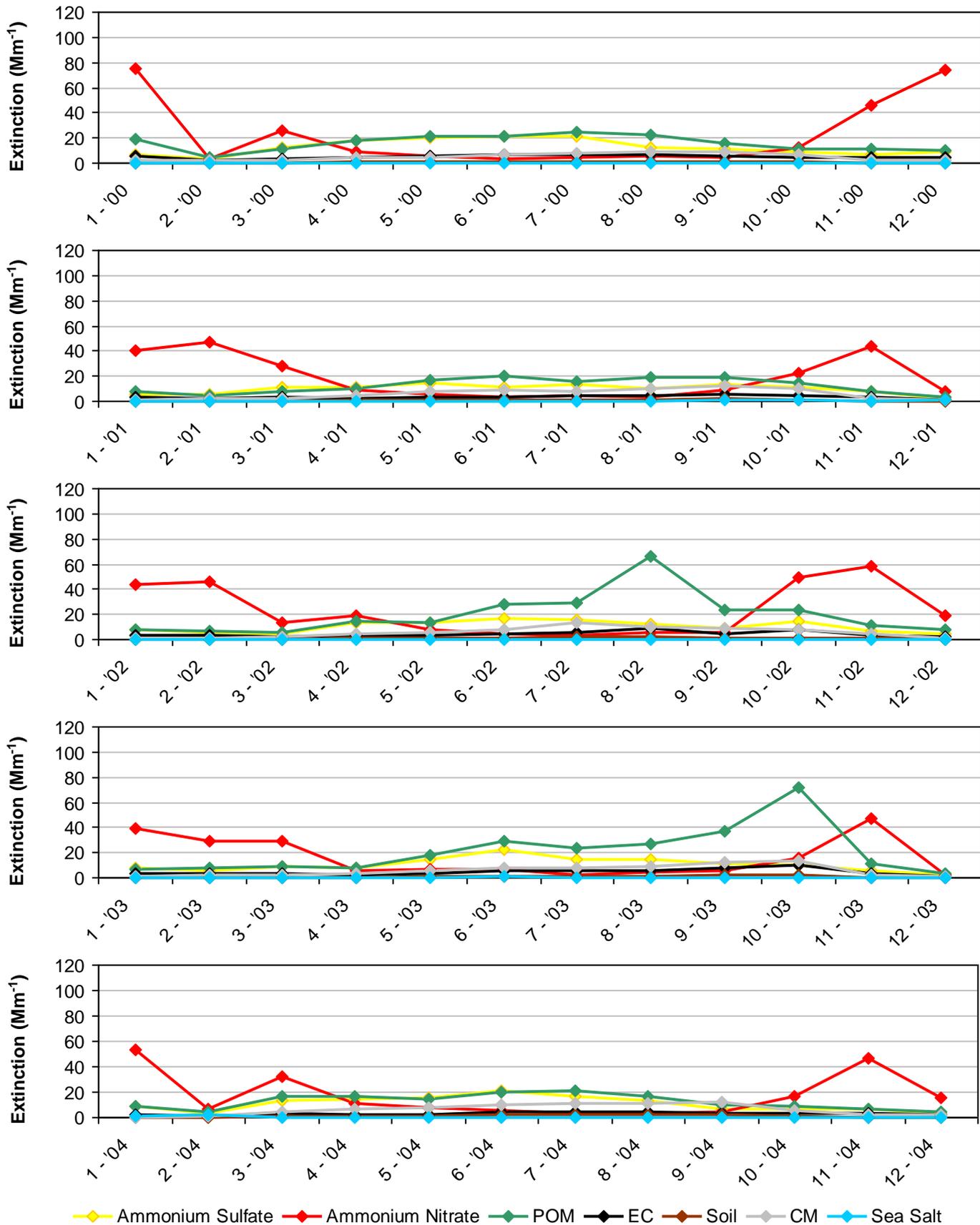


Figure C.8-6
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

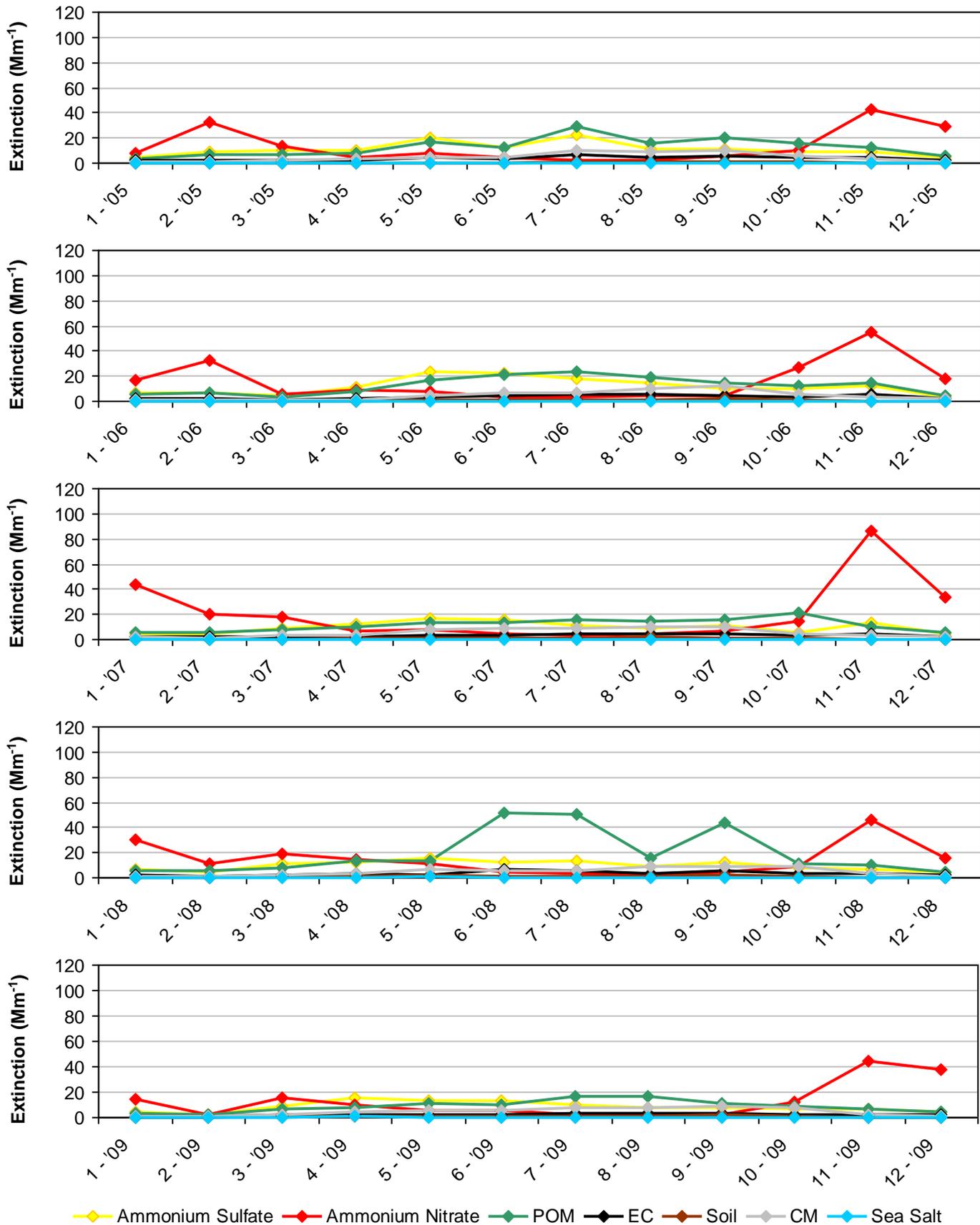


Figure C.8-7
Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
2000-2004 Progress Period Extinction, All Sampled Days

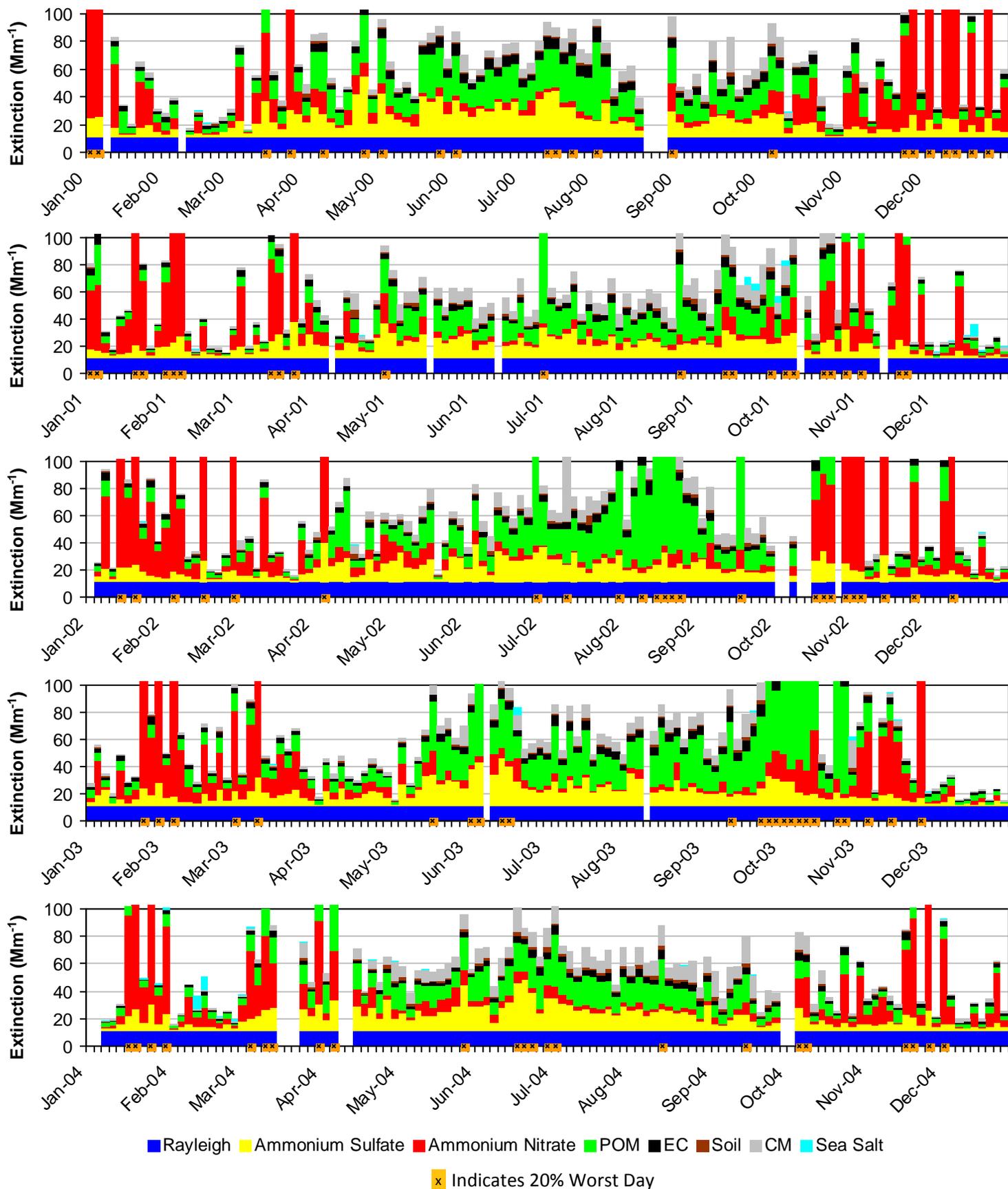
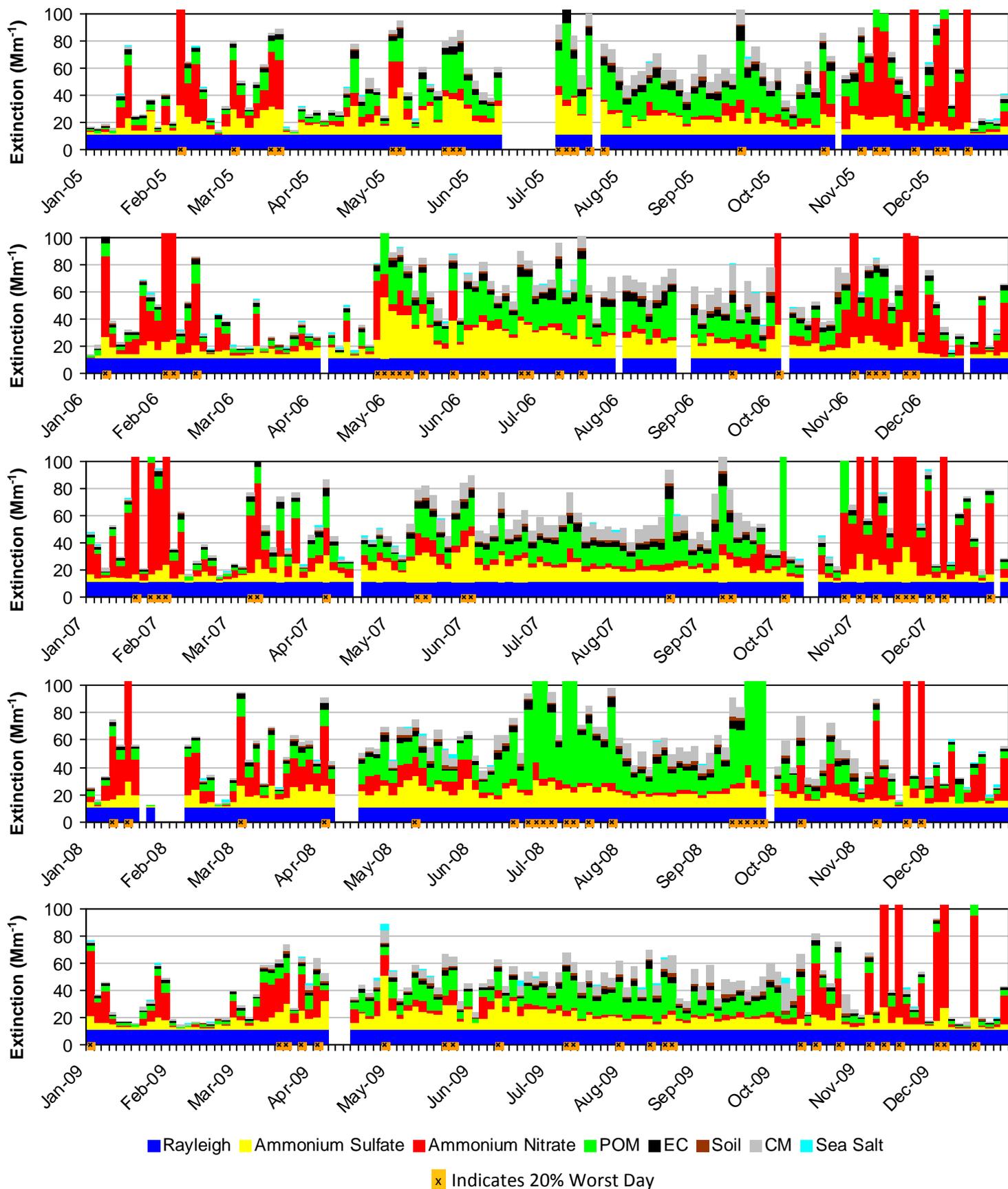


Figure C.8-8
 Sequoia NP and Kings Canyon NP, CA (SEQU1 Site)
 2005-2009 Progress Period Extinction, All Sampled Days



C.9. YOSEMITE NP AND EMIGRANT WA (YOSE1)

The following tables and figures are presented in this section for the Yosemite NP and Emigrant WA represented by the YOSE1 IMPROVE Monitor:

- **Table C.9-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.9-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.9-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.9-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.9-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.9-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.9-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.9-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.9-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.9-1
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P -B)	Percent Change
Deciview (dv)																	
Best 20% Days	4.2	2.8	3.7	3.2	3.1	3.2	3.4	3.9	2.0	2.3	1.8	-0.1	0.2	3.4	2.9	-0.5	-15%
Worst 20% Days	16.6	16.3	20.2	18.0	17.1	15.7	15.9	17.7	18.6	16.5	12.8	0.0	0.5	17.6	16.9	-0.7	-4%
All Days	10.4	9.7	11.3	10.4	9.9	9.6	9.7	10.1	9.4	8.8	7.3	-0.2	0.0	10.4	9.5	-0.9	-9%
Total Extinction (Mm-1)																	
Best 20% Days	15.3	13.4	14.6	13.8	13.8	13.9	14.1	14.9	12.2	12.7	12.0	-0.2	0.2	14.2	13.5	-0.7	-5%
Worst 20% Days	61.1	52.9	78.5	67.1	63.9	49.2	49.5	67.1	84.5	59.7	36.4	0.3	0.4	64.7	62.0	-2.7	-4%
All Days	32.7	29.8	37.4	33.8	31.9	29.0	29.1	32.5	34.5	28.8	22.5	-0.2	0.2	33.1	30.8	-2.3	-7%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	1.8	1.2	1.4	1.2	1.2	1.3	1.7	1.8	1.0	1.2	0.8	0.0	0.3	1.4	1.4	0.0	0%
Worst 20% Days	9.5	7.7	7.4	6.4	8.5	10.2	10.9	8.2	8.7	8.0	6.7	0.1	0.4	7.9	9.2	1.3	17%
All Days	5.4	4.8	4.9	4.6	5.0	6.0	5.8	4.7	4.7	4.3	3.5	-0.1	0.2	4.9	5.1	0.2	4%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	0.5	0.6	0.7	0.5	0.5	0.8	0.4	0.6	0.2	0.2	0.2	0.0	0.2	0.6	0.5	-0.1	-17%
Worst 20% Days	15.6	7.4	8.3	5.7	3.5	4.6	5.5	13.4	3.2	5.8	2.2	-0.5	0.1	8.1	6.5	-1.6	-20%
All Days	4.9	3.2	3.6	2.7	1.9	2.2	2.1	4.2	1.7	2.1	1.2	-0.2	0.0	3.3	2.4	-0.9	-27%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	1.6	0.6	1.2	1.3	1.1	0.9	0.9	1.1	0.4	0.4	0.3	-0.1	0.0	1.2	0.8	-0.4	-33%
Worst 20% Days	16.1	19.0	42.4	35.5	31.8	16.4	14.5	25.5	50.2	26.6	8.3	0.9	0.4	29.0	26.7	-2.3	-8%
All Days	7.3	7.2	13.5	11.8	9.9	6.7	6.8	8.8	13.1	8.0	3.6	-0.1	0.5	9.9	8.7	-1.2	-12%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	0.5	0.2	0.4	0.3	0.4	0.4	0.4	0.4	0.1	0.2	0.2	0.0	0.1	0.4	0.3	-0.1	-25%
Worst 20% Days	4.6	4.0	5.5	5.2	4.6	3.8	3.6	5.0	6.7	4.2	1.9	0.0	0.4	4.8	4.6	-0.2	-4%
All Days	2.2	1.8	2.3	2.2	1.9	1.9	1.9	2.0	2.1	1.6	0.9	0.0	0.1	2.1	1.9	-0.2	-10%
Soil Extinction (Mm-1)																	
Best 20% Days	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.5	0.1	0.1	0.0	0%
Worst 20% Days	0.8	1.2	0.8	0.6	1.1	0.5	1.3	0.8	1.1	0.9	1.2	0.0	0.4	0.9	0.9	0.0	0%
All Days	0.4	0.6	0.5	0.3	0.6	0.3	0.7	0.5	0.6	0.5	0.5	0.0	0.4	0.5	0.5	0.0	0%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	0.5	0.5	0.5	0.4	0.4	0.2	0.3	0.7	0.3	0.5	0.4	0.0	0.2	0.5	0.4	-0.1	-20%
Worst 20% Days	4.5	3.6	4.0	3.4	4.4	3.5	3.6	4.2	4.5	4.0	5.8	0.0	0.4	4.0	4.0	0.0	0%
All Days	2.2	2.0	2.5	2.0	2.5	1.9	1.9	2.3	2.3	2.2	2.7	0.0	0.5	2.2	2.1	-0.1	-5%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0%
Worst 20% Days	0.0	0.0	0.1	0.3	0.1	0.1	0.2	0.1	0.1	0.3	0.2	0.0	0.0	0.1	0.1	0.0	0%
All Days	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.4	0.1	0.1	0.0	0%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

"---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.9-1
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

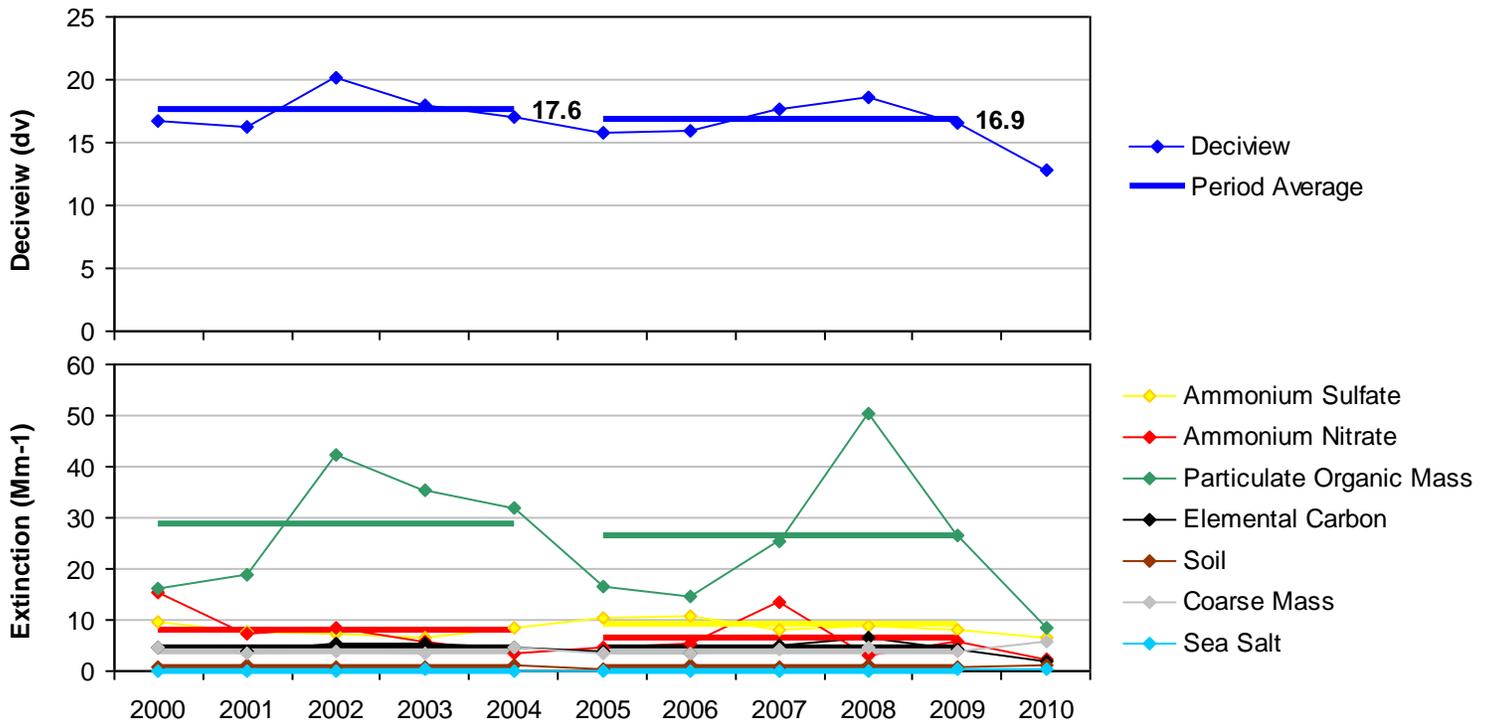


Figure C.9-2
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

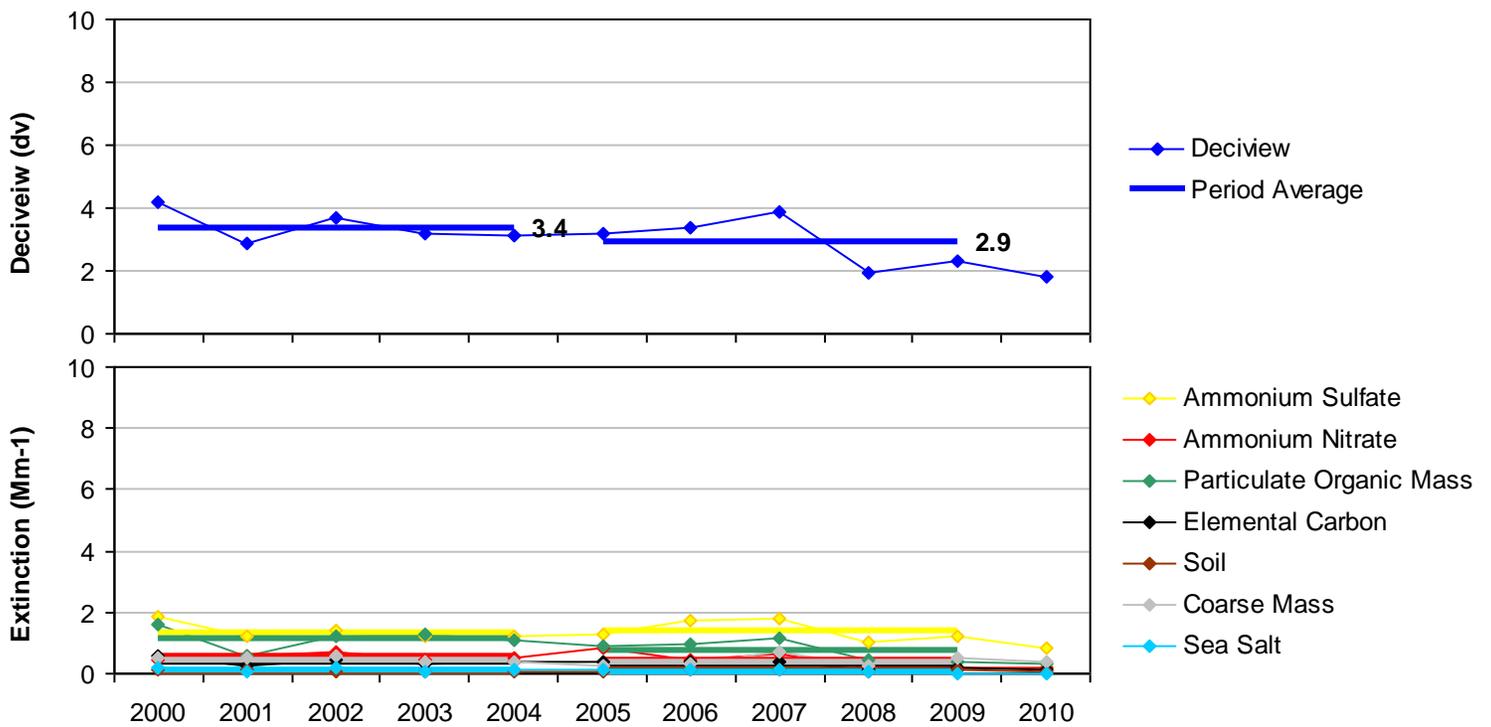
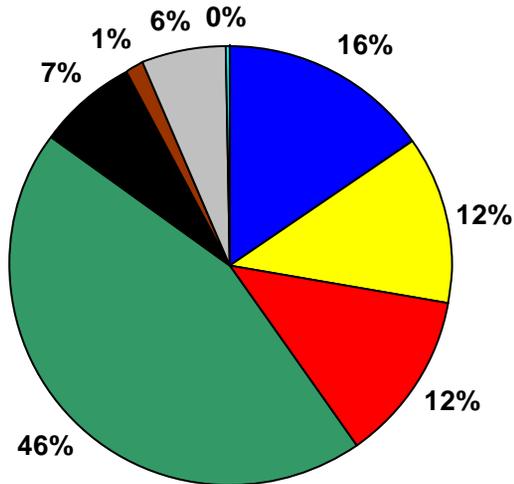


Figure C.9-3
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
20% Most Impaired Visibility Days

2000-2004 Baseline Average
 17.6 dv (16.3 - 20.2 dv)



2005-2009 Progress Period Average
 16.9 dv (15.7 - 18.6 dv)

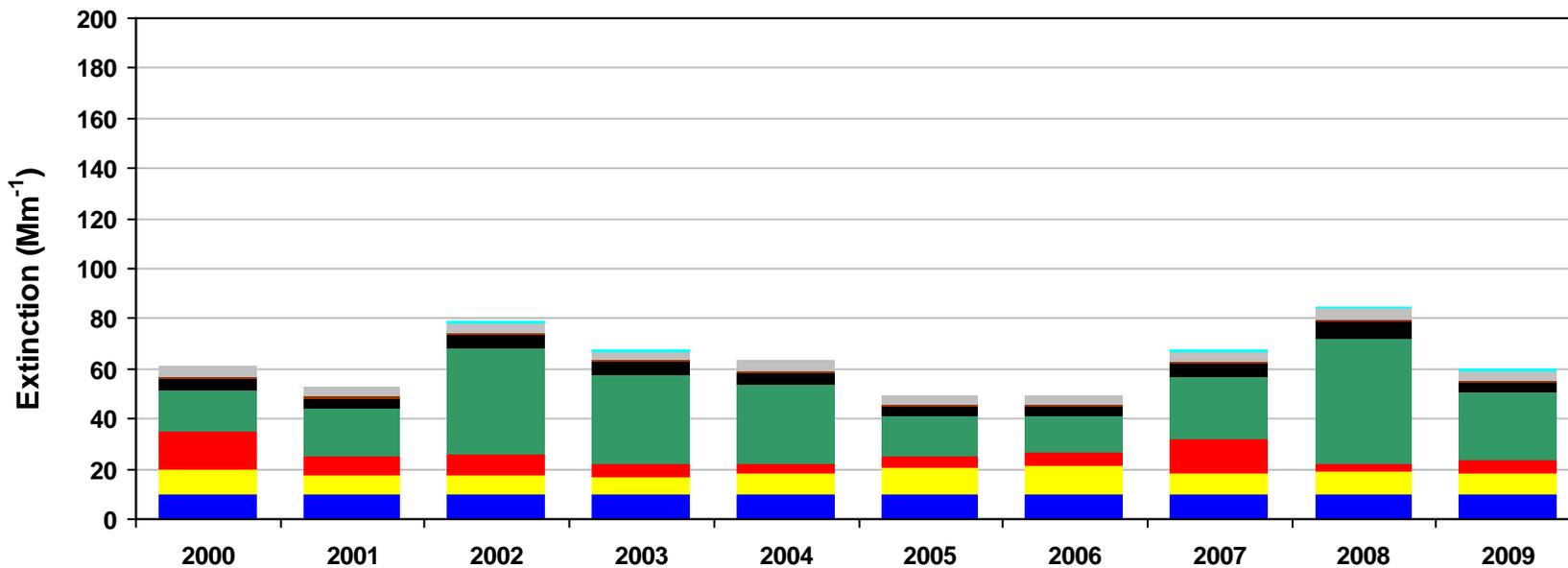
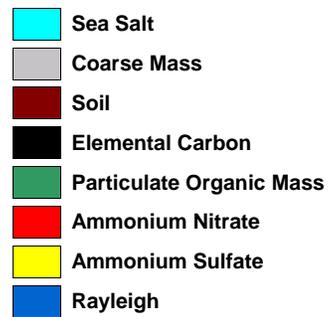
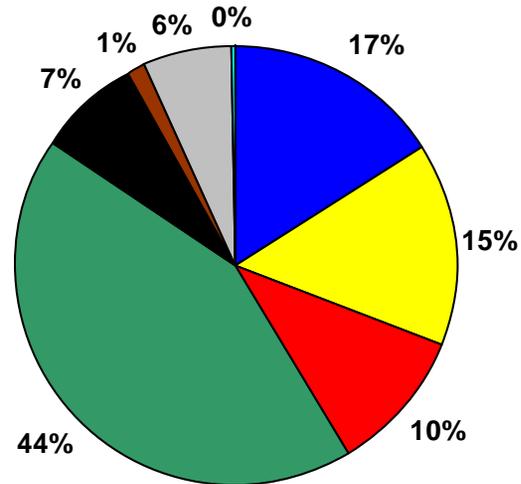


Figure C.9-4
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
20% Least Impaired Visibility Days

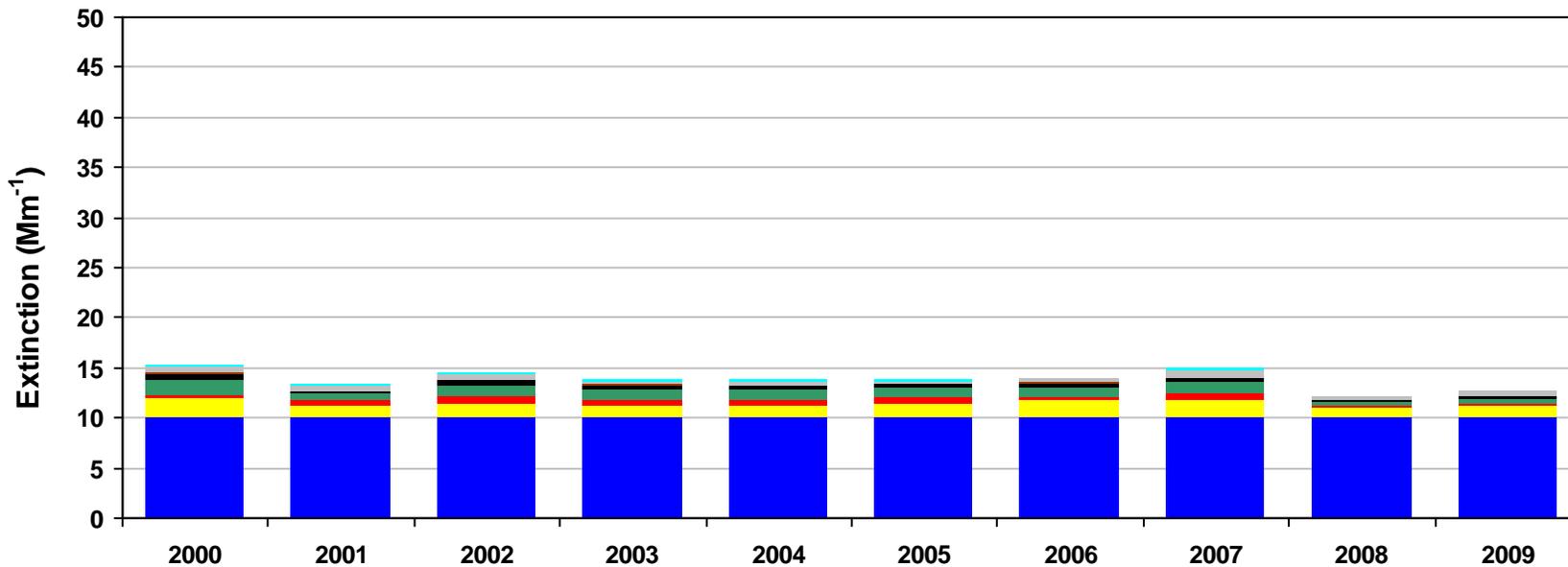
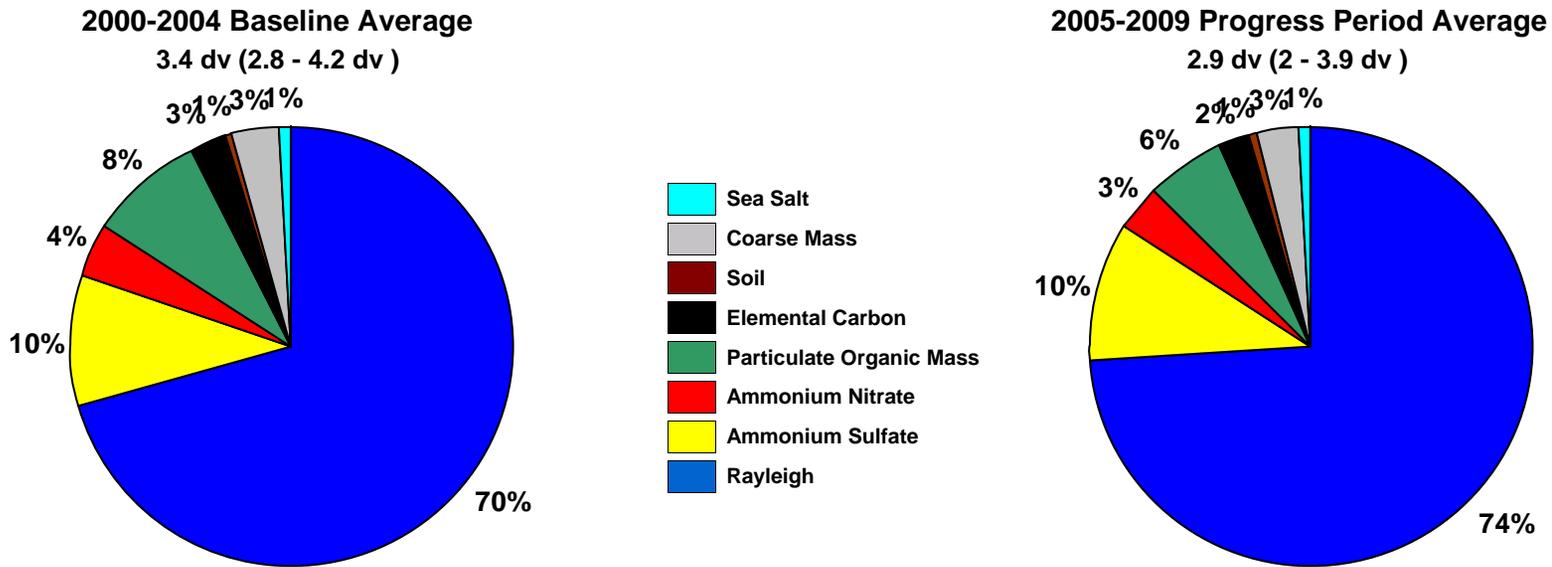


Figure C.9-5
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days

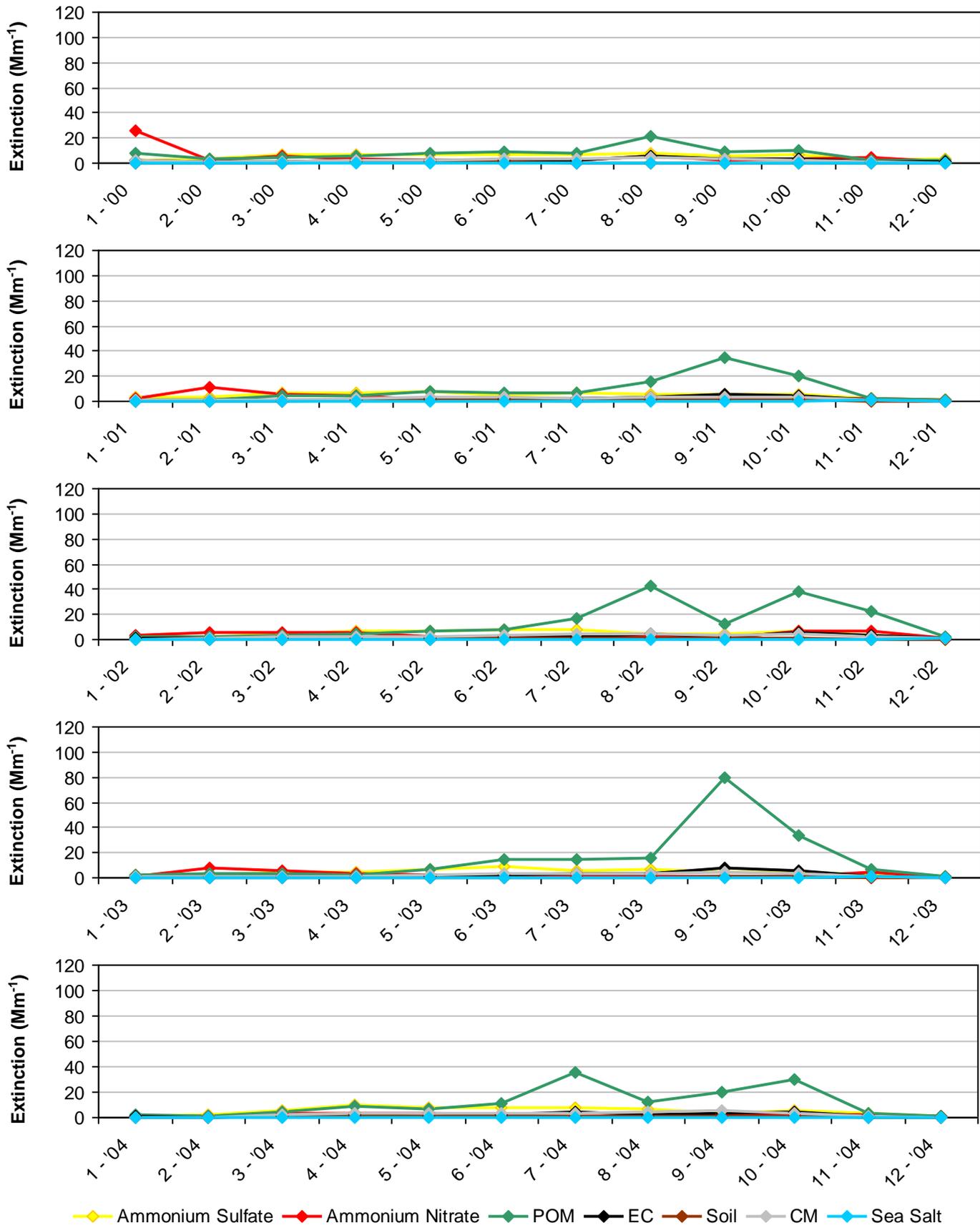


Figure C.9-6
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

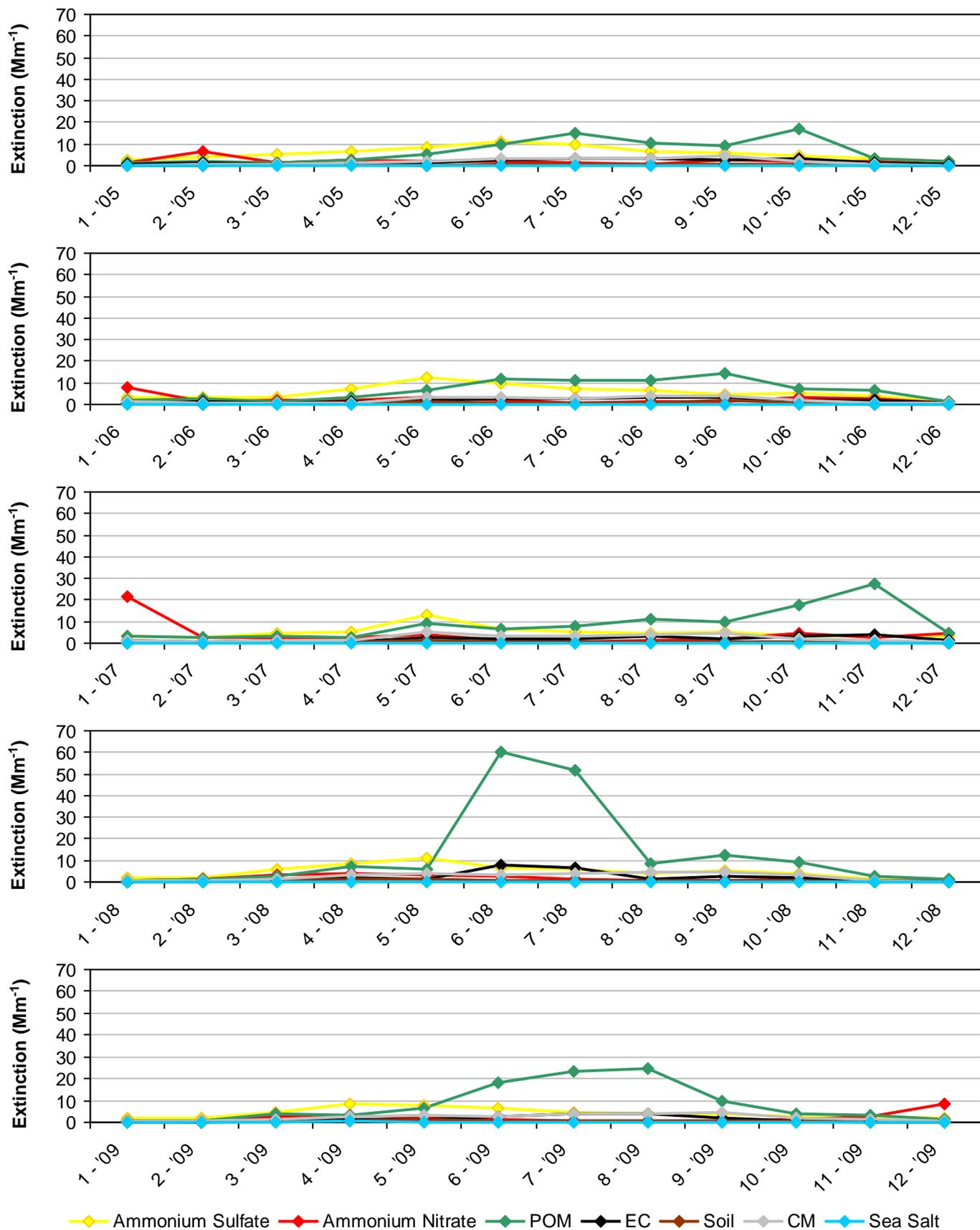


Figure C.9-7
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
2000-2004 Progress Period Extinction, All Sampled Days

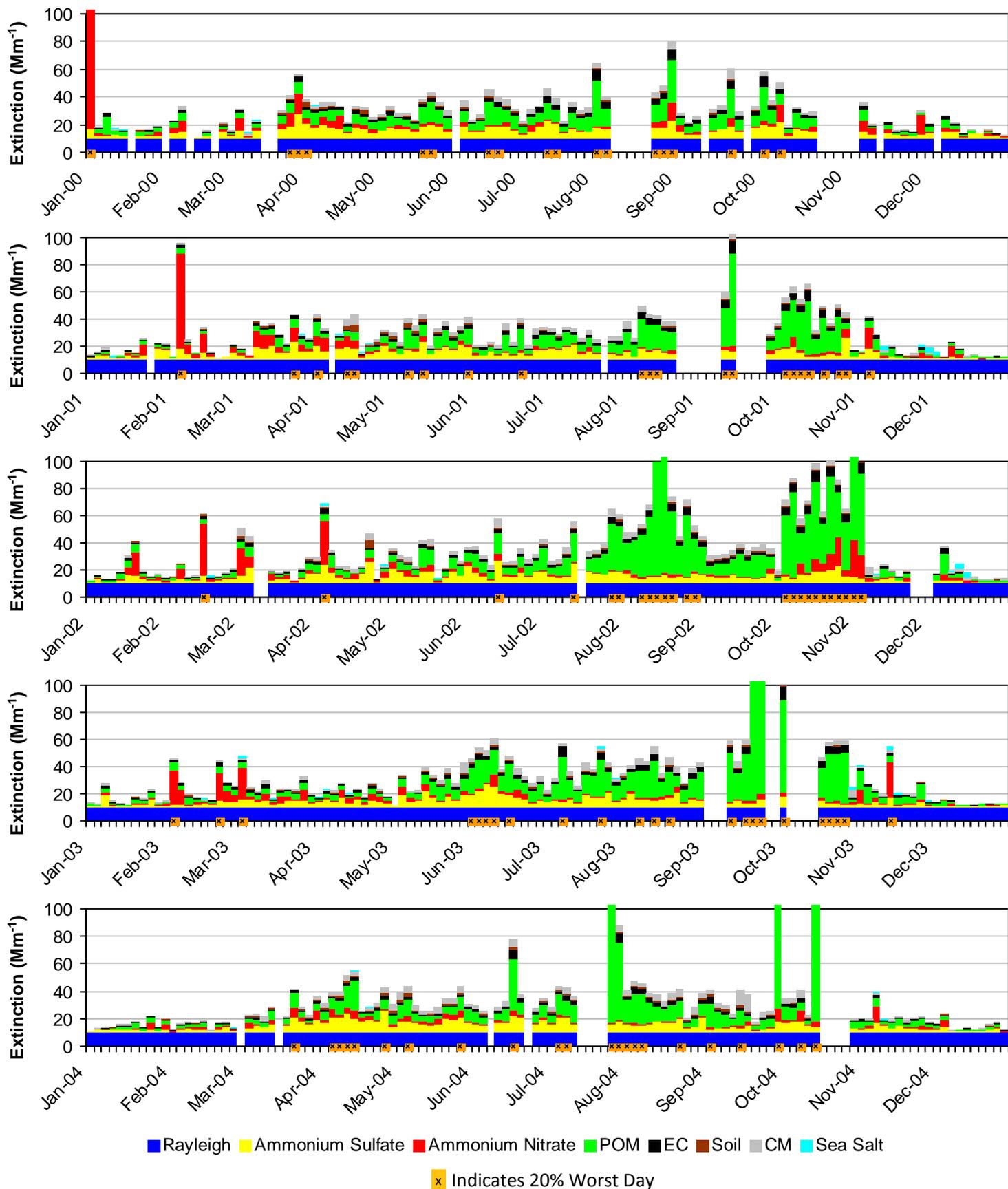
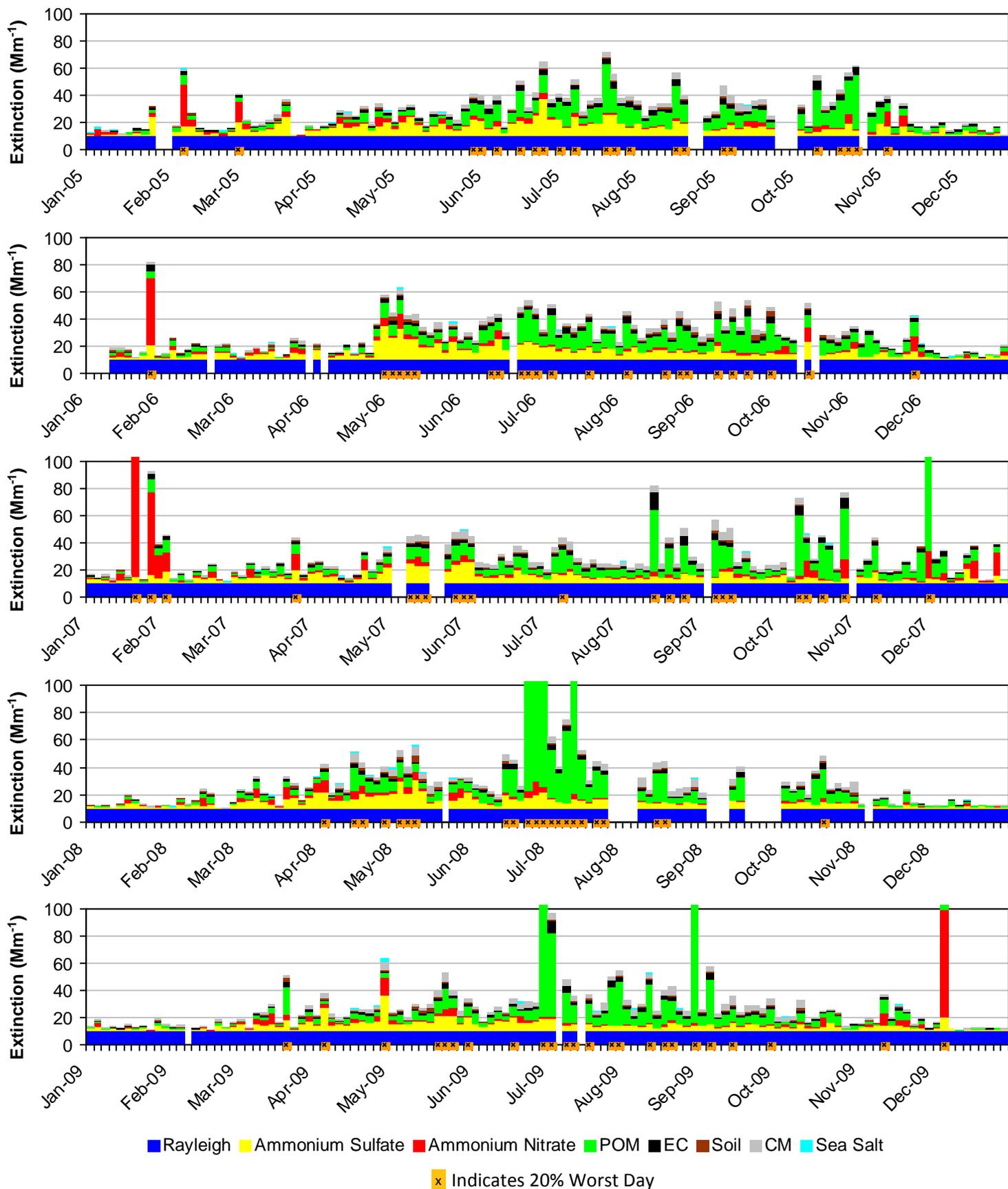


Figure C.9-8
Yosemite NP and Emigrant WA, CA (YOSE1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



C.10. AGUA TIBIA WA (AGTI1)

The following tables and figures are presented in this section for the Agua Tibia WA represented by the AGTI1 IMPROVE Monitor:

- **Table C.10-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.10-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.10-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.10-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.10-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.10-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.10-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.10-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.10-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

Table C.10-1
Agua Tibia WA, CA (AGTI1 Site)
Annual Averages, 5-Year Period Averages and Trends

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	10.2	10.4	9.4	8.4	6.9	---	9.0	7.5	6.3	6.8	-0.5	0.0	9.6	7.4	-2.2	-23%
Worst 20% Days	---	22.9	24.9	24.0	22.2	21.2	---	22.0	21.0	19.4	18.4	-0.6	0.0	23.5	20.9	-2.6	-11%
All Days	---	17.2	17.9	17.2	16.2	15.0	---	16.4	14.9	13.4	13.0	-0.5	0.0	17.1	14.9	-2.2	-13%
Total Extinction (Mm-1)																	
Best 20% Days	---	28.3	28.8	26.2	23.5	20.2	---	25.1	21.4	19.1	19.8	-1.2	0.0	26.7	21.4	-5.3	-20%
Worst 20% Days	---	99.8	121.7	114.7	93.2	84.3	---	92.7	82.5	70.2	63.4	-5.7	0.0	107.4	82.4	-25.0	-23%
All Days	---	61.6	67.9	63.9	56.5	50.5	---	57.1	49.3	42.2	40.0	-2.8	0.0	62.5	49.8	-12.7	-20%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	3.9	4.8	3.3	3.6	2.6	---	3.1	2.1	2.2	2.0	-0.3	0.0	3.9	2.5	-1.4	-36%
Worst 20% Days	---	29.7	34.2	36.9	26.5	33.8	---	24.3	23.3	22.0	18.4	-1.1	0.0	31.8	25.8	-6.0	-19%
All Days	---	17.3	17.4	17.0	15.3	15.4	---	14.4	12.5	11.0	9.2	-0.7	0.0	16.8	13.3	-3.5	-21%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	4.5	3.8	3.1	1.7	1.2	---	2.2	1.6	1.3	1.3	-0.4	0.0	3.3	1.6	-1.7	-52%
Worst 20% Days	---	29.5	37.6	23.5	29.1	15.2	---	30.8	19.1	14.3	13.0	-2.2	0.1	29.9	19.9	-10.0	-33%
All Days	---	14.0	16.7	12.6	12.4	8.6	---	13.7	8.7	6.7	6.4	-0.9	0.0	13.9	9.4	-4.5	-32%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	3.3	3.0	3.2	2.5	1.7	---	2.4	1.9	1.2	1.7	-0.3	0.0	3.0	1.8	-1.2	-40%
Worst 20% Days	---	12.8	19.6	27.1	10.7	9.9	---	10.1	13.5	9.8	8.7	-0.6	0.1	17.5	10.8	-6.7	-38%
All Days	---	8.0	9.9	11.8	6.8	6.2	---	6.4	6.8	4.9	4.9	-0.4	0.0	9.1	6.1	-3.0	-33%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	2.0	2.1	2.1	1.3	1.3	---	1.6	1.3	0.8	0.9	-0.1	0.0	1.9	1.2	-0.7	-37%
Worst 20% Days	---	6.5	6.6	7.9	4.5	6.2	---	4.9	3.5	3.8	3.4	-0.4	0.0	6.4	4.6	-1.8	-28%
All Days	---	4.4	4.3	4.9	3.2	4.0	---	3.2	2.5	2.1	2.2	-0.3	0.0	4.2	2.9	-1.3	-31%
Soil Extinction (Mm-1)																	
Best 20% Days	---	0.3	0.6	0.5	0.4	0.2	---	0.6	0.4	0.3	0.3	0.0	0.2	0.5	0.4	-0.1	-20%
Worst 20% Days	---	1.3	1.7	1.0	1.0	0.8	---	0.9	0.9	1.0	0.8	0.0	0.2	1.3	0.9	-0.4	-31%
All Days	---	0.8	1.1	0.8	0.9	0.5	---	0.8	0.8	0.7	0.6	0.0	0.1	0.9	0.7	-0.2	-22%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	2.4	2.8	2.1	2.3	1.8	---	3.7	2.3	1.9	1.9	-0.1	0.2	2.4	2.4	0.0	0%
Worst 20% Days	---	8.6	10.4	7.2	8.3	6.7	---	8.7	8.0	6.8	6.7	-0.2	0.1	8.6	7.5	-1.1	-13%
All Days	---	5.7	6.8	5.3	5.7	4.0	---	6.5	5.5	4.6	4.5	-0.1	0.2	5.9	5.1	-0.8	-14%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	0.8	0.7	0.9	0.7	0.4	---	0.5	0.9	0.4	0.7	0.0	0.2	0.8	0.6	-0.2	-25%
Worst 20% Days	---	0.4	0.8	0.0	2.0	0.8	---	1.9	3.1	1.4	1.5	0.2	0.1	0.8	1.8	1.0	>100%
All Days	---	0.5	0.6	0.4	1.3	0.9	---	1.2	1.6	1.1	1.1	0.1	0.1	0.7	1.2	0.5	71%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.10-1
Agua Tibia WA, CA (AGT11 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

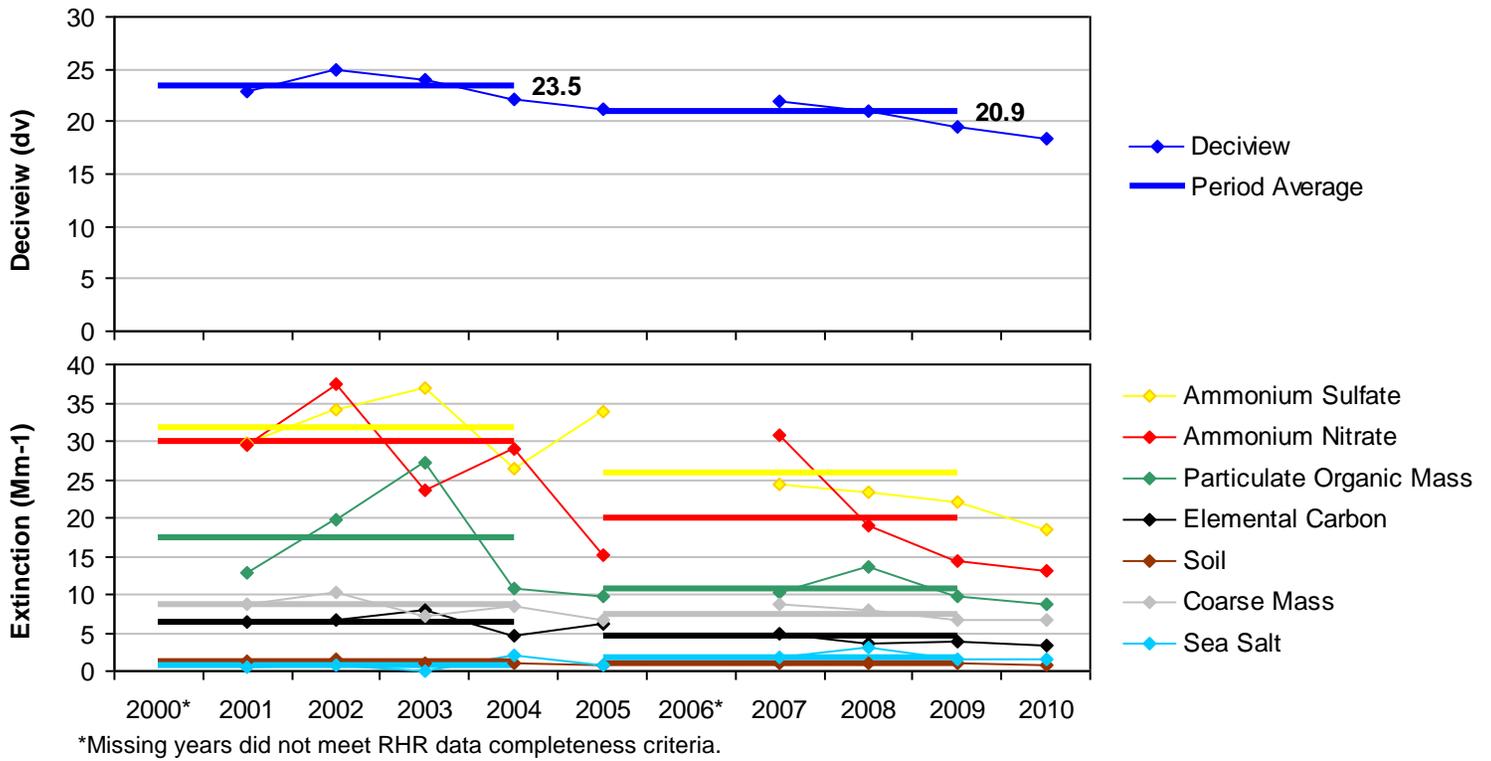


Figure C.10-2
Agua Tibia WA, CA (AGT11 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

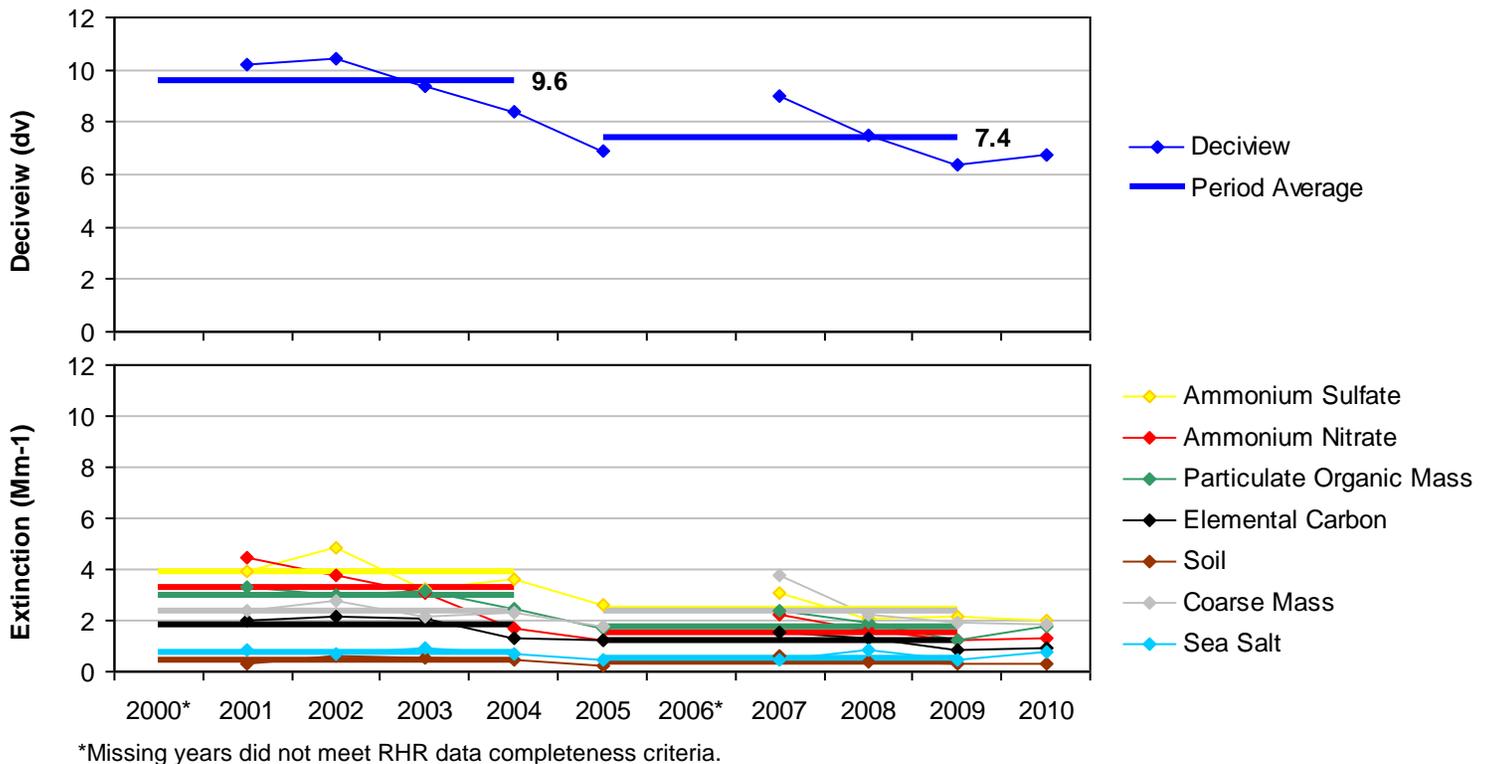
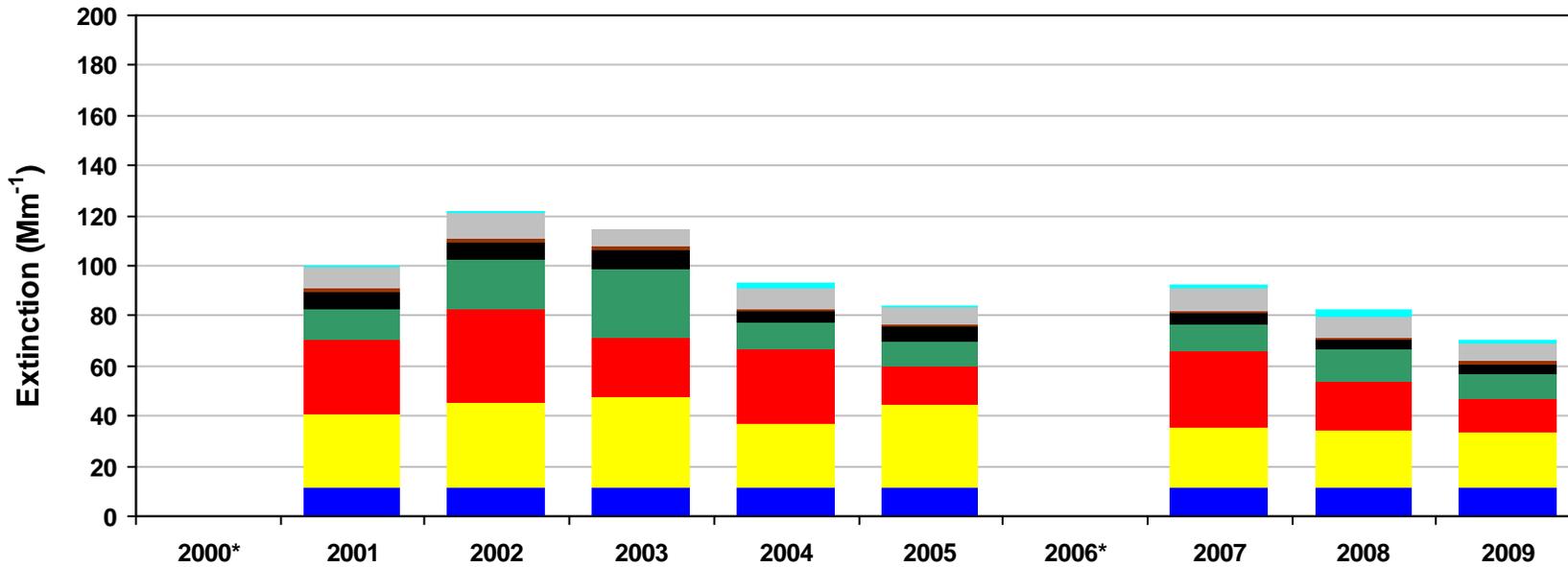
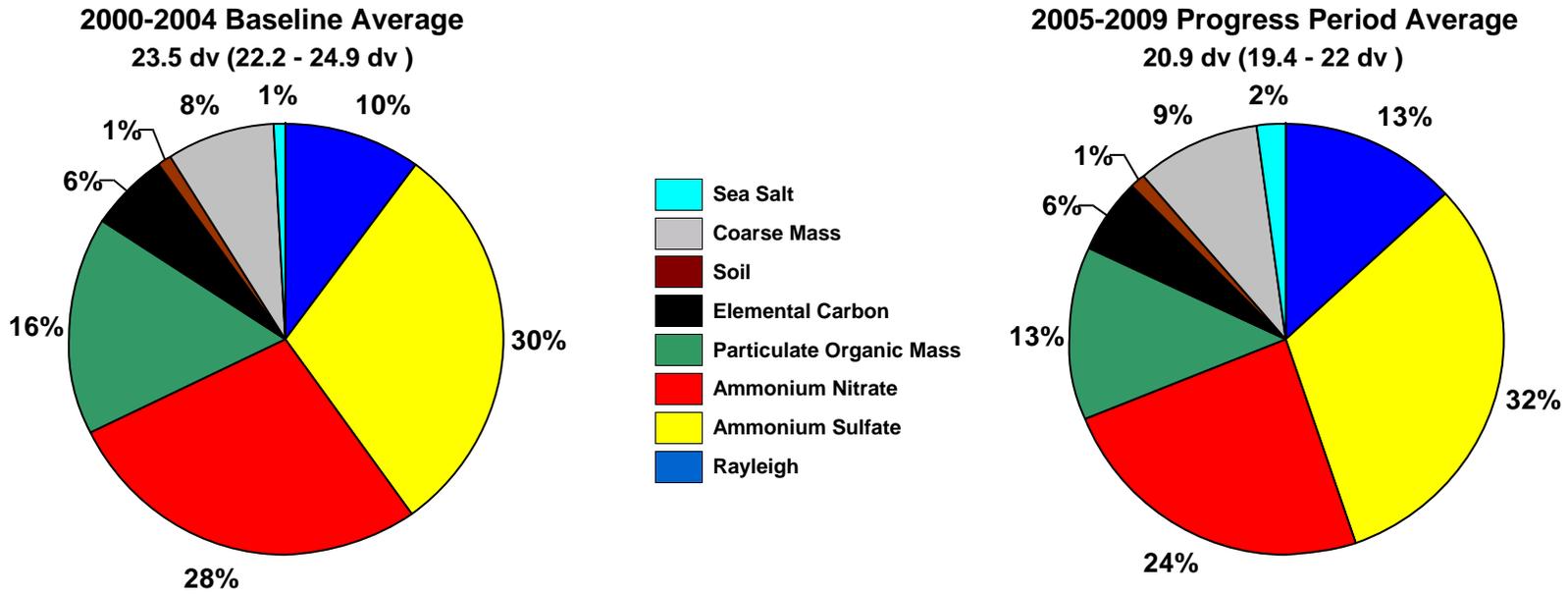
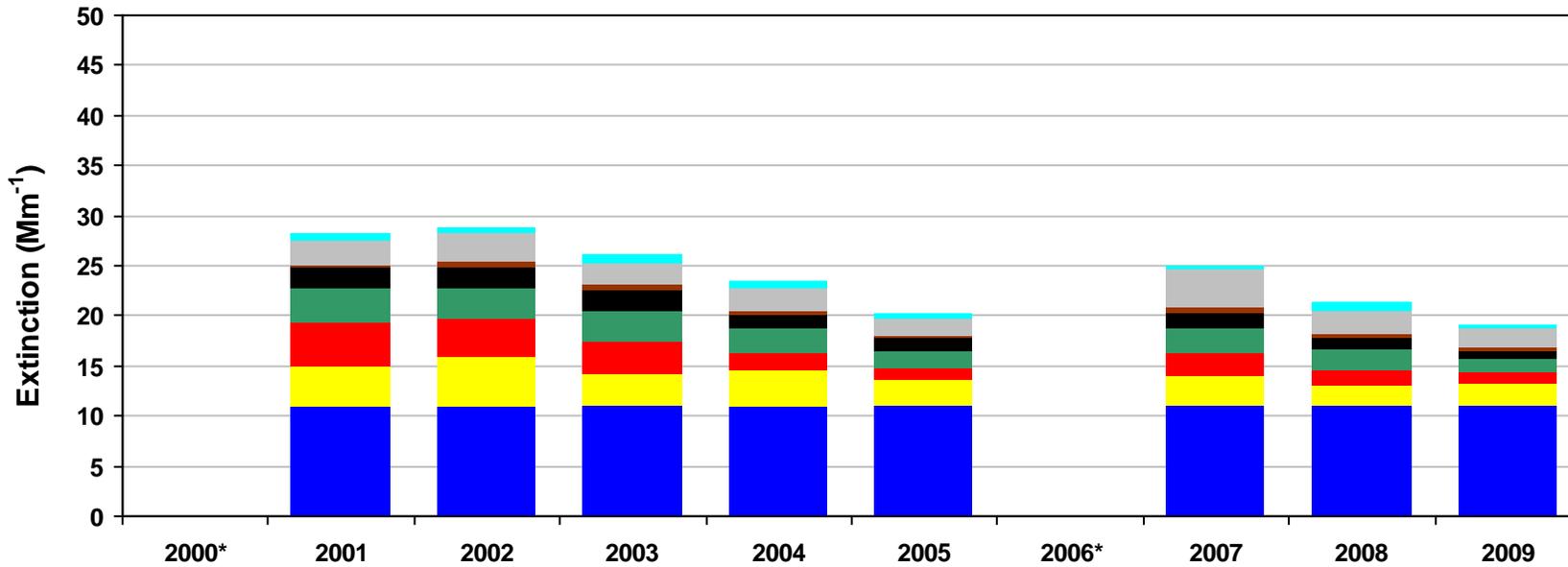
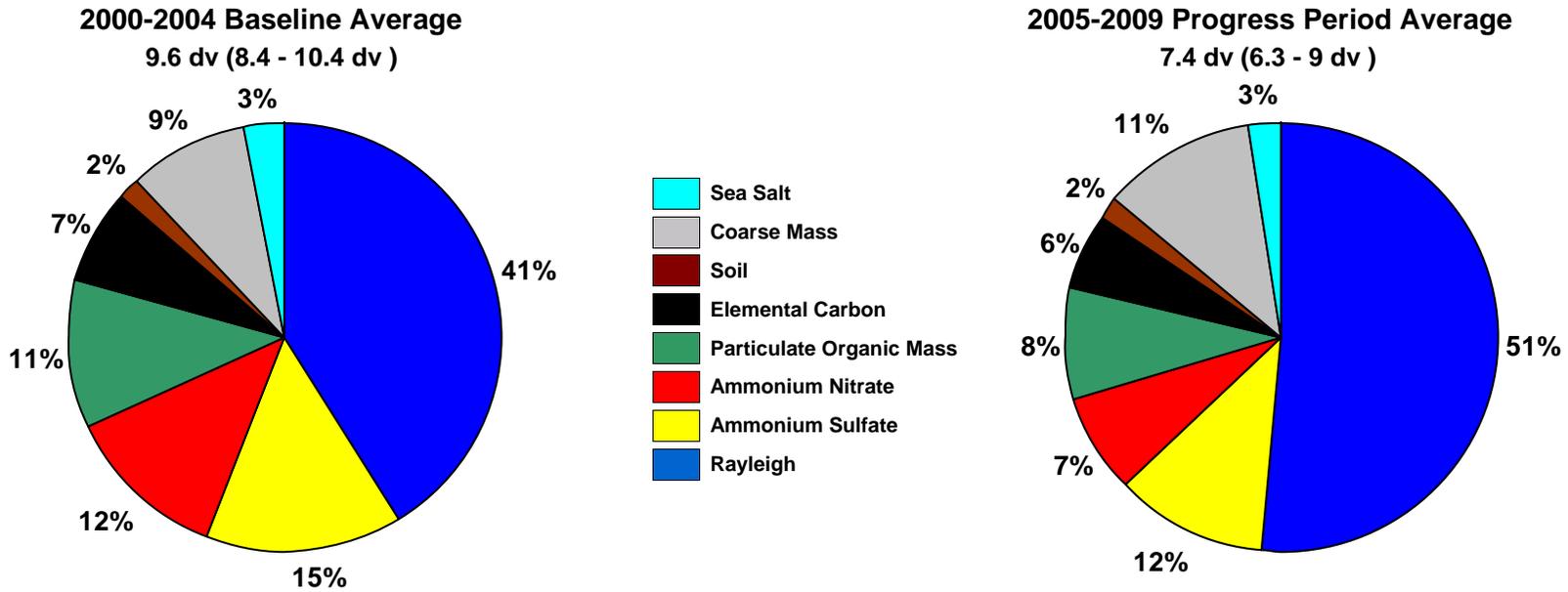


Figure C.10-3
Agua Tibia WA, CA (AGT11 Site)
20% Most Impaired Visibility Days



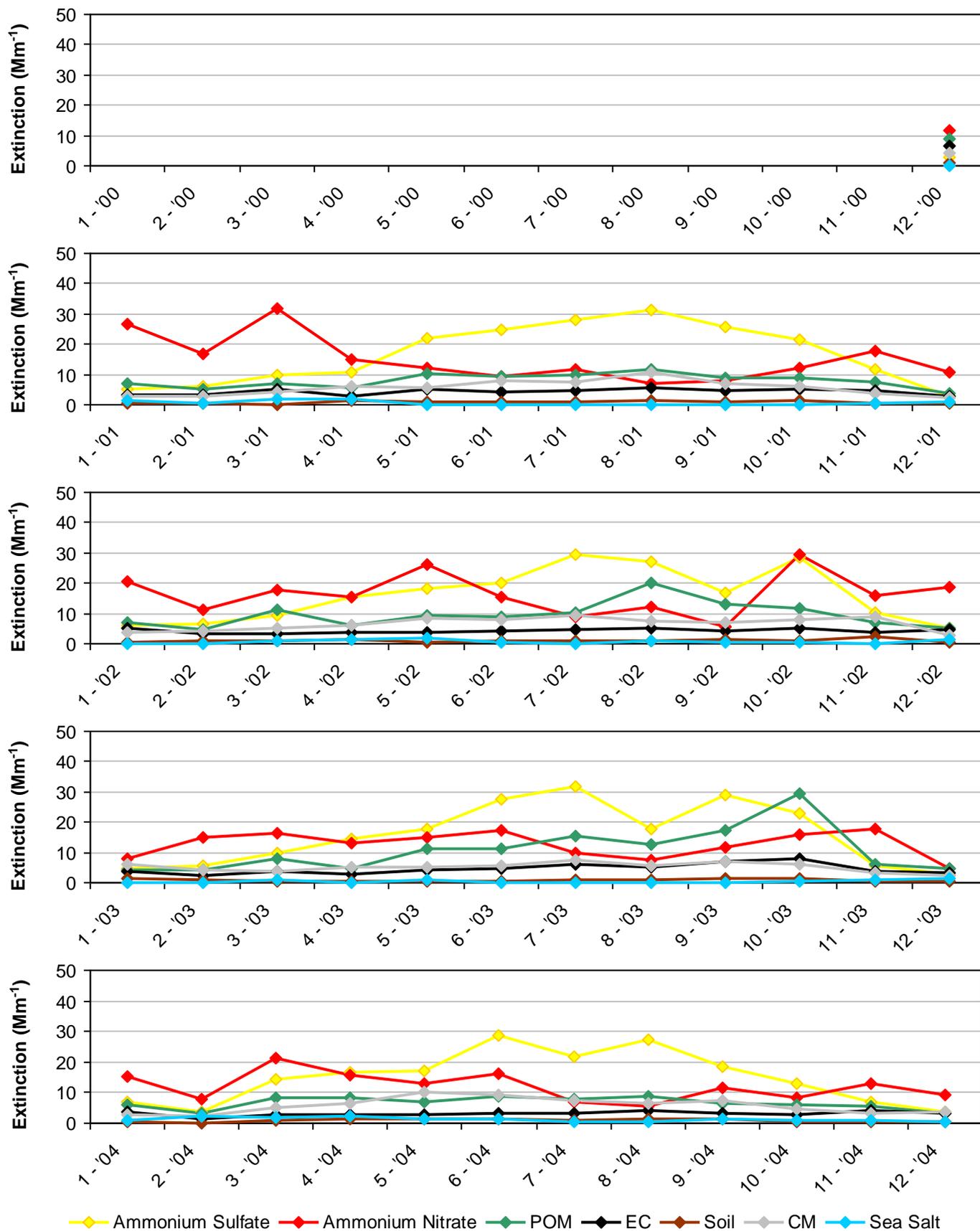
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.10-4
Agua Tibia WA, CA (AGT11 Site)
20% Least Impaired Visibility Days



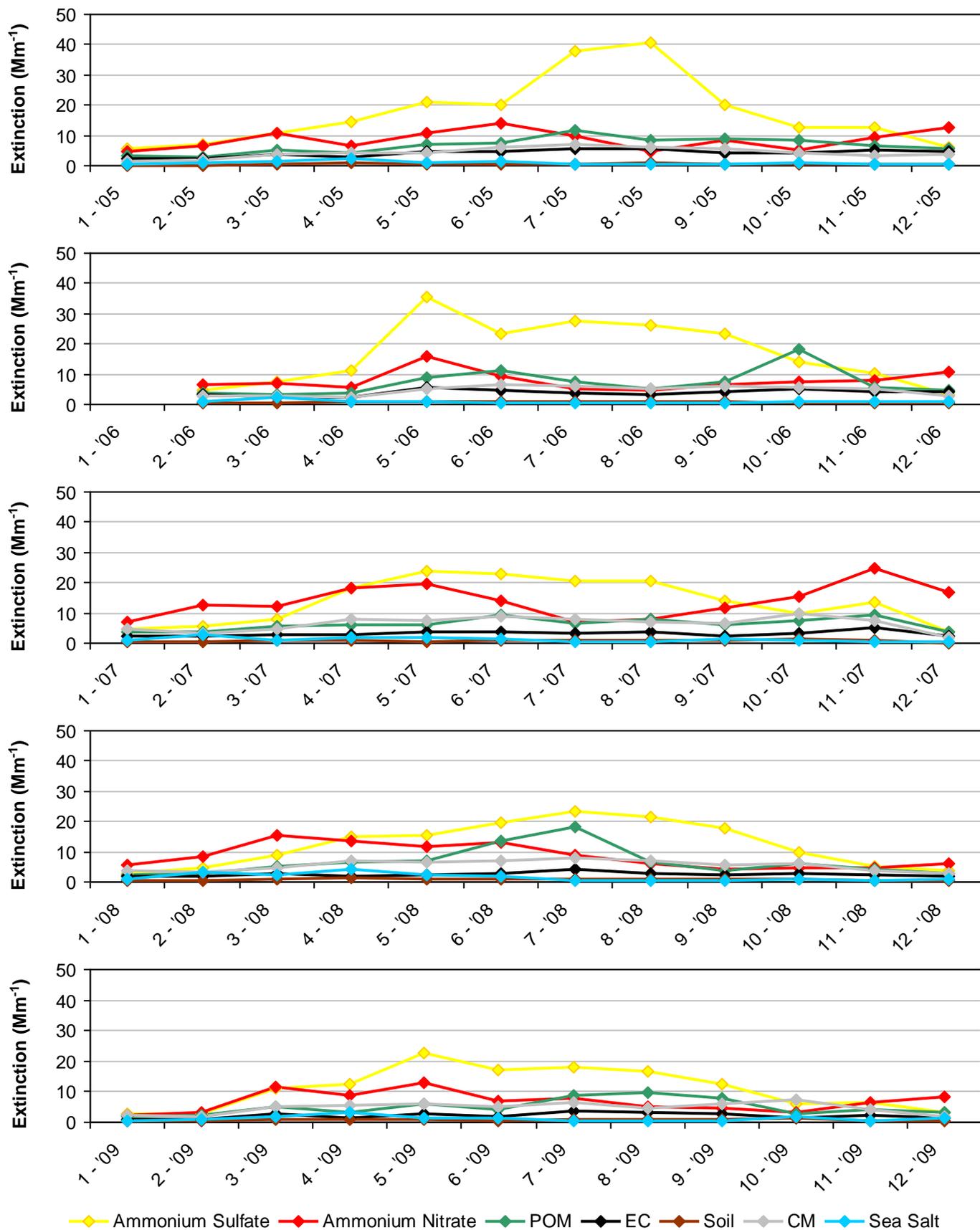
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.10-5
Agua Tibia WA, CA (AGT11 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



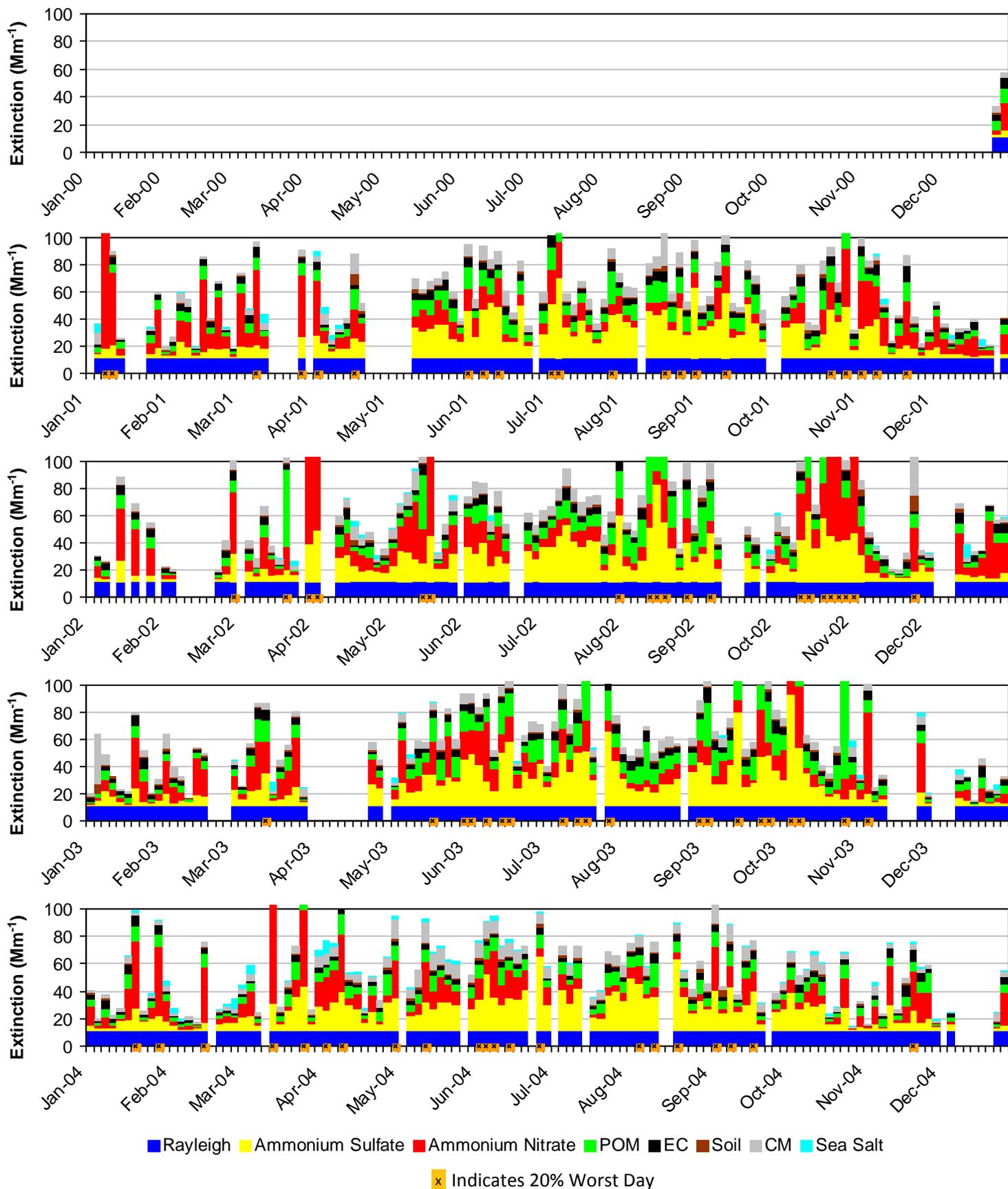
*Note that monthly averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.10-6
Agua Tibia WA, CA (AGT11 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days



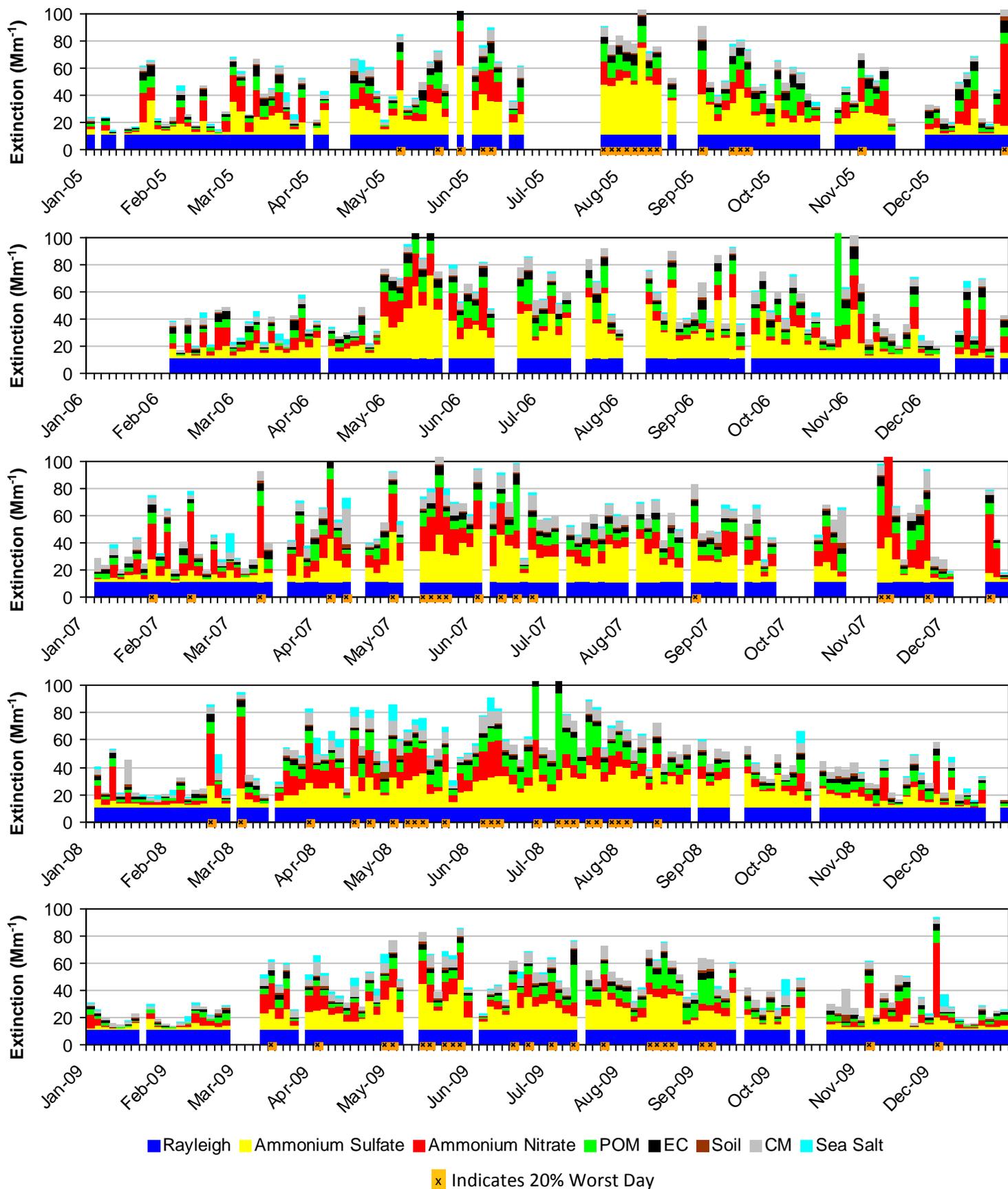
*Note that monthly averages for the year 2006 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.10-7
Agua Tibia WA, CA (AGT11 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.10-8
Agua Tibia WA, CA (AGT11 Site)
2005-2009 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2006 are shown here, but this year did not meet RHR data completeness criteria.

C.11. JOSHUA TREE NP (JOSH1)

The following tables and figures are presented in this section for Joshua Tree NP represented by the JOSH1 IMPROVE Monitor:

- **Table C.11-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.11-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.11-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.11-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.11-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.11-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.11-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.11-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.11-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

Table C.11-1
Joshua Tree NP, CA (JOSH1 Site)
Annual Averages, 5-Year Period Averages and Trends

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	5.9	6.6	6.2	5.6	5.5	5.7	5.7	5.1	4.4	4.5	-0.2	0.0	6.1	5.3	-0.8	-13%
Worst 20% Days	---	19.1	20.5	19.8	19.1	19.4	18.1	18.1	16.7	16.8	14.7	-0.5	0.0	19.6	17.8	-1.8	-9%
All Days	---	12.3	13.4	13.0	12.5	12.4	11.6	11.8	11.0	10.9	9.9	-0.3	0.0	12.8	11.5	-1.3	-10%
Total Extinction (Mm-1)																	
Best 20% Days	---	18.2	19.5	18.8	17.8	17.4	17.7	17.8	16.8	15.6	15.8	-0.4	0.0	18.6	17.1	-1.5	-8%
Worst 20% Days	---	70.3	81.3	73.2	69.2	70.6	62.5	64.6	54.0	54.8	43.9	-3.2	0.0	73.5	61.3	-12.2	-17%
All Days	---	38.6	43.5	41.2	39.4	39.3	35.5	36.2	32.8	32.9	28.6	-1.4	0.0	40.7	35.3	-5.4	-13%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	2.4	3.1	2.1	2.0	2.4	2.3	2.4	1.8	1.6	1.5	-0.1	0.1	2.4	2.1	-0.3	-13%
Worst 20% Days	---	12.9	10.4	12.6	13.3	17.8	12.2	11.3	11.3	9.8	7.8	-0.3	0.1	12.3	12.5	0.2	2%
All Days	---	7.2	6.5	7.2	7.6	9.3	6.7	6.4	6.6	6.5	4.9	-0.1	0.2	7.1	7.1	0.0	0%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	1.4	1.6	1.9	1.1	1.1	0.8	0.8	1.3	0.6	1.1	-0.1	0.0	1.5	0.9	-0.6	-40%
Worst 20% Days	---	24.8	33.1	25.6	25.5	22.8	15.0	16.5	12.8	13.1	10.0	-2.5	0.0	27.3	16.0	-11.3	-41%
All Days	---	9.5	12.3	10.4	9.4	8.1	6.3	6.9	5.5	5.0	4.7	-0.9	0.0	10.4	6.4	-4.0	-39%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	1.4	1.6	1.8	1.8	1.3	1.5	1.4	1.2	1.0	1.3	-0.1	0.0	1.6	1.3	-0.3	-19%
Worst 20% Days	---	7.6	13.6	12.0	7.8	7.7	11.1	13.8	8.4	10.5	6.1	0.0	0.4	10.3	10.3	0.0	0%
All Days	---	4.3	6.3	6.1	4.7	4.5	4.7	5.3	4.4	4.6	3.3	0.0	0.3	5.4	4.7	-0.7	-13%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	0.9	0.8	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.6	0.0	0.0	0.9	0.7	-0.2	-22%
Worst 20% Days	---	3.5	4.6	4.6	3.8	4.4	4.3	3.6	2.7	3.1	2.4	-0.1	0.0	4.1	3.6	-0.5	-12%
All Days	---	2.1	2.5	2.5	2.1	2.5	2.2	1.9	1.6	1.7	1.4	-0.1	0.1	2.3	2.0	-0.3	-13%
Soil Extinction (Mm-1)																	
Best 20% Days	---	0.4	0.5	0.3	0.4	0.3	0.4	0.5	0.3	0.4	0.2	0.0	0.4	0.4	0.4	0.0	0%
Worst 20% Days	---	2.4	1.5	1.2	1.2	1.2	1.9	1.8	2.1	1.9	1.3	0.1	0.2	1.6	1.8	0.2	13%
All Days	---	1.1	1.0	0.7	0.9	0.7	0.9	1.1	1.1	1.1	0.7	0.0	0.5	0.9	1.0	0.1	11%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	1.6	1.9	1.5	1.4	1.4	1.7	1.9	1.4	1.3	1.0	0.0	0.1	1.6	1.5	-0.1	-6%
Worst 20% Days	---	9.2	7.9	7.1	7.1	6.2	7.9	7.2	6.4	6.1	6.2	-0.3	0.0	7.8	6.8	-1.0	-13%
All Days	---	4.4	4.8	4.2	4.4	3.9	4.4	4.2	3.4	3.7	3.4	-0.1	0.0	4.4	3.9	-0.5	-11%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0%
Worst 20% Days	---	0.0	0.2	0.1	0.5	0.4	0.2	0.5	0.4	0.4	0.1	0.0	0.1	0.2	0.4	0.2	100%
All Days	---	0.0	0.1	0.1	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.0	0.1	0.1	0.3	0.2	>100%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.11-1
Joshua Tree NP, CA (JOSH1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

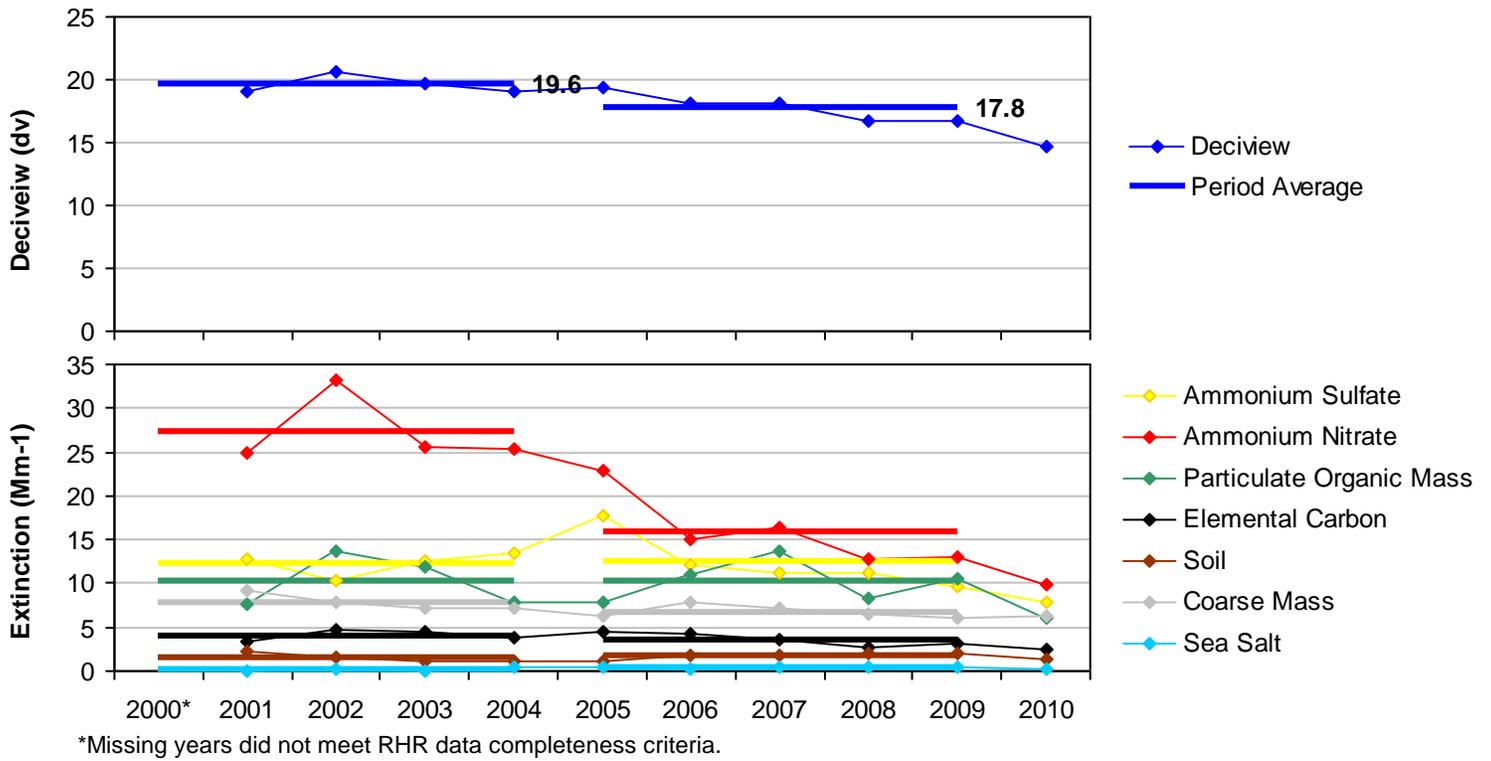


Figure C.11-2
Joshua Tree NP, CA (JOSH1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

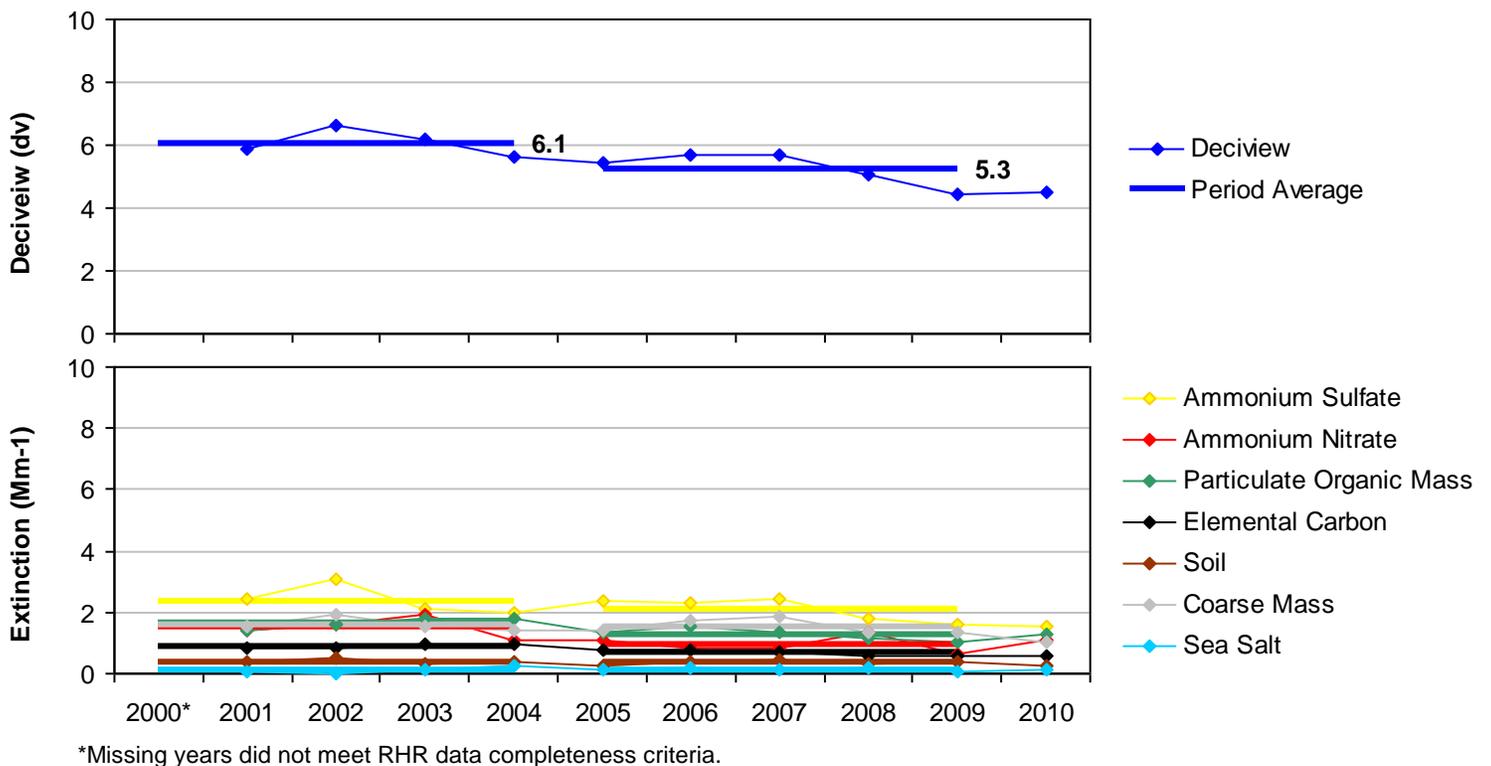
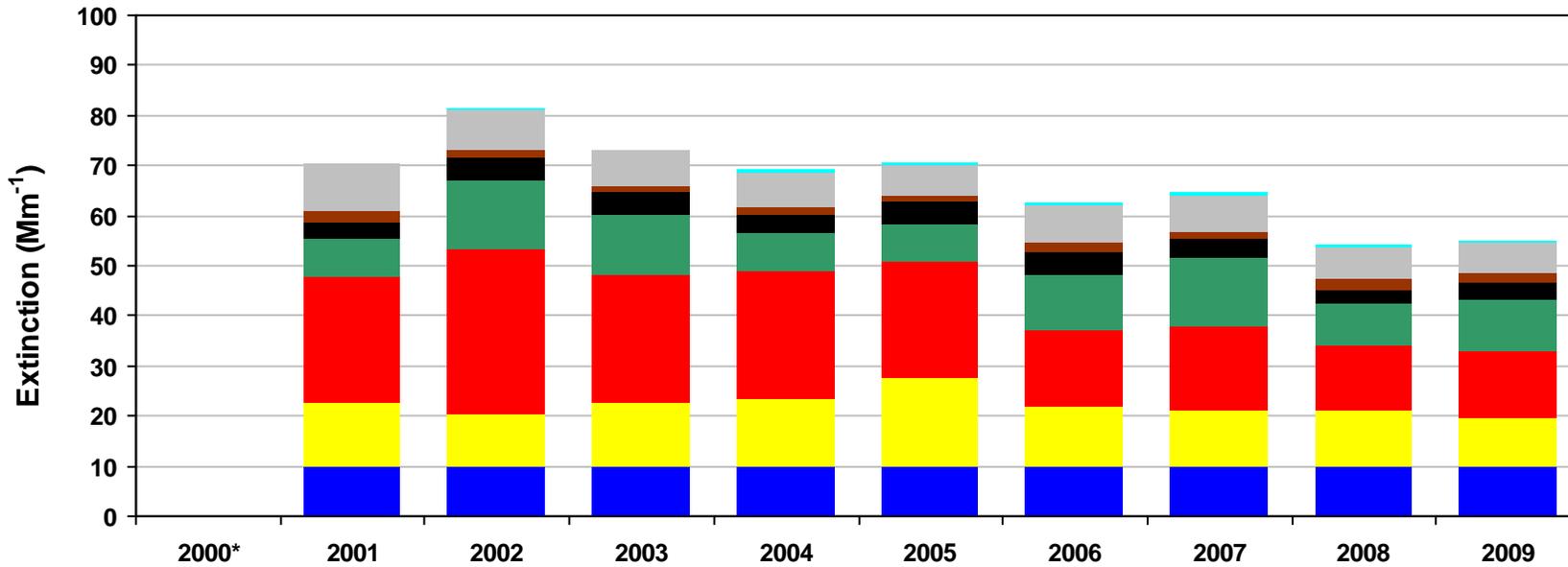
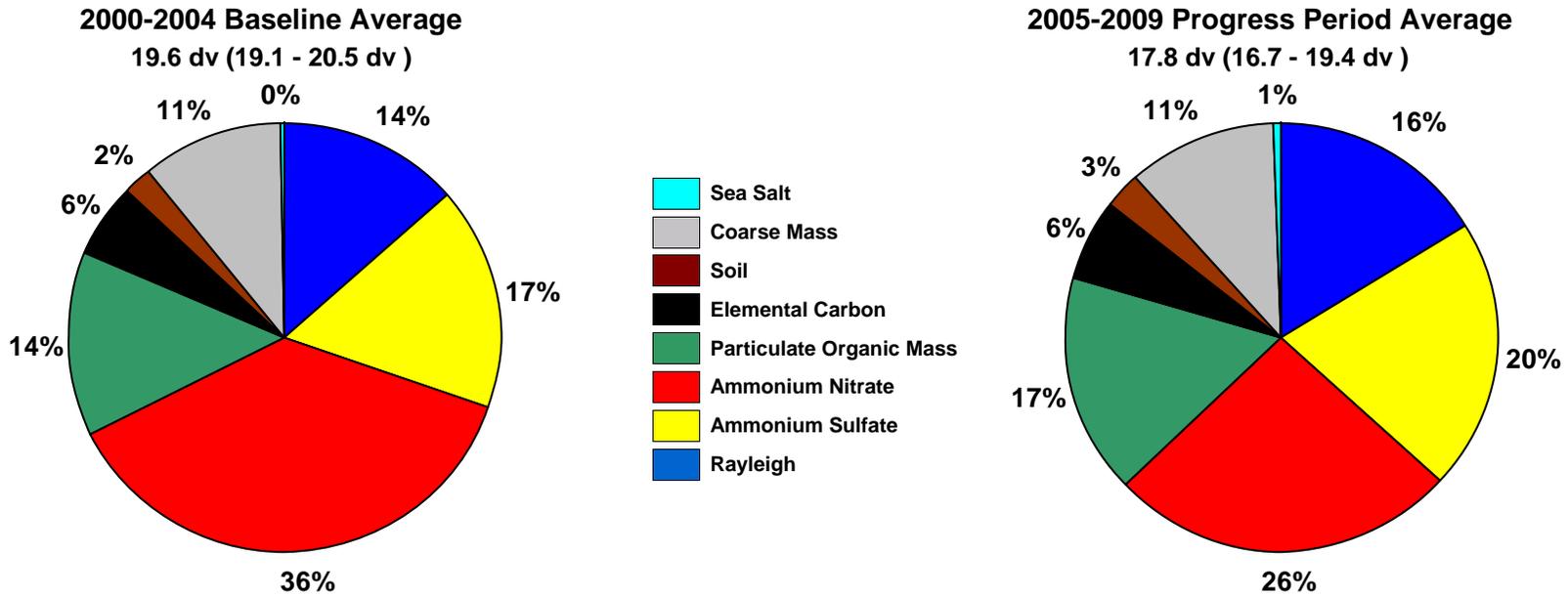


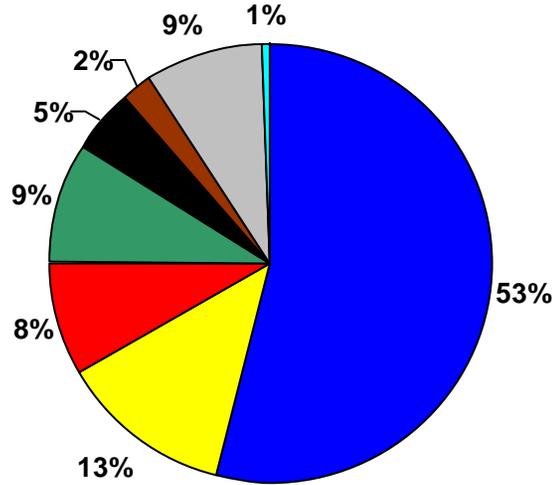
Figure C.11-3
Joshua Tree NP, CA (JOSH1 Site)
20% Most Impaired Visibility Days



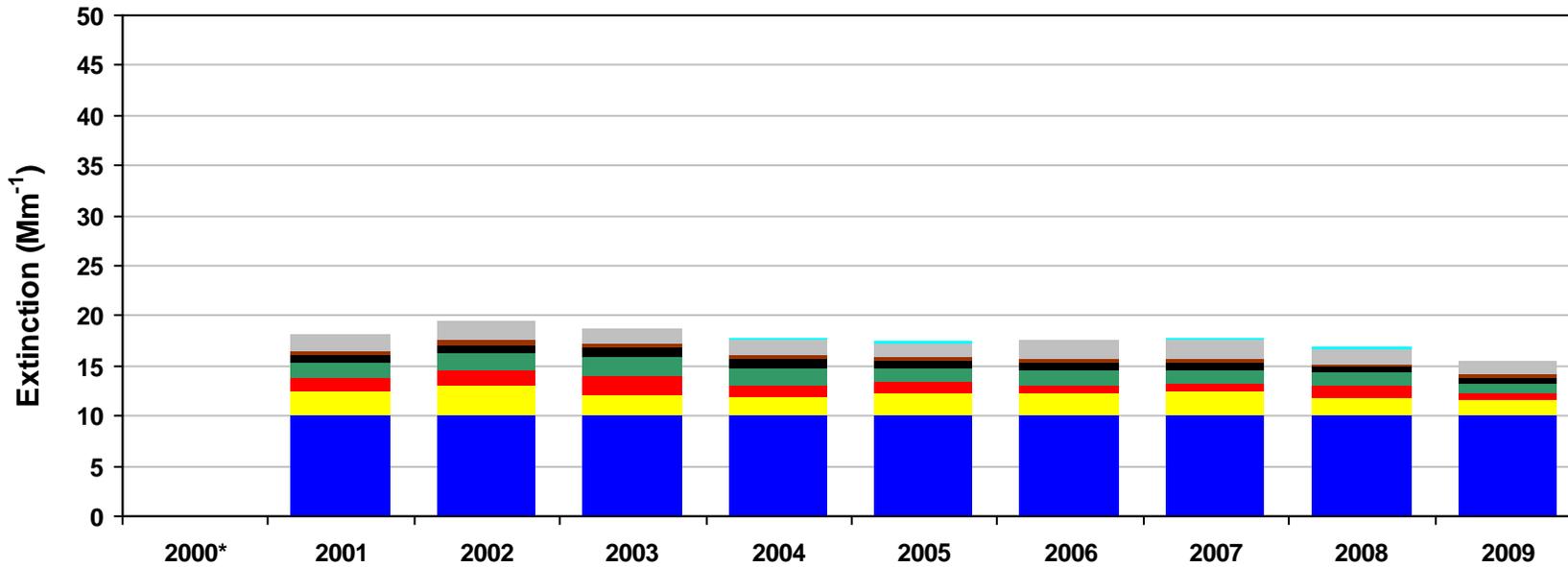
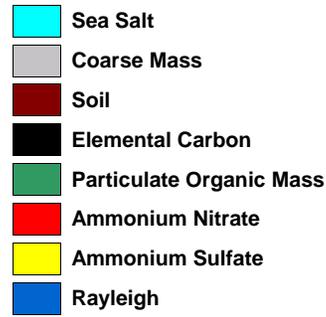
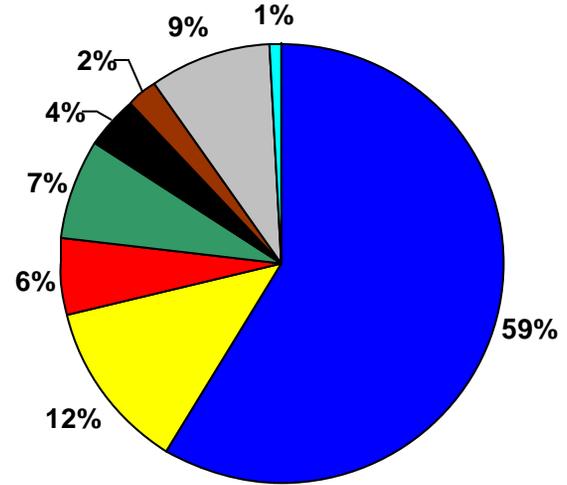
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.11-4
Joshua Tree NP, CA (JOSH1 Site)
20% Least Impaired Visibility Days

2000-2004 Baseline Average
 6.1 dv (5.6 - 6.6 dv)

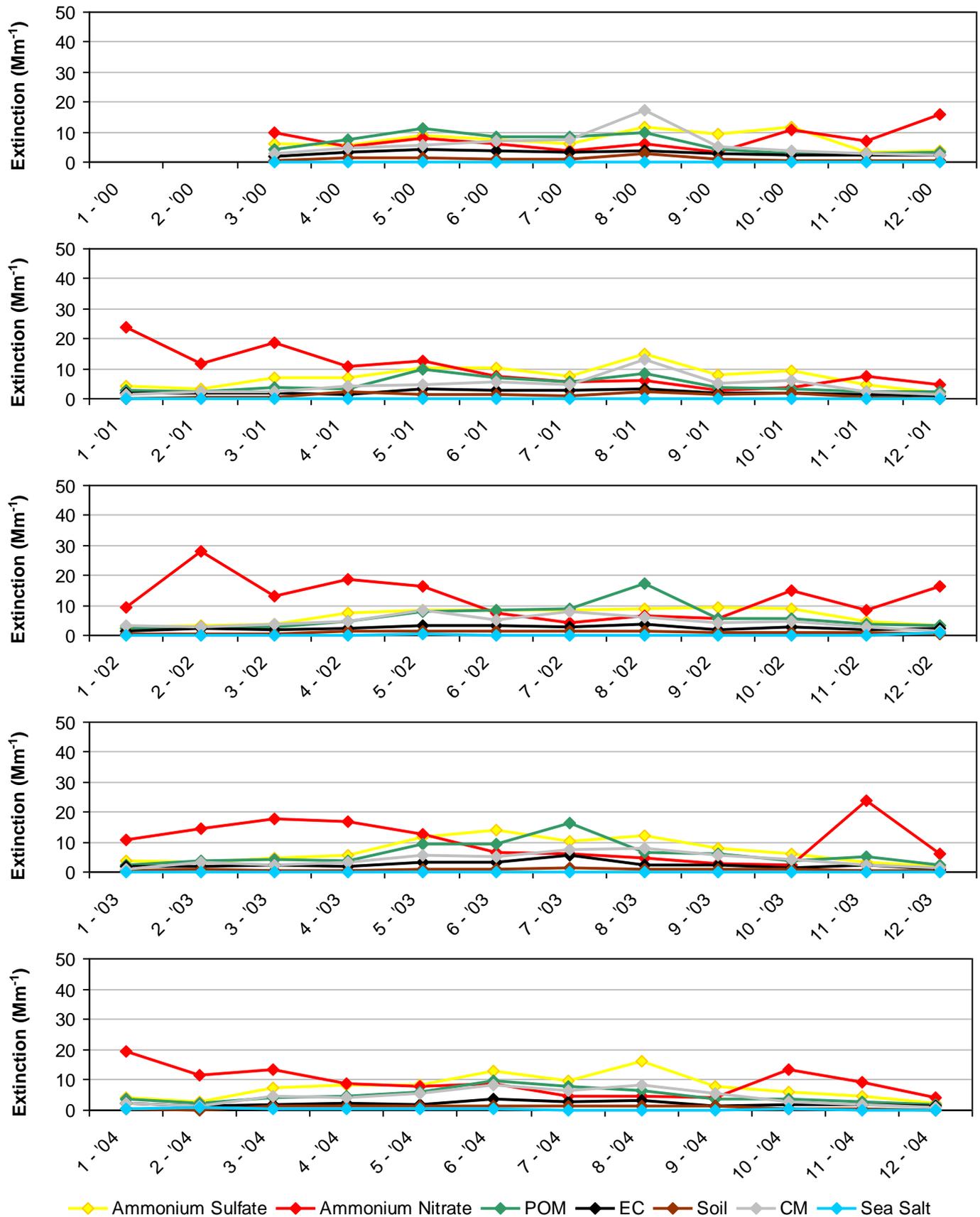


2005-2009 Progress Period Average
 5.3 dv (4.4 - 5.7 dv)



*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.11-5
Joshua Tree NP, CA (JOSH1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



*Note that monthly averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.11-6
Joshua Tree NP, CA (JOSH1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

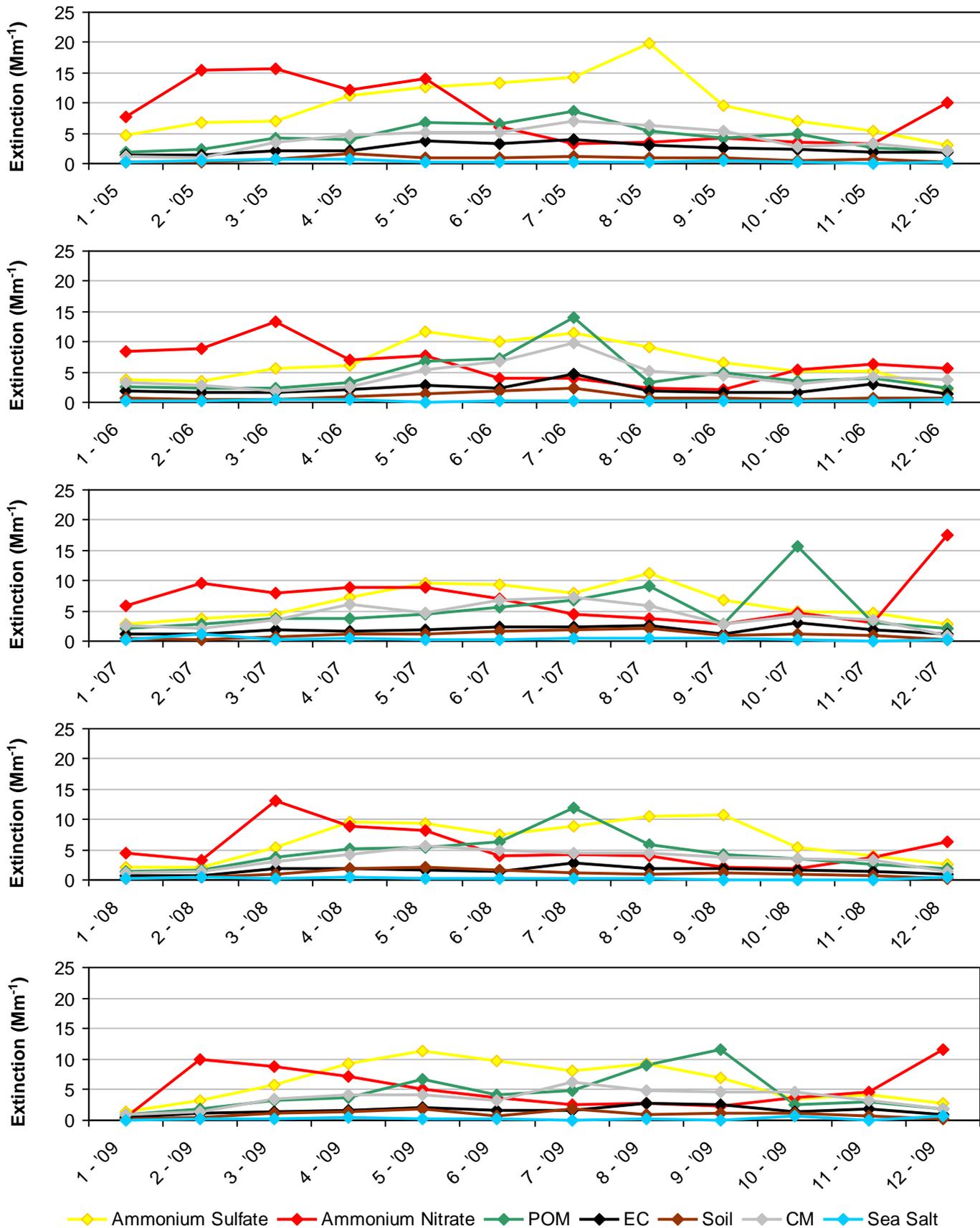
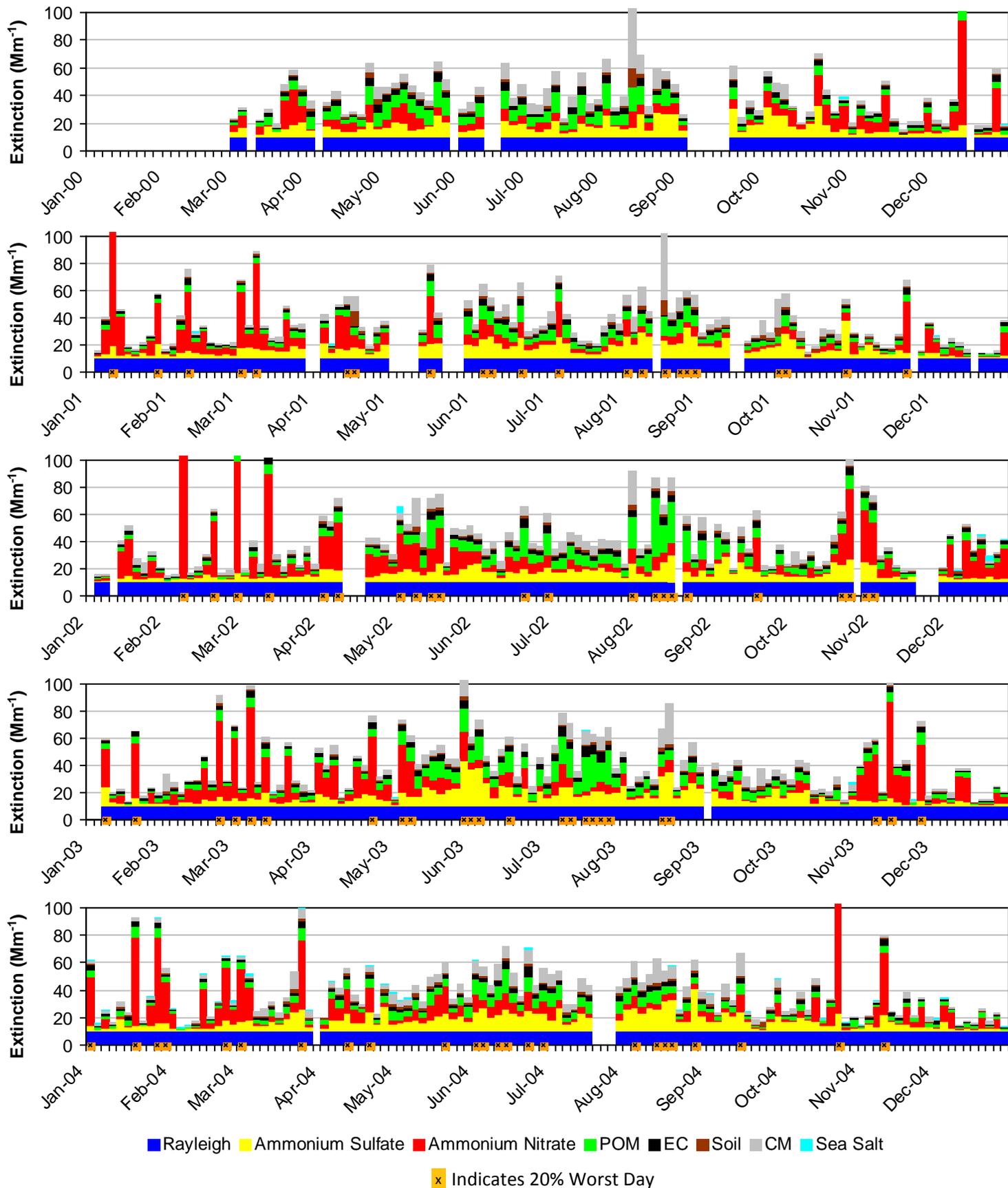
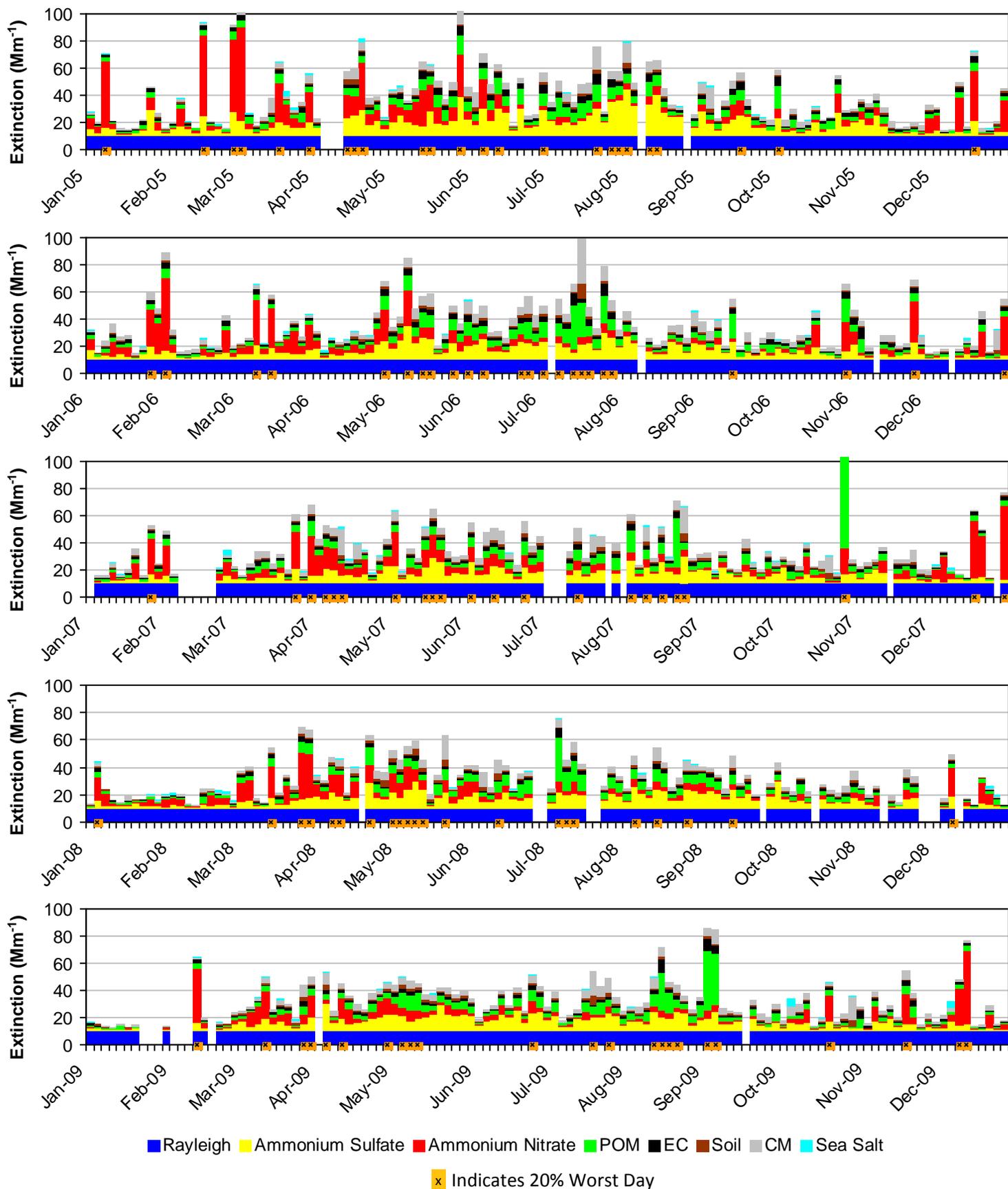


Figure C.11-7
Joshua Tree NP, CA (JOSH1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.11-8
 Joshua Tree NP, CA (JOSH1 Site)
 2005-2009 Progress Period Extinction, All Sampled Days



C.12. SAN GABRIEL WA AND CUCAMONGA WA (SAGA1)

The following tables and figures are presented in this section for the San Gabriel WA and Cucamonga WA represented by the SAGA1 IMPROVE Monitor:

- **Table C.12-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.12-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.12-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.12-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.12-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.12-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.12-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.12-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.12-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.12-1
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	---	6.4	4.4	3.7	4.3	4.4	5.4	3.7	---	---	-0.1	0.3	4.8	4.5	-0.3	-6%
Worst 20% Days	---	---	21.8	18.4	19.6	19.4	17.4	17.4	17.9	---	---	-0.5	0.0	19.9	18.0	-1.9	-10%
All Days	---	---	14.1	11.9	12.0	12.3	10.8	11.5	10.8	---	---	-0.4	0.1	12.7	11.3	-1.4	-11%
Total Extinction (Mm-1)																	
Best 20% Days	---	---	19.3	15.9	14.7	15.6	15.8	17.4	14.8	---	---	-0.2	0.3	16.6	15.9	-0.7	-4%
Worst 20% Days	---	---	95.9	64.4	74.1	70.5	57.8	57.8	62.1	---	---	-3.5	0.1	78.2	62.0	-16.2	-21%
All Days	---	---	48.4	37.1	38.8	39.4	32.6	34.4	33.6	---	---	-1.5	0.1	41.4	35.0	-6.4	-16%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	---	2.1	1.7	1.8	2.1	2.1	2.4	1.6	---	---	0.0	0.5	1.9	2.1	0.2	11%
Worst 20% Days	---	---	10.5	10.1	16.5	20.4	15.2	12.2	14.3	---	---	0.5	0.4	12.3	15.5	3.2	26%
All Days	---	---	7.4	6.5	8.6	10.7	7.4	6.9	7.2	---	---	0.0	0.4	7.5	8.1	0.6	8%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	---	3.2	1.7	1.3	1.5	1.3	1.8	1.5	---	---	-0.1	0.3	2.1	1.5	-0.6	-29%
Worst 20% Days	---	---	28.9	26.1	28.0	19.7	15.3	14.0	13.2	---	---	-3.0	0.0	27.7	15.5	-12.2	-44%
All Days	---	---	12.0	10.2	9.9	8.5	6.6	7.4	5.8	---	---	-1.0	0.0	10.7	7.1	-3.6	-34%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	---	2.1	1.3	1.0	1.3	1.3	1.4	0.8	---	---	-0.1	0.3	1.5	1.2	-0.3	-20%
Worst 20% Days	---	---	25.7	9.4	10.6	10.2	9.1	12.0	13.4	---	---	0.4	0.5	15.3	11.2	-4.1	-27%
All Days	---	---	9.6	5.3	5.2	5.1	4.2	4.9	5.3	---	---	-0.1	0.1	6.7	4.9	-1.8	-27%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	---	1.0	0.7	0.4	0.7	0.7	0.6	0.3	---	---	-0.1	0.0	0.7	0.6	-0.1	-14%
Worst 20% Days	---	---	5.3	3.8	3.8	5.2	4.1	3.8	3.2	---	---	-0.2	0.1	4.3	4.1	-0.2	-5%
All Days	---	---	2.8	2.3	2.1	2.6	2.1	2.0	1.6	---	---	-0.2	0.0	2.4	2.1	-0.3	-13%
Soil Extinction (Mm-1)																	
Best 20% Days	---	---	0.4	0.2	0.1	0.2	0.3	0.3	0.2	---	---	0.0	0.5	0.3	0.3	0.0	0%
Worst 20% Days	---	---	0.8	0.8	1.0	0.9	0.9	1.0	1.4	---	---	0.1	0.0	0.9	1.1	0.2	22%
All Days	---	---	0.8	0.6	0.7	0.5	0.6	0.7	0.8	---	---	0.0	0.5	0.7	0.6	-0.1	-14%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	---	1.4	1.3	0.9	0.8	0.9	1.7	1.1	---	---	0.0	0.5	1.2	1.1	-0.1	-8%
Worst 20% Days	---	---	15.5	4.8	4.5	4.6	3.8	5.5	7.0	---	---	-0.1	0.5	8.3	5.2	-3.1	-37%
All Days	---	---	6.5	3.2	3.0	2.7	2.5	3.2	3.6	---	---	-0.2	0.4	4.2	3.0	-1.2	-29%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	---	0.1	0.0	0.1	0.1	0.2	0.2	0.3	---	---	0.0	0.0	0.1	0.2	0.1	100%
Worst 20% Days	---	---	0.3	0.4	0.6	0.6	0.3	0.3	0.6	---	---	0.0	0.5	0.4	0.4	0.0	0%
All Days	---	---	0.1	0.1	0.3	0.3	0.2	0.3	0.3	---	---	0.0	0.2	0.2	0.3	0.1	50%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.12-1
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

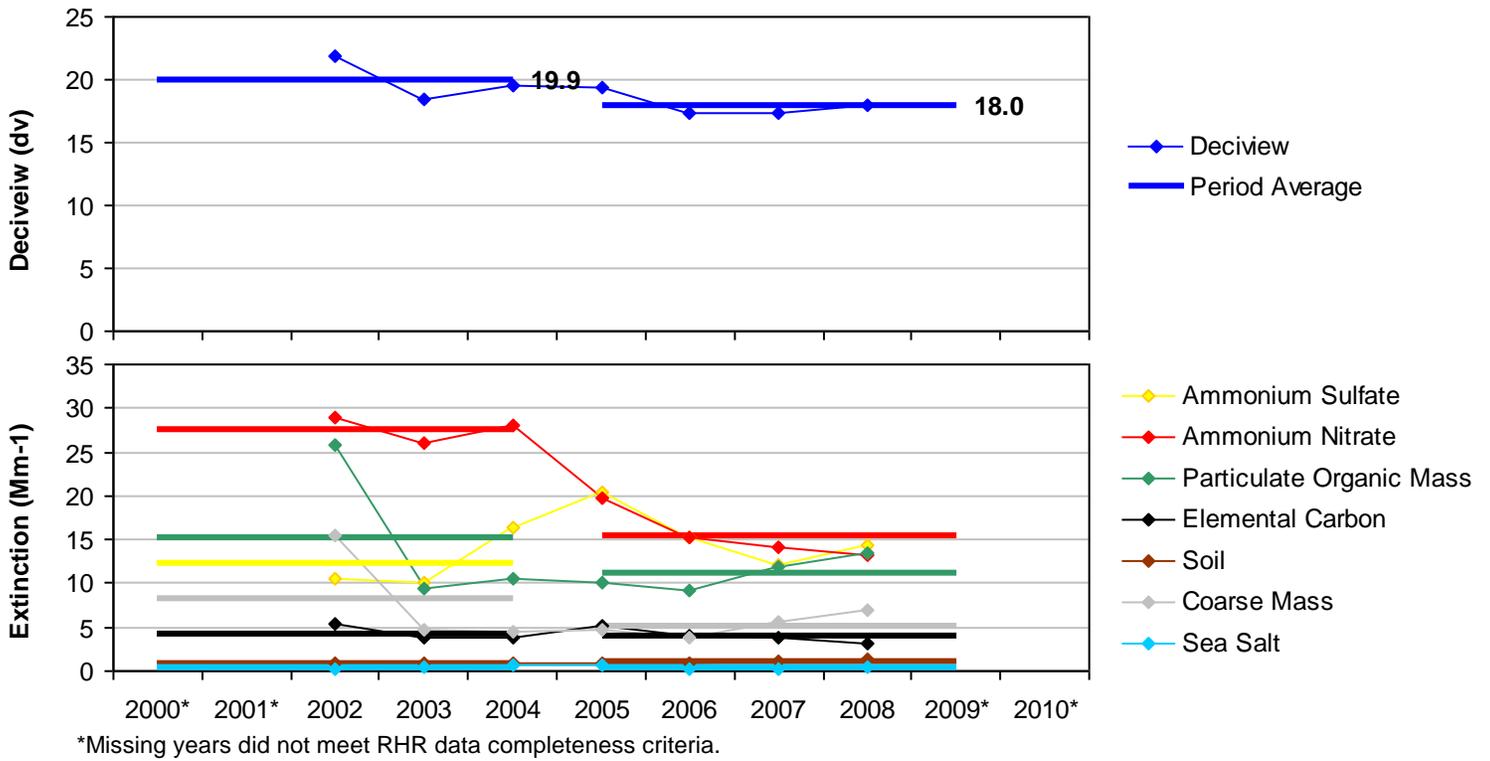


Figure C.12-2
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

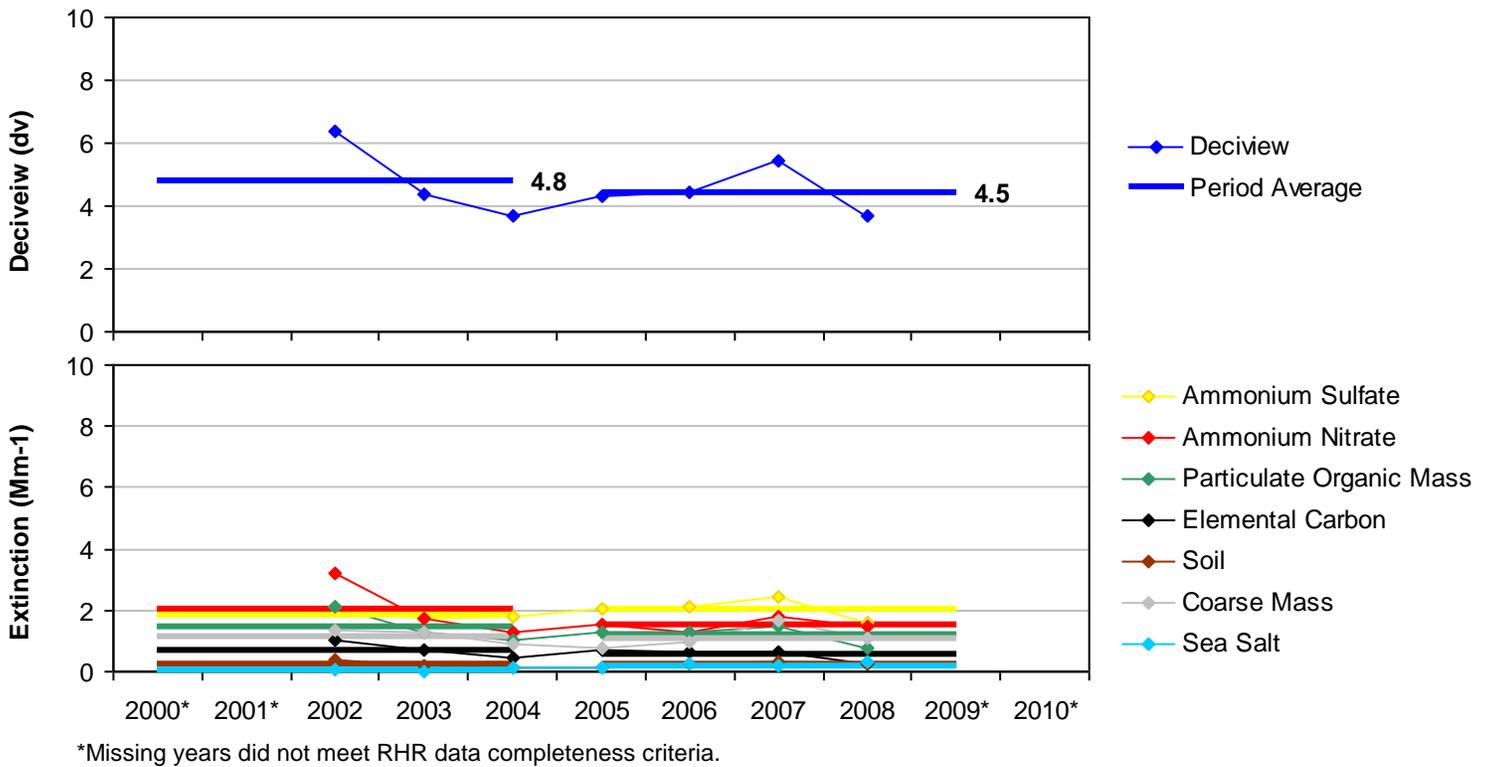
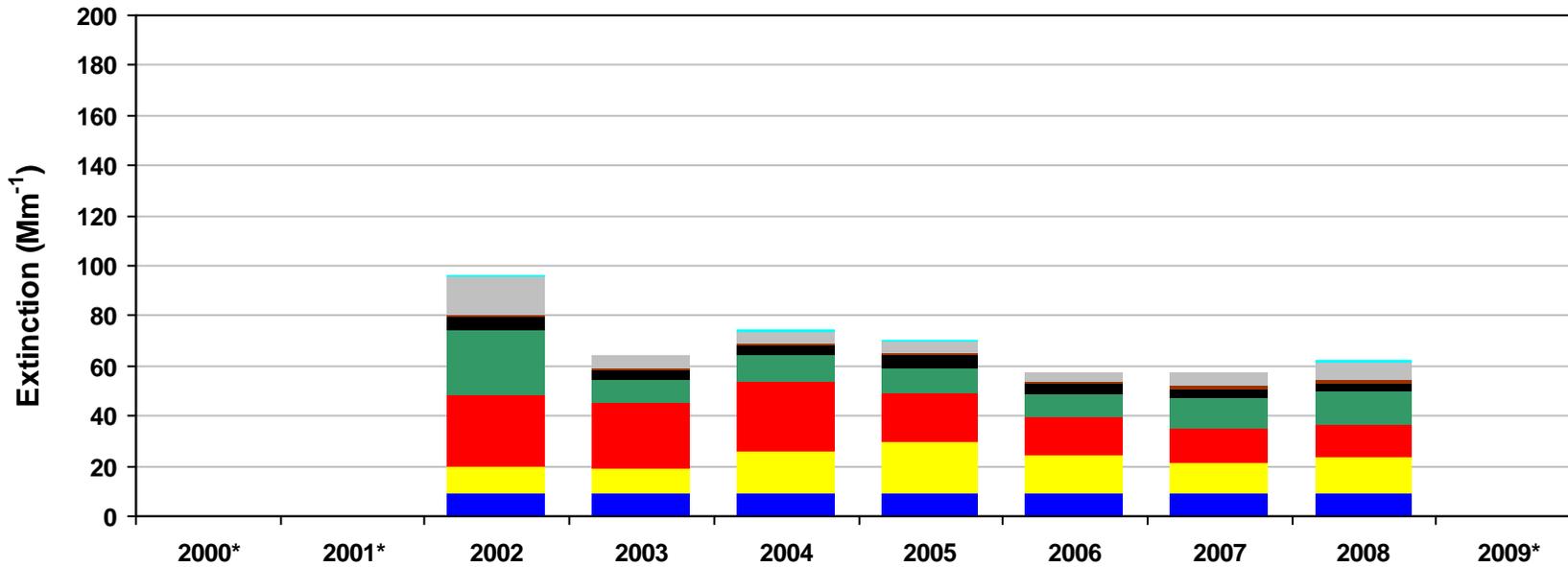
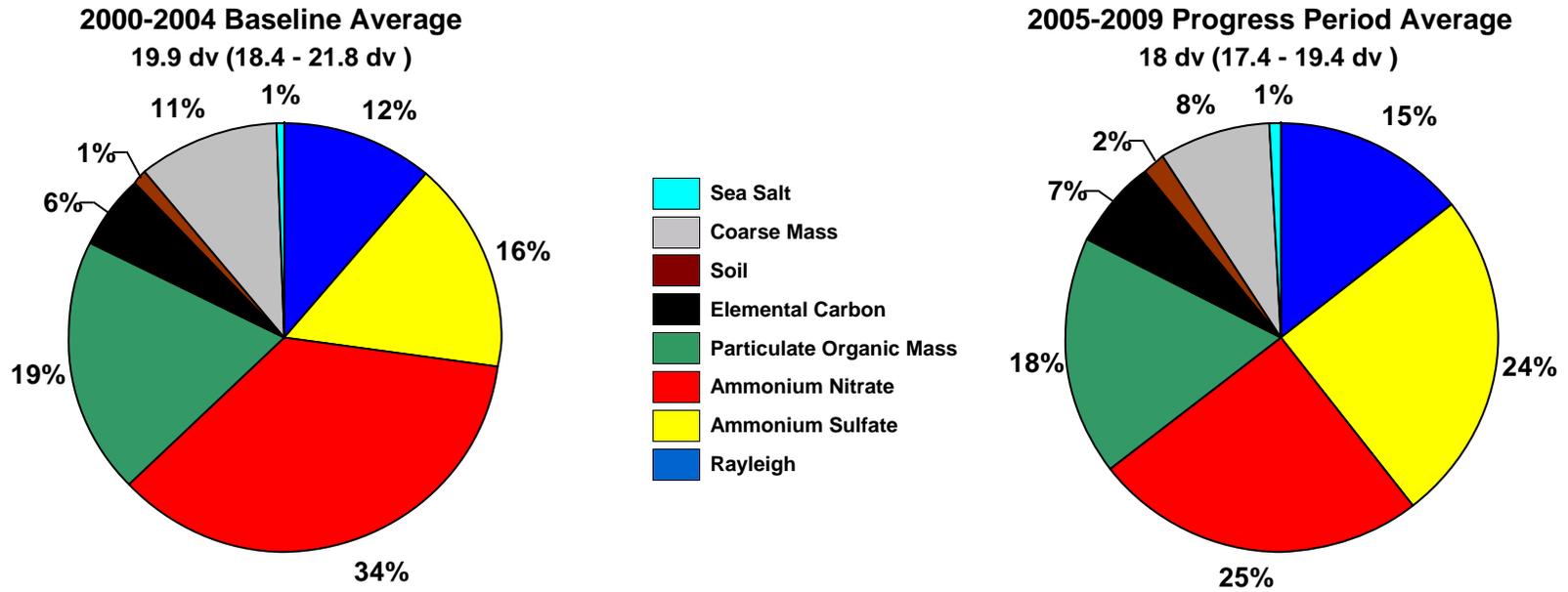
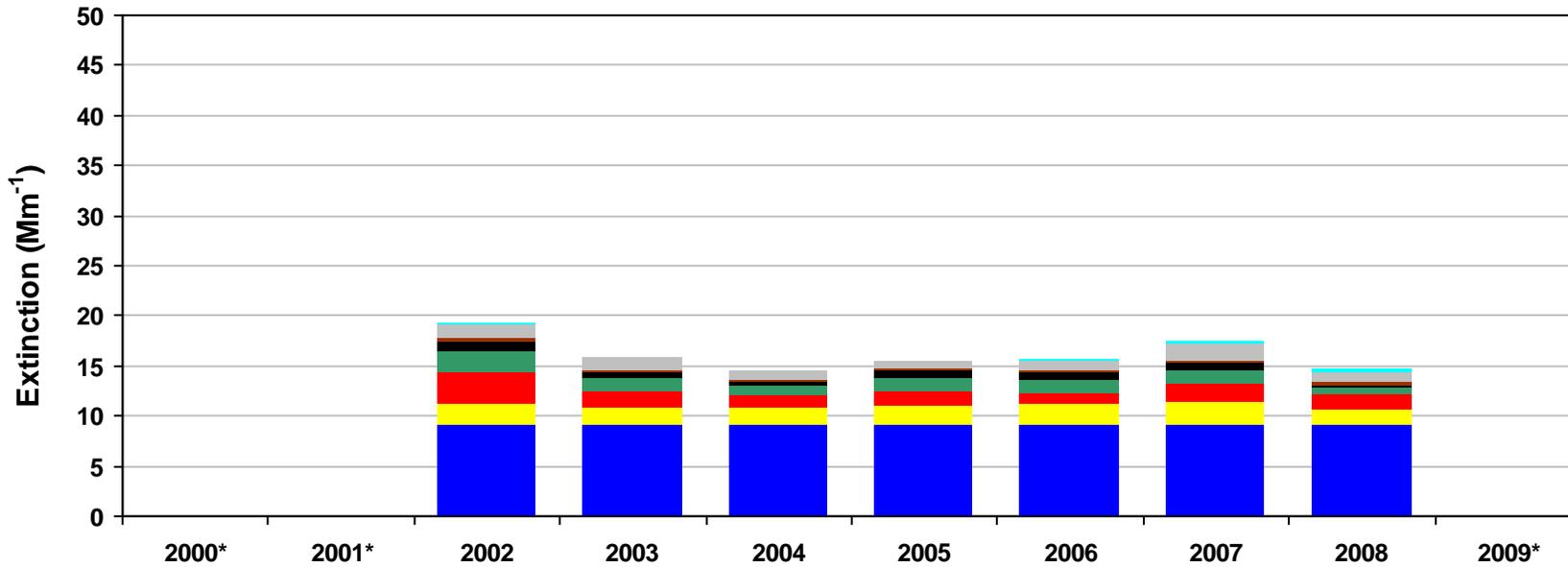
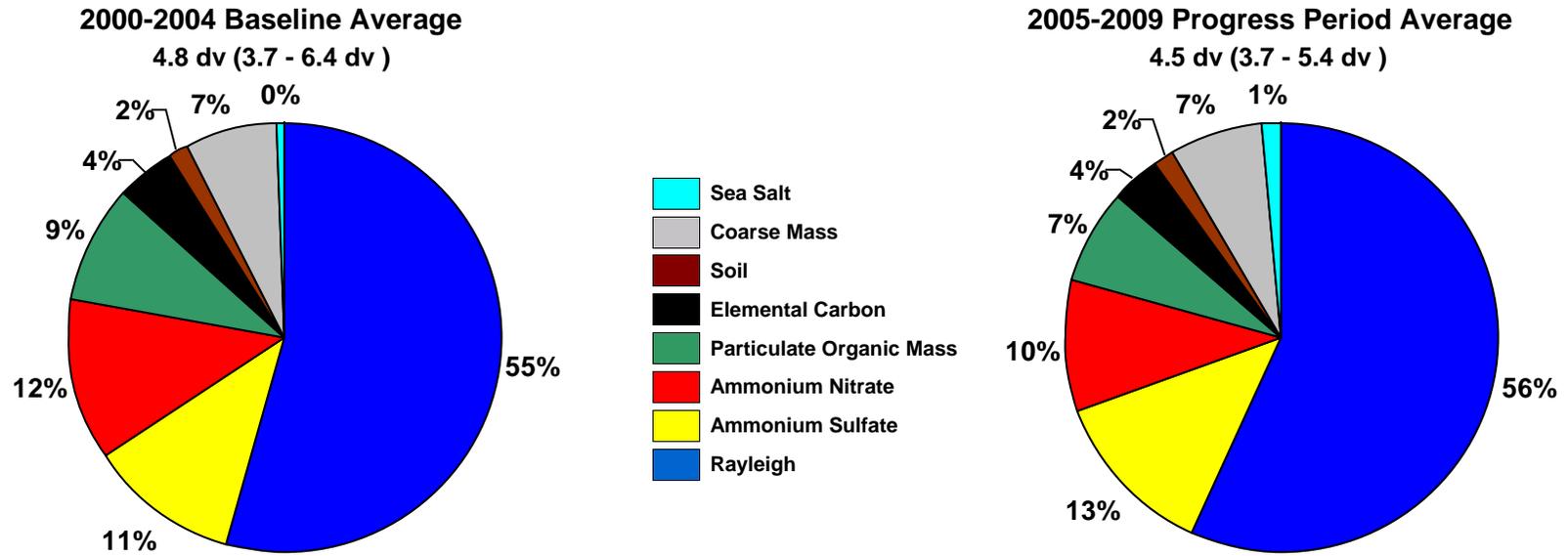


Figure C.12-3
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
20% Most Impaired Visibility Days



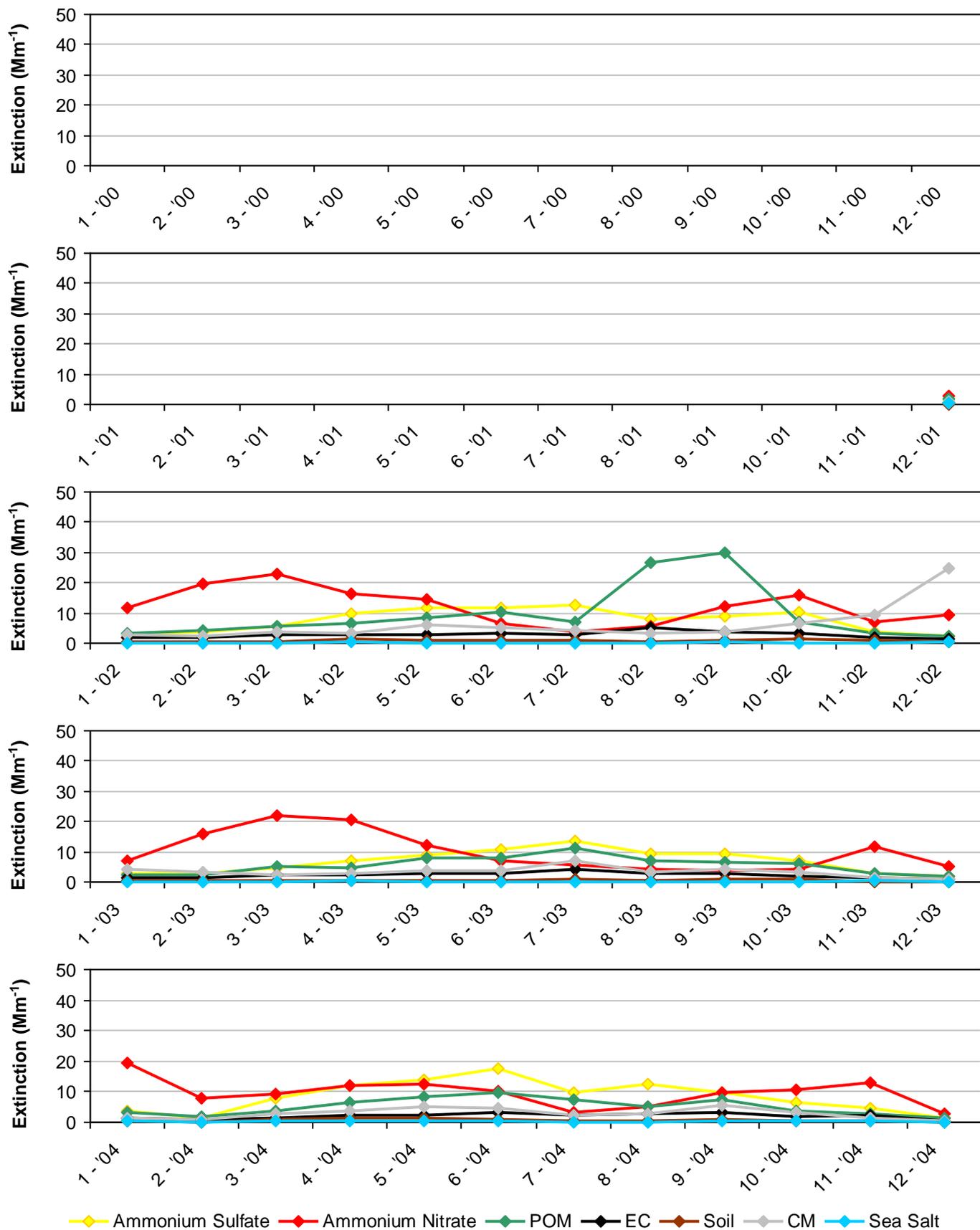
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.12-4
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
20% Least Impaired Visibility Days



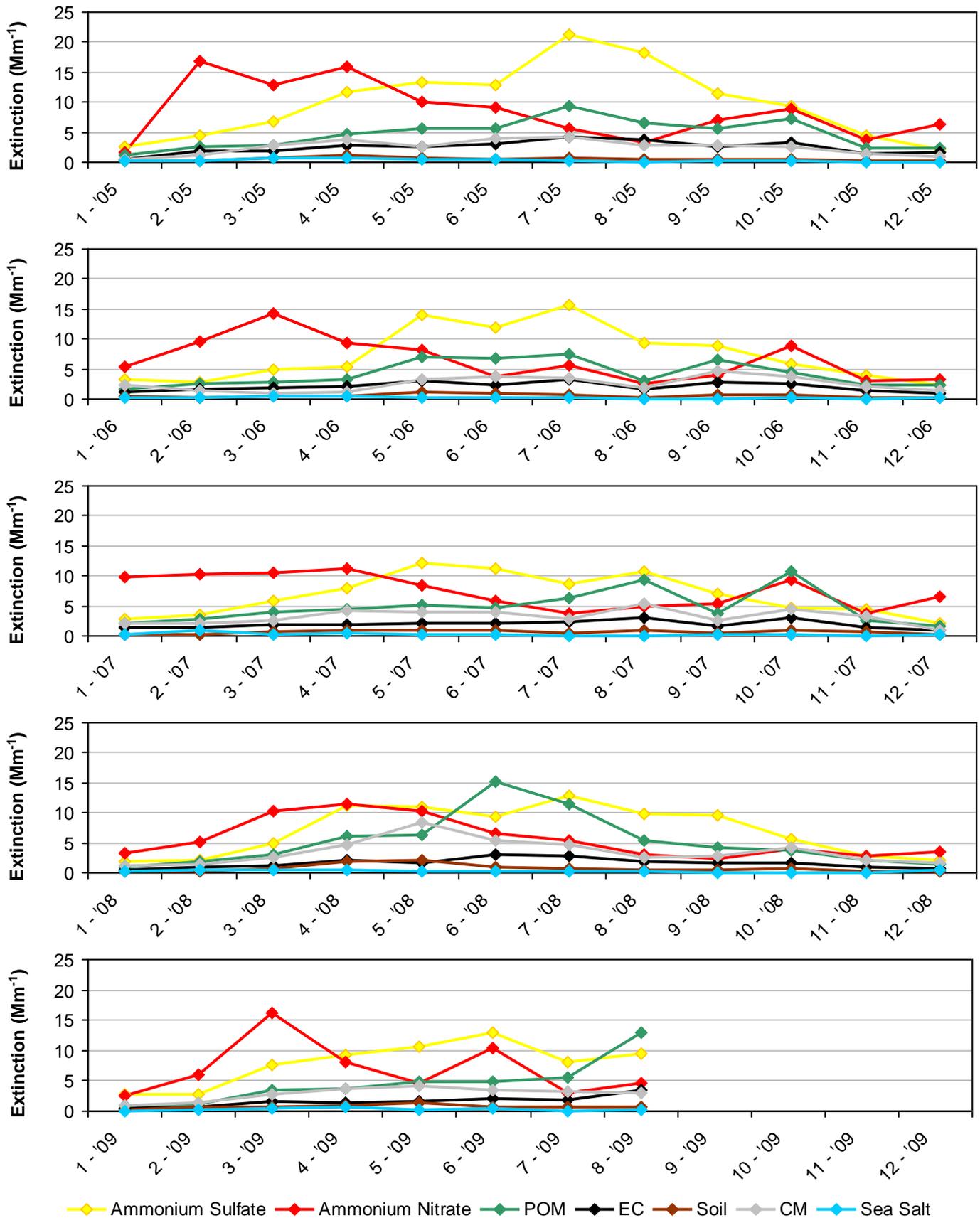
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.12-5
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



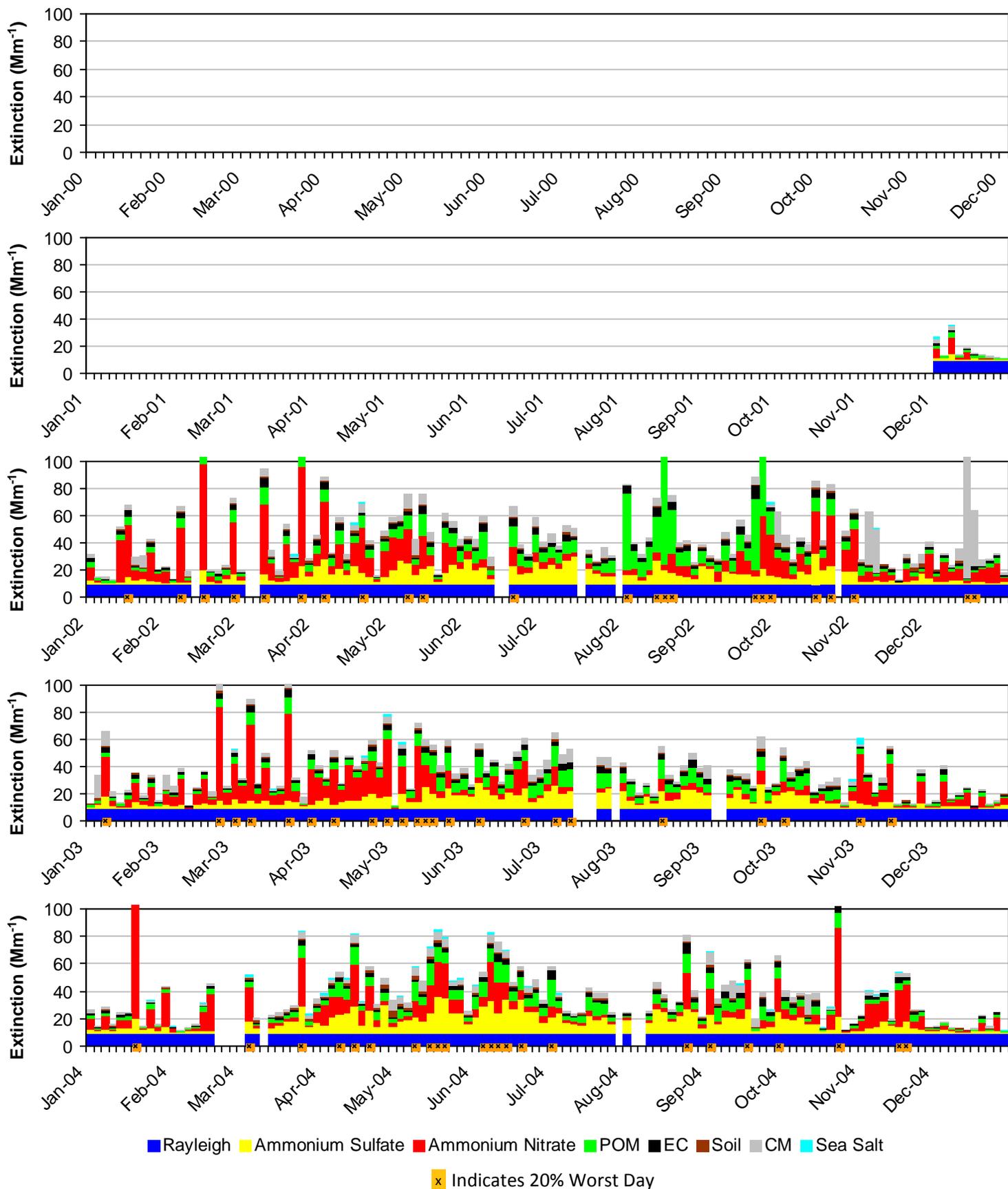
*Note that monthly averages for the years 2000 and 2001 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.12-6
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days



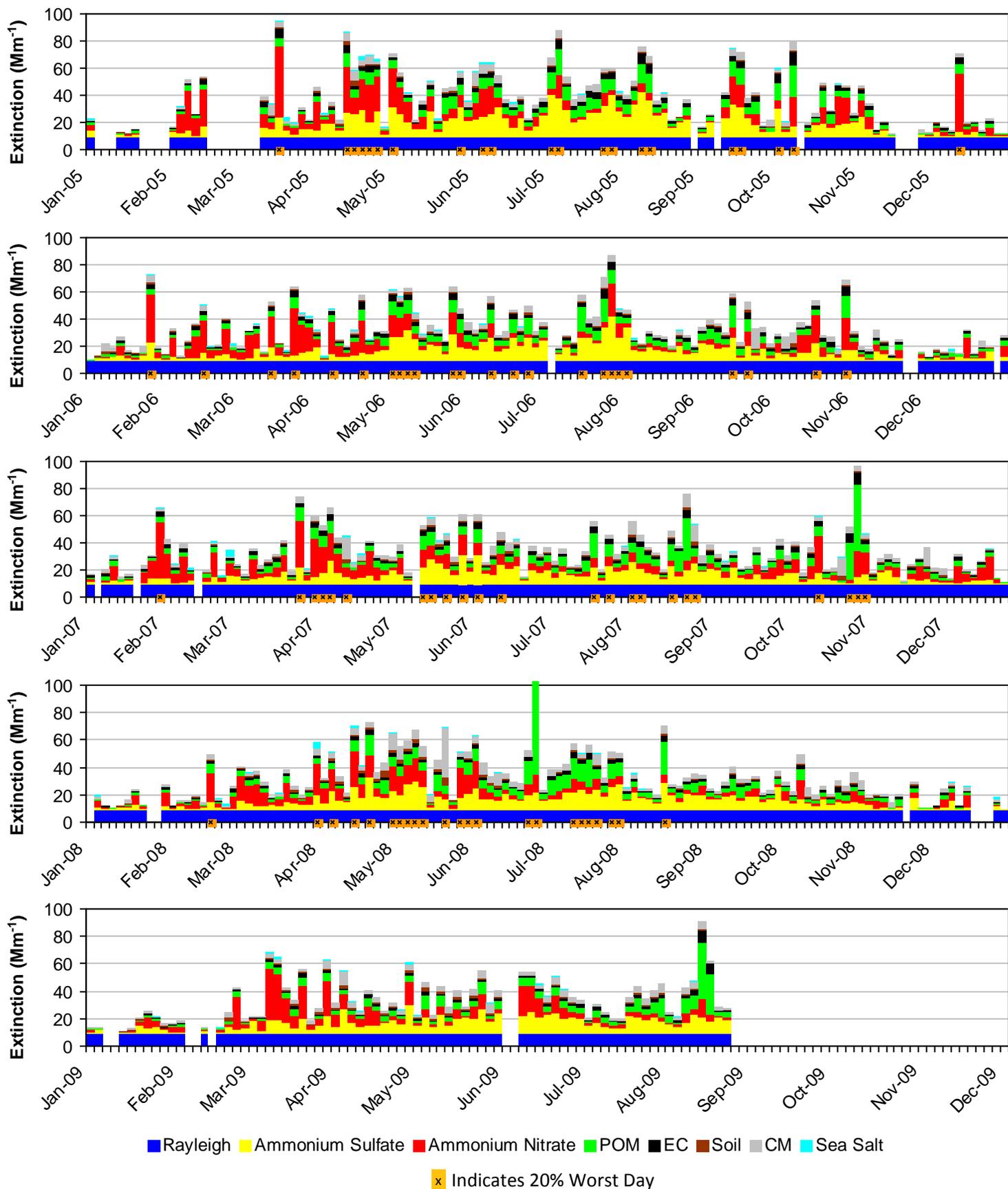
*Note that monthly averages for the year 2009 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.12-7
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the years 2000 and 2001 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.12-8
San Gabriel WA and Cucamonga WA, CA (SAGA1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2009 are shown here, but this year did not meet RHR data completeness criteria.

C.13. SAN GORGONIO WA AND SAN JACINTO WA (SAGO1)

The following tables and figures are presented in this section for the San Gorgonio WA and San Jacinto WA represented by the SAGO1 IMPROVE Monitor:

- **Table C.13-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.13-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.13-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.13-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.13-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.13-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.13-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.13-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.13-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

Table C.13-1
San Geronio WA and San Jacinto WA, CA (SAGO1 Site)
Annual Averages, 5-Year Period Averages and Trends

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	---	5.0	6.2	5.1	5.3	4.1	5.0	5.5	4.4	3.6	3.0	-0.2	0.1	5.4	4.5	-0.9	-17%
Worst 20% Days	---	21.2	23.3	22.6	21.6	21.5	19.9	21.5	20.2	19.2	16.7	-0.5	0.0	22.2	20.5	-1.7	-8%
All Days	---	14.2	15.0	14.3	14.3	13.2	12.7	13.3	12.2	11.7	10.4	-0.4	0.0	14.4	12.6	-1.8	-13%
Total Extinction (Mm-1)																	
Best 20% Days	---	16.8	18.8	16.9	17.2	15.1	16.7	17.5	15.6	14.5	13.6	-0.3	0.1	17.4	15.9	-1.5	-9%
Worst 20% Days	---	84.7	105.9	100.8	87.7	89.0	75.3	96.3	78.5	71.0	53.2	-3.4	0.1	94.8	82.0	-12.8	-14%
All Days	---	47.8	53.5	50.4	49.1	45.8	41.0	46.1	39.9	37.8	31.7	-2.1	0.0	50.2	42.1	-8.1	-16%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	---	1.6	2.1	1.6	2.0	1.5	2.1	2.1	1.6	1.4	1.1	0.0	0.5	1.8	1.7	-0.1	-6%
Worst 20% Days	---	12.5	11.2	14.6	14.5	16.0	12.4	10.8	11.5	9.3	7.6	-0.4	0.1	13.2	12.0	-1.2	-9%
All Days	---	7.5	6.7	7.4	8.2	8.7	6.7	6.2	6.7	6.0	4.8	-0.1	0.1	7.4	6.9	-0.5	-7%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	---	1.7	2.6	1.7	1.3	0.6	0.8	1.3	1.2	0.6	0.6	-0.2	0.0	1.8	0.9	-0.9	-50%
Worst 20% Days	---	37.4	58.0	45.5	39.0	37.0	31.8	27.0	31.0	26.0	20.9	-3.1	0.0	44.9	30.6	-14.3	-32%
All Days	---	16.2	21.5	17.6	16.4	14.1	11.7	11.8	10.0	9.5	8.0	-1.4	0.0	17.9	11.4	-6.5	-36%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	---	1.4	1.7	1.5	1.6	1.2	1.1	1.3	1.0	0.7	0.7	-0.1	0.0	1.6	1.1	-0.5	-31%
Worst 20% Days	---	12.4	14.5	17.9	11.3	12.6	9.9	29.8	13.7	15.5	6.7	0.3	0.3	14.0	16.3	2.3	16%
All Days	---	6.7	7.5	8.1	6.4	5.8	5.4	9.2	6.2	5.9	3.8	-0.2	0.2	7.2	6.5	-0.7	-10%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	---	1.1	1.2	0.9	0.8	0.7	0.8	0.7	0.4	0.3	0.3	-0.1	0.0	1.0	0.6	-0.4	-40%
Worst 20% Days	---	4.9	5.8	5.4	4.6	6.5	5.3	6.3	3.8	4.1	2.8	-0.1	0.2	5.2	5.2	0.0	0%
All Days	---	3.1	3.2	3.0	2.9	3.3	2.9	2.8	2.1	2.0	1.5	-0.1	0.0	3.0	2.6	-0.4	-13%
Soil Extinction (Mm-1)																	
Best 20% Days	---	0.1	0.4	0.2	0.2	0.1	0.3	0.3	0.2	0.2	0.1	0.0	0.4	0.2	0.2	0.0	0%
Worst 20% Days	---	1.2	1.1	0.9	1.2	0.9	0.9	1.5	1.4	1.0	1.0	0.0	0.5	1.1	1.2	0.1	9%
All Days	---	0.7	0.9	0.6	0.8	0.5	0.6	0.8	0.8	0.7	0.6	0.0	0.4	0.8	0.7	-0.1	-13%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	---	0.5	0.9	0.9	1.1	1.0	1.5	1.6	0.9	1.1	0.5	0.1	0.0	0.8	1.2	0.4	50%
Worst 20% Days	---	6.2	5.4	6.4	6.6	5.4	4.5	10.4	6.3	4.4	4.1	0.0	0.4	6.1	6.2	0.1	2%
All Days	---	3.5	3.6	3.5	4.1	3.0	3.4	5.0	3.8	3.4	2.8	0.0	0.5	3.7	3.7	0.0	0%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	---	0.3	0.0	0.2	0.2	0.1	0.1	0.1	0.3	0.1	0.2	0.0	0.5	0.2	0.1	-0.1	-50%
Worst 20% Days	---	0.1	0.1	0.1	0.6	0.6	0.4	0.5	0.8	0.6	0.2	0.1	0.0	0.2	0.6	0.4	>100%
All Days	---	0.2	0.1	0.2	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.0	0.0	0.2	0.3	0.1	50%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.13-1
San Gorgonio WA and San Jacinto WA, CA (SAGO1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

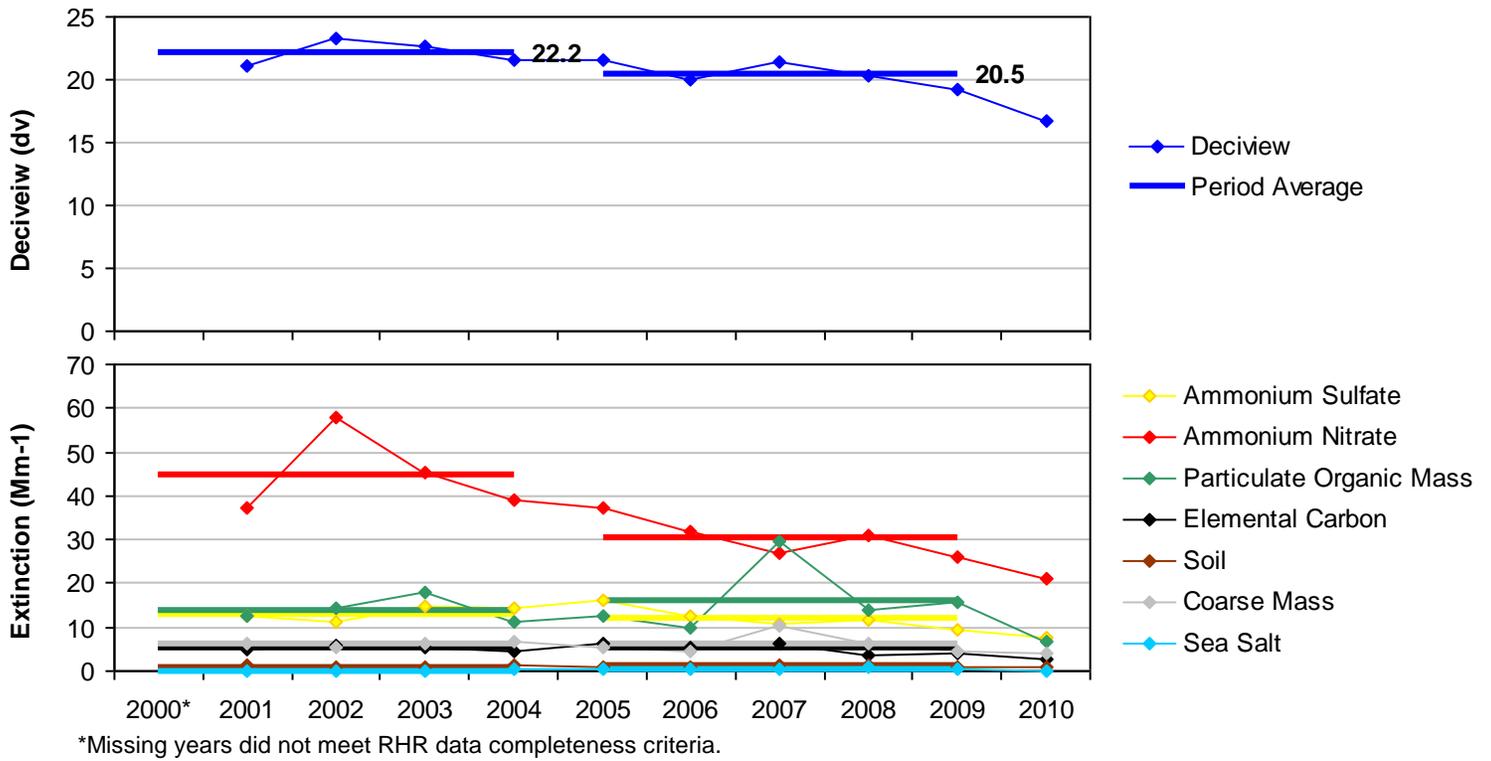


Figure C.13-2
San Gorgonio WA and San Jacinto WA, CA (SAGO1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

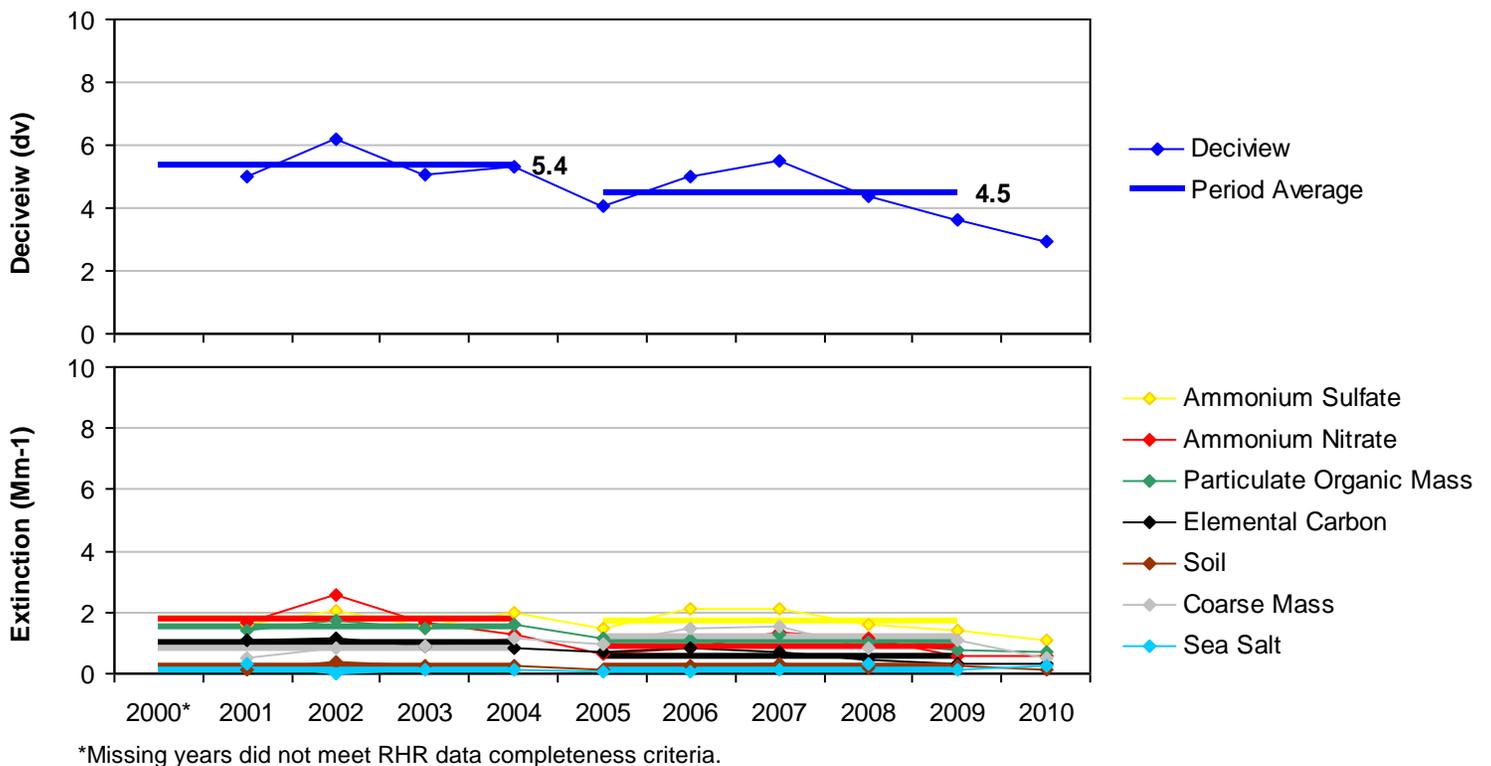
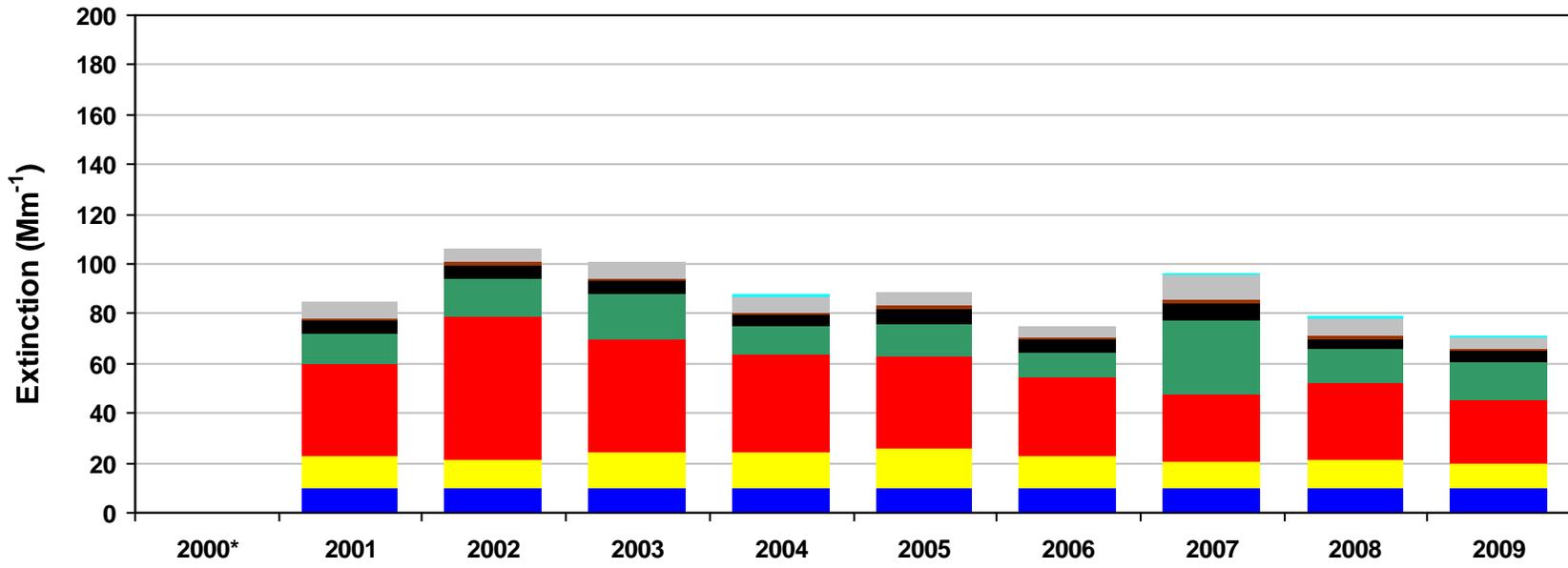
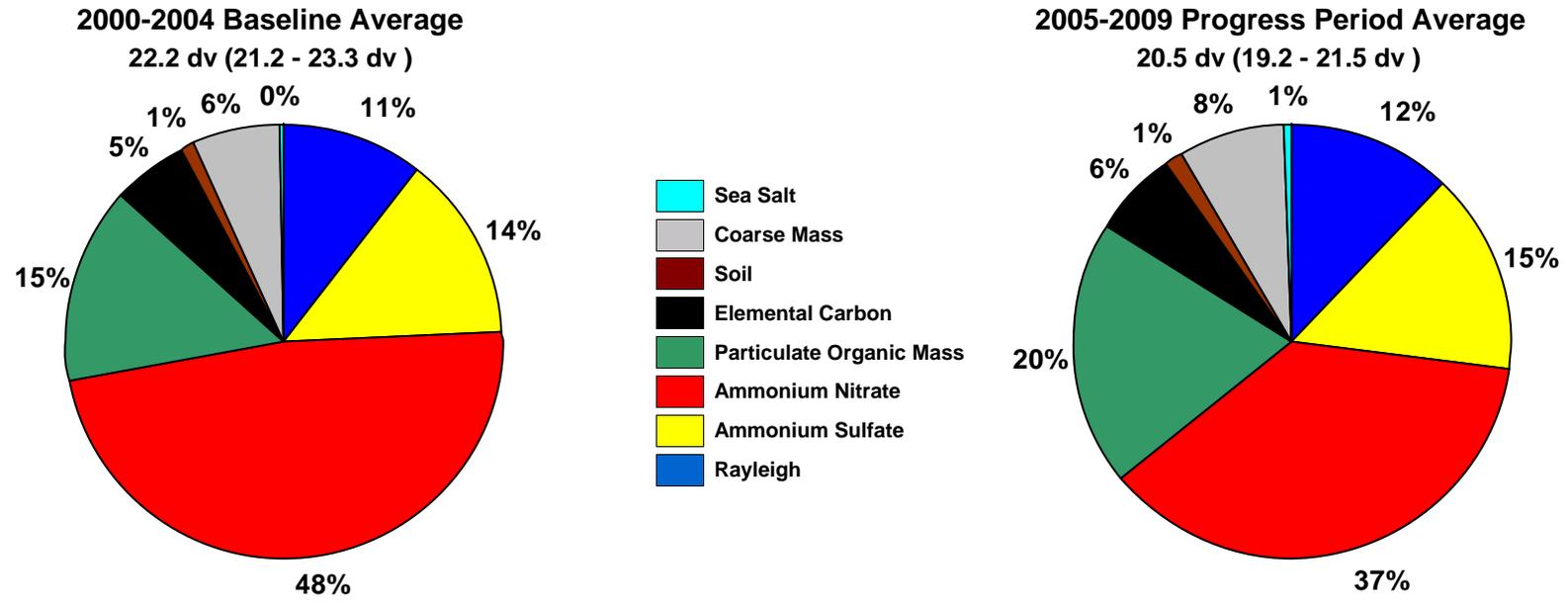
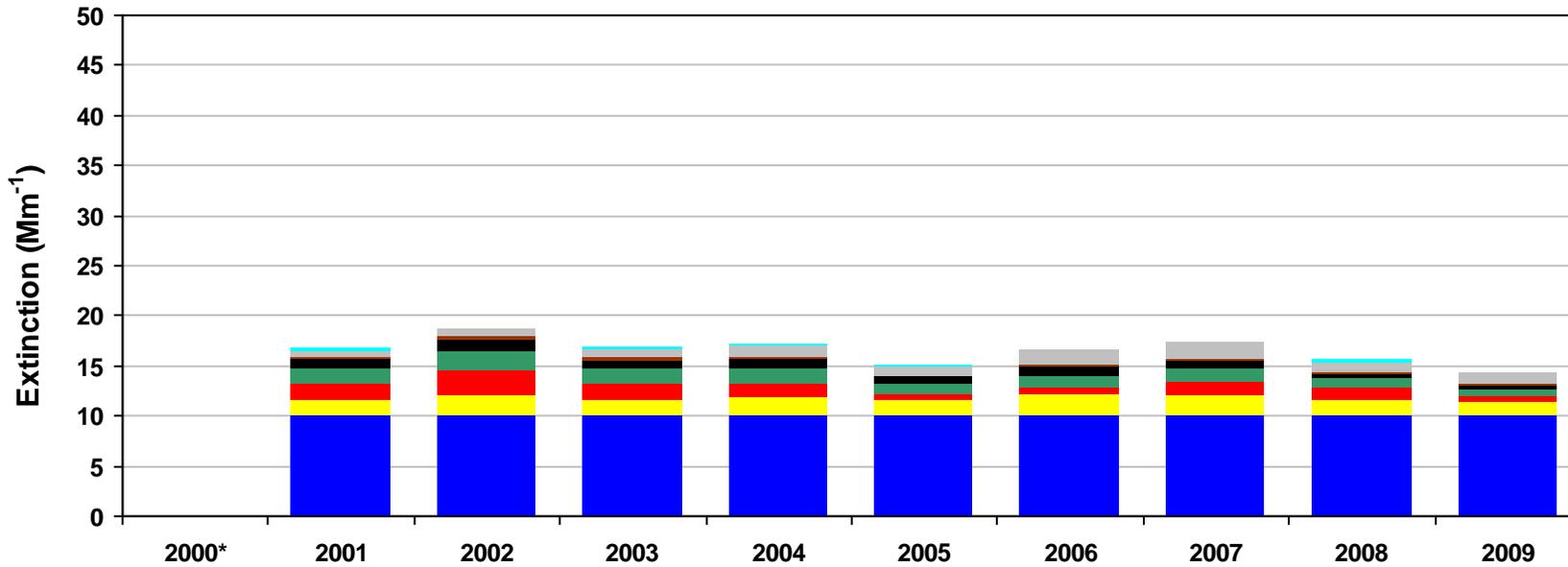
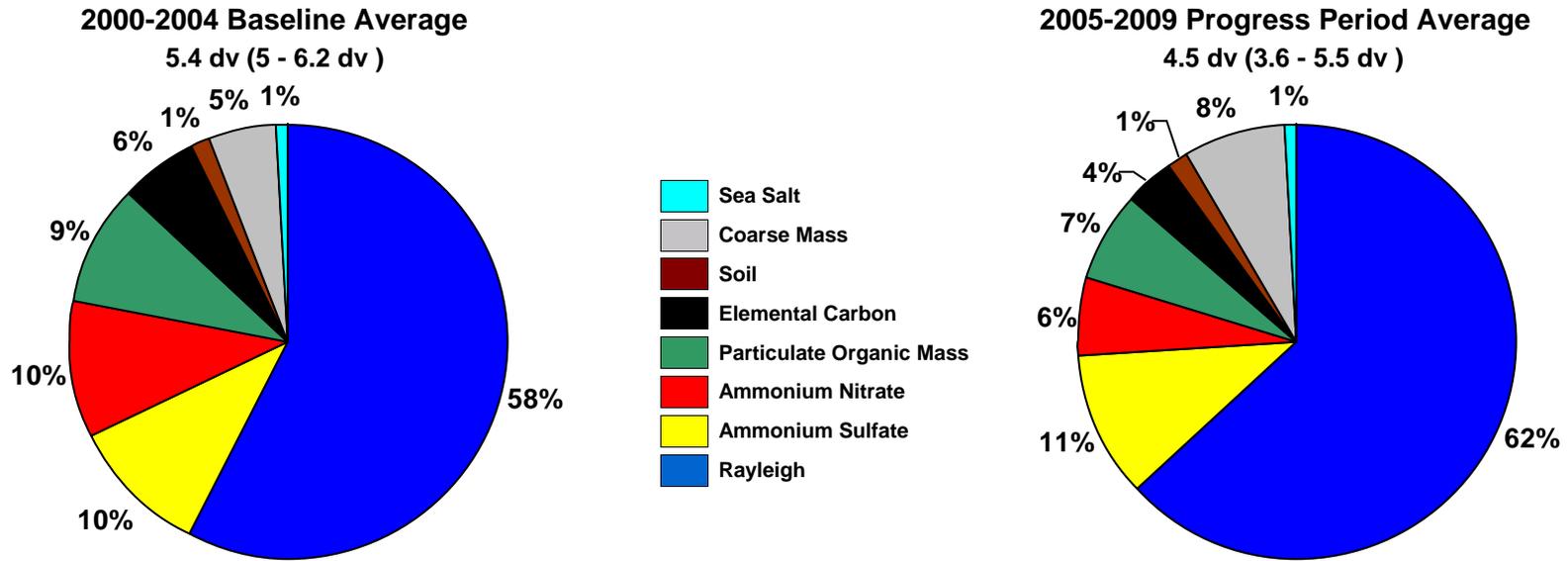


Figure C.13-3
San Gorgonio WA and San Jacinto WA, CA (SAGO1 Site)
20% Most Impaired Visibility Days



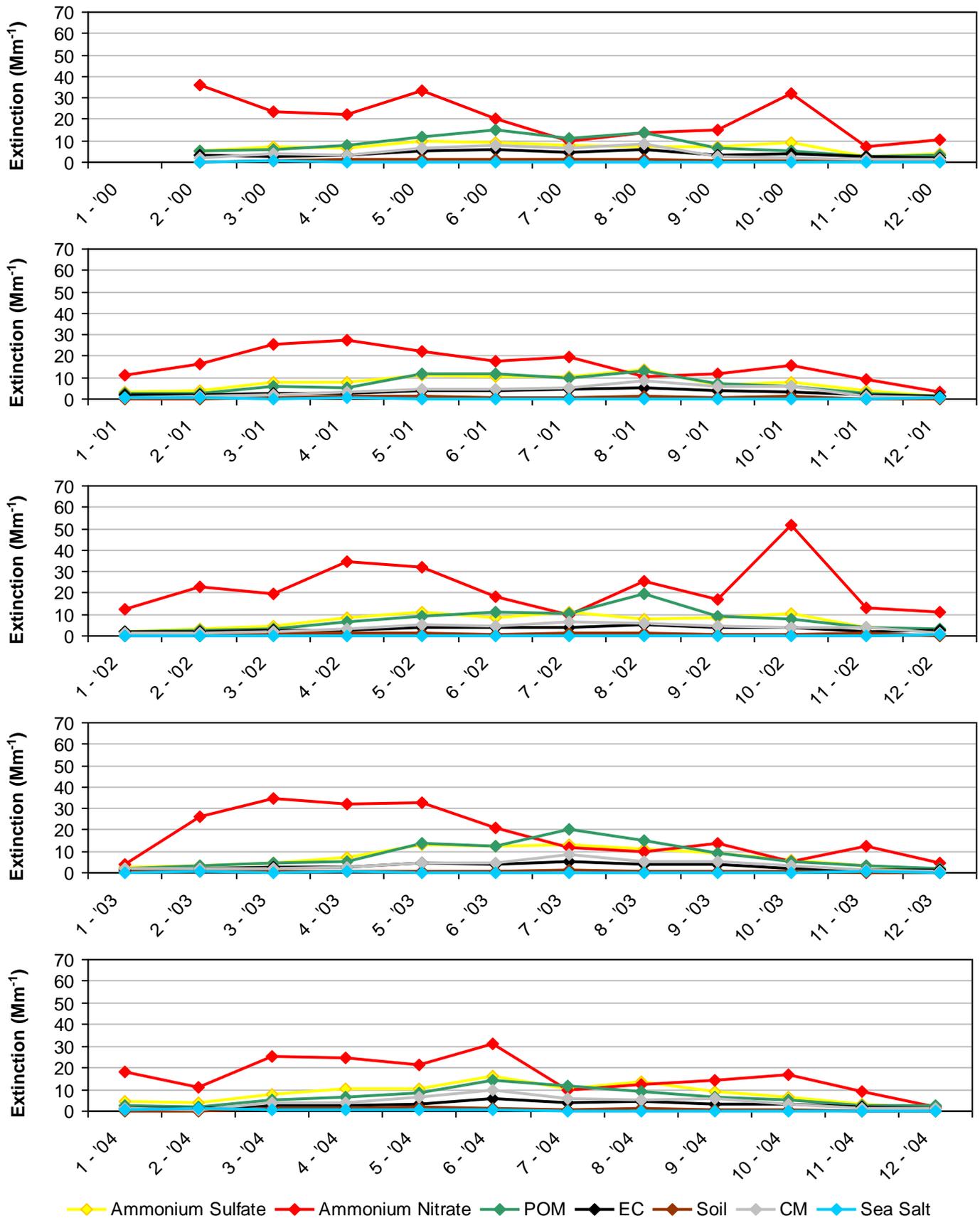
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.13-4
San Gorgonio WA and San Jacinto WA, CA (SAGO1 Site)
20% Least Impaired Visibility Days



*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.13-5
San Geronio WA and San Jacinto WA, CA (SAGO1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



*Note that monthly averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.13-6
San Geronio WA and San Jacinto WA, CA (SAGO1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

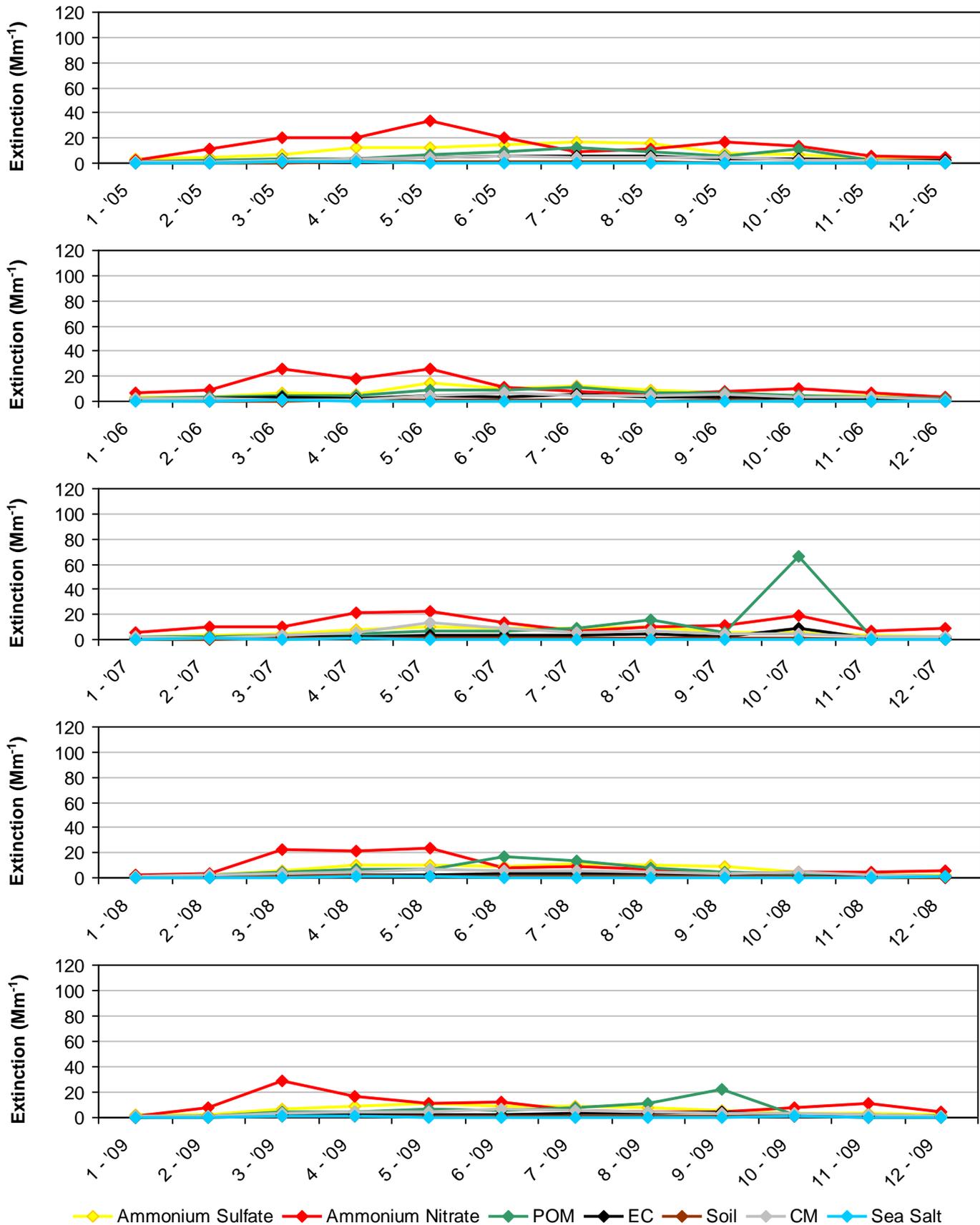
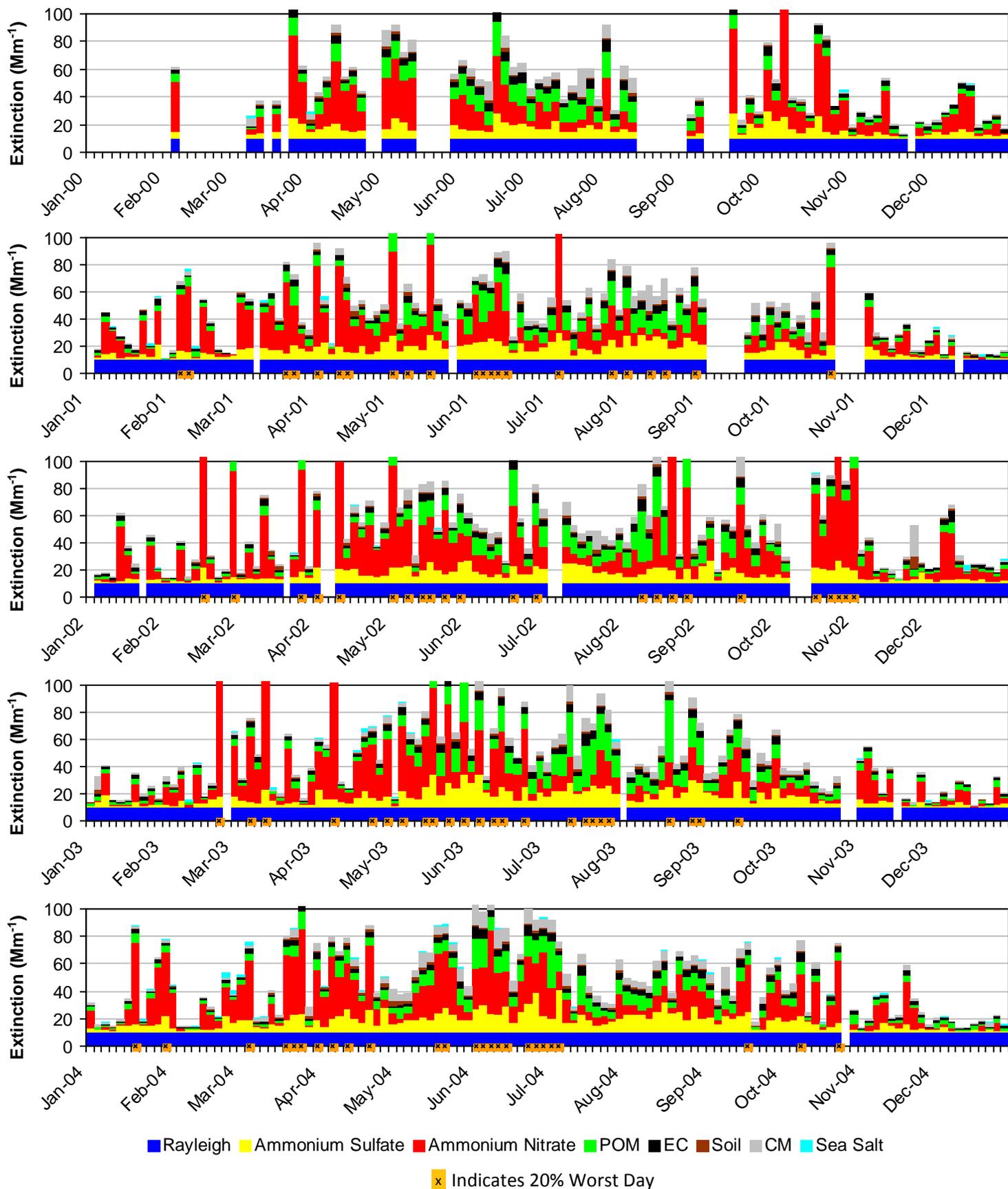
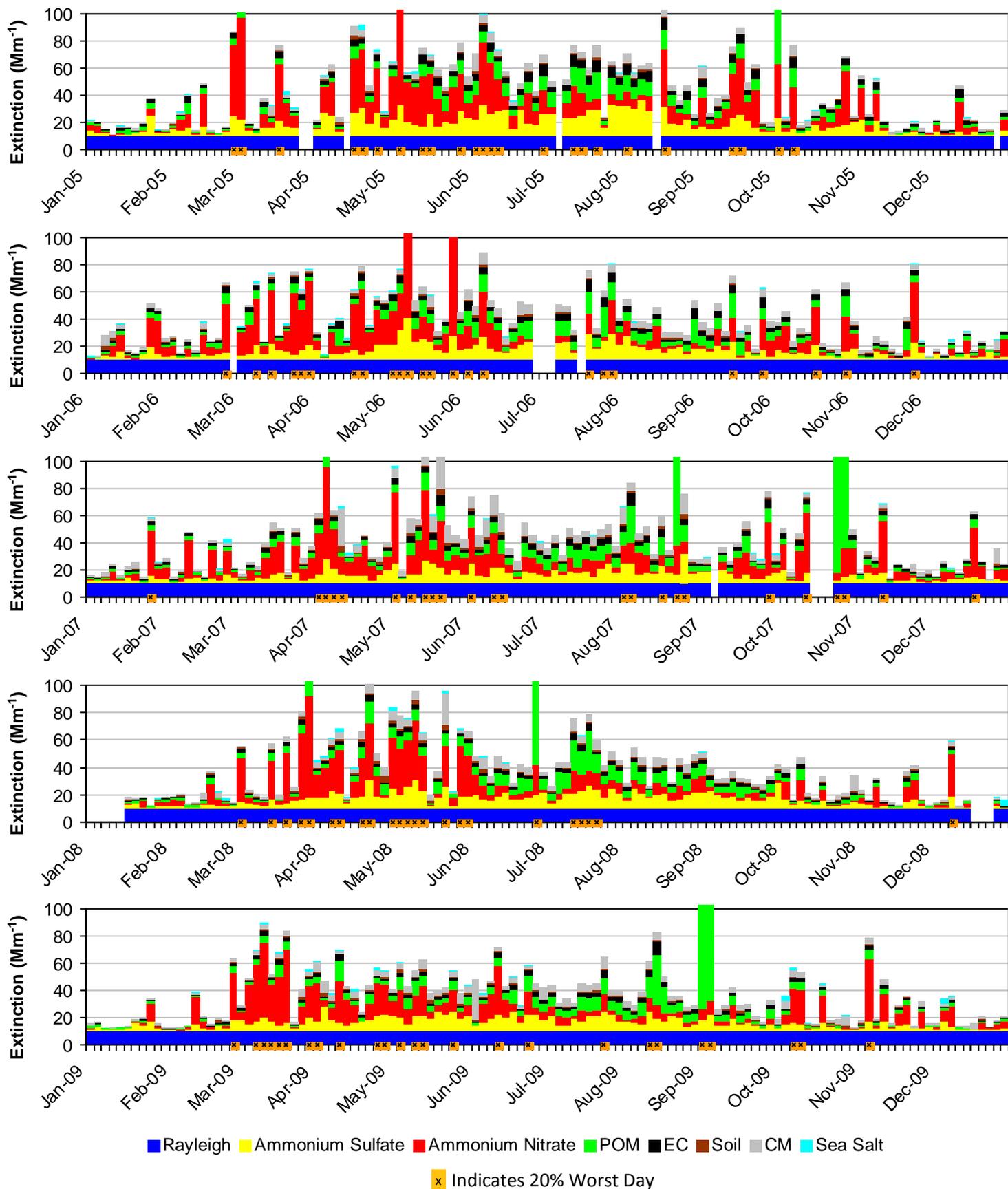


Figure C.13-7
San Gorgonio WA and San Jacinto WA, CA (SAGO1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2000 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.13-8
 San Gorgonio WA and San Jacinto WA, CA (SAGO1 Site)
 2005-2009 Progress Period Extinction, All Sampled Days



C.14. PINNACLES NM AND VENTANA WA (PINN1)

The following tables and figures are presented in this section for the Pinnacles NM and Ventana WA represented by the PINN1 IMPROVE Monitor:

- **Table C.14-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.14-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.14-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.14-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.14-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.14-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.14-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.14-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.14-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

**Table C.14-1
Pinnacles NP and Ventana WA, CA (PINN1 Site)
Annual Averages, 5-Year Period Averages and Trends**

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	9.8	---	8.6	8.4	8.7	8.0	7.9	8.5	8.4	7.2	7.2	-0.2	0.0	8.9	8.0	-0.9	-10%
Worst 20% Days	18.7	---	19.9	17.1	18.1	18.1	17.9	18.3	19.8	17.8	15.1	0.0	0.4	18.5	18.4	-0.1	-1%
All Days	14.3	---	14.0	12.7	13.5	13.4	12.9	13.0	13.7	12.4	11.3	-0.2	0.1	13.6	13.1	-0.5	-4%
Total Extinction (Mm-1)																	
Best 20% Days	26.9	---	24.1	23.4	24.3	22.6	22.0	23.5	23.5	20.7	20.6	-0.5	0.0	24.7	22.5	-2.2	-9%
Worst 20% Days	65.6	---	74.7	56.0	64.0	62.3	60.4	66.0	78.0	61.7	45.6	0.0	0.5	65.1	65.7	0.6	1%
All Days	44.1	---	44.1	37.4	41.0	40.7	38.9	39.8	43.8	37.4	32.2	-0.6	0.1	41.7	40.1	-1.6	-4%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	4.9	---	4.2	4.5	4.1	4.4	3.3	3.5	3.5	3.5	3.3	-0.2	0.0	4.4	3.6	-0.8	-18%
Worst 20% Days	12.4	---	15.4	13.8	13.9	18.2	17.3	15.7	15.5	16.1	10.1	0.4	0.1	13.9	16.6	2.7	19%
All Days	9.1	---	9.4	7.9	9.1	10.3	9.5	8.5	8.9	8.3	6.7	-0.1	0.3	8.9	9.1	0.2	2%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	2.8	---	2.6	2.6	2.4	1.7	1.5	2.2	2.1	1.5	1.5	-0.1	0.0	2.6	1.8	-0.8	-31%
Worst 20% Days	18.3	---	19.3	10.1	20.7	13.9	10.9	16.2	13.5	12.0	7.8	-0.7	0.2	17.1	13.3	-3.8	-22%
All Days	8.7	---	7.8	6.0	8.3	6.2	5.7	7.3	6.6	5.7	4.3	-0.3	0.0	7.7	6.3	-1.4	-18%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	2.8	---	2.7	2.3	2.6	2.0	2.1	2.4	2.6	1.6	1.7	-0.1	0.0	2.6	2.1	-0.5	-19%
Worst 20% Days	12.1	---	18.1	12.5	10.2	8.9	9.0	12.6	24.8	11.8	6.2	0.0	0.5	13.2	13.4	0.2	2%
All Days	7.0	---	8.1	6.3	6.0	5.4	5.3	5.6	8.8	5.6	3.7	-0.2	0.1	6.8	6.2	-0.6	-9%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	1.5	---	1.2	1.1	1.2	1.1	1.1	1.1	0.8	0.7	0.6	-0.1	0.0	1.2	1.0	-0.2	-17%
Worst 20% Days	6.4	---	4.7	3.5	3.6	4.2	3.4	3.4	3.9	2.5	2.8	-0.3	0.0	4.6	3.5	-1.1	-24%
All Days	3.6	---	2.7	2.3	2.2	2.5	2.3	2.0	2.0	1.6	1.4	-0.2	0.0	2.7	2.1	-0.6	-22%
Soil Extinction (Mm-1)																	
Best 20% Days	0.2	---	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.0	0.5	0.2	0.2	0.0	0%
Worst 20% Days	0.6	---	0.6	0.5	0.6	0.4	0.8	0.5	0.6	0.6	0.7	0.0	0.4	0.6	0.6	0.0	0%
All Days	0.4	---	0.4	0.3	0.4	0.3	0.4	0.4	0.5	0.4	0.4	0.0	0.2	0.4	0.4	0.0	0%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	1.9	---	1.7	1.4	1.7	1.7	1.3	2.1	1.7	1.5	1.5	0.0	0.1	1.7	1.7	0.0	0%
Worst 20% Days	3.8	---	4.3	4.0	3.0	4.2	6.0	4.7	5.1	4.4	4.1	0.1	0.1	3.8	4.9	1.1	29%
All Days	3.5	---	3.6	2.8	2.8	3.5	3.2	3.3	3.9	3.1	3.0	0.0	0.5	3.2	3.4	0.2	6%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	1.7	---	0.4	0.4	1.1	0.6	1.6	1.0	1.6	0.8	0.8	0.1	0.4	0.9	1.1	0.2	22%
Worst 20% Days	0.9	---	1.3	0.6	0.9	1.5	2.0	2.0	3.5	3.4	2.9	0.3	0.0	0.9	2.5	1.6	>100%
All Days	0.9	---	1.0	0.8	1.2	1.5	1.5	1.6	2.1	1.7	1.7	0.1	0.0	1.0	1.7	0.7	70%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.14-1
Pinnacles NP and Ventana WA, CA (PINN1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

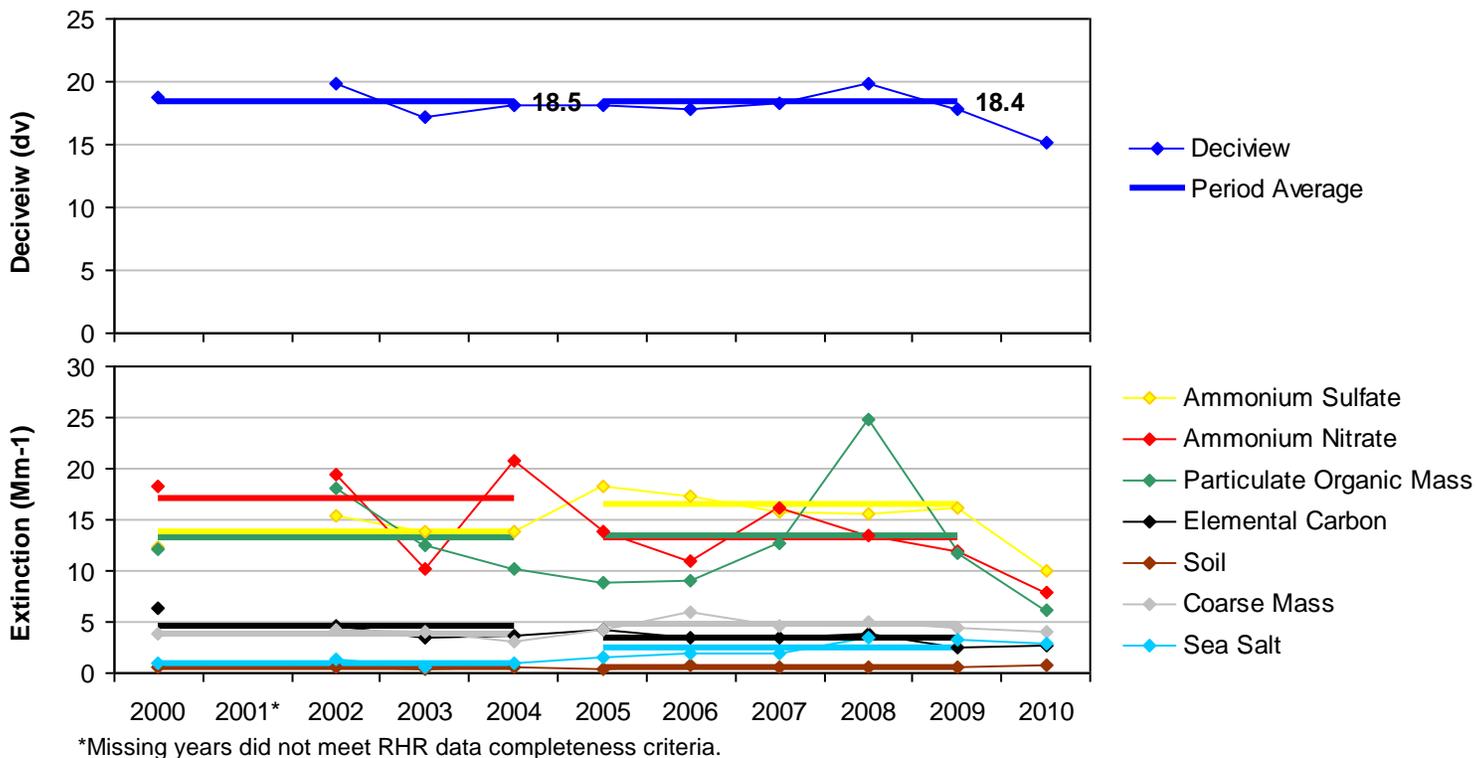


Figure C.14-2
Pinnacles NP and Ventana WA, CA (PINN1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

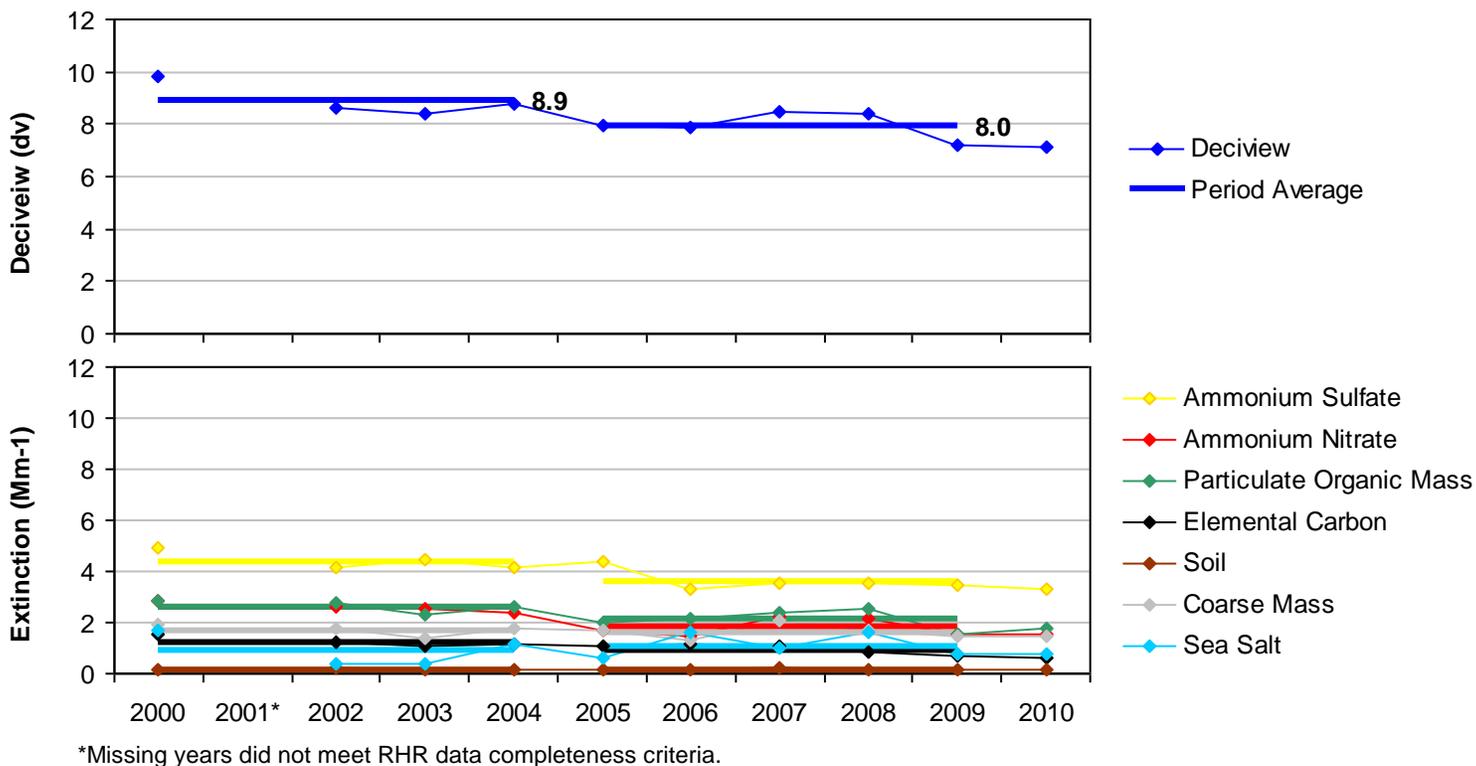
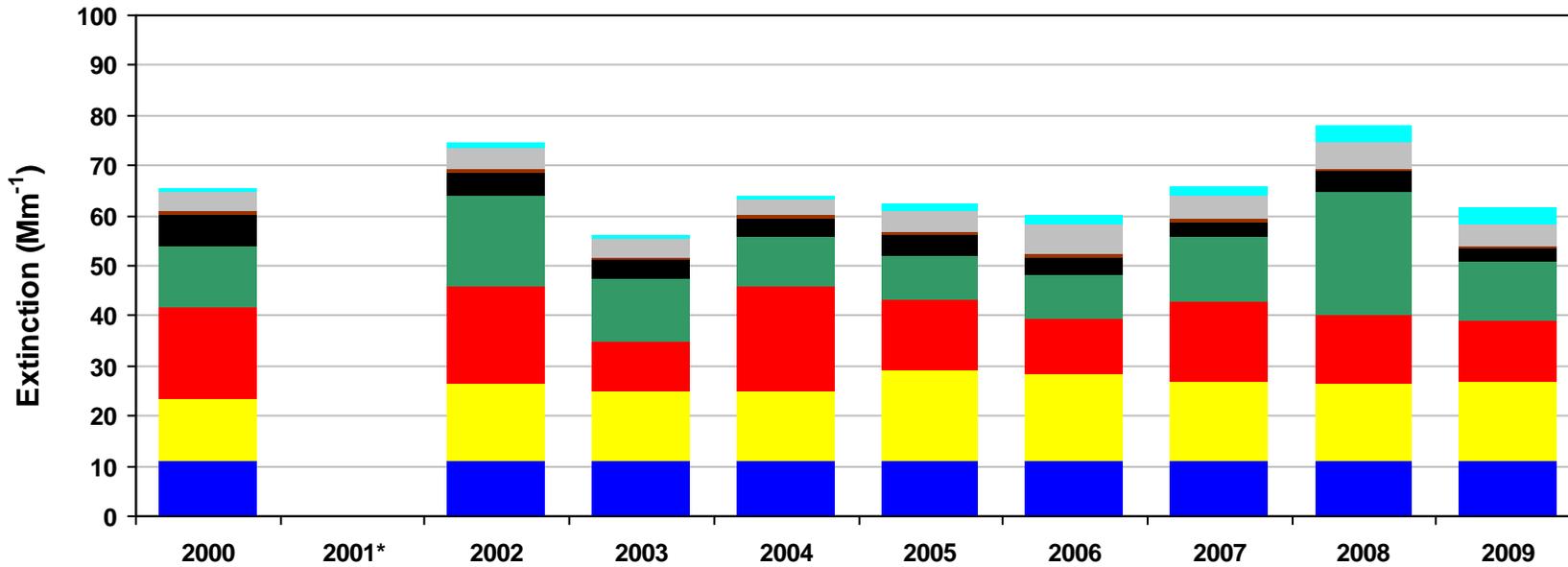
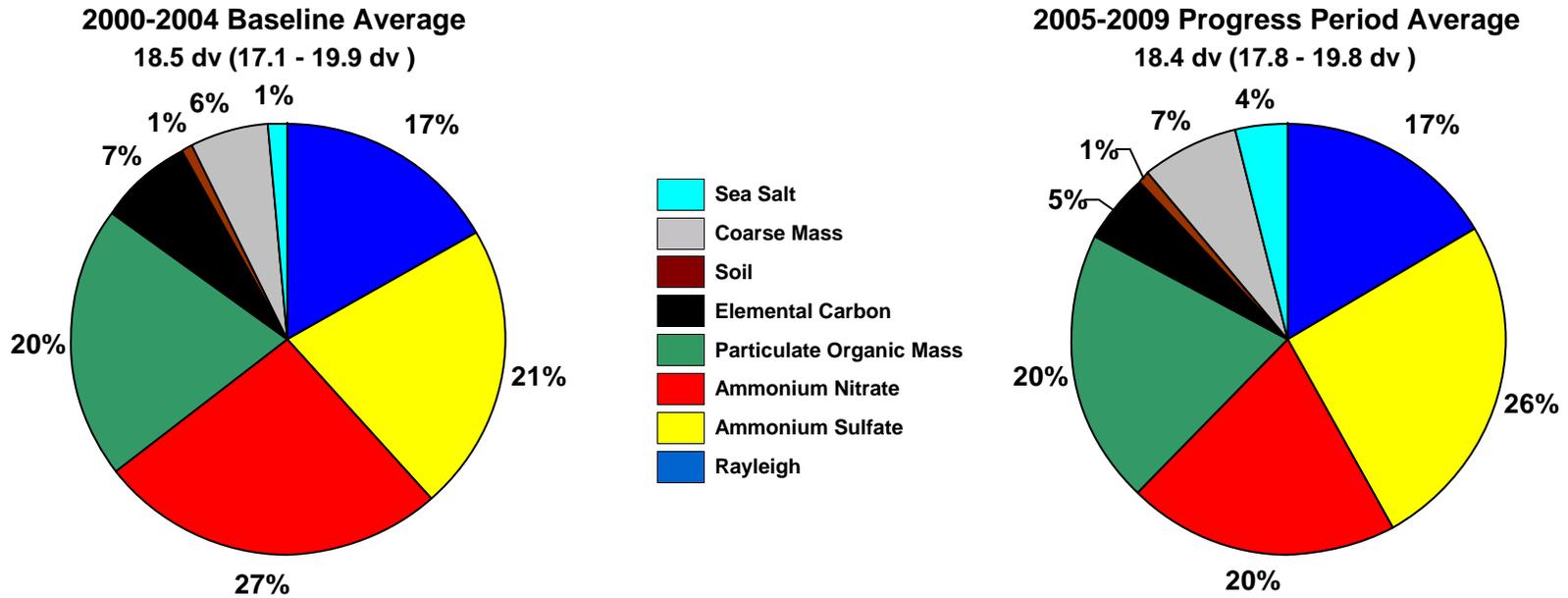
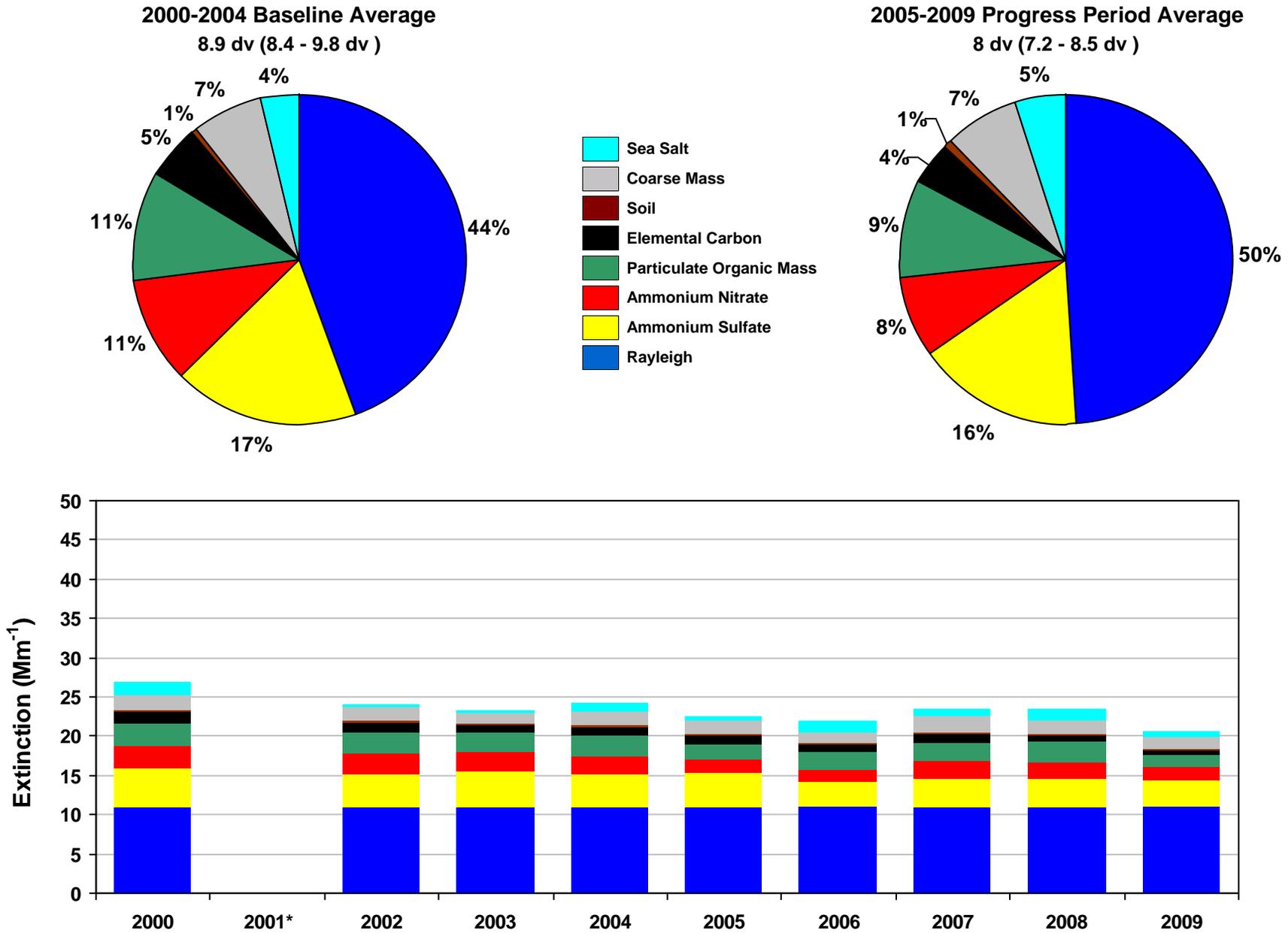


Figure C.14-3
Pinnacles NP and Ventana WA, CA (PINN1 Site)
20% Most Impaired Visibility Days



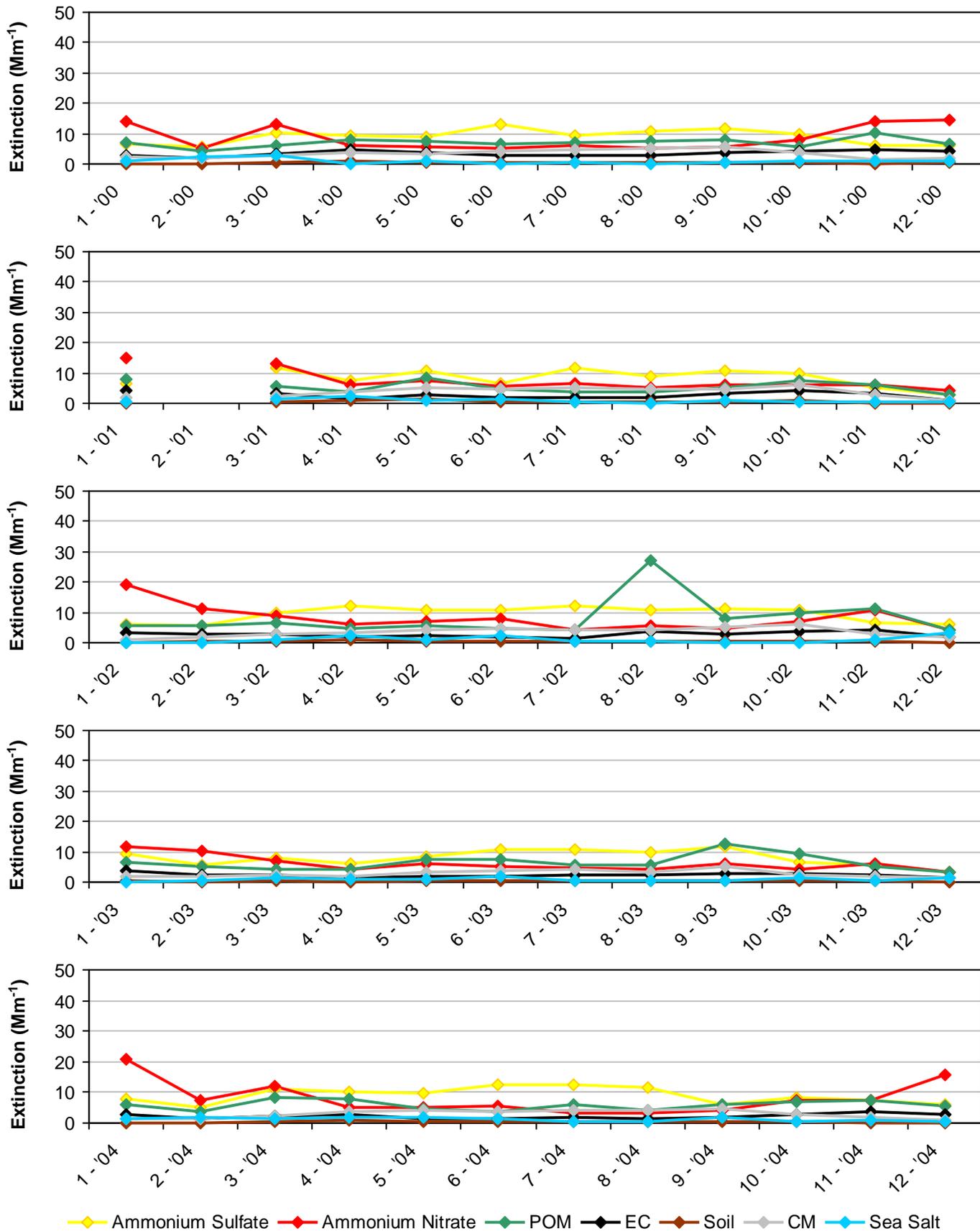
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.14-4
Pinnacles NP and Ventana WA, CA (PINN1 Site)
20% Least Impaired Visibility Days



*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.14-5
Pinnacles NP and Ventana WA, CA (PINN1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



*Note that monthly averages for the year 2001 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.14-6
Pinnacles NP and Ventana WA, CA (PINN1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

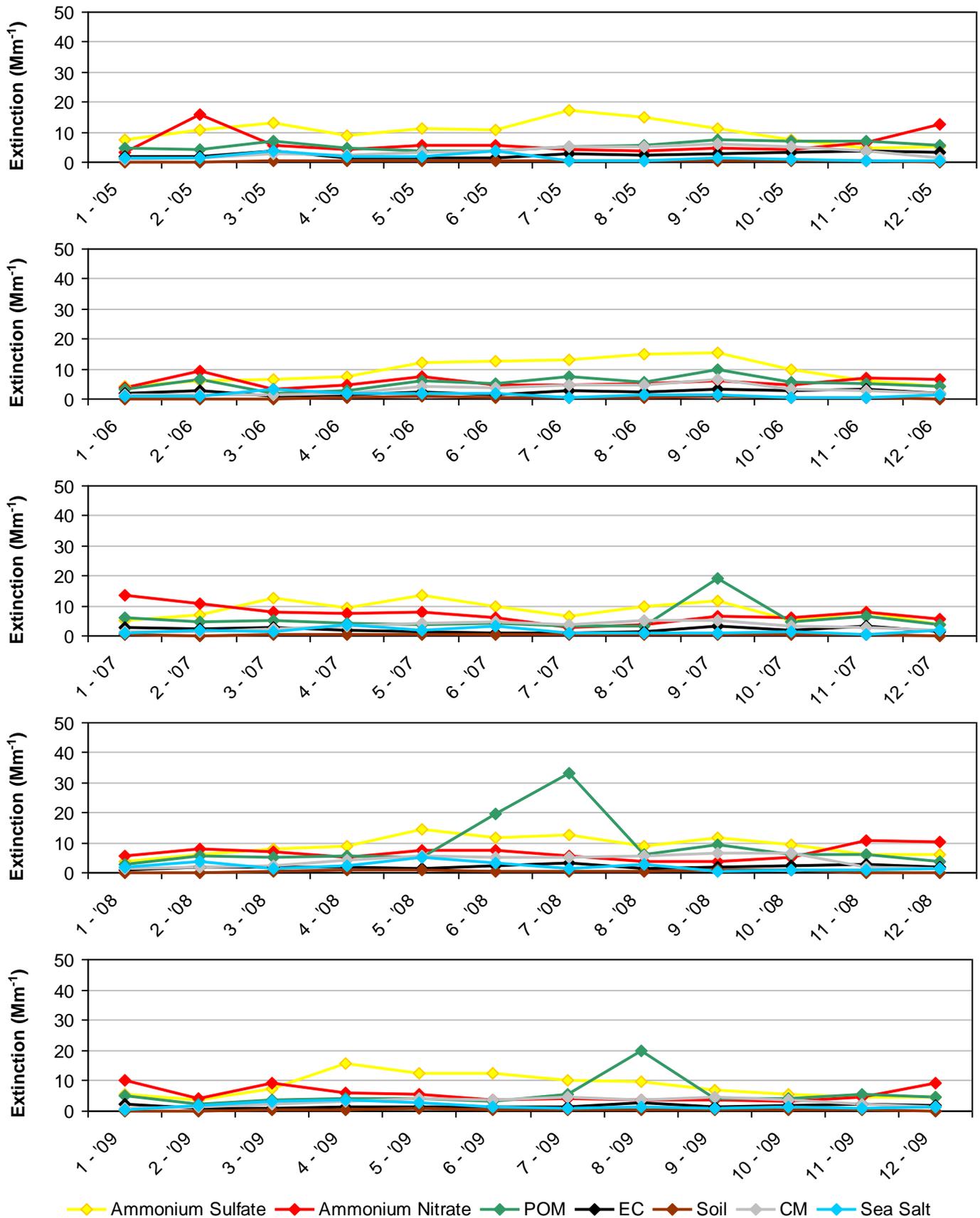
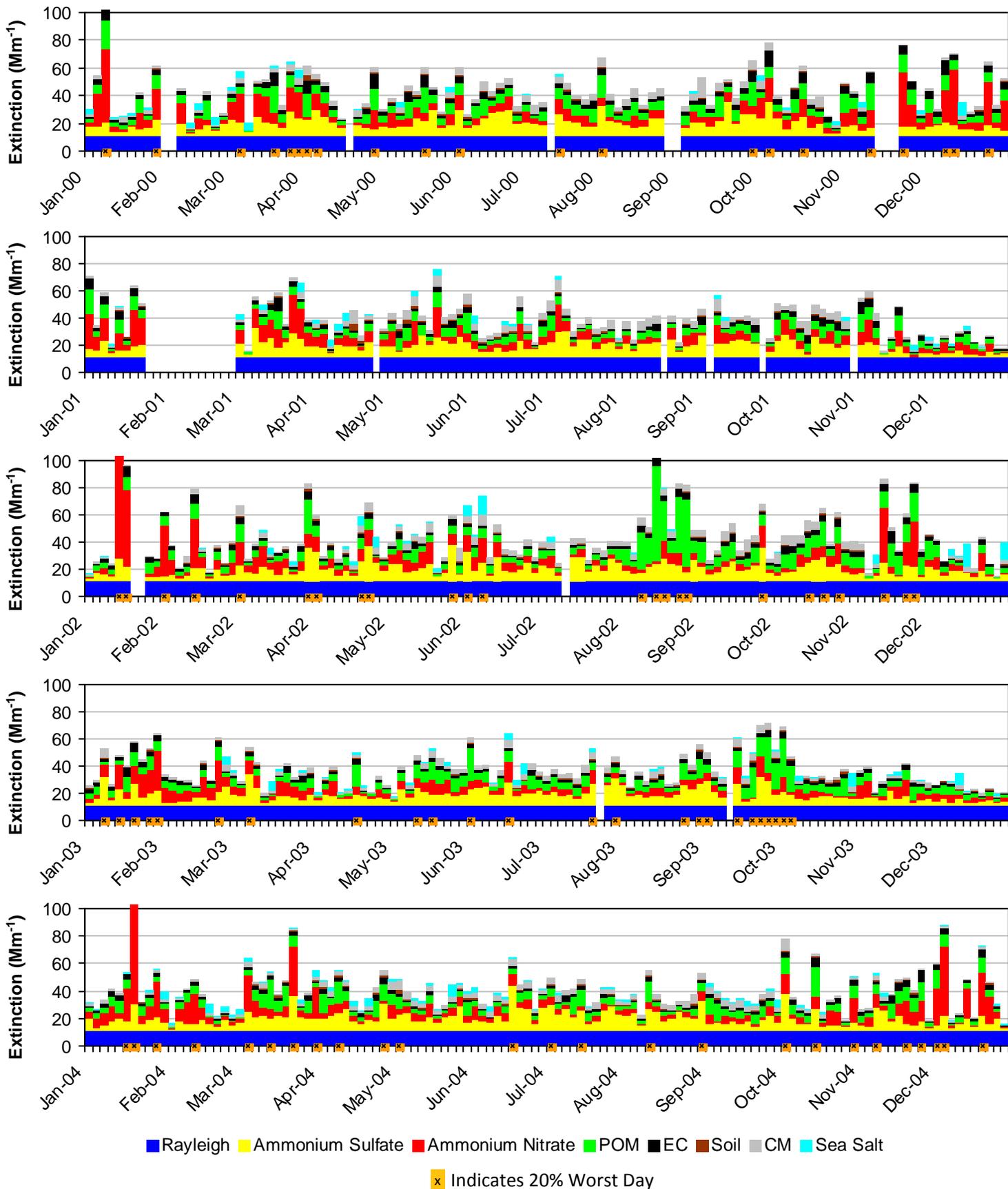
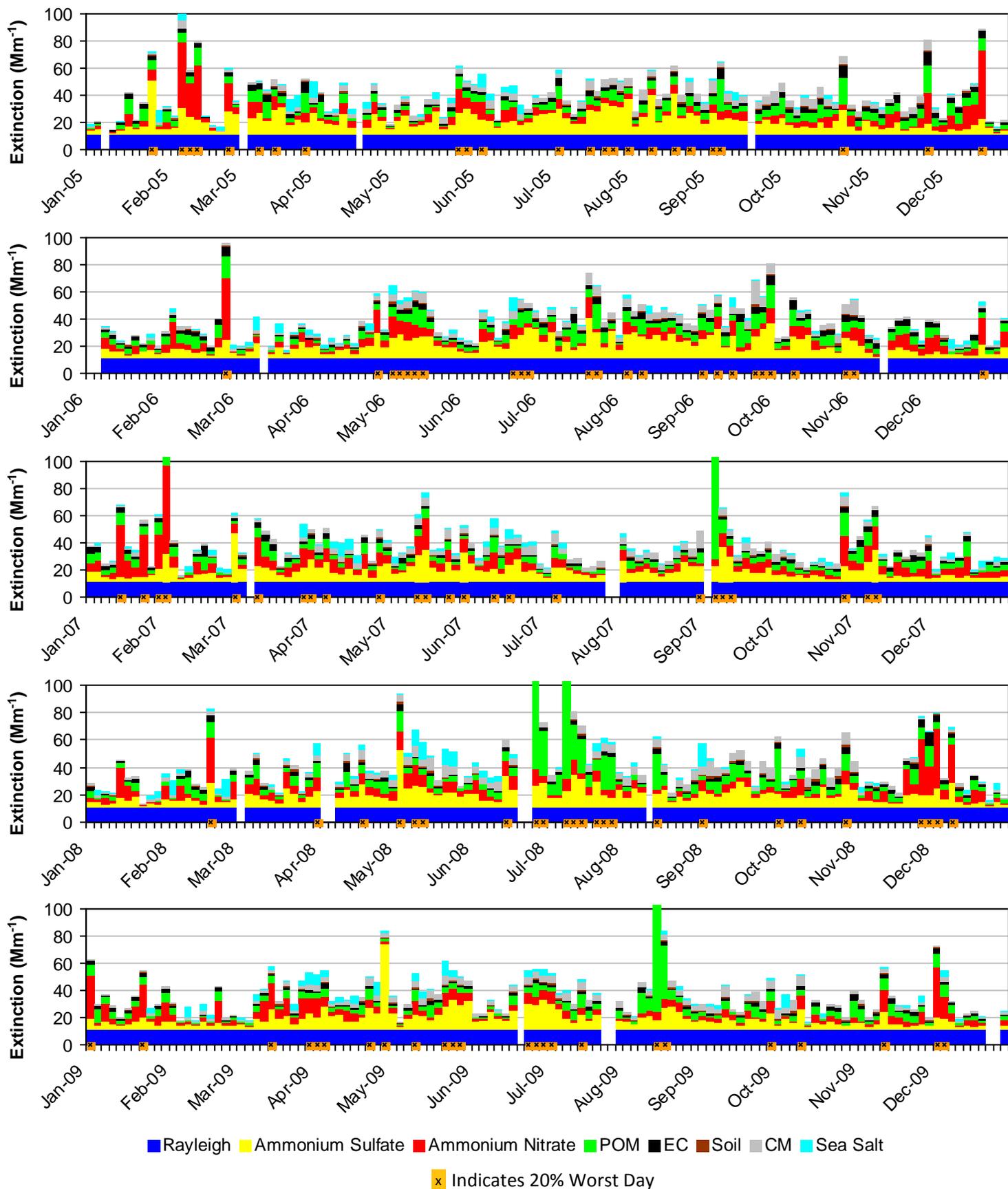


Figure C.14-7
Pinnacles NP and Ventana WA, CA (PINN1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the year 2001 are shown here, but this year did not meet RHR data completeness criteria.

Figure C.14-8
Pinnacles NP and Ventana WA, CA (PINN1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



C.15. POINT REYES NATIONAL SEASHORE (PORE1)

The following tables and figures are presented in this section for the Point Reyes National Seashore represented by the PORE1 IMPROVE Monitor:

- **Table C.15-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.15-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.15-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.15-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.15-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.15-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.15-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.15-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.15-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

Table C.15-1
Point Reyes National Seashore, CA (PORE1 Site)
Annual Averages, 5-Year Period Averages and Trends

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	10.5	---	10.5	---	10.5	9.8	9.6	8.9	9.5	7.8	8.0	-0.2	0.0	10.5	9.1	-1.4	-13%
Worst 20% Days	21.2	---	24.3	---	22.9	22.3	22.0	22.4	22.1	21.3	22.0	-0.2	0.2	22.8	22.0	-0.8	-4%
All Days	15.7	---	16.9	---	16.2	15.9	15.7	15.5	15.8	14.6	14.7	-0.2	0.1	16.3	15.5	-0.8	-5%
Total Extinction (Mm-1)																	
Best 20% Days	29.0	---	28.9	---	29.1	26.9	26.5	24.9	26.4	22.1	22.6	-0.7	0.0	29.0	25.4	-3.6	-12%
Worst 20% Days	85.3	---	134.7	---	106.7	96.8	92.6	101.8	94.1	87.7	94.7	-2.7	0.2	108.9	94.6	-14.3	-13%
All Days	51.9	---	65.2	---	57.0	54.6	53.3	54.3	53.7	48.9	49.8	-1.1	0.1	58.0	53.0	-5.0	-9%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	6.8	---	6.1	---	7.3	6.0	5.7	6.0	5.9	4.4	4.8	-0.2	0.0	6.7	5.6	-1.1	-16%
Worst 20% Days	13.1	---	15.2	---	13.9	27.6	22.2	17.1	17.9	19.7	19.2	0.7	0.1	14.1	20.9	6.8	48%
All Days	10.0	---	11.3	---	10.9	14.8	12.9	10.9	11.7	11.1	10.5	0.1	0.4	10.7	12.3	1.6	15%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	2.4	---	2.4	---	2.3	1.9	1.6	1.6	1.6	1.2	1.1	-0.2	0.0	2.4	1.6	-0.8	-33%
Worst 20% Days	19.9	---	56.6	---	38.7	24.8	16.0	32.4	17.7	21.7	24.8	-2.2	0.2	38.4	22.5	-15.9	-41%
All Days	7.8	---	15.5	---	11.4	8.3	6.6	9.1	6.8	7.5	7.6	-0.6	0.1	11.6	7.7	-3.9	-34%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	1.3	---	1.5	---	1.7	1.5	0.7	0.6	1.5	0.6	0.6	-0.1	0.1	1.5	1.0	-0.5	-33%
Worst 20% Days	8.6	---	16.4	---	11.2	5.4	4.6	5.3	7.2	5.8	4.0	-0.7	0.1	12.1	5.7	-6.4	-53%
All Days	4.1	---	5.7	---	4.3	3.4	2.9	2.5	3.2	2.7	1.9	-0.3	0.0	4.7	2.9	-1.8	-38%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	0.5	---	0.6	---	0.6	0.5	0.3	0.3	0.4	0.2	0.2	0.0	0.0	0.6	0.3	-0.3	-50%
Worst 20% Days	3.9	---	3.1	---	2.8	2.6	1.9	2.2	1.5	1.6	1.5	-0.3	0.0	3.3	2.0	-1.3	-39%
All Days	1.7	---	1.3	---	1.2	1.1	1.1	0.8	0.8	0.8	0.6	-0.1	0.0	1.4	0.9	-0.5	-36%
Soil Extinction (Mm-1)																	
Best 20% Days	0.1	---	0.1	---	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0%
Worst 20% Days	0.4	---	0.5	---	0.3	0.2	0.3	0.2	0.4	0.3	0.3	0.0	0.2	0.4	0.3	-0.1	-25%
All Days	0.2	---	0.3	---	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.0	0.4	0.2	0.2	0.0	0%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	2.6	---	2.5	---	1.8	1.6	2.1	1.6	1.5	1.1	1.2	-0.1	0.0	2.3	1.6	-0.7	-30%
Worst 20% Days	7.6	---	7.7	---	7.1	5.8	9.6	8.6	9.8	5.4	6.5	0.1	0.5	7.5	7.8	0.3	4%
All Days	5.0	---	5.0	---	4.6	4.0	5.2	5.2	5.1	3.6	4.0	-0.1	0.5	4.9	4.6	-0.3	-6%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	3.2	---	3.7	---	3.4	3.3	4.0	2.7	3.5	2.4	2.6	-0.1	0.3	3.4	3.2	-0.2	-6%
Worst 20% Days	19.8	---	23.2	---	20.6	18.5	26.0	24.0	27.6	21.2	26.4	0.7	0.1	21.2	23.4	2.2	10%
All Days	11.1	---	14.0	---	12.4	10.9	12.4	13.7	13.9	11.0	13.0	0.0	0.5	12.5	12.4	-0.1	-1%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.15-1
Point Reyes National Seashore, CA (PORE1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

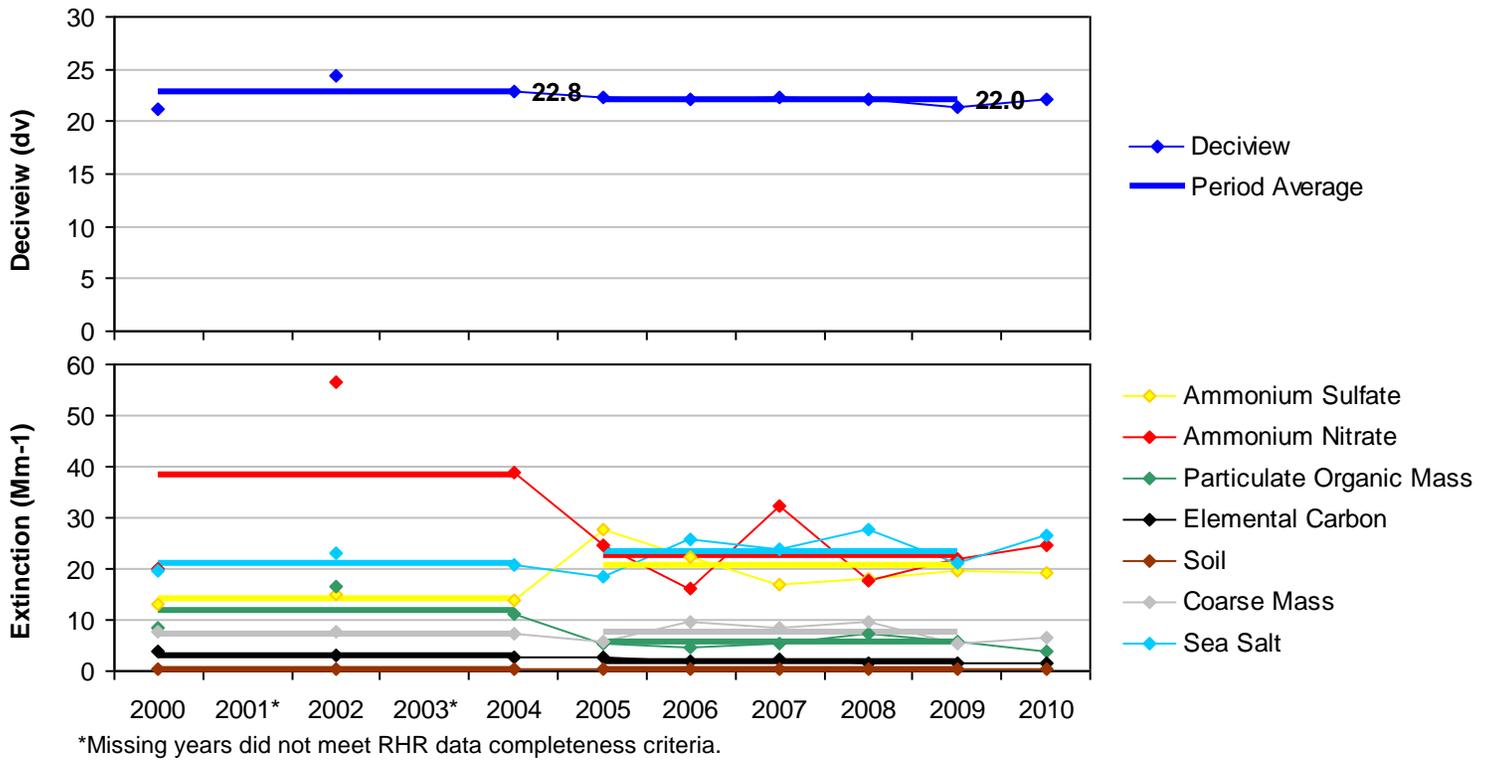


Figure C.15-2
Point Reyes National Seashore, CA (PORE1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

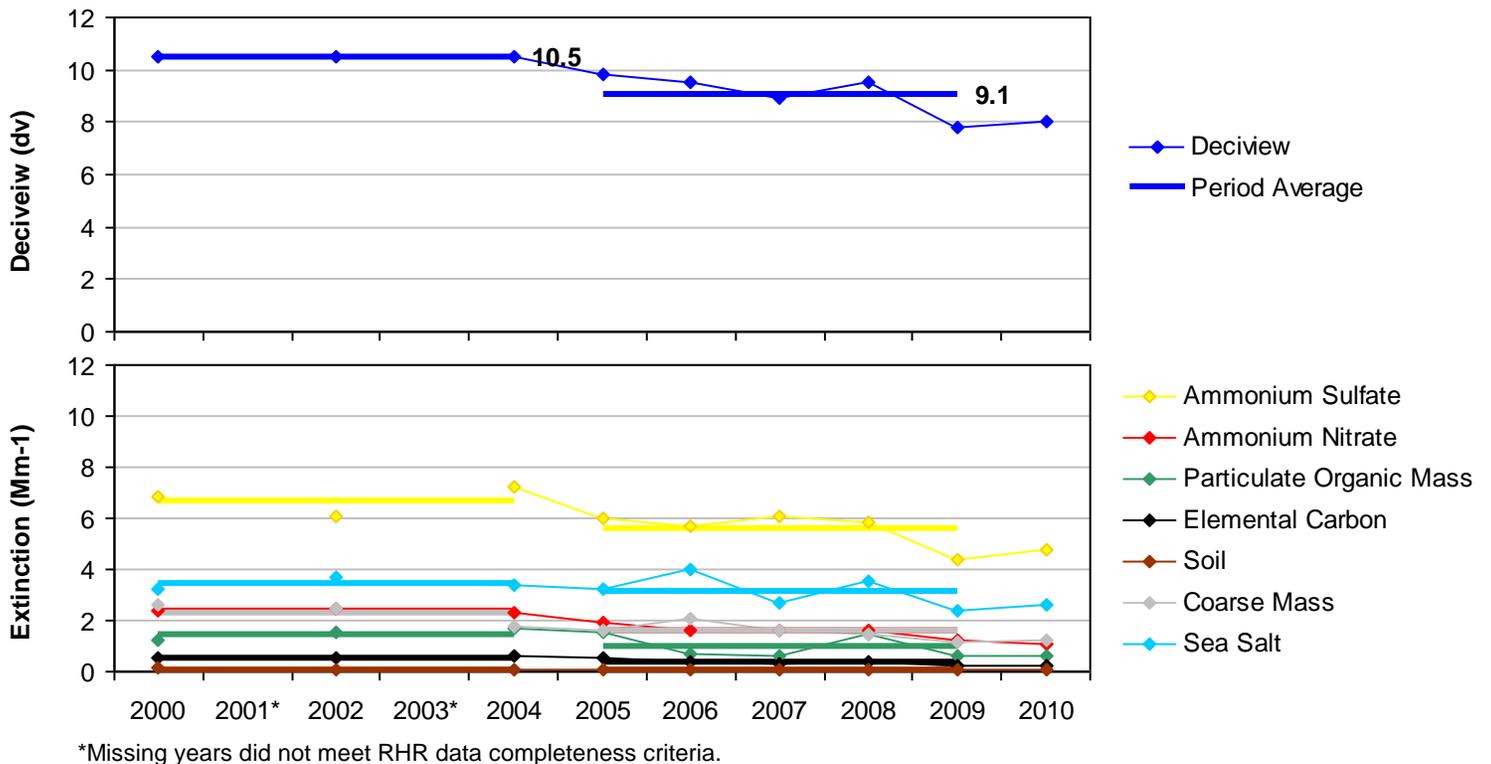
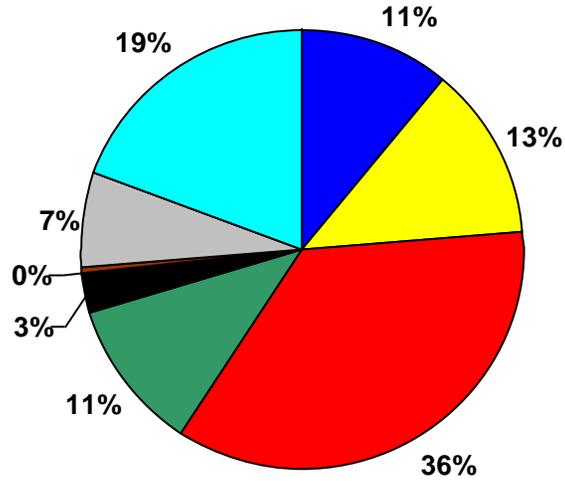
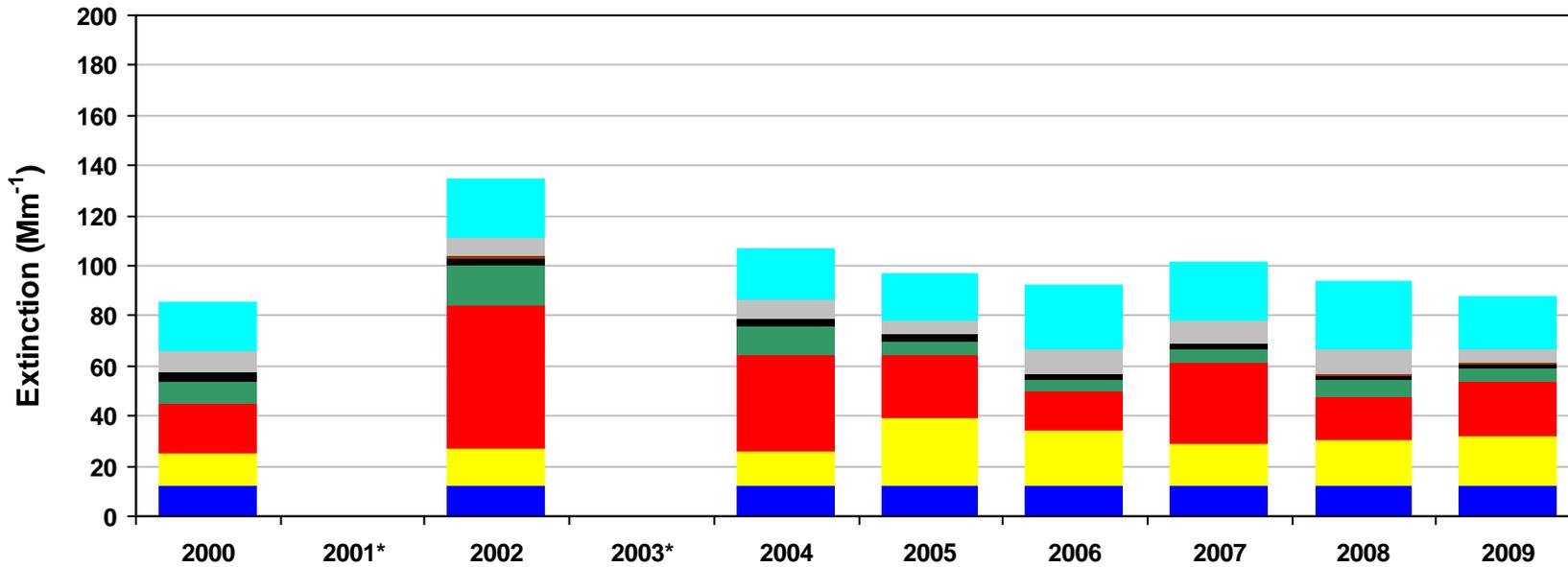
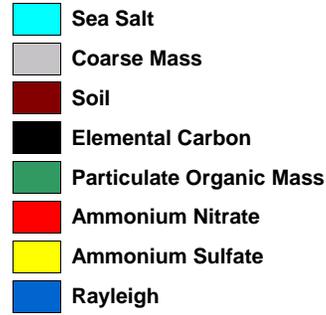
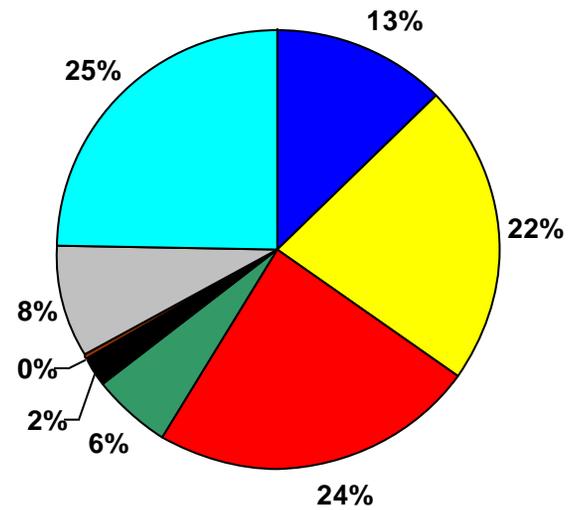


Figure C.15-3
Point Reyes National Seashore, CA (PORE1 Site)
20% Most Impaired Visibility Days

2000-2004 Baseline Average
 22.8 dv (21.2 - 24.3 dv)



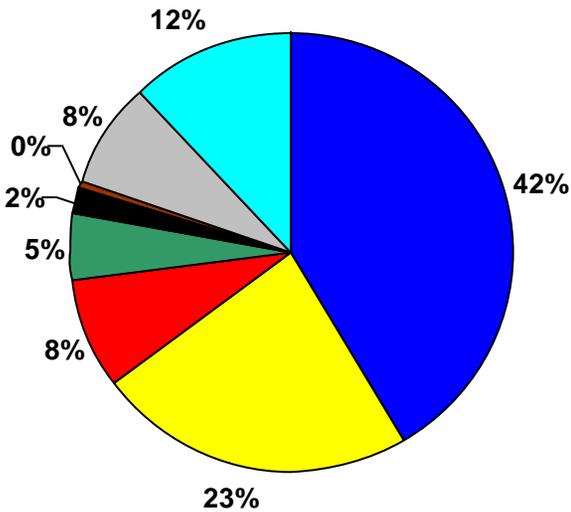
2005-2009 Progress Period Average
 22 dv (21.3 - 22.4 dv)



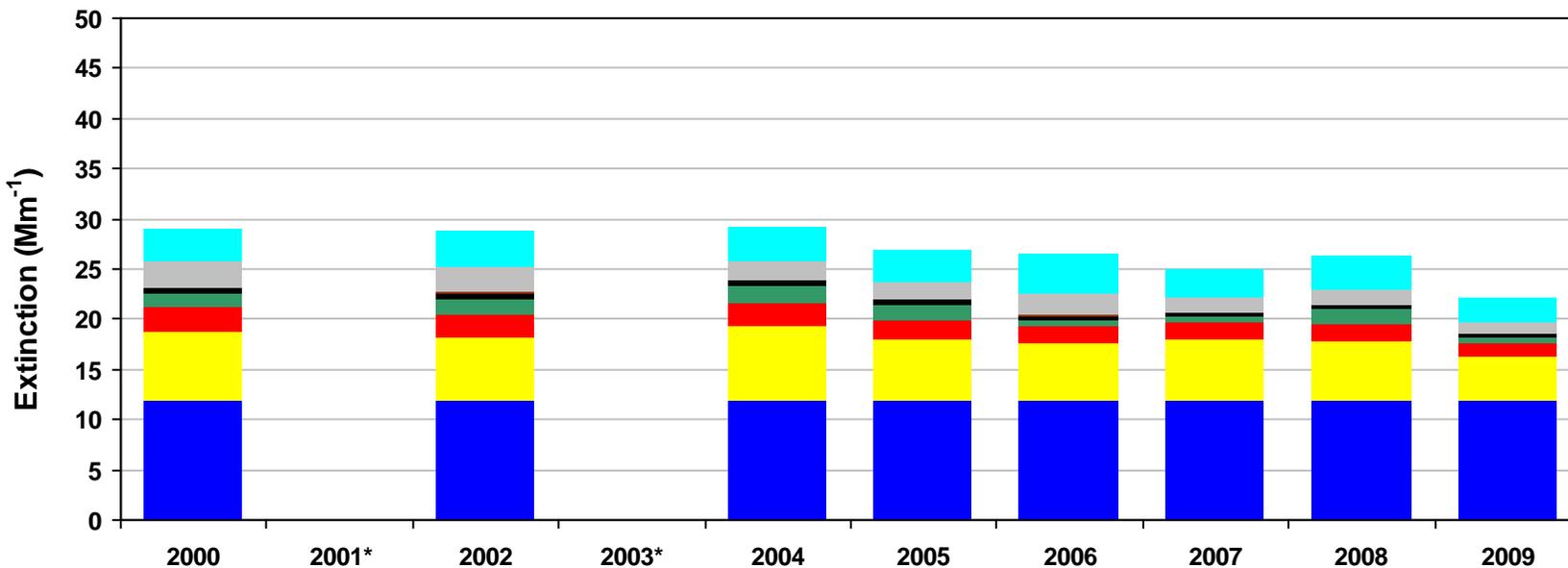
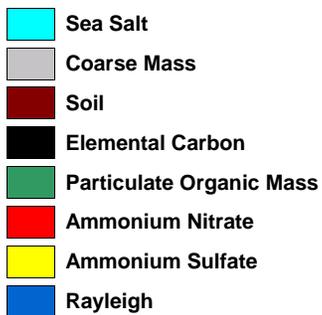
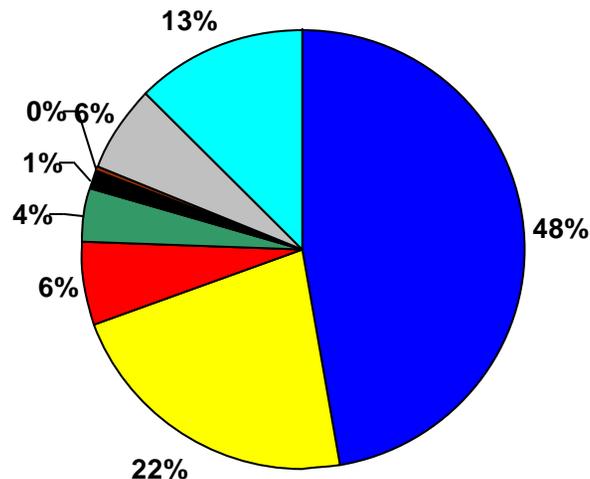
*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.15-4
Point Reyes National Seashore, CA (PORE1 Site)
20% Least Impaired Visibility Days

2000-2004 Baseline Average
 10.5 dv (10.5 - 10.5 dv)

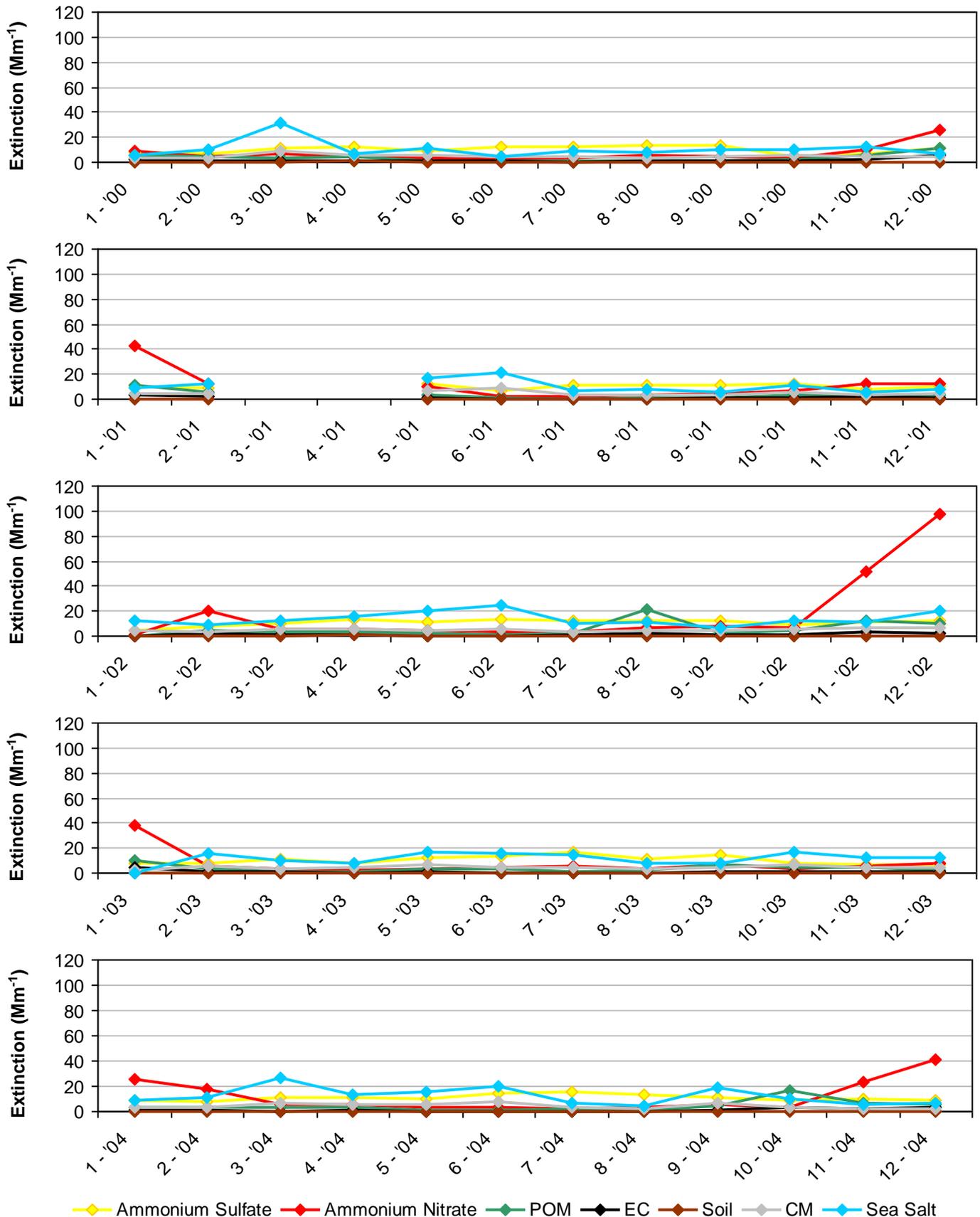


2005-2009 Progress Period Average
 9.1 dv (7.8 - 9.8 dv)



*Missing years did not meet RHR data completeness criteria. Only complete years are included in 5-year average pie charts.

Figure C.15-5
Point Reyes National Seashore, CA (PORE1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days



*Note that monthly averages for the years 2001 and 2003 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.15-6
Point Reyes National Seashore, CA (PORE1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

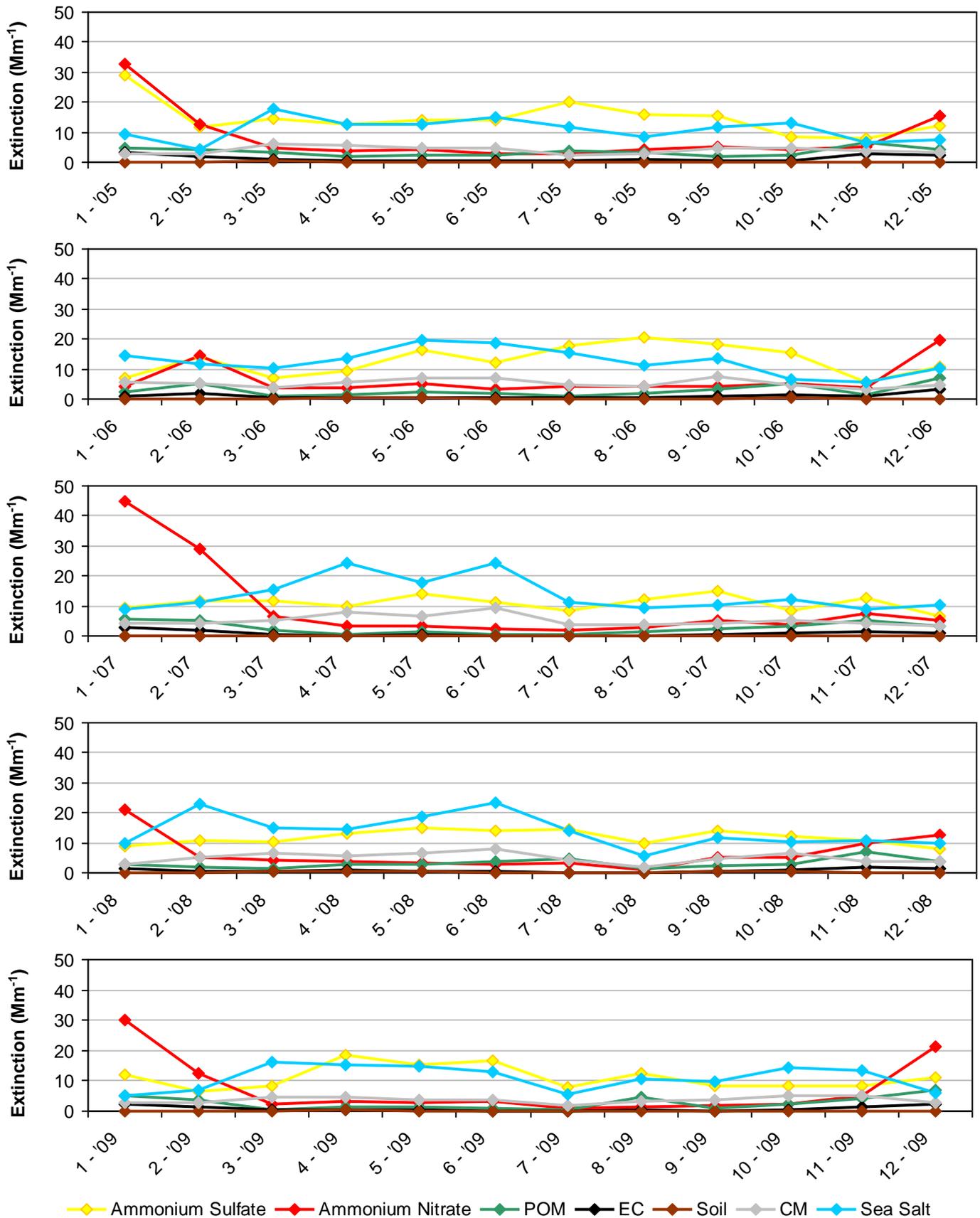
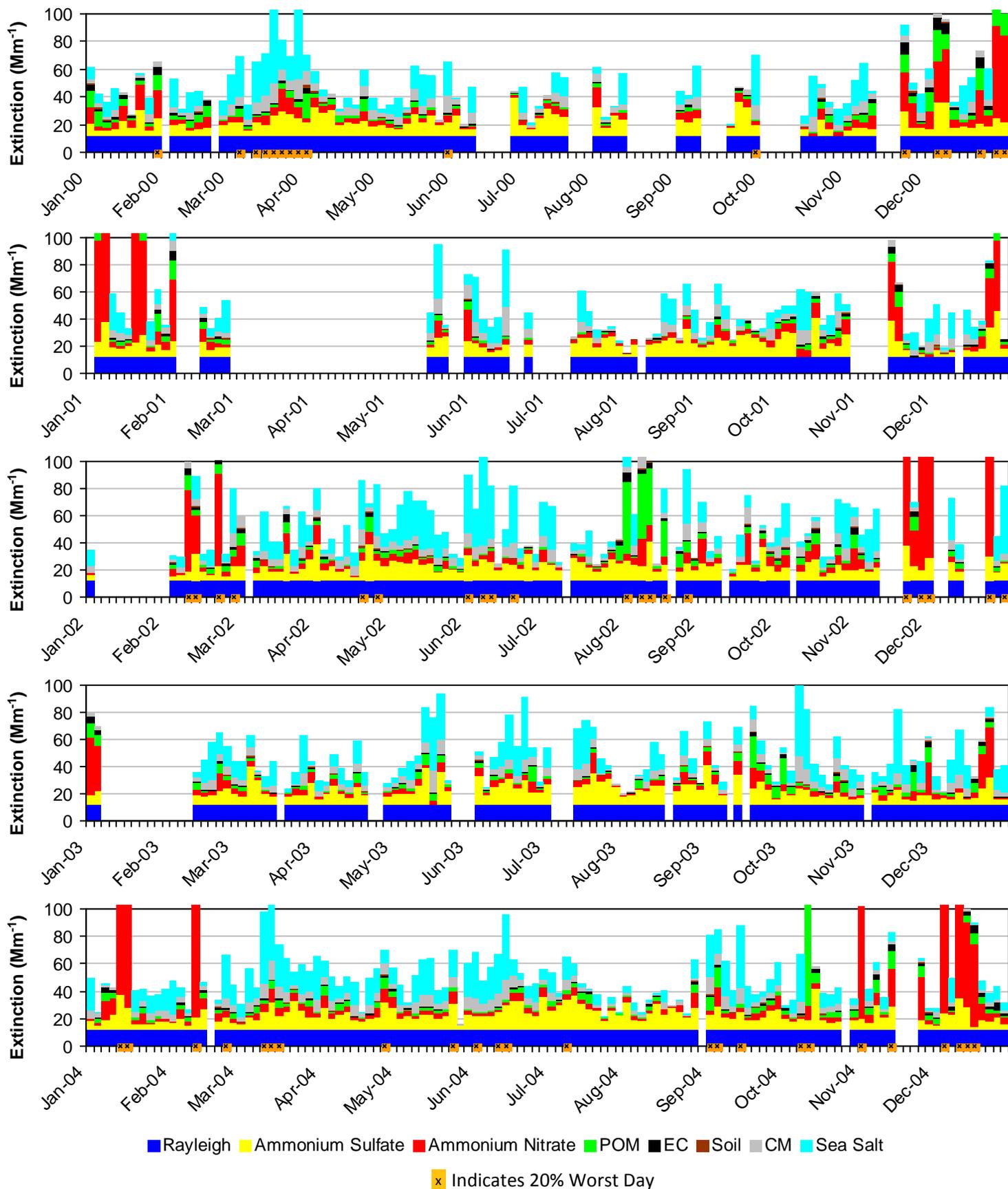
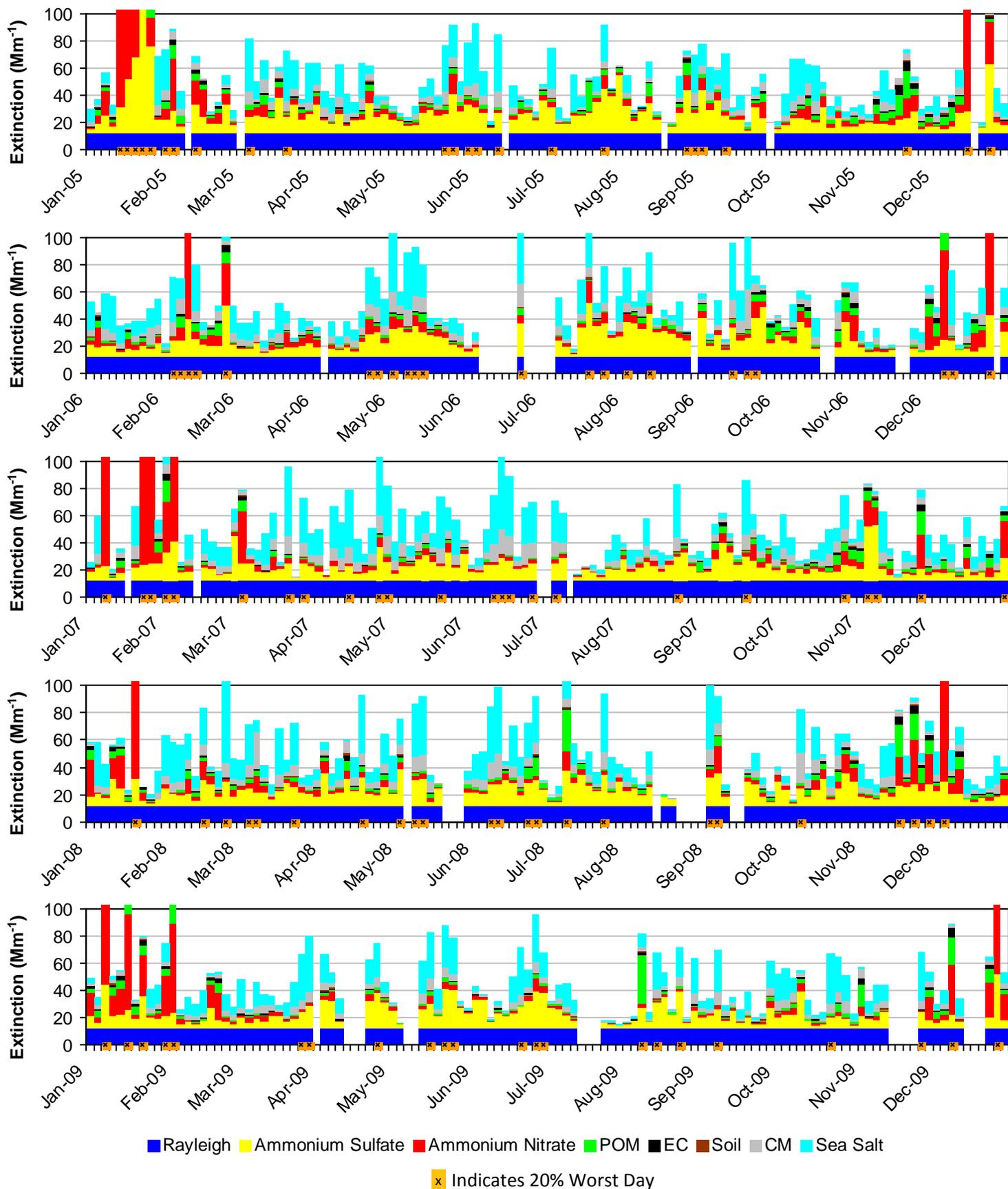


Figure C.15-7
Point Reyes National Seashore, CA (PORE1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



*Note that daily averages for the years 2001 and 2003 are shown here, but these years did not meet RHR data completeness criteria.

Figure C.15-8
Point Reyes National Seashore, CA (PORE1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



C.16. SAN RAFAEL WA (RAFA1)

The following tables and figures are presented in this section for the San Rafael WA represented by the RAFA1 IMPROVE Monitor:

- **Table C.16-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.16-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.16-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.16-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.16-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.16-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.16-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.16-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.16-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

Table C.16-1
San Rafael WA, CA (RAFA1 Site)
Annual Averages, 5-Year Period Averages and Trends

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	7.1	5.7	7.2	5.7	6.7	5.0	5.2	6.8	5.9	4.6	4.2	-0.2	0.1	6.5	5.5	-1.0	-15%
Worst 20% Days	18.9	17.8	19.7	18.7	19.0	18.7	20.2	20.6	19.6	17.0	16.6	0.1	0.3	18.8	19.2	0.4	2%
All Days	13.4	12.7	14.0	12.6	13.8	12.8	12.6	13.7	12.9	11.1	10.8	-0.1	0.2	13.3	12.6	-0.7	-5%
Total Extinction (Mm-1)																	
Best 20% Days	20.6	18.0	21.0	17.8	20.0	16.7	16.9	20.1	18.4	16.0	15.4	-0.3	0.1	19.5	17.6	-1.9	-10%
Worst 20% Days	66.5	60.5	73.8	66.7	67.6	65.5	89.6	86.3	73.3	55.8	52.9	0.9	0.4	67.0	74.1	7.1	11%
All Days	41.4	38.9	44.8	39.2	43.4	40.2	43.2	45.5	41.1	33.6	32.5	0.0	0.5	41.6	40.7	-0.9	-2%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	3.2	2.1	3.2	2.5	3.1	2.3	2.5	3.0	2.7	2.2	1.8	0.0	0.2	2.8	2.5	-0.3	-11%
Worst 20% Days	22.6	20.0	18.4	19.8	21.3	22.7	25.9	17.7	18.8	15.9	12.8	-0.4	0.2	20.4	20.2	-0.2	-1%
All Days	11.4	10.5	10.8	9.6	11.5	12.5	12.1	10.2	10.3	8.2	7.3	-0.1	0.2	10.7	10.7	0.0	0%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	2.3	2.2	2.8	1.3	2.0	1.1	1.3	2.4	1.5	1.0	0.9	-0.1	0.1	2.1	1.4	-0.7	-33%
Worst 20% Days	13.6	11.4	14.8	10.0	13.1	13.1	11.8	14.5	9.2	9.2	9.7	-0.3	0.1	12.6	11.6	-1.0	-8%
All Days	7.4	6.6	8.4	6.2	7.4	6.1	5.5	7.8	5.2	4.5	4.6	-0.3	0.0	7.2	5.8	-1.4	-19%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	1.9	1.5	2.0	1.8	2.0	1.4	1.0	1.3	1.3	0.8	1.0	-0.1	0.0	1.8	1.2	-0.6	-33%
Worst 20% Days	8.6	7.8	19.5	15.2	10.8	8.9	21.8	29.7	21.5	7.7	7.5	0.6	0.2	12.4	17.9	5.5	44%
All Days	5.3	4.7	7.6	6.6	6.2	4.9	7.1	8.8	7.4	3.8	3.9	0.2	0.4	6.1	6.4	0.3	5%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	0.9	0.7	0.9	0.6	0.7	0.6	0.4	0.5	0.5	0.3	0.3	-0.1	0.0	0.7	0.5	-0.2	-29%
Worst 20% Days	3.6	2.6	3.3	3.2	2.4	3.0	9.6	5.4	3.0	1.7	1.7	-0.1	0.2	3.0	4.5	1.5	50%
All Days	2.1	1.7	1.9	1.7	1.6	1.6	3.0	2.0	1.4	1.0	1.0	-0.1	0.1	1.8	1.8	0.0	0%
Soil Extinction (Mm-1)																	
Best 20% Days	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.2	0.1	0.2	0.1	100%
Worst 20% Days	0.9	1.4	0.9	1.1	1.0	0.7	1.1	0.9	1.5	1.1	1.2	0.0	0.2	1.0	1.1	0.1	10%
All Days	0.6	0.7	0.7	0.6	0.7	0.5	0.6	0.7	0.9	0.7	0.6	0.0	0.2	0.7	0.7	0.0	0%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	1.6	1.2	1.4	1.2	1.1	0.8	0.9	1.9	1.1	1.0	0.9	0.0	0.1	1.3	1.2	-0.1	-8%
Worst 20% Days	6.5	7.3	6.1	6.8	7.7	6.0	7.5	7.1	7.2	7.2	5.6	0.1	0.2	6.9	7.0	0.1	1%
All Days	4.2	4.4	4.6	4.0	4.9	3.6	3.8	4.7	4.6	4.2	3.6	0.0	0.5	4.4	4.2	-0.2	-5%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	0.7	0.3	0.5	0.3	0.9	0.6	0.7	0.8	1.1	0.5	0.3	0.0	0.1	0.5	0.7	0.2	40%
Worst 20% Days	0.8	0.1	0.8	0.5	1.5	1.1	1.8	1.0	2.1	3.0	4.4	0.2	0.0	0.8	1.8	1.0	>100%
All Days	0.4	0.3	0.8	0.5	1.1	1.1	1.2	1.3	1.3	1.3	1.5	0.1	0.0	0.6	1.2	0.6	100%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

"---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.16-1
San Rafael WA, CA (RAFA1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

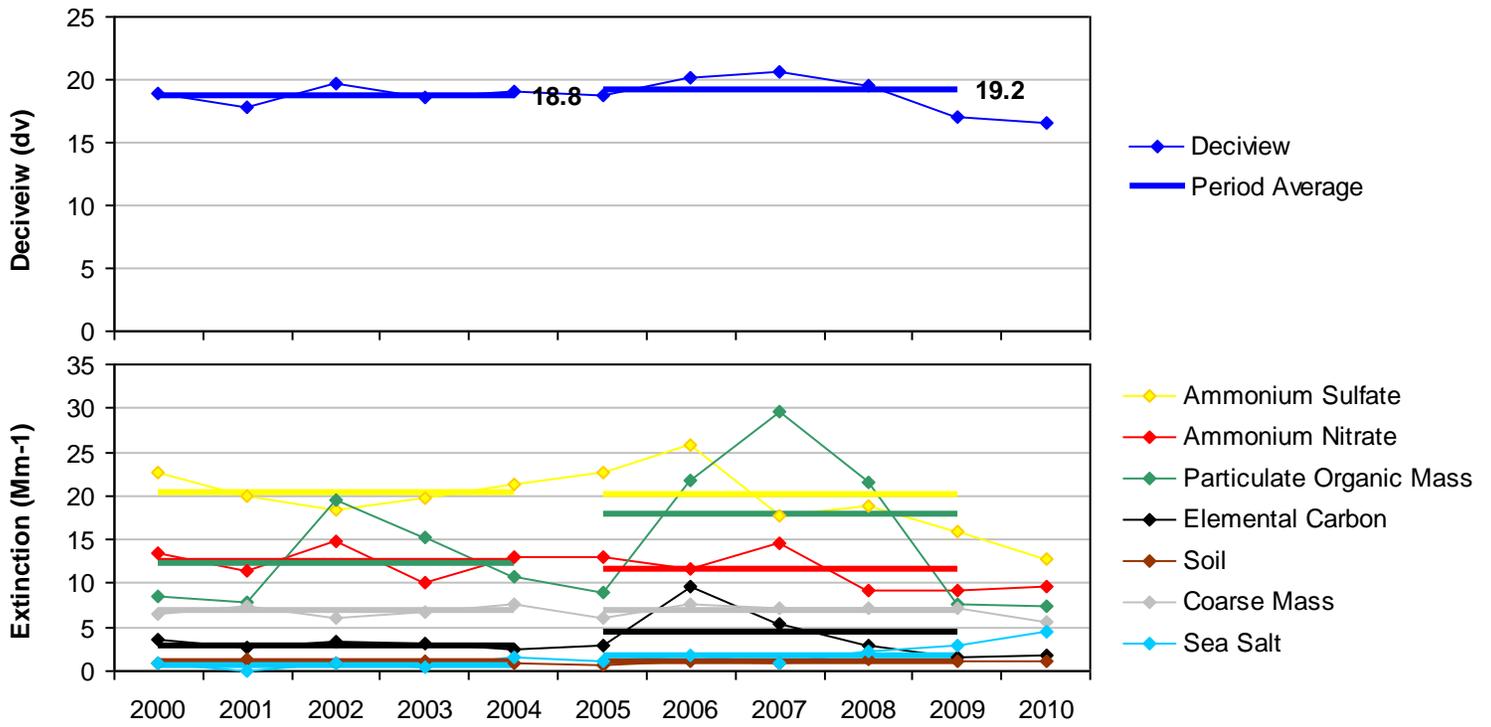


Figure C.16-2
San Rafael WA, CA (RAFA1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

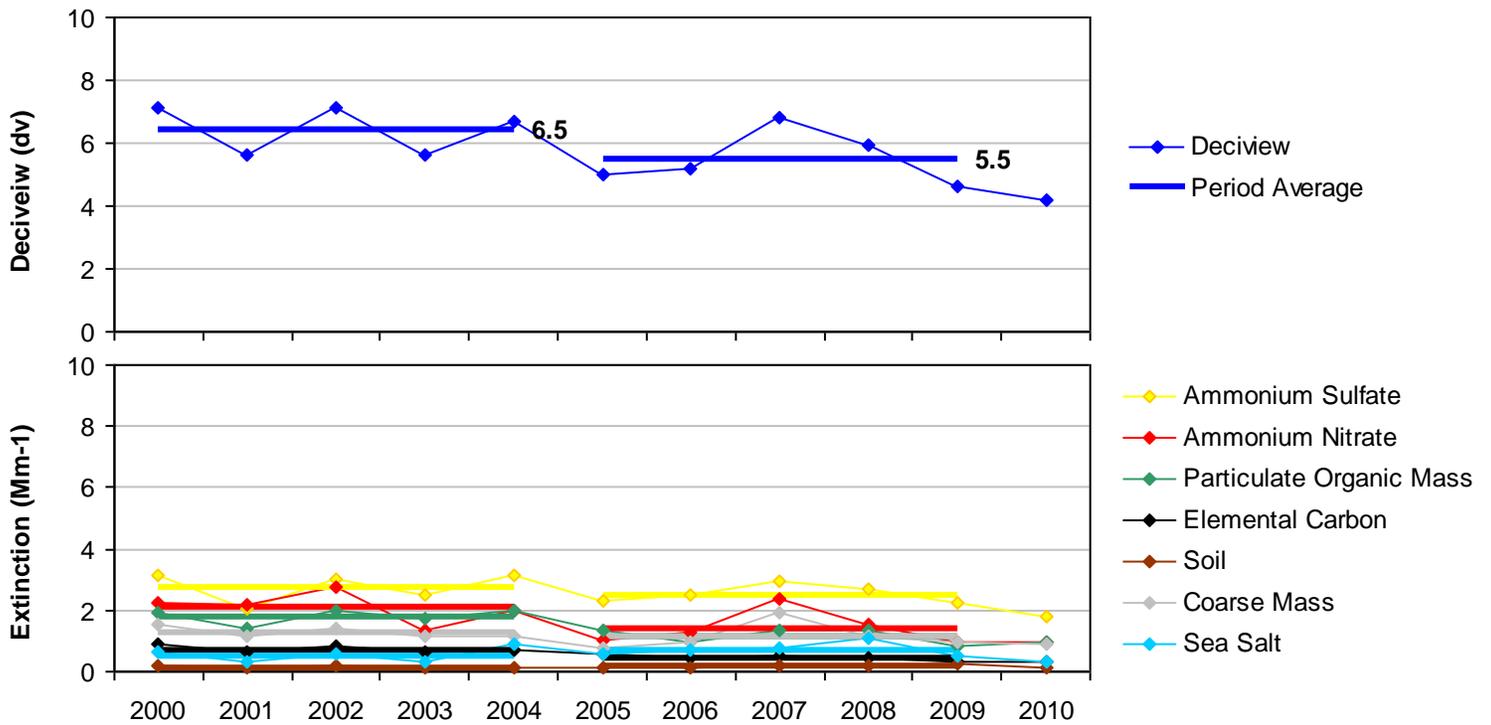


Figure C.16-3
San Rafael WA, CA (RAFA1 Site)
20% Most Impaired Visibility Days

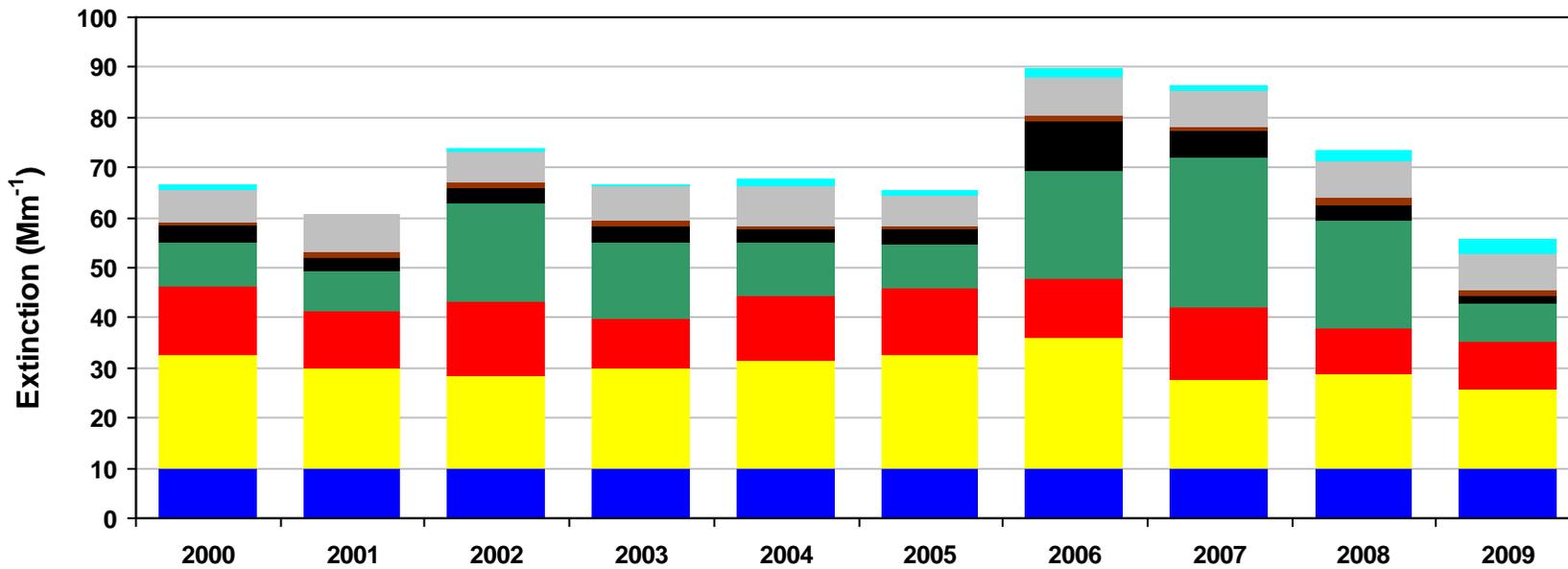
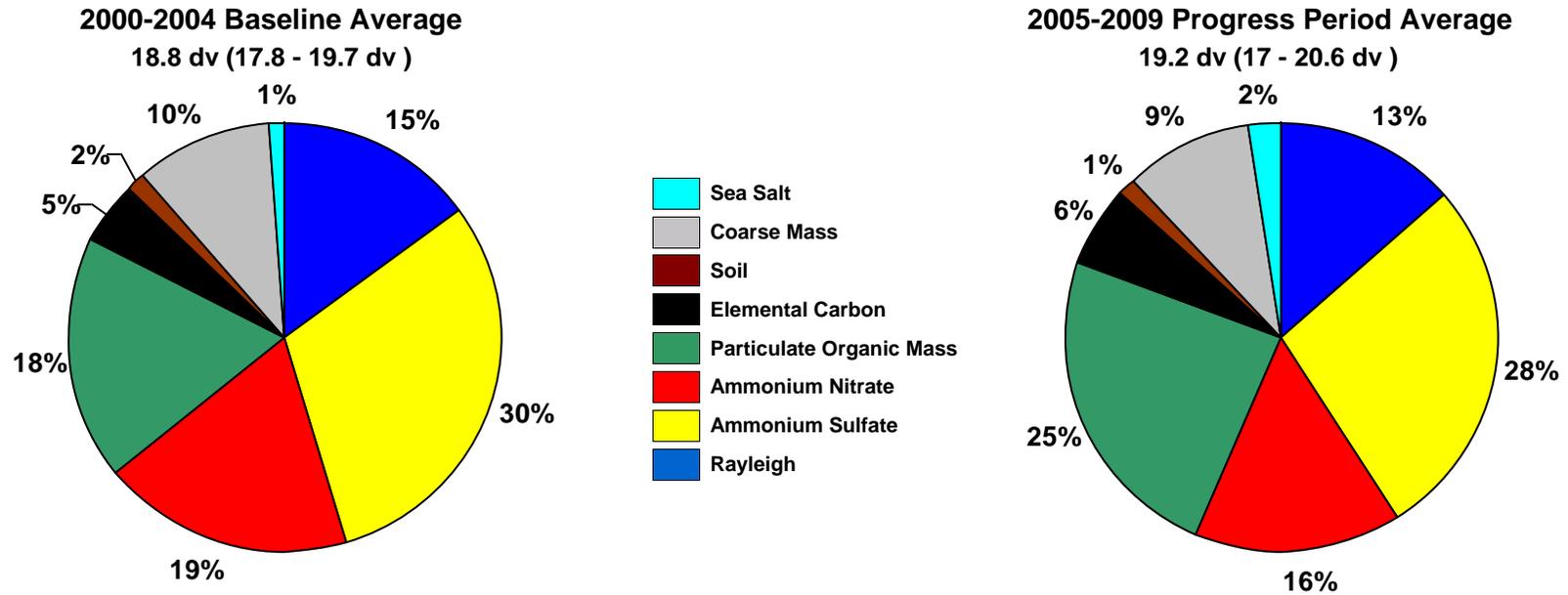


Figure C.16-4
San Rafael WA, CA (RAFA1 Site)
20% Least Impaired Visibility Days

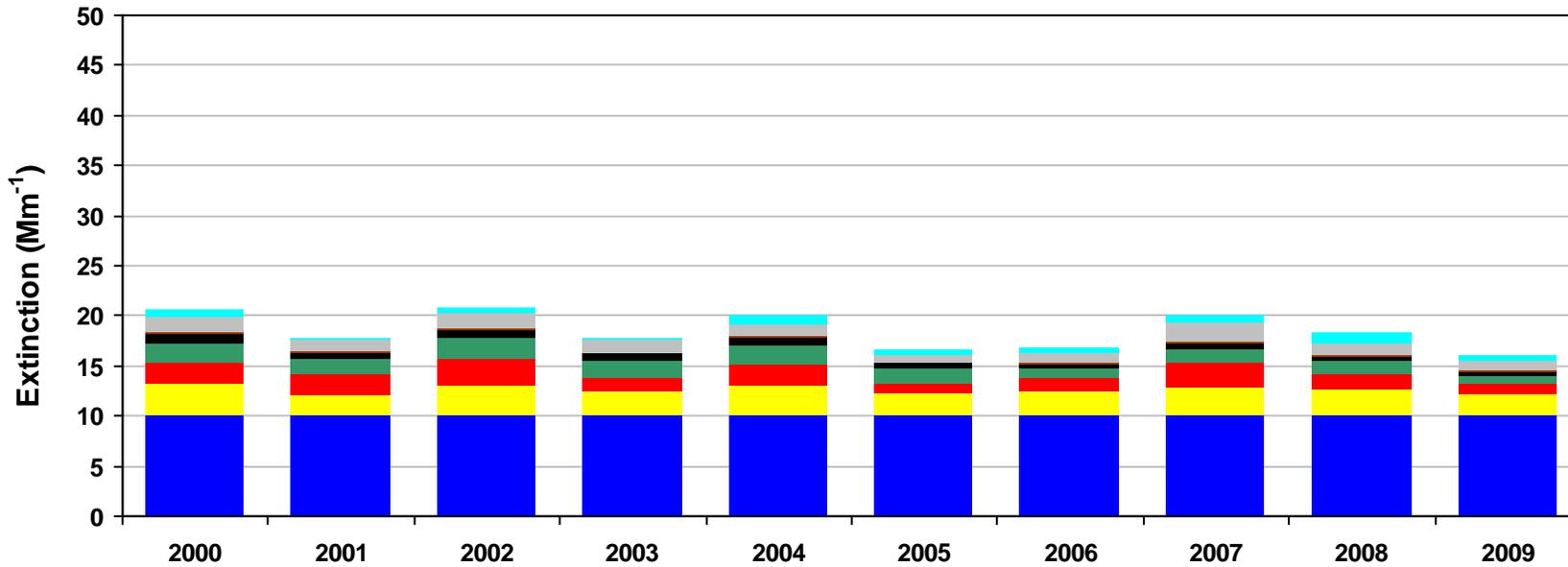
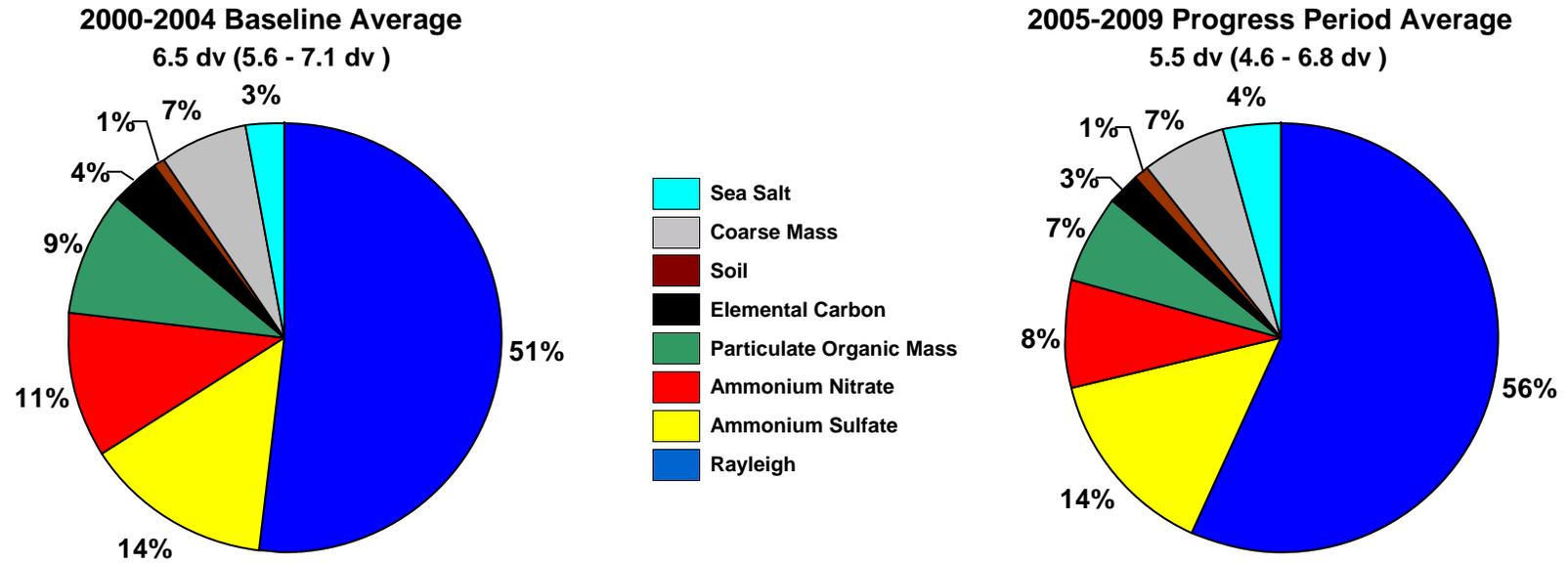


Figure C.16-5
San Rafael WA, CA (RAFA1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days

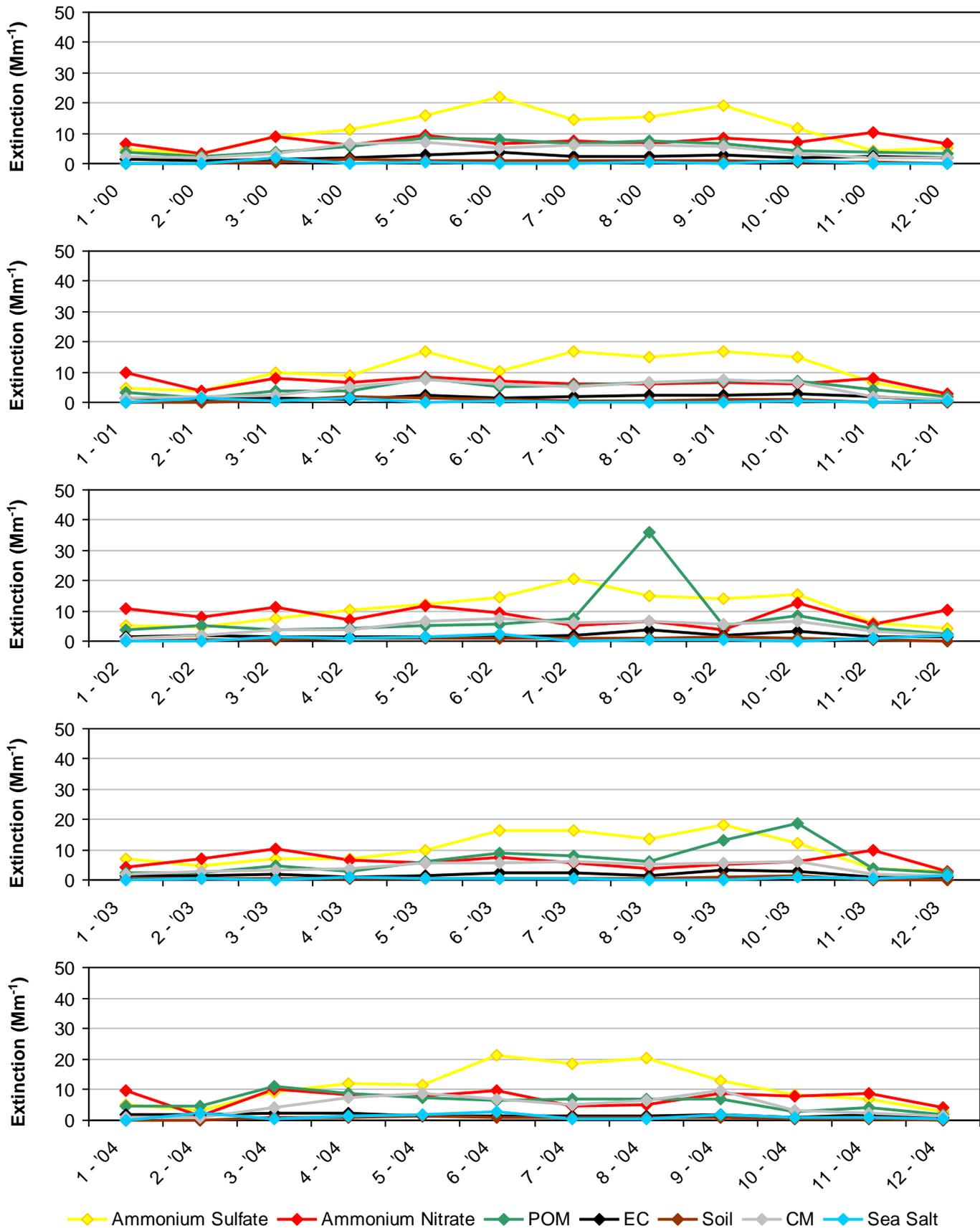


Figure C.16-6
San Rafael WA, CA (RAFA1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

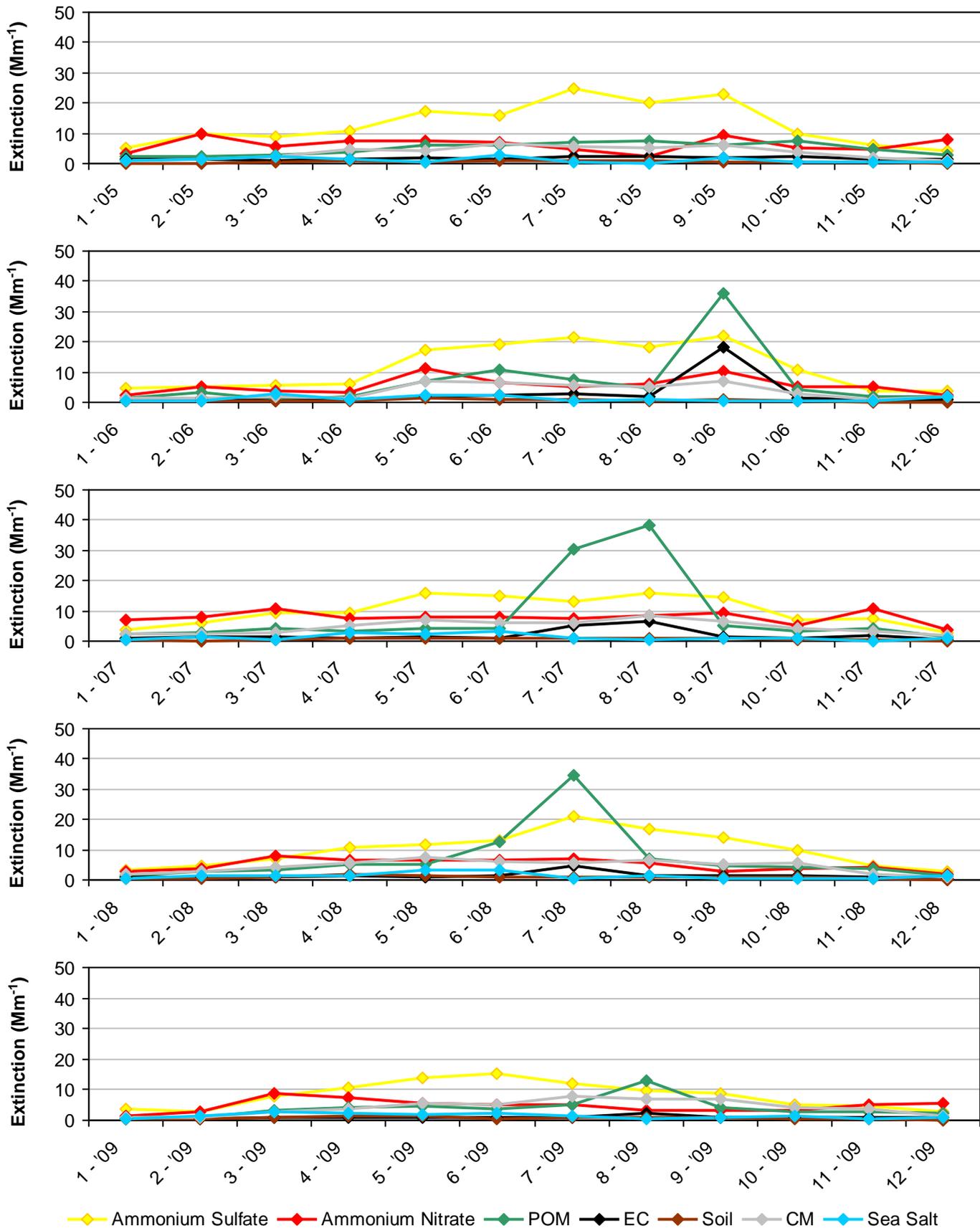


Figure C.16-7
San Rafael WA, CA (RAFA1 Site)
2000-2004 Progress Period Extinction, All Sampled Days

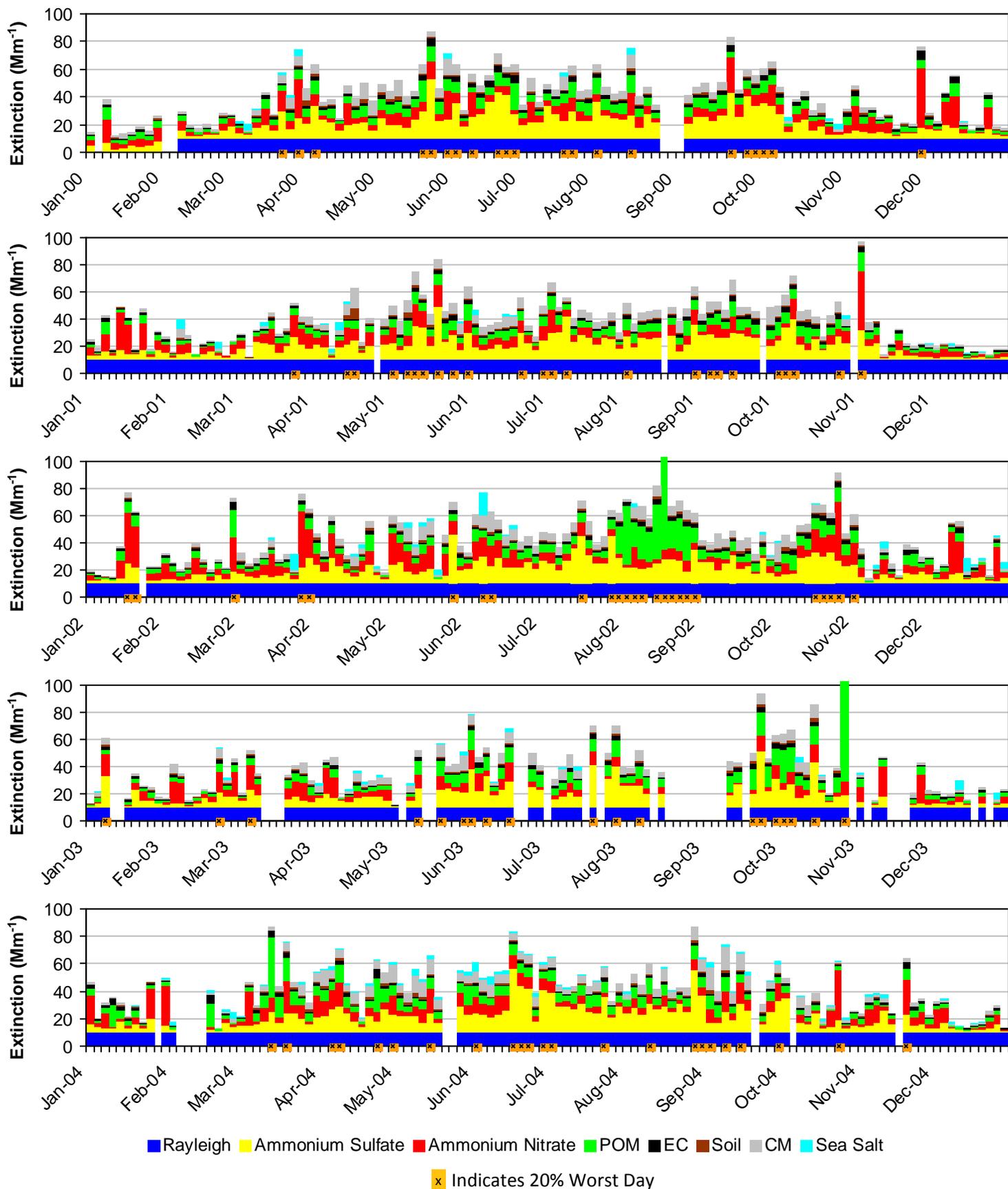
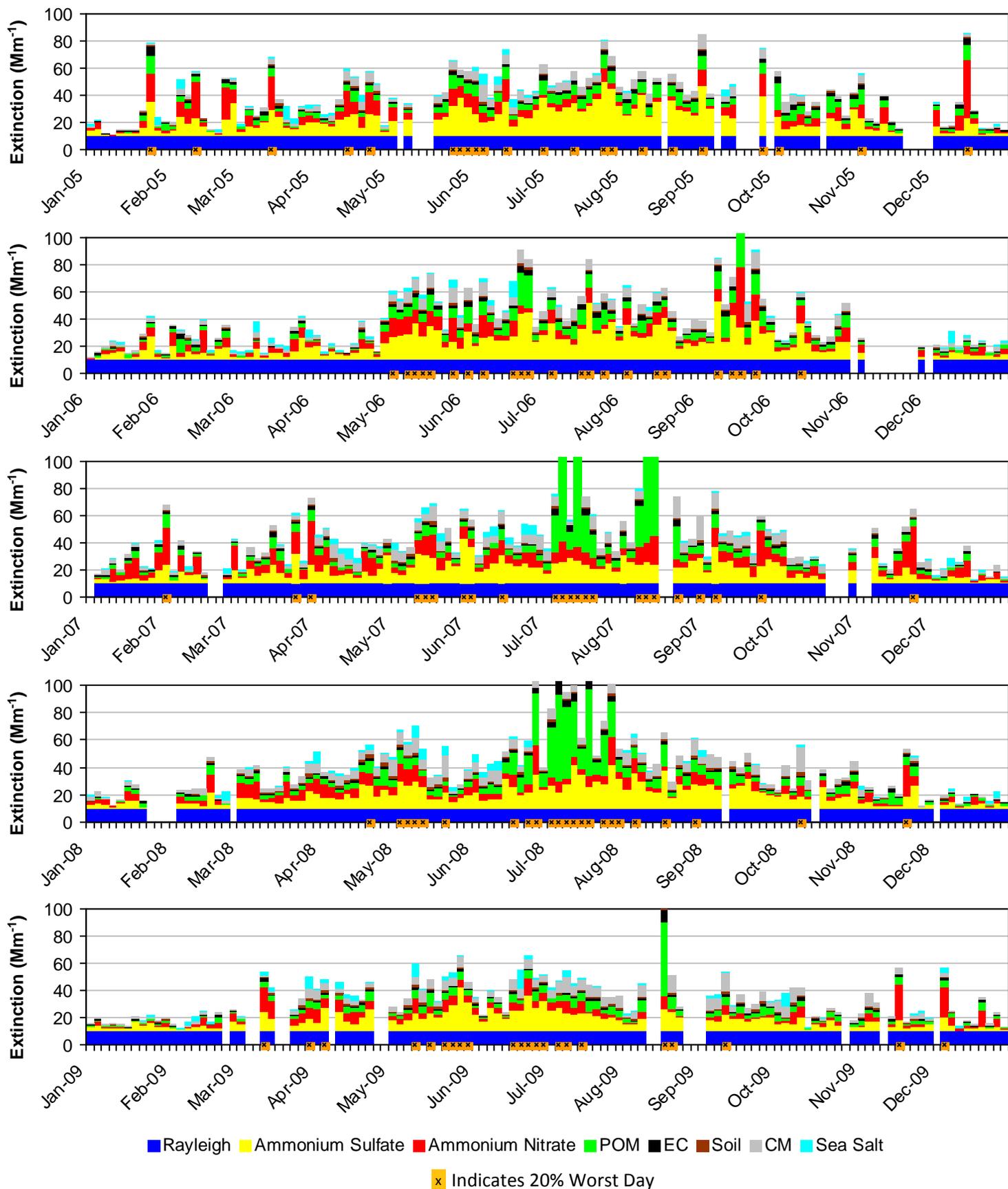


Figure C.16-8
San Rafael WA, CA (RAFA1 Site)
2005-2009 Progress Period Extinction, All Sampled Days



C.17. REDWOOD NP (REDW1)

The following tables and figures are presented in this section for the Redwood NP represented by the REDW1 IMPROVE Monitor:

- **Table C.17-1: Annual Averages, 5-Year Period Averages, and Trends:** Table of averages and other metrics for the 20% least impaired days, the 20% most impaired days, and all sampled days is presented.
- **Figure C.17-1: Annual and 5-Year Period Averages for the 20% Most Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.17-2: Annual and 5-Year Period Averages for the 20% Least Impaired Visibility Days:** Line graphs depicting annual and period averages by component are presented.
- **Figure C.17-3: 20% Most Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component for the 20% most impaired days are presented.
- **Figure C.17-4: 20% Least Impaired Visibility Days:** Pie charts depicting period averages and stacked bar charts depicting annual averages by component are presented.
- **Figure C.17-5: 2000-2004 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the baseline period are presented.
- **Figure C.17-6: 2005-2009 Monthly Average Aerosol Extinction, All Monitored Days:** Line graphs depicting monthly averages by year and component for the progress period are presented.
- **Figure C.17-7: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the baseline period are presented.
- **Figure C.17-8: 2000-2004 Progress Period Extinction, All Sampled Days:** Stacked bar charts depicting daily averages by year and component for the progress period are presented.

Table C.17-1
Redwood NP, CA (REDW1 Site)
Annual Averages, 5-Year Period Averages and Trends

Group	Baseline Period					Progress Period					2010	2000-2009 Trend Statistics*		Period Averages**			
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		Slope (change/yr.)	p-value	Baseline (B)	Progress (P)	Difference (P-B)	Percent Change
Deciview (dv)																	
Best 20% Days	7.3	6.0	5.9	5.4	5.8	5.7	5.9	6.0	5.4	4.9	---	-0.1	0.0	6.1	5.6	-0.5	-8%
Worst 20% Days	19.0	18.9	18.7	17.2	18.6	18.1	20.8	18.2	19.8	18.9	---	0.0	0.5	18.5	19.1	0.6	3%
All Days	13.1	12.1	12.7	11.3	12.4	12.0	12.7	11.9	12.3	11.2	---	-0.1	0.1	12.3	12.0	-0.3	-2%
Total Extinction (Mm-1)																	
Best 20% Days	21.0	18.3	18.4	17.5	18.2	17.8	18.2	18.4	17.5	16.4	---	-0.2	0.0	18.7	17.7	-1.0	-5%
Worst 20% Days	67.7	66.7	65.5	56.5	64.8	62.4	84.4	62.9	76.4	70.4	---	0.3	0.4	64.2	71.3	7.1	11%
All Days	40.4	37.3	39.1	33.9	38.0	36.7	41.8	36.2	39.5	35.6	---	-0.3	0.2	37.7	37.9	0.2	1%
Ammonium Sulfate Extinction (Mm-1)																	
Best 20% Days	2.9	2.1	2.7	1.9	2.0	2.6	2.6	2.7	2.1	2.0	---	0.0	0.2	2.3	2.4	0.1	4%
Worst 20% Days	12.2	14.6	15.7	16.4	15.6	19.3	22.1	16.8	17.0	22.2	---	0.9	0.0	14.9	19.5	4.6	31%
All Days	8.3	8.4	9.4	8.6	9.2	9.6	10.3	8.9	9.0	9.1	---	0.1	0.1	8.8	9.4	0.6	7%
Ammonium Nitrate Extinction (Mm-1)																	
Best 20% Days	0.9	0.7	0.7	0.5	0.6	0.6	0.5	0.7	0.5	0.4	---	0.0	0.0	0.7	0.5	-0.2	-29%
Worst 20% Days	7.5	9.8	6.5	4.5	6.4	6.5	7.5	7.4	5.1	4.4	---	-0.3	0.1	7.0	6.2	-0.8	-11%
All Days	3.5	3.7	3.3	2.4	2.8	2.8	3.2	3.0	2.5	2.0	---	-0.1	0.0	3.2	2.7	-0.5	-16%
Particulate Organic Mass Extinction (Mm-1)																	
Best 20% Days	1.9	1.4	1.3	1.5	1.4	1.1	0.9	1.3	1.3	0.8	---	-0.1	0.0	1.5	1.1	-0.4	-27%
Worst 20% Days	8.2	6.6	11.0	5.0	9.1	4.9	9.0	4.4	15.9	10.2	---	0.2	0.4	8.0	8.9	0.9	11%
All Days	4.6	3.3	5.2	3.5	4.5	3.3	4.2	2.9	5.7	3.6	---	-0.1	0.4	4.2	3.9	-0.3	-7%
Elemental Carbon Extinction (Mm-1)																	
Best 20% Days	0.8	0.5	0.4	0.3	0.5	0.4	0.2	0.3	0.3	0.2	---	0.0	0.0	0.5	0.3	-0.2	-40%
Worst 20% Days	1.9	1.4	1.8	0.7	1.5	0.9	1.5	0.9	1.4	1.2	---	-0.1	0.2	1.5	1.2	-0.3	-20%
All Days	1.3	0.8	1.1	0.7	0.9	0.7	0.9	0.6	0.7	0.6	---	-0.1	0.0	1.0	0.7	-0.3	-30%
Soil Extinction (Mm-1)																	
Best 20% Days	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	---	0.0	0.3	0.1	0.0	-0.1	-100%
Worst 20% Days	0.2	0.4	0.4	0.2	0.3	0.2	0.3	0.2	0.2	0.3	---	0.0	0.4	0.3	0.2	-0.1	-33%
All Days	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---	0.0	0.2	0.2	0.1	-0.1	-50%
Coarse Mass Extinction (Mm-1)																	
Best 20% Days	1.2	0.8	0.8	0.9	0.8	0.7	0.9	0.8	0.8	0.7	---	0.0	0.1	0.9	0.8	-0.1	-11%
Worst 20% Days	4.8	3.4	4.0	3.8	4.3	3.3	5.4	3.3	4.0	3.5	---	-0.1	0.4	4.1	3.9	-0.2	-5%
All Days	2.6	2.0	2.4	2.0	2.2	1.8	2.4	1.9	2.0	2.0	---	0.0	0.1	2.2	2.0	-0.2	-9%
Sea Salt Extinction (Mm-1)																	
Best 20% Days	2.2	1.7	1.5	1.2	1.8	1.4	2.2	1.6	1.4	1.2	---	-0.1	0.1	1.7	1.6	-0.1	-6%
Worst 20% Days	22.0	19.5	15.2	14.8	16.7	16.4	27.6	18.9	21.7	17.6	---	0.3	0.4	17.6	20.4	2.8	16%
All Days	9.0	7.8	6.5	5.6	7.1	7.2	9.7	7.9	8.4	7.2	---	0.1	0.4	7.2	8.1	0.9	13%

*Values highlighted in blue (red) indicate statistically significant decreasing (increasing) annual trend. Significance is measured at the 85% confidence level (p-value ≤0.15).

**Values highlighted in blue indicate a decrease in the 5-year average, values highlighted in red indicate an increase.

---" Indicates a missing year that did not meet RHR data completeness criteria.

Figure C.17-1
Redwood NP, CA (REDW1 Site)
Annual and 5-Year Period Averages
20% Most Impaired Visibility Days

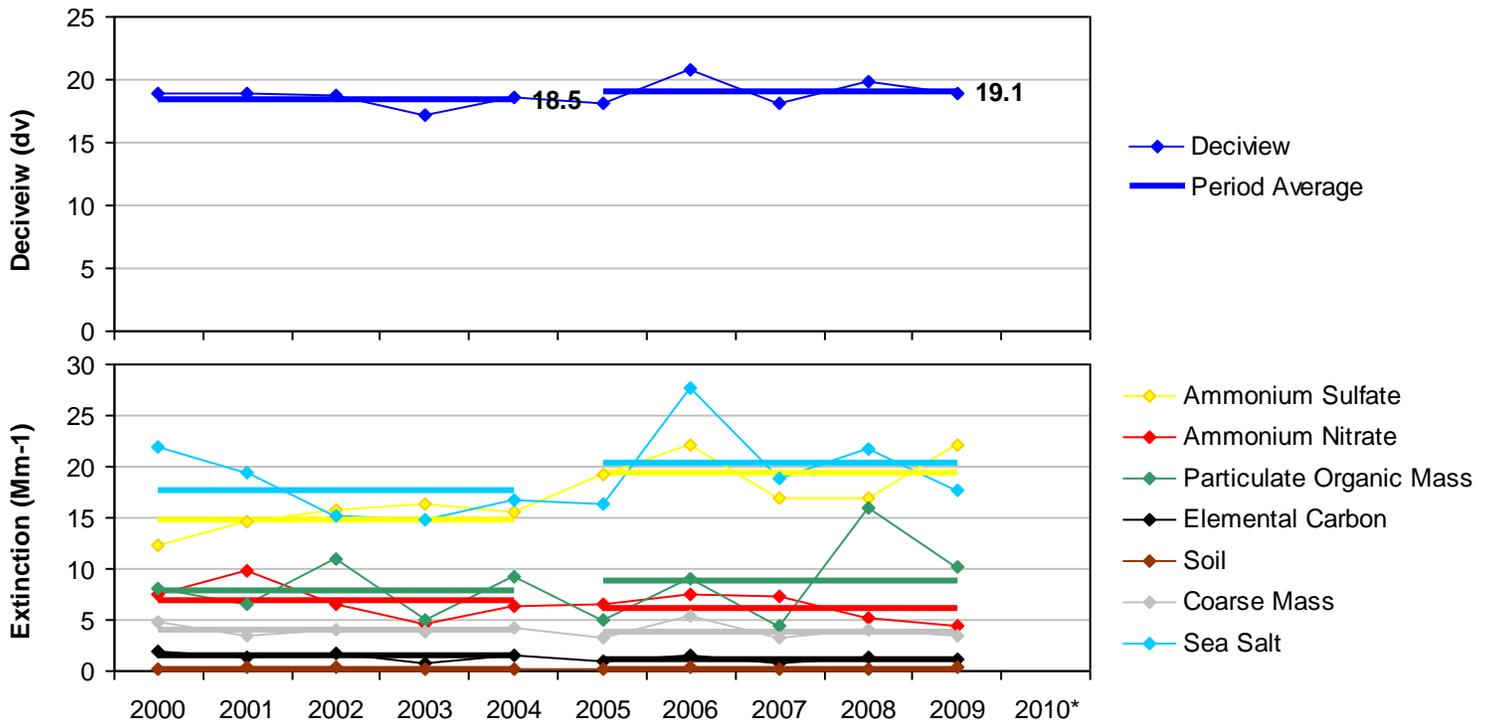


Figure C.17-2
Redwood NP, CA (REDW1 Site)
Annual and 5-Year Period Averages
20% Least Impaired Visibility Days

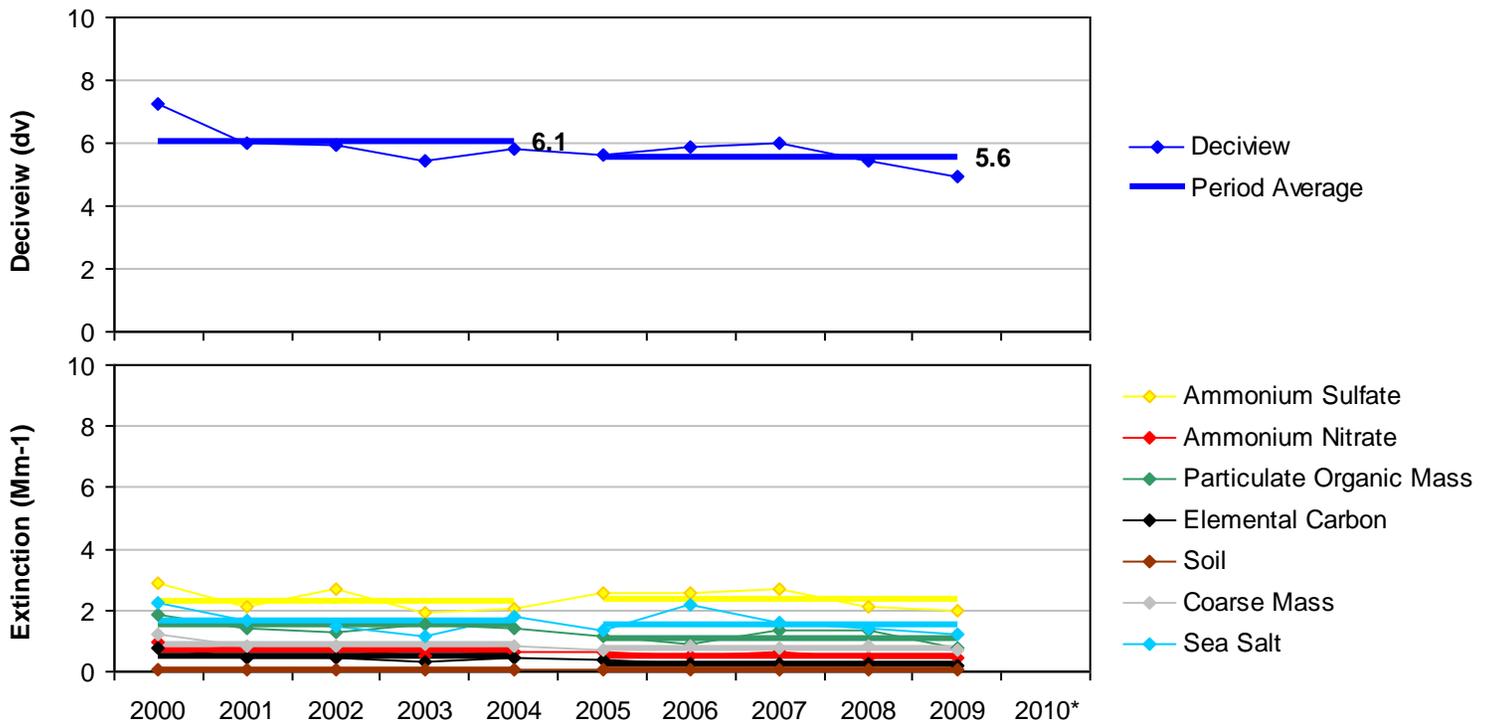
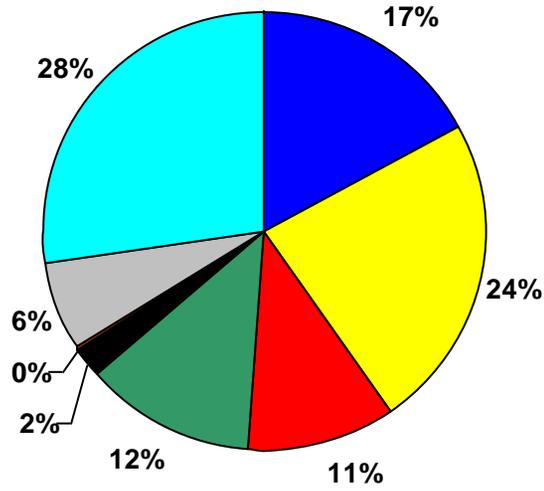
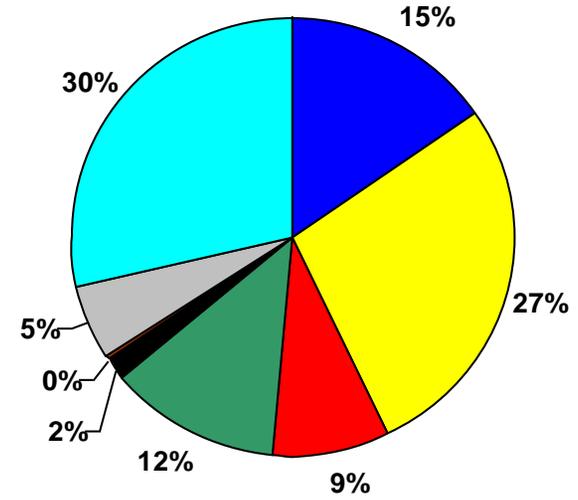


Figure C.17-3
Redwood NP, CA (REDW1 Site)
20% Most Impaired Visibility Days

2000-2004 Baseline Average
 18.5 dv (17.2 - 19 dv)



2005-2009 Progress Period Average
 19.1 dv (18.1 - 20.8 dv)



- Sea Salt
- Coarse Mass
- Soil
- Elemental Carbon
- Particulate Organic Mass
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

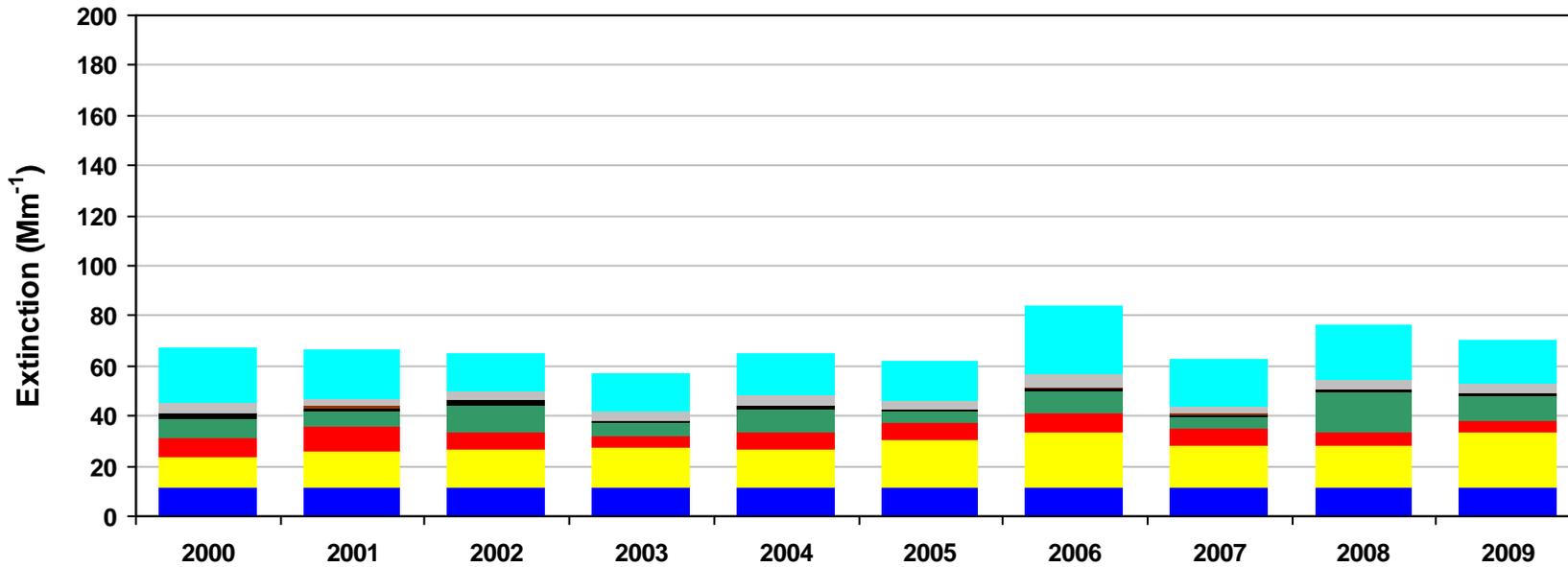
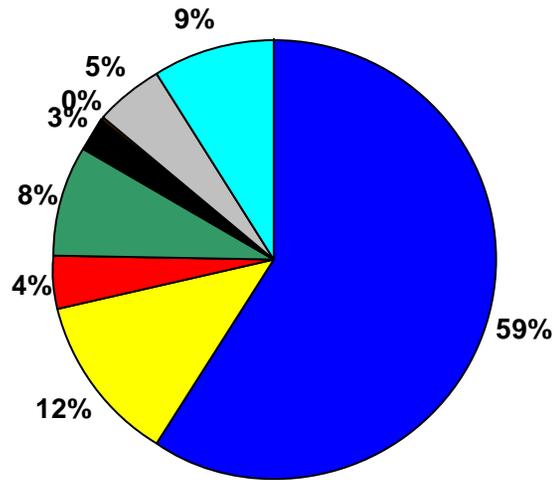


Figure C.17-4
Redwood NP, CA (REDW1 Site)
20% Least Impaired Visibility Days

2000-2004 Baseline Average
 6.1 dv (5.4 - 7.3 dv)



2005-2009 Progress Period Average
 5.6 dv (4.9 - 6 dv)

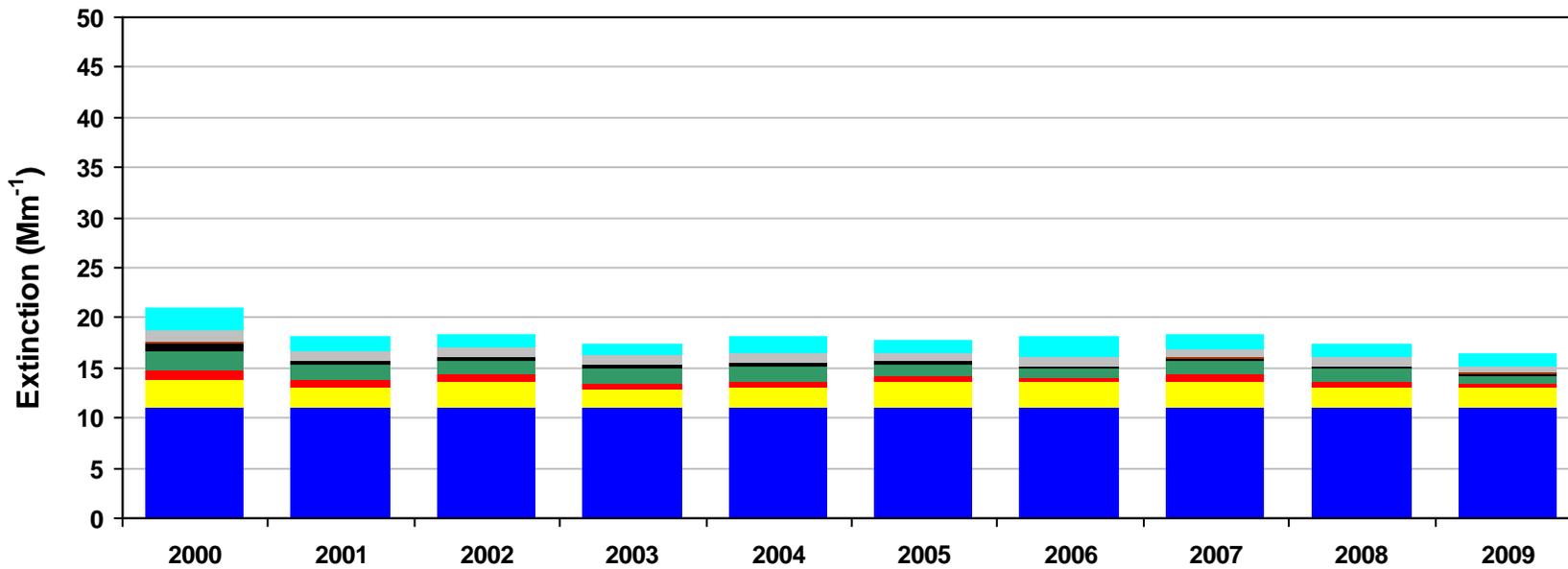
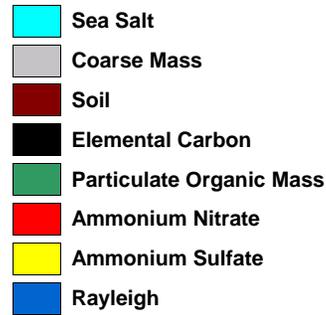
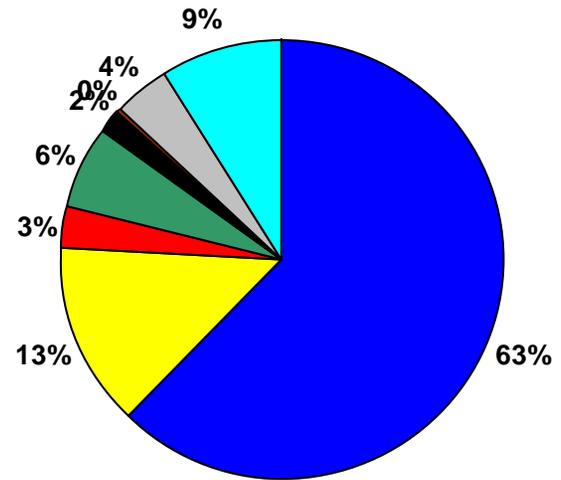


Figure C.17-5
Redwood NP, CA (REDW1 Site)
2000-2004 Monthly Average Aerosol Extinction, All Monitored Days

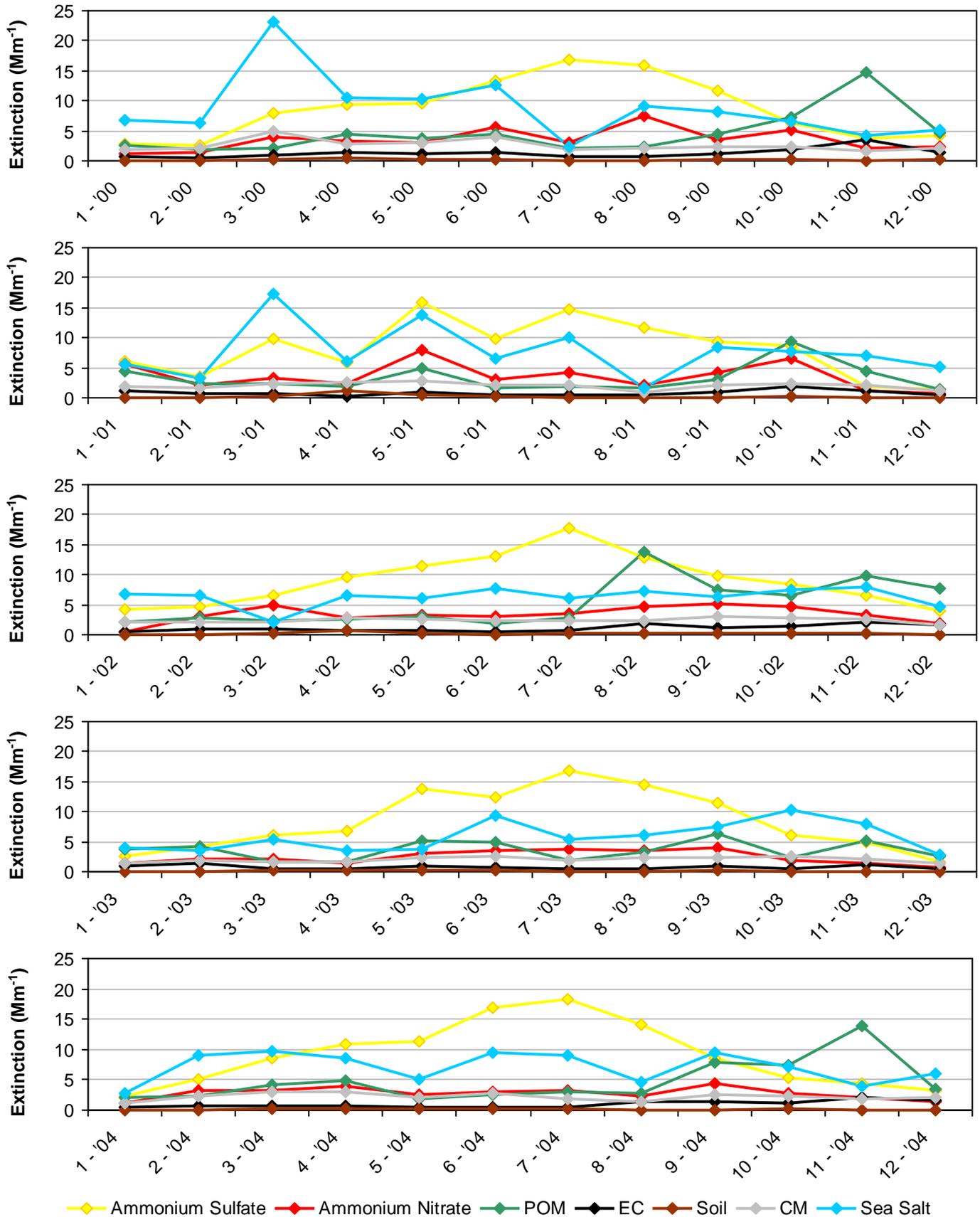


Figure C.17-6
Redwood NP, CA (REDW1 Site)
2005-2009 Monthly Average Aerosol Extinction, All Monitored Days

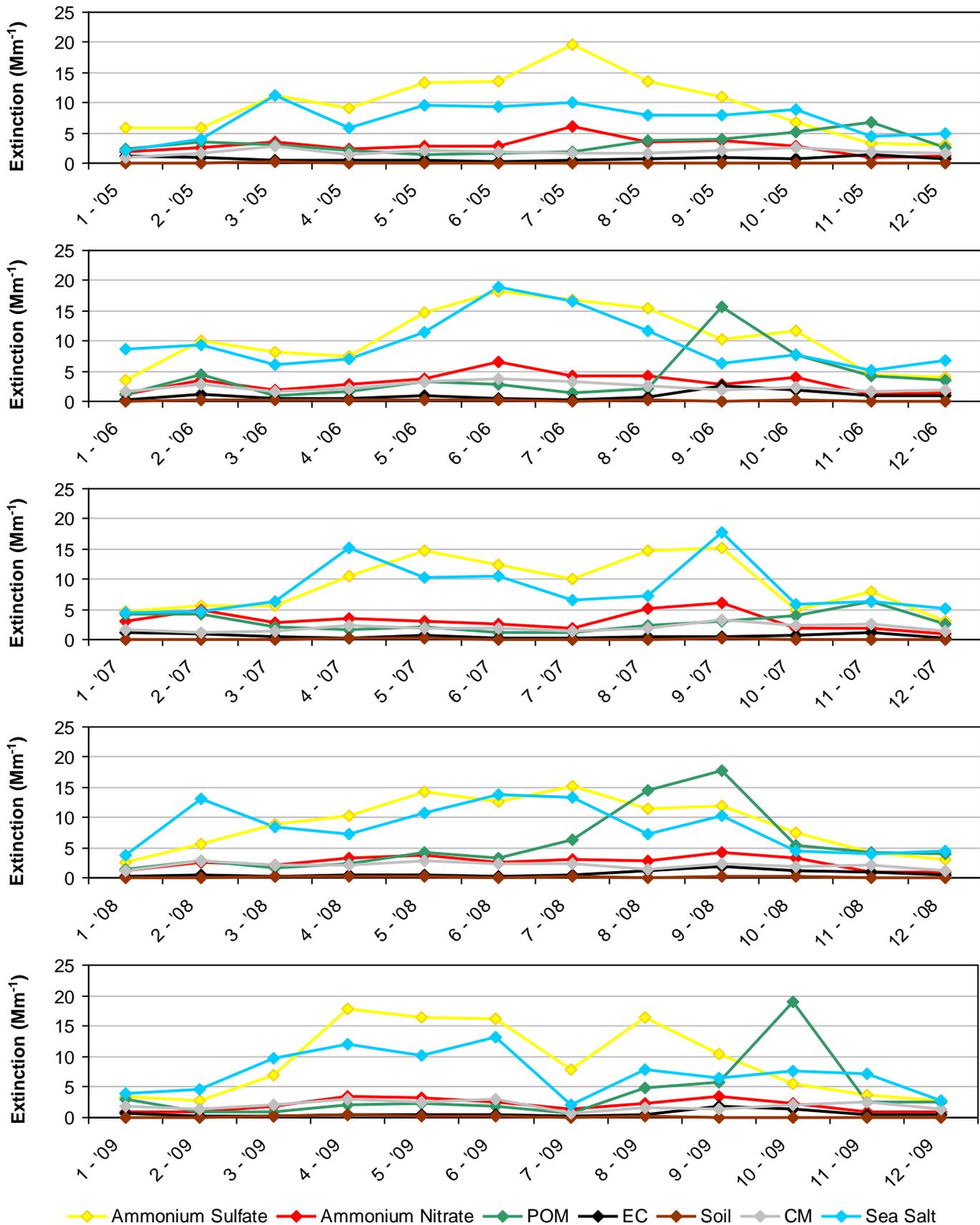
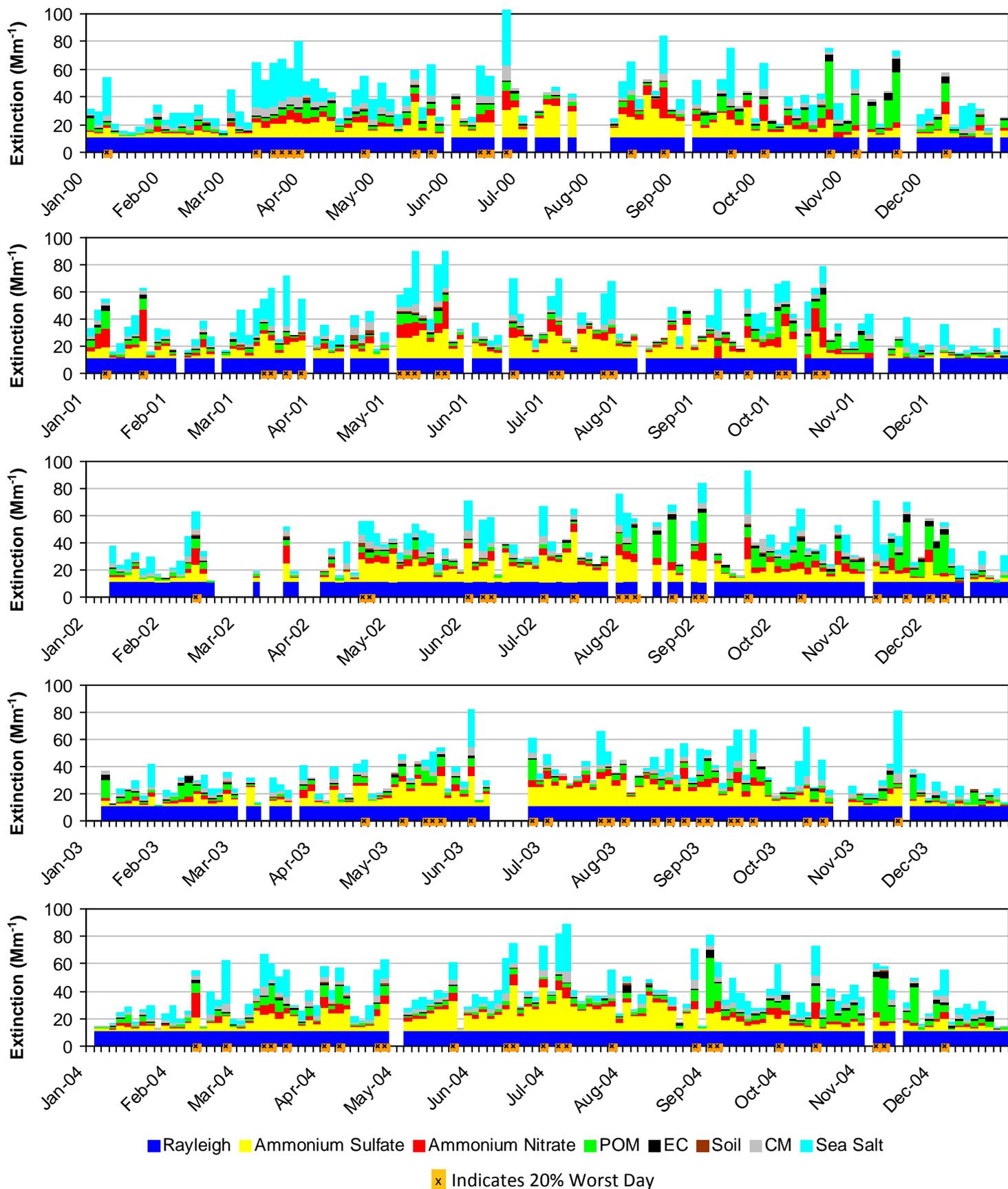


Figure C.17-7
Redwood NP, CA (REDW1 Site)
2000-2004 Progress Period Extinction, All Sampled Days



■ Rayleigh
 ■ Ammonium Sulfate
 ■ Ammonium Nitrate
 ■ POM
 ■ EC
 ■ Soil
 ■ CM
 ■ Sea Salt
x Indicates 20% Worst Day

Figure C.17-8
Redwood NP, CA (REDW1 Site)
2005-2009 Progress Period Extinction, All Sampled Days

