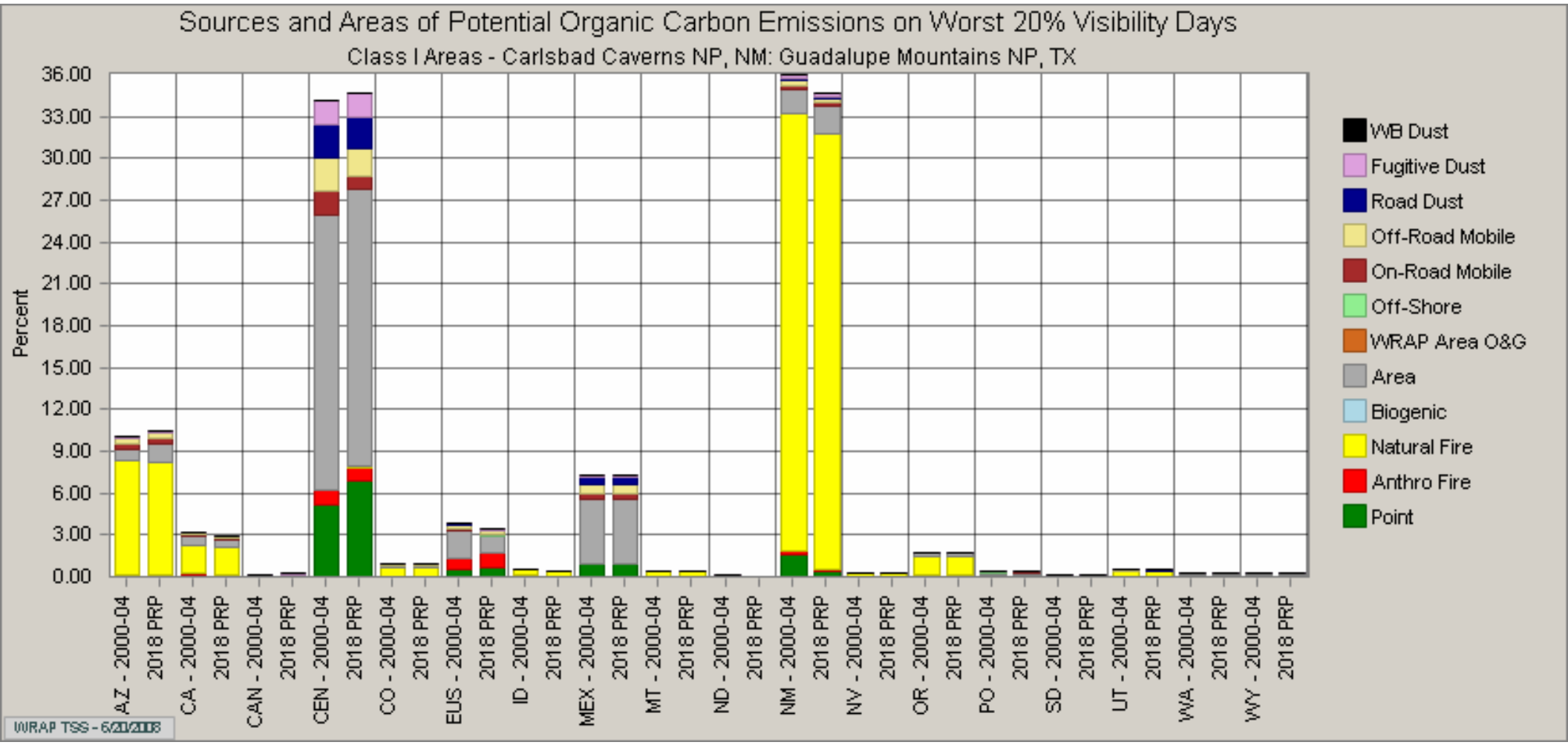
Carlsbad Caverns NP / Guadalupe Mt NP, TX
Organic Carbon (OC)

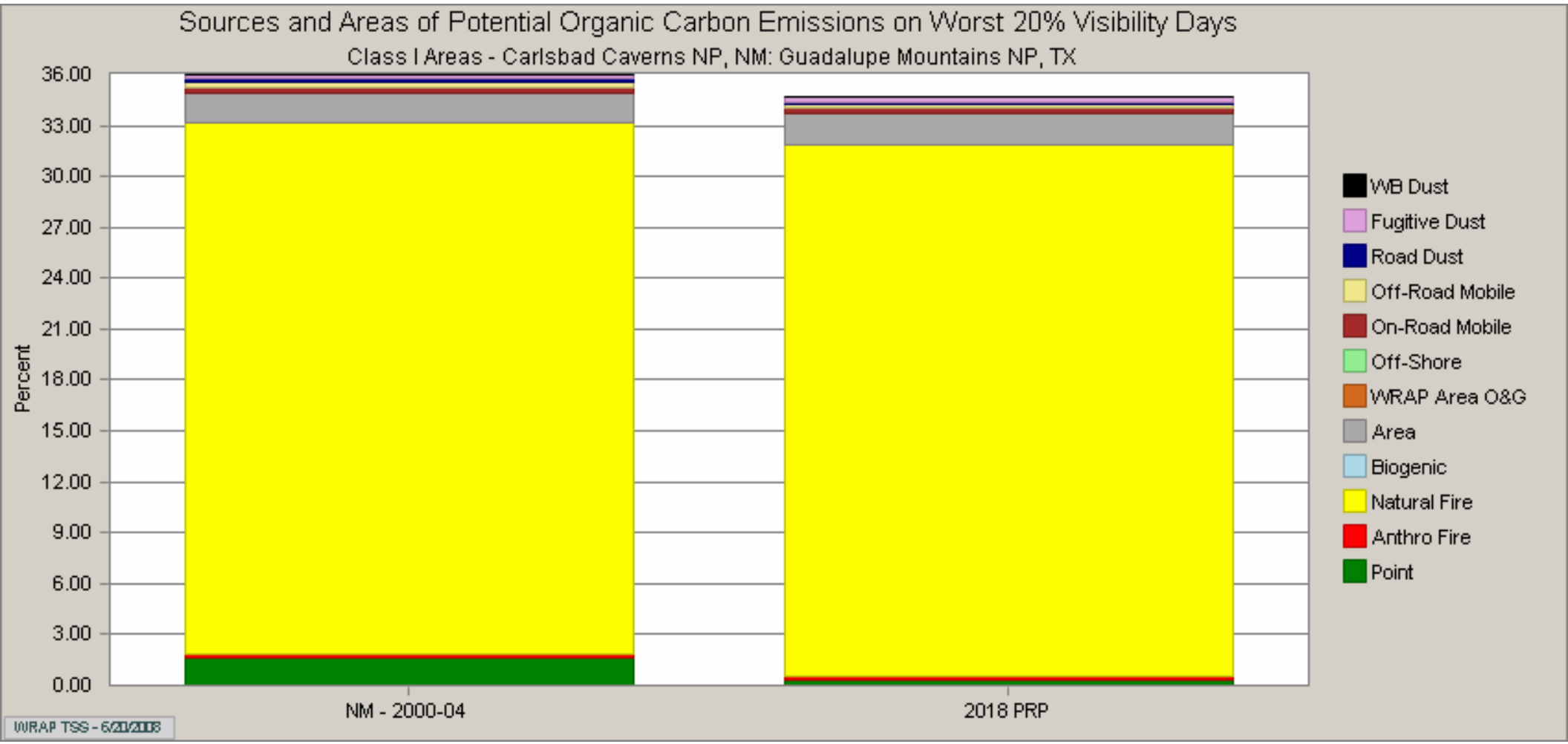
The largest potential contributor to visibility impairment from OC at GUMO in 2000-04 is due to Natural Fire (see bar graph). Looking at the map of Normalized Weighted Emissions Potential (WEP) for GUMO, there are not any WEP% values near Bernalillo County.

Bernalillo's OC emissions from Natural Fire in 2002 were 14.947 TPY, which is 0.09% of New Mexico's 16,271.936 TPY, and the predicted emissions in 2018 remain constant at 2002 values.

The 2002 emissions inventory indicates that Bernalillo County's contribution to OC from Natural Fire is minimal (0.09%), and Bernalillo County is not in proximity to any WEP% values, so it is unlikely that Bernalillo County's OC emissions contribute significantly to the visibility impairment at GUMO.

The impacts on GUMO from outside New Mexico are unusual in that they equal or exceed the emissions from within New Mexico. The level of potential OC emissions on the worst 20% days at GUMO originating from CENWRAP are comparable to New Mexico's contribution. This downwind effect could handicap the efforts of New Mexico and Bernalillo County to reduce visibility impacts at SACR.


Sources and Areas of Potential Organic Carbon Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM: Guadalupe Mountains NP, TX
Percent
36.00
33.00
30.00
27.00
24.00
21.00
18.00
15.00
12.00
9.00
6.00
3.00
0.00
AZ - 2000-04
2018 PRP
CA - 2000-04
2018 PRP
CAN - 2000-04
2018 PRP
CEN - 2000-04
2018 PRP
CO - 2000-04
2018 PRP
EUS - 2000-04
2018 PRP
ID - 2000-04
2018 PRP
MEX - 2000-04
2018 PRP
MT - 2000-04
2018 PRP
ND - 2000-04
2018 PRP
NM - 2000-04
2018 PRP
NV - 2000-04
2018 PRP
OR - 2000-04
2018 PRP
PO - 2000-04
2018 PRP
SD - 2000-04
2018 PRP
UT - 2000-04
2018 PRP
WA - 2000-04
2018 PRP
WY - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2008

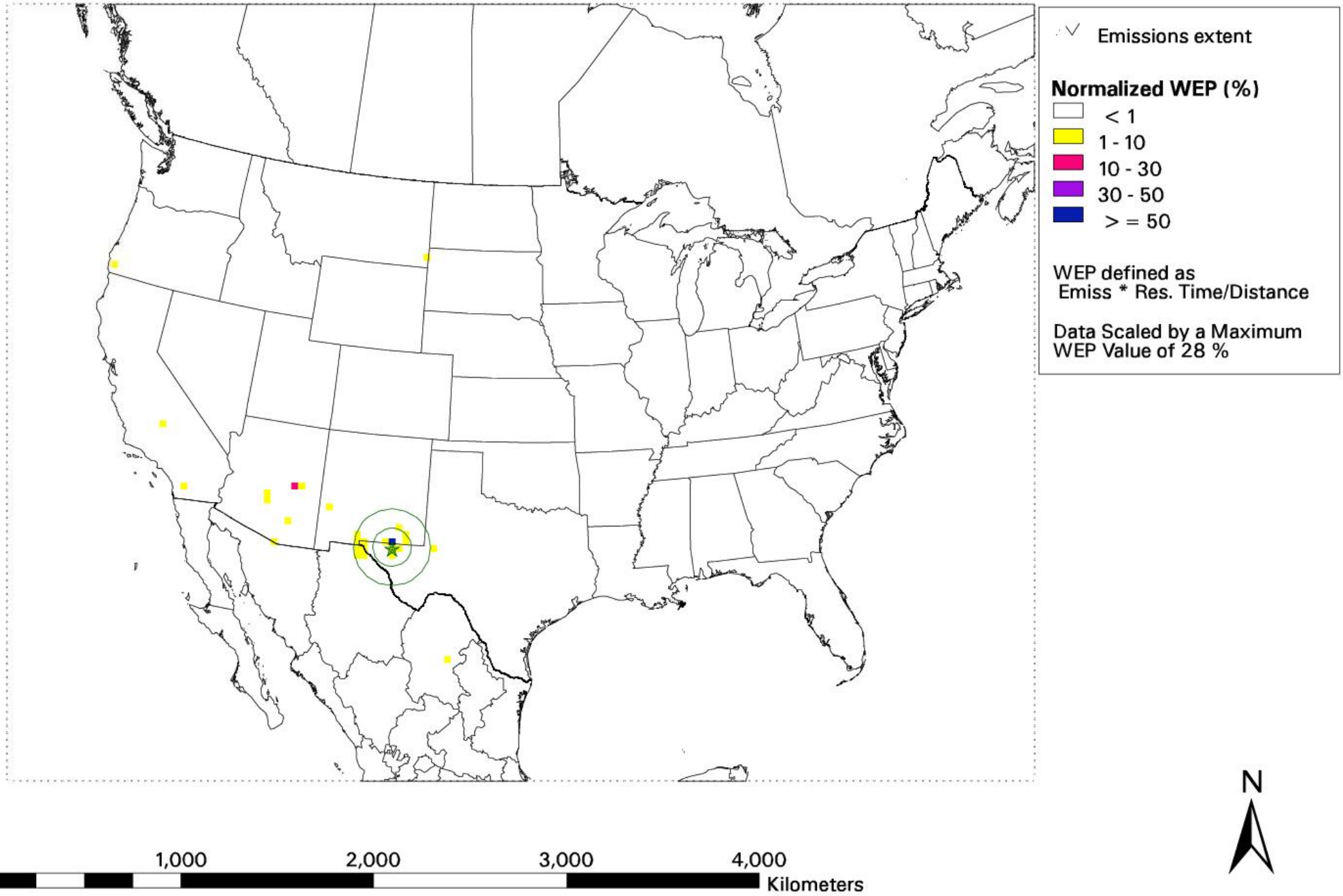

Sources and Areas of Potential Organic Carbon Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM: Guadalupe Mountains NP, TX
Percent
36.00
33.00
30.00
27.00
24.00
21.00
18.00
15.00
12.00
9.00
6.00
3.00
0.00
NM - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2018

Guadalupe Mountains National Park, TX

Normalized Weighted Emission Potential (WEP) for Organic Carbon (POA)

2000-04 Baseline

20% Worst Visibility Days

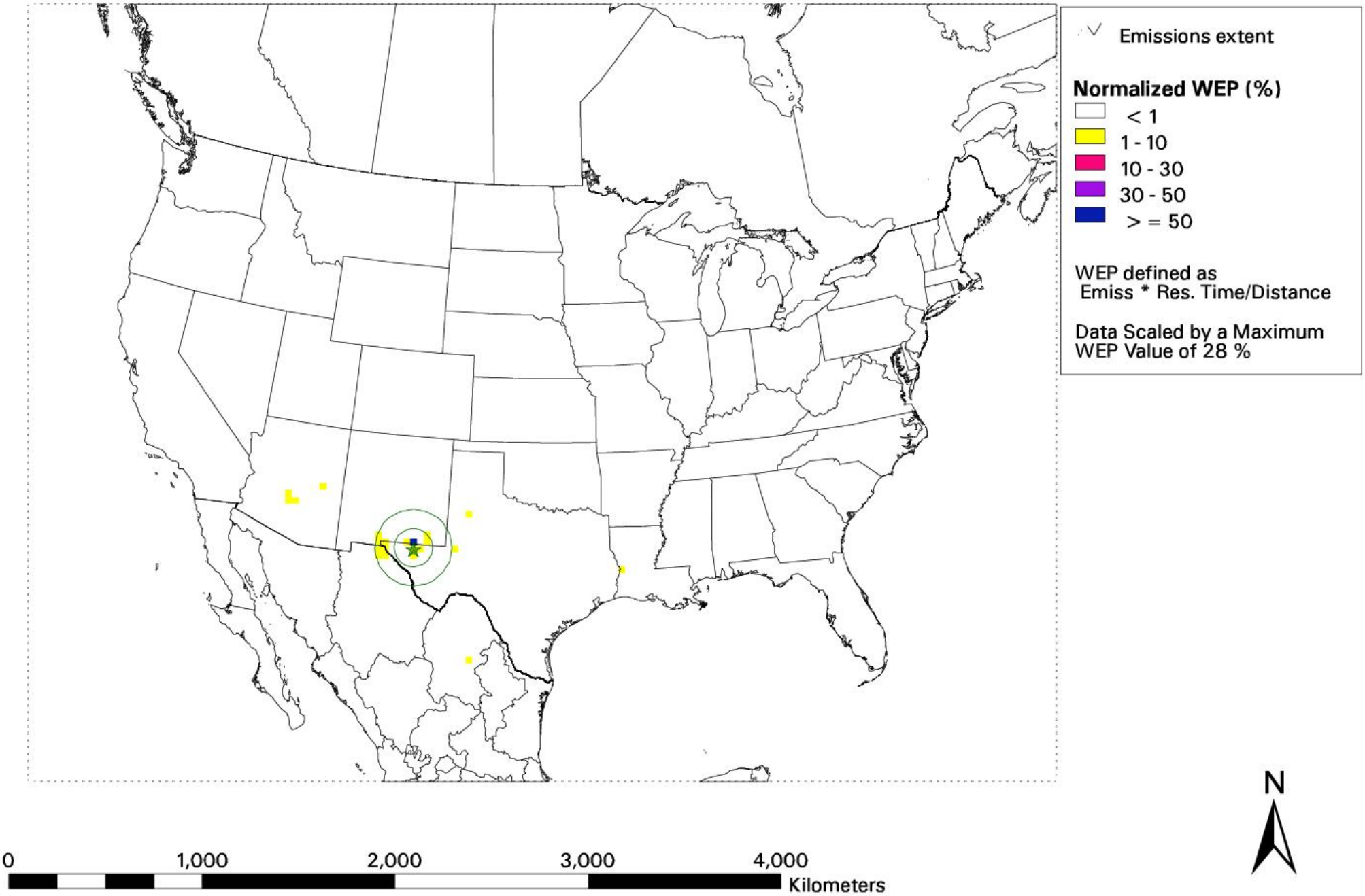


Guadalupe Mountains National Park, TX

Normalized Weighted Emission Potential (WEP) for Organic Carbon (POA)

2018 Preliminary Reasonable Progress

20% Worst Visibility Days



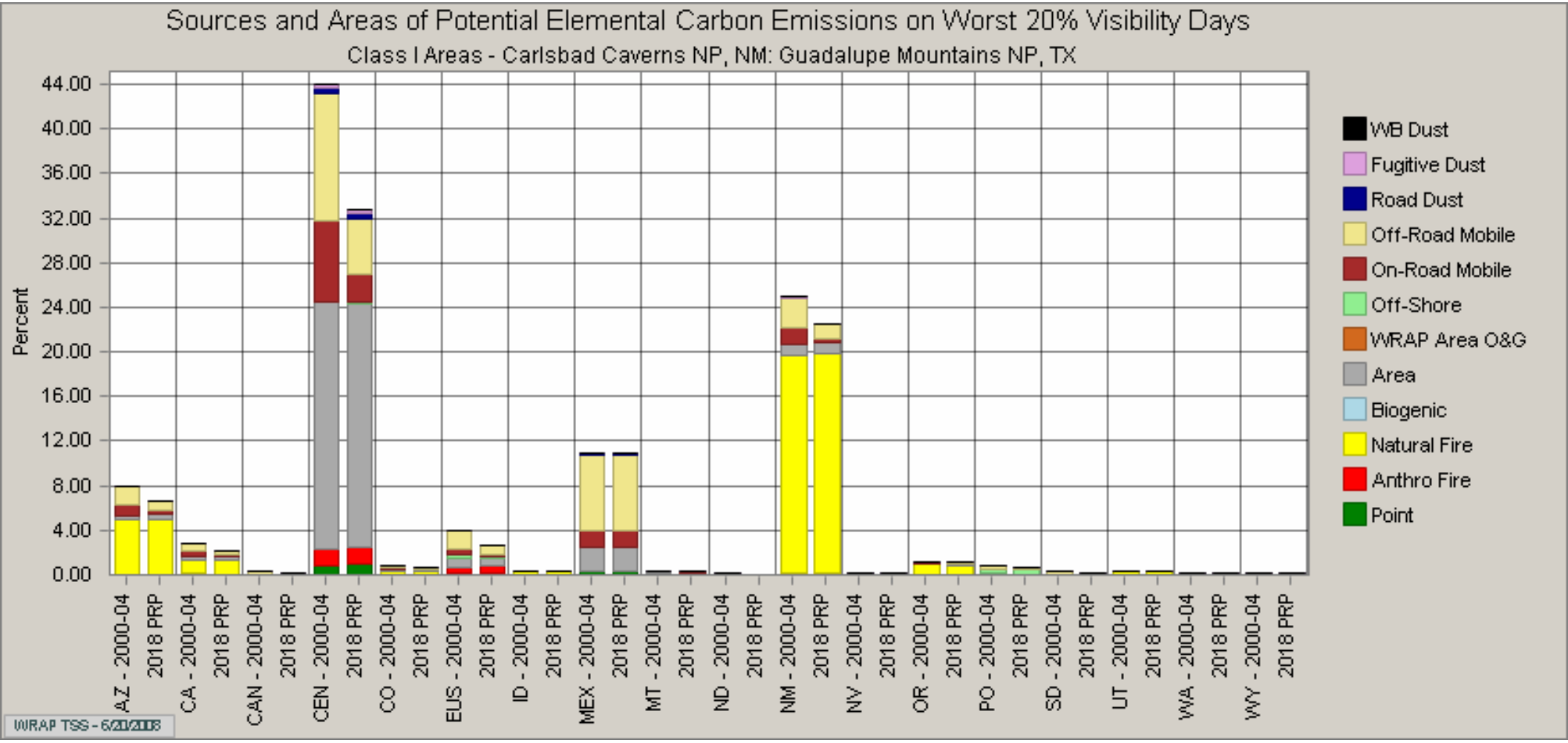
Carlsbad Caverns NP / Guadalupe Mt NP, TX [GUMO]
Elemental Carbon (EC)

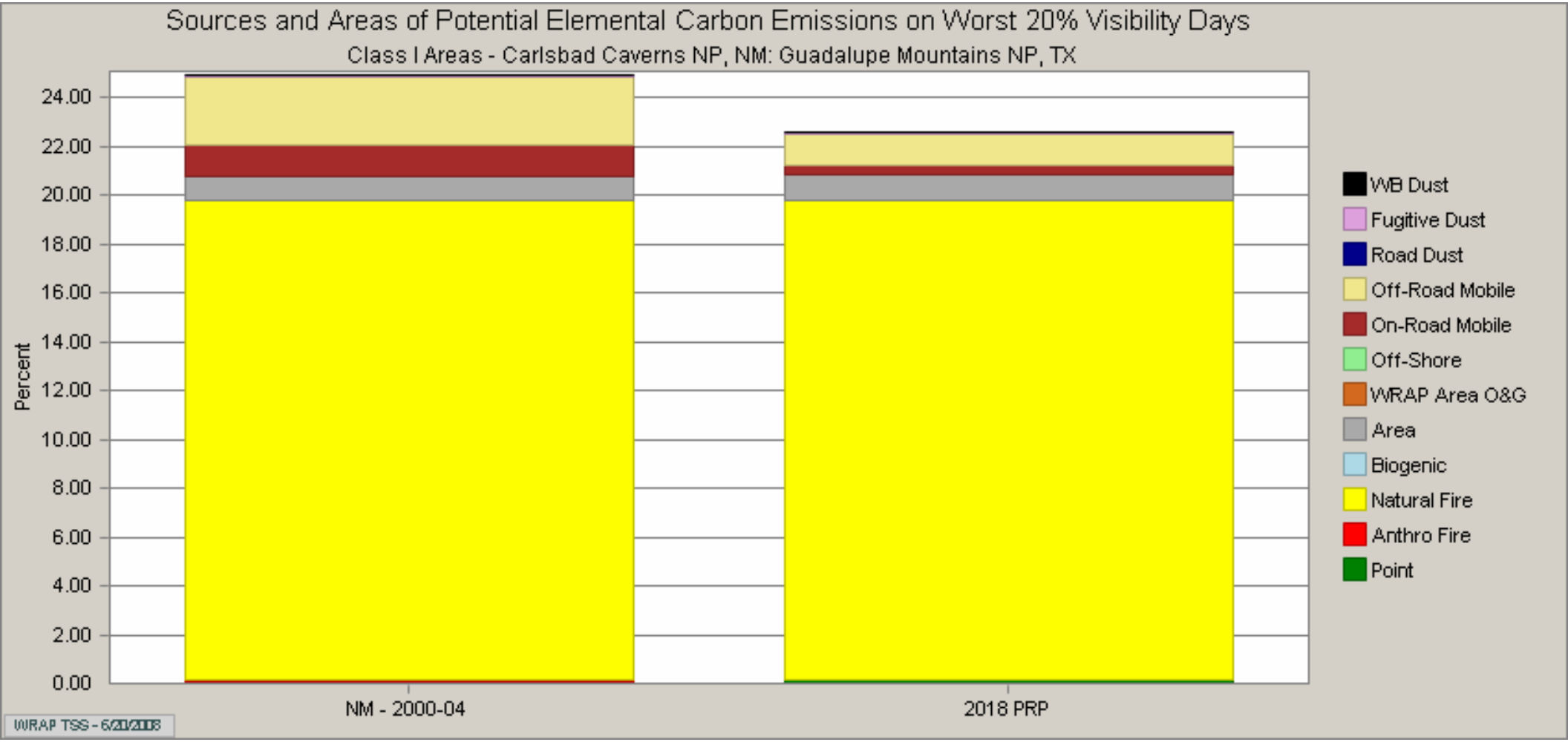
The largest potential contributor to visibility impairment at GUMO from EC in 2000-04 is Natural Fire. The 2018 potential EC emissions are predicted to come mostly from Natural Fire in 2018 as well. (see bar graph). Looking at the map of Normalized Weighted Emissions Potential (WEP) for GUMO, there are not any WEP% values near Bernalillo County.

Bernalillo's EC emissions from natural fire in 2002 were 2.307 TPY, which is 0.07% of New Mexico's 3293.129 TPY, and the predicted emissions for Bernalillo County in 2018 remain constant at 2002 values.

The 2002 emissions inventory indicated that Bernalillo County's contribution to EC from Natural Fire was minimal (0.07%), and Bernalillo County is not in proximity to any WEP% values, so it is unlikely that Bernalillo County's EC emissions contribute significantly to the visibility impairment at GUMO

The impacts on GUMO from outside New Mexico are unusual in that they equal or exceed the emissions from within New Mexico. The level of potential EC emissions on the worst 20% days at GUMO originating from CENWRAP in 2000-04 exceed New Mexico's emissions. This downwind effect could handicap the efforts of New Mexico and Bernalillo County to reduce visibility impacts at GUMO.


Sources and Areas of Potential Elemental Carbon Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM; Guadalupe Mountains NP, TX
Percent
44.00
40.00
36.00
32.00
28.00
24.00
20.00
16.00
12.00
8.00
4.00
0.00
AZ - 2000-04
2018 PRP
CA - 2000-04
2018 PRP
CAN - 2000-04
2018 PRP
CEN - 2000-04
2018 PRP
CO - 2000-04
2018 PRP
EUS - 2000-04
2018 PRP
ID - 2000-04
2018 PRP
MEX - 2000-04
2018 PRP
MT - 2000-04
2018 PRP
ND - 2000-04
2018 PRP
NM - 2000-04
2018 PRP
NV - 2000-04
2018 PRP
OR - 2000-04
2018 PRP
PO - 2000-04
2018 PRP
SD - 2000-04
2018 PRP
UT - 2000-04
2018 PRP
WA - 2000-04
2018 PRP
WY - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2008

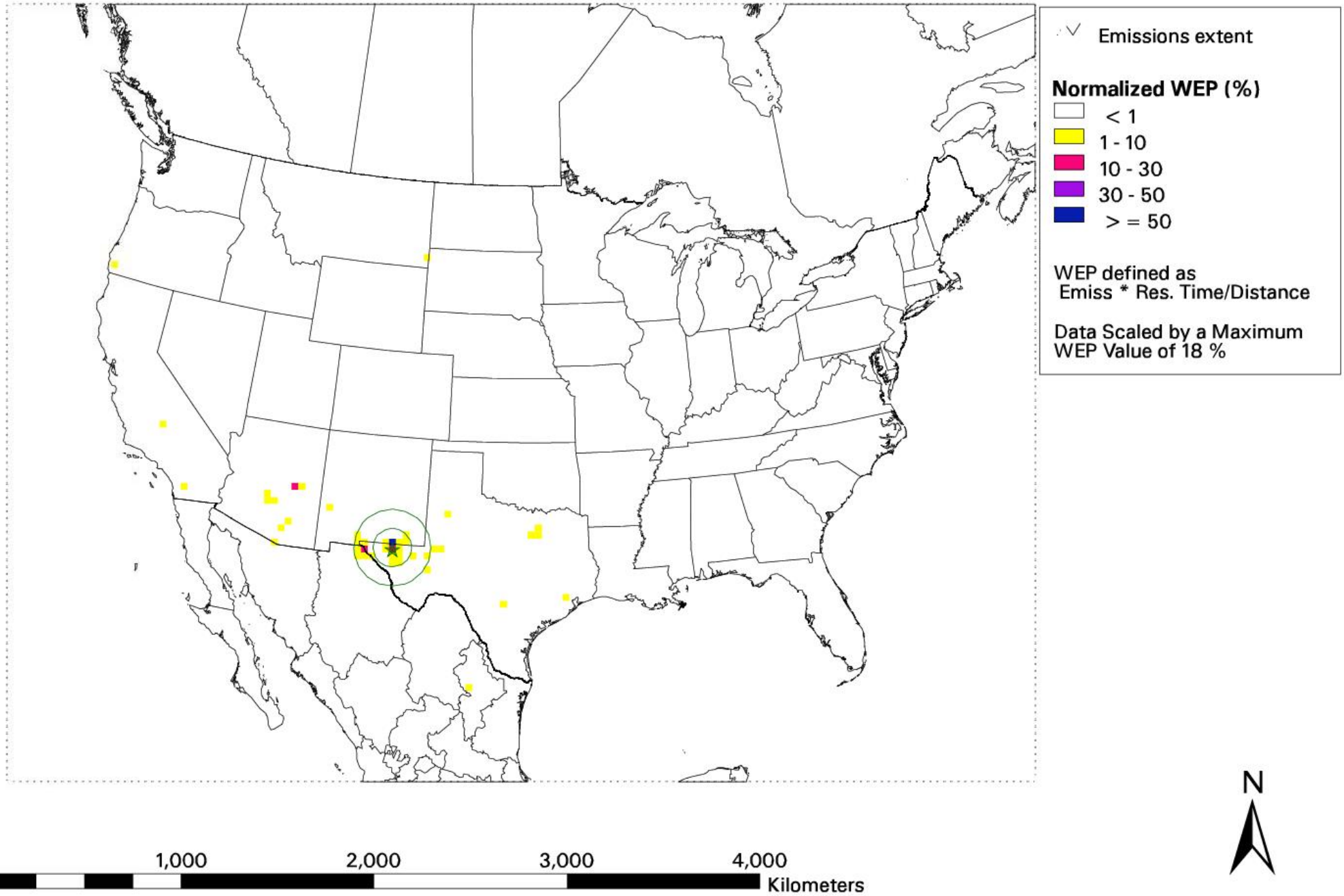

Sources and Areas of Potential Elemental Carbon Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM: Guadalupe Mountains NP, TX
Percent
24.00
22.00
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
NM - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2018

Guadalupe Mountains National Park, TX

Normalized Weighted Emission Potential (WEP) for Elemental Carbon (PEC)

2000-04 Baseline

20% Worst Visibility Days

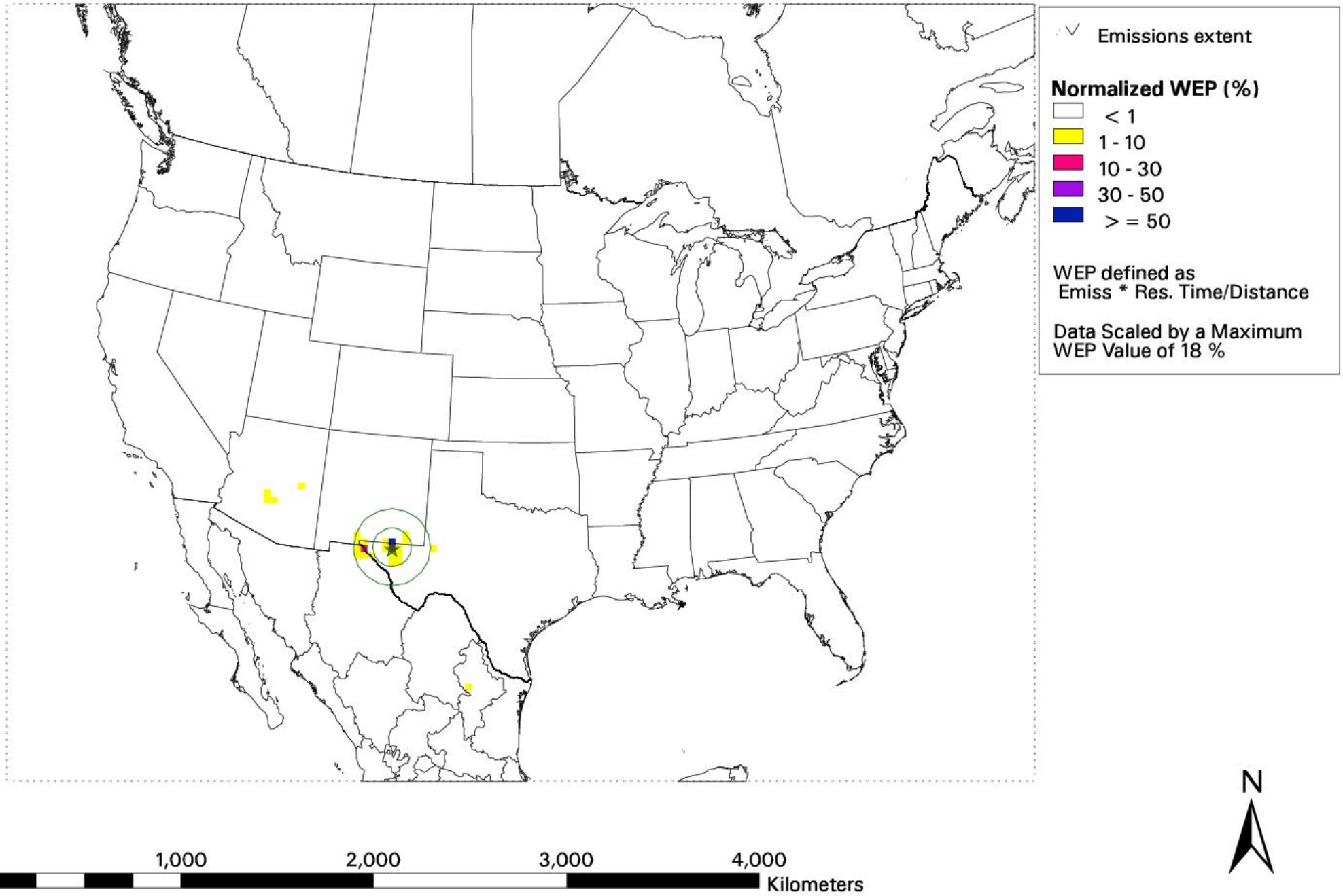


Guadalupe Mountains National Park, TX

Normalized Weighted Emission Potential (WEP) for Elemental Carbon (PEC)

2018 Preliminary Reasonable Progress

20% Worst Visibility Days



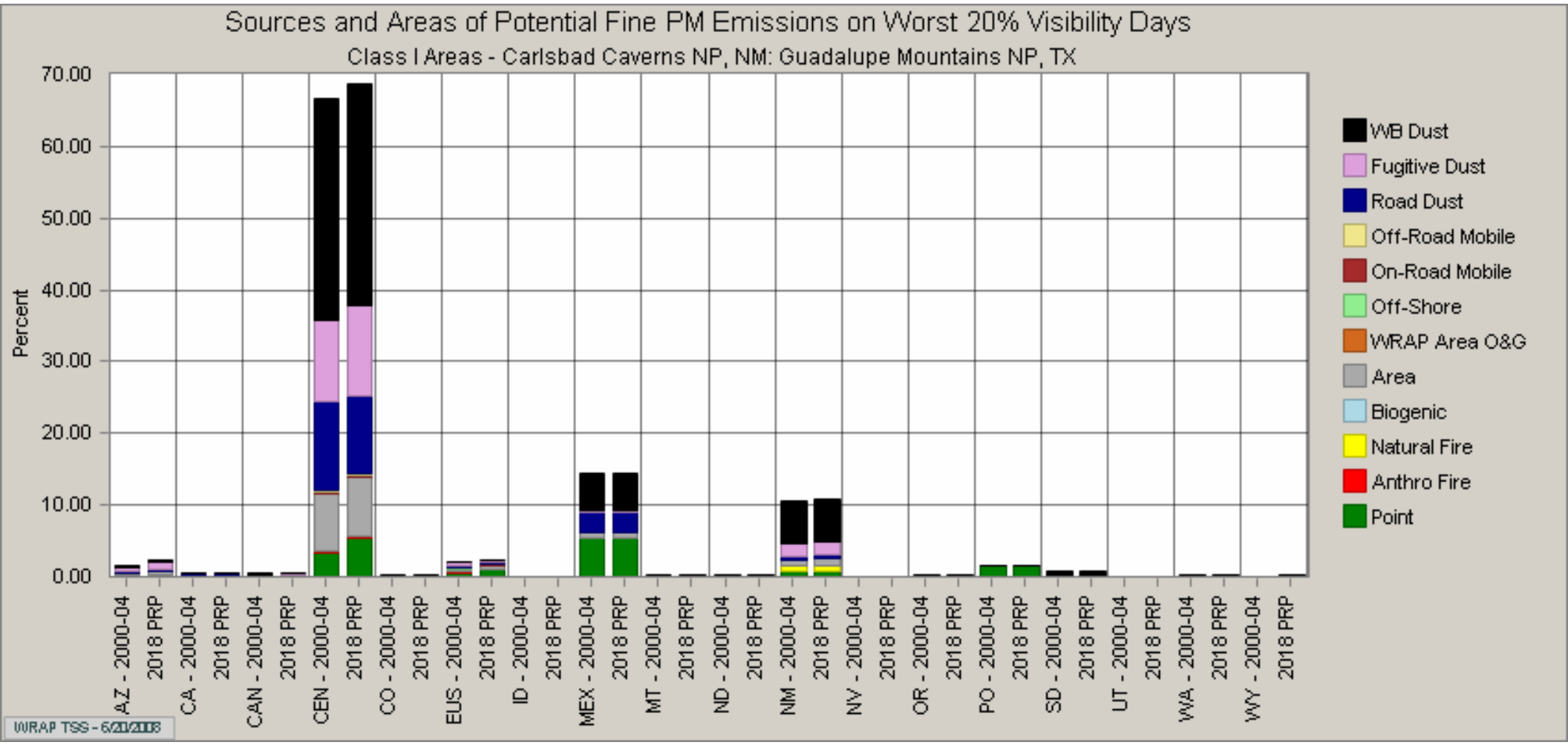
Carlsbad Caverns NP / Guadalupe Mt NP, TX [GUMO]
Particulate Matter fine (PMf)

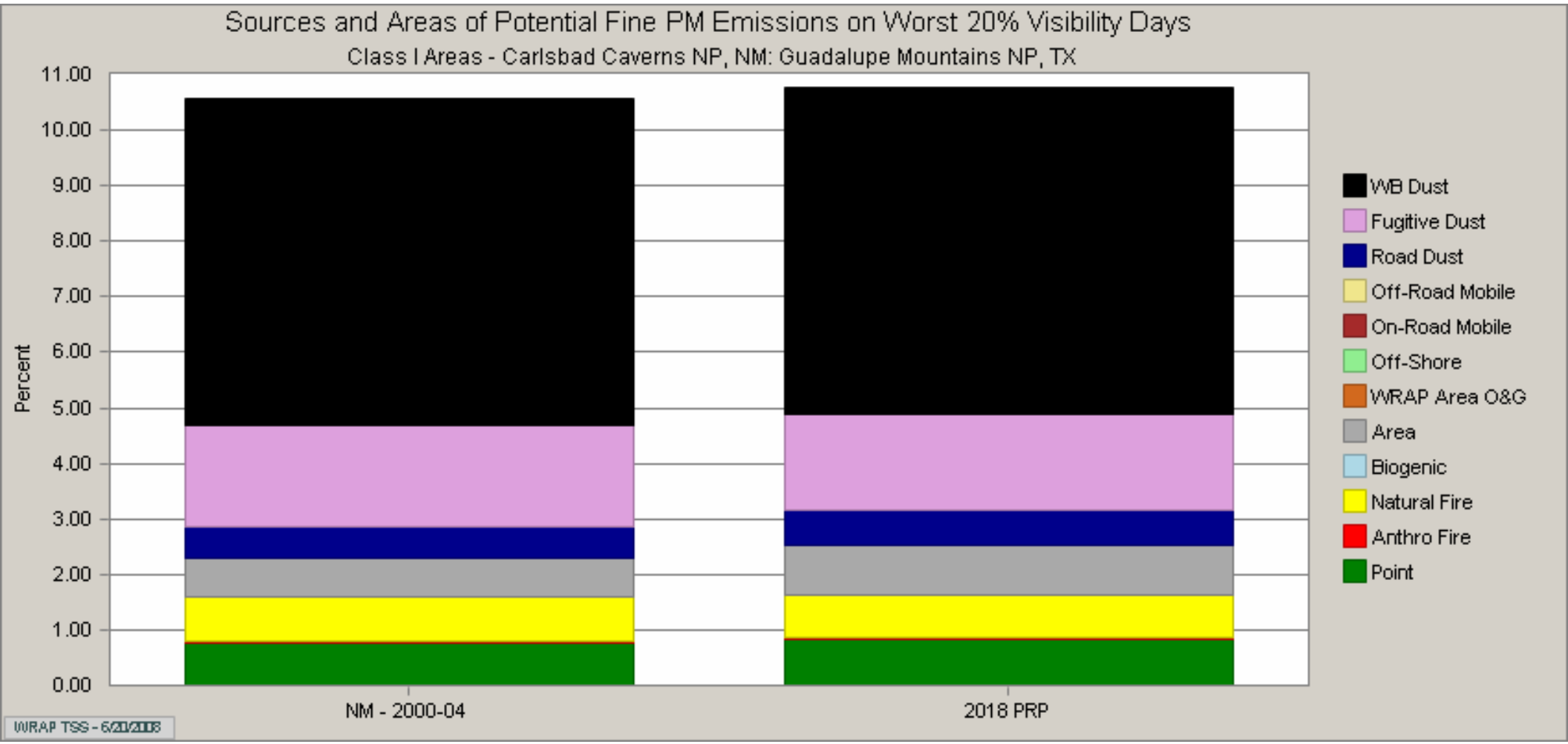
The largest potential contributor to visibility impairment in 2000-04 and 2018 from PMf is due to WB Dust, followed by Fugitive Dust (see bar graph). Looking at the map of Normalized Weighted Emissions Potential (WEP) for GUMO, there are not any WEP% values near Bernalillo County.

In 2002, Bernalillo's PMf emissions from WB Dust were 93.5505 TPY, which is 0.57% of New Mexico's emissions of 16,398.8 TPY, and the predicted emissions for Bernalillo County and New Mexico in 2018 remain constant at 2002 values. Bernalillo's 2002 PMf emissions from Fugitive Dust were 1593.21 TPY which is 23.6% of New Mexico's 6751.05 TPY, and the predicted emissions for Bernalillo County in 2018 are 1579.9 TPY which is 22.5% of New Mexico's 7025.69 TPY.

In 2002, Bernalillo County was the largest contributor of PMf in New Mexico. However, WB Dust was the largest fraction of PMf emissions impacting GUMO, while the largest fraction of PMf emissions in Bernalillo County was due to Fugitive Dust. This would indicate that Bernalillo County is less likely to contribute to the visibility impairment at GUMO from PMf, but this parsing of individual categories of dust may not preclude Bernalilllo's impact on GUMO. Therefore, it is possible that Bernalillo County's PMf emissions contribute to the visibility impairment at SACRs, but unlikely.

The impacts on GUMO from outside New Mexico are unusual in that they equal or exceed the emissions from within New Mexico. The level of potential PMf emissions on the worst 20% days at GUMO originating from CENWRAP in 2000-04 vastly exceeded New Mexico's emissions and are predicted to exceed New Mexico's contribution in 2018 as well. This downwind effect could handicap the efforts of New Mexico and Bernalillo County to reduce visibility impacts at GUMO.


Sources and Areas of Potential Fine PM Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM: Guadalupe Mountains NP, TX
Percent
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
AZ - 2000-04
2018 PRP
CA - 2000-04
2018 PRP
CAN - 2000-04
2018 PRP
CEN - 2000-04
2018 PRP
CO - 2000-04
2018 PRP
EUS - 2000-04
2018 PRP
ID - 2000-04
2018 PRP
MEX - 2000-04
2018 PRP
MT - 2000-04
2018 PRP
ND - 2000-04
2018 PRP
NM - 2000-04
2018 PRP
NV - 2000-04
2018 PRP
OR - 2000-04
2018 PRP
PO - 2000-04
2018 PRP
SD - 2000-04
2018 PRP
UT - 2000-04
2018 PRP
WA - 2000-04
2018 PRP
WY - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2008

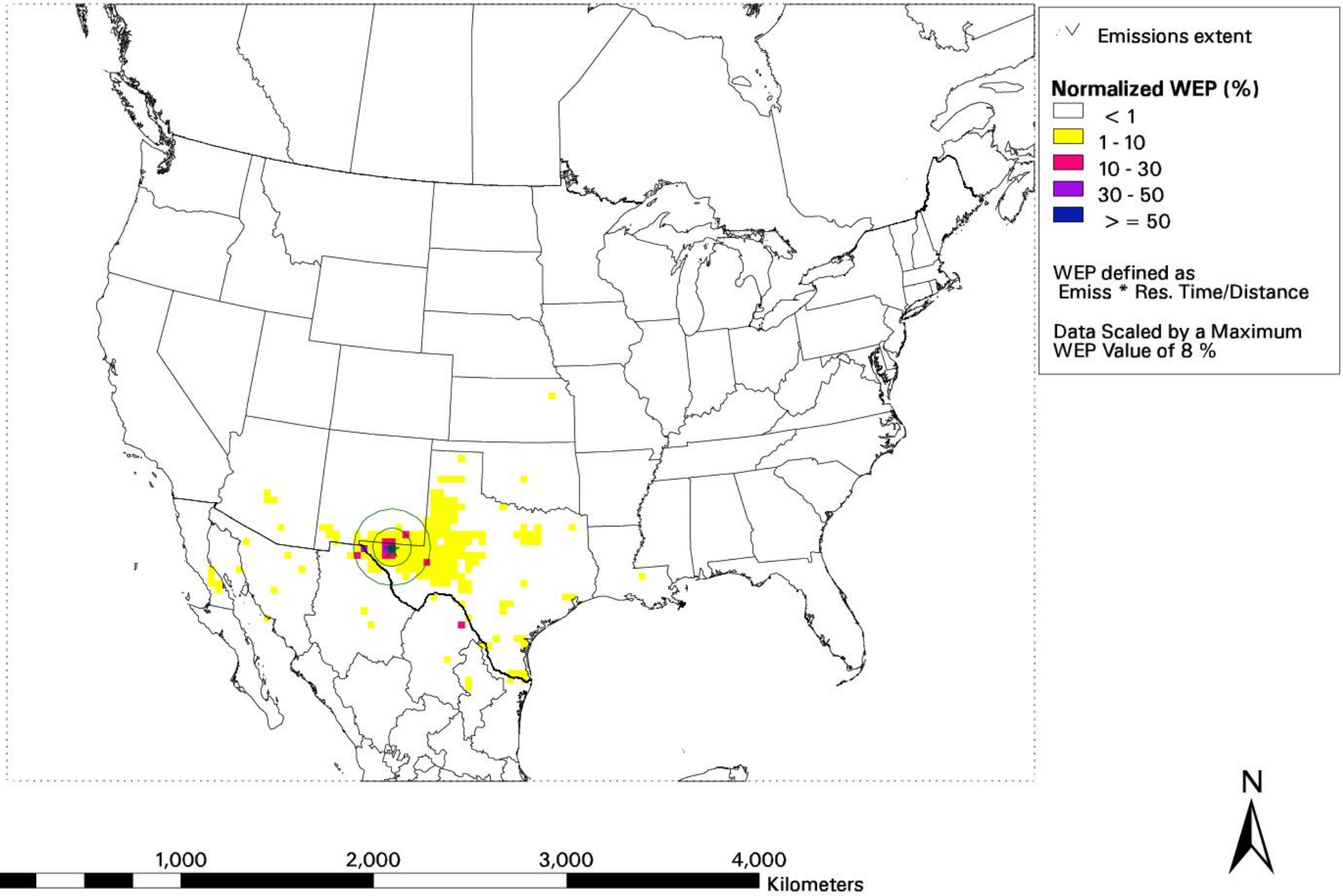

Sources and Areas of Potential Fine PM Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM: Guadalupe Mountains NP, TX
Percent
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
NM - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2018

Guadalupe Mountains National Park, TX

Normalized Weighted Emission Potential (WEP) for Fine Particulate Matter (PMFINE)

2000-04 Baseline

20% Worst Visibility Days

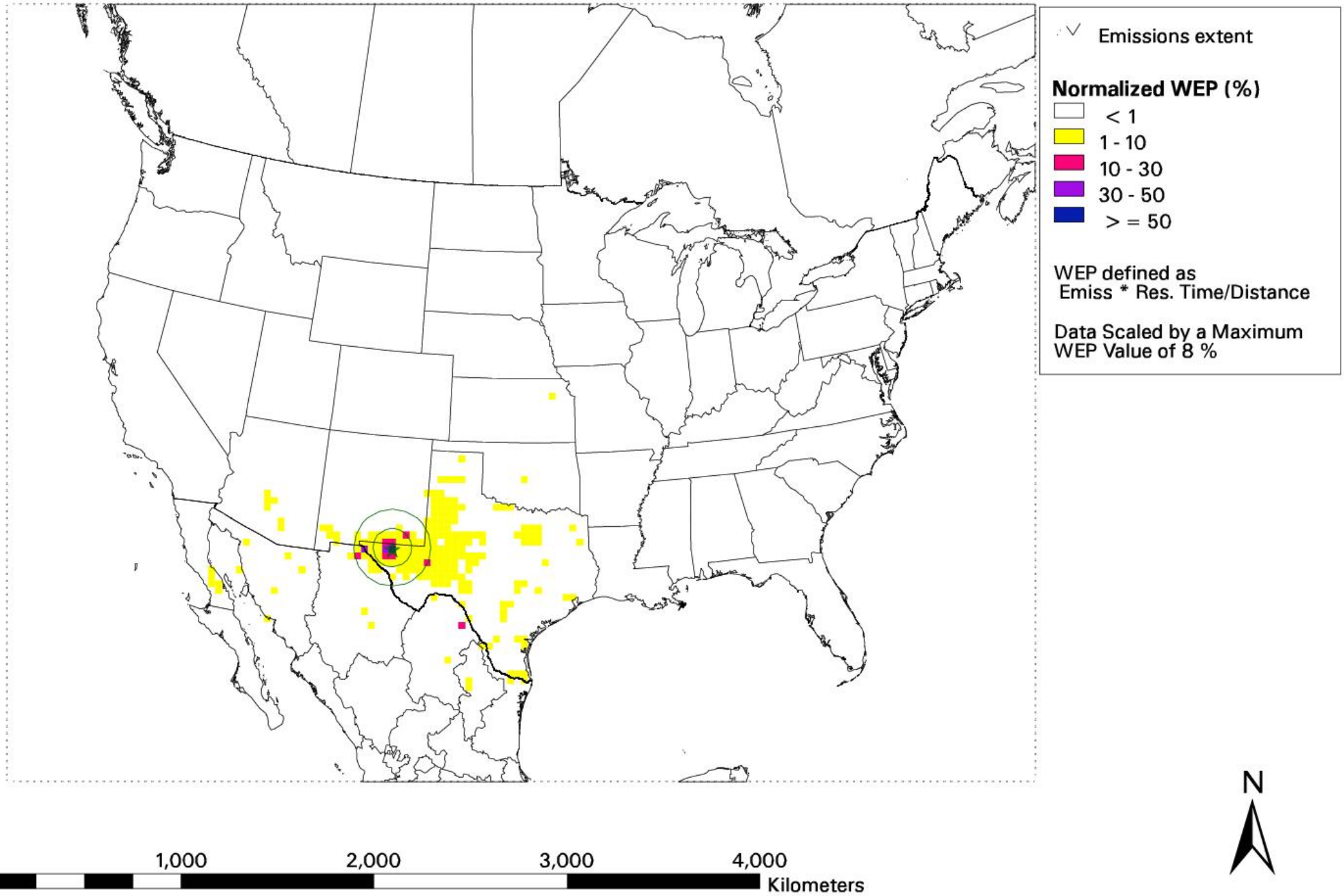


Guadalupe Mountains National Park, TX

Normalized Weighted Emission Potential (WEP) for Fine Particulate Matter (PMFINE)

2018 Preliminary Reasonable Progress

20% Worst Visibility Days



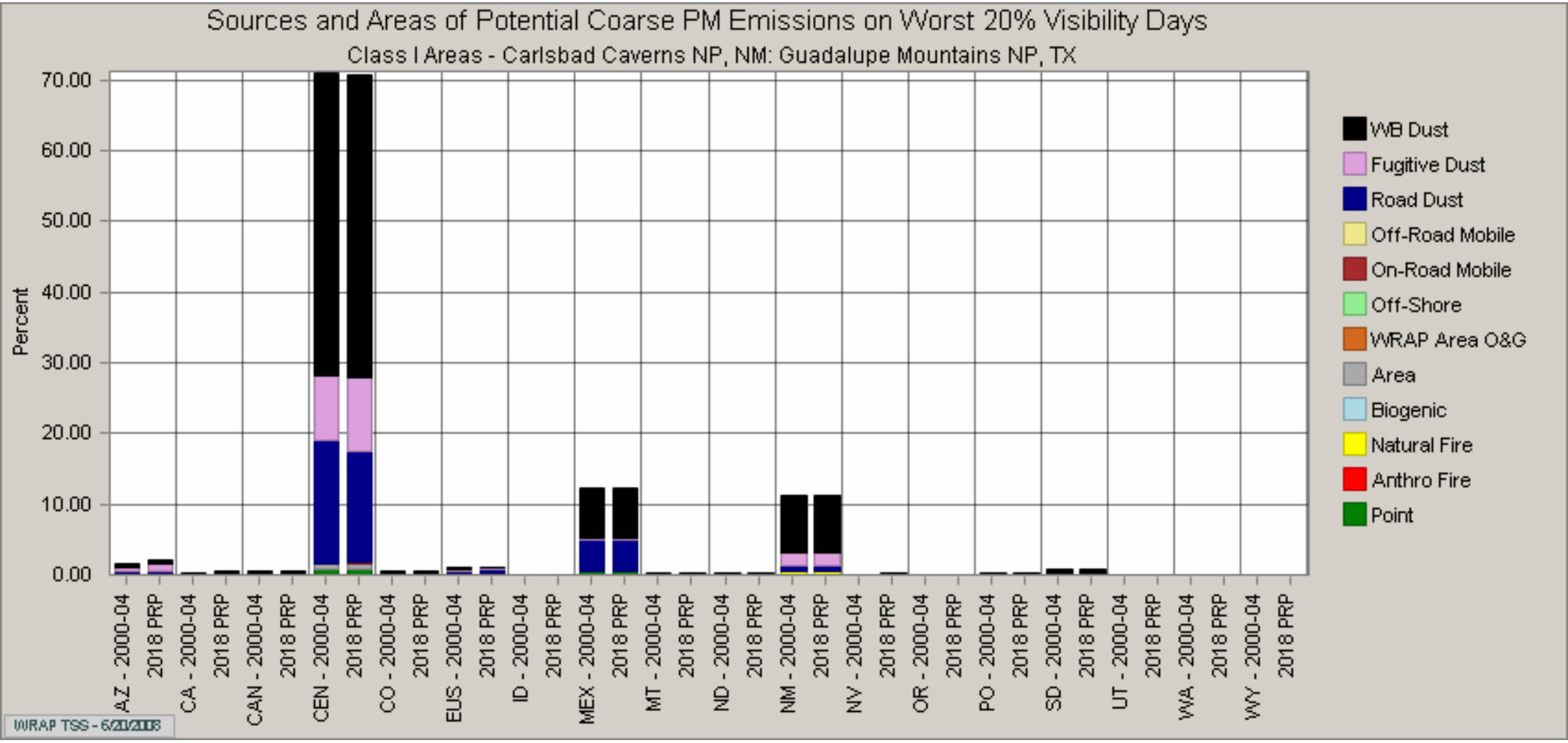
Carlsbad Caverns NP / Guadalupe Mt NP, TX [GUMO]
Particulate Matter coarse (PMc)

For the 2000-04 period, the largest potential contributor to visibility impairment at GUMO from PMc emissions is WB Dust, followed by Fugitive Dust and Road Dust (see bar graph). Looking at the map of Normalized Weighted Emissions Potential (WEP) for GUMO, there are not any WEP% values near Bernalillo County.

In 2002, Bernalillo's PMc emissions from WB Dust were 841.9548 TPY, which is 0.57% of New Mexico's 147,589.19 TPY, and the predicted emissions for Bernalillo County and New Mexico in 2018 remain constant at 2002 values.

In 2002 Bernalillo County was the largest contributor of PMc in New Mexico. However, WB Dust was the largest fraction of PMc emissions impacting GUMO, while the largest fraction of PMc emissions in Bernalillo County was due to Fugitive Dust. This would indicate that Bernalillo County is less likely to contribute to the visibility impairment at GUMO from PMc, but this parsing of individual categories of dust may not preclude Bernalilllo's impact on GUMO. Therefore, it is possible that Bernalillo County's PMc emissions contribute to the visibility impairment at GUMO, but not likely.

The impacts on GUMO by emissions from outside New Mexico are unusual in that they equal or exceed the emissions from within New Mexico. The level of potential PMc emissions on the worst 20% days at GUMO originating from CENWRAP in 2000-04 were six times that emitted by New Mexico and are predicted to exceed New Mexico's contribution in 2018 as well. This downwind effect could handicap the efforts of New Mexico and Bernalillo County to reduce visibility impacts at GUMO.


Sources and Areas of Potential Coarse PM Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM: Guadalupe Mountains NP, TX
Percent
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
AZ - 2000-04
2018 PRP
CA - 2000-04
2018 PRP
CAN - 2000-04
2018 PRP
CEN - 2000-04
2018 PRP
CO - 2000-04
2018 PRP
EUS - 2000-04
2018 PRP
ID - 2000-04
2018 PRP
MEX - 2000-04
2018 PRP
MT - 2000-04
2018 PRP
ND - 2000-04
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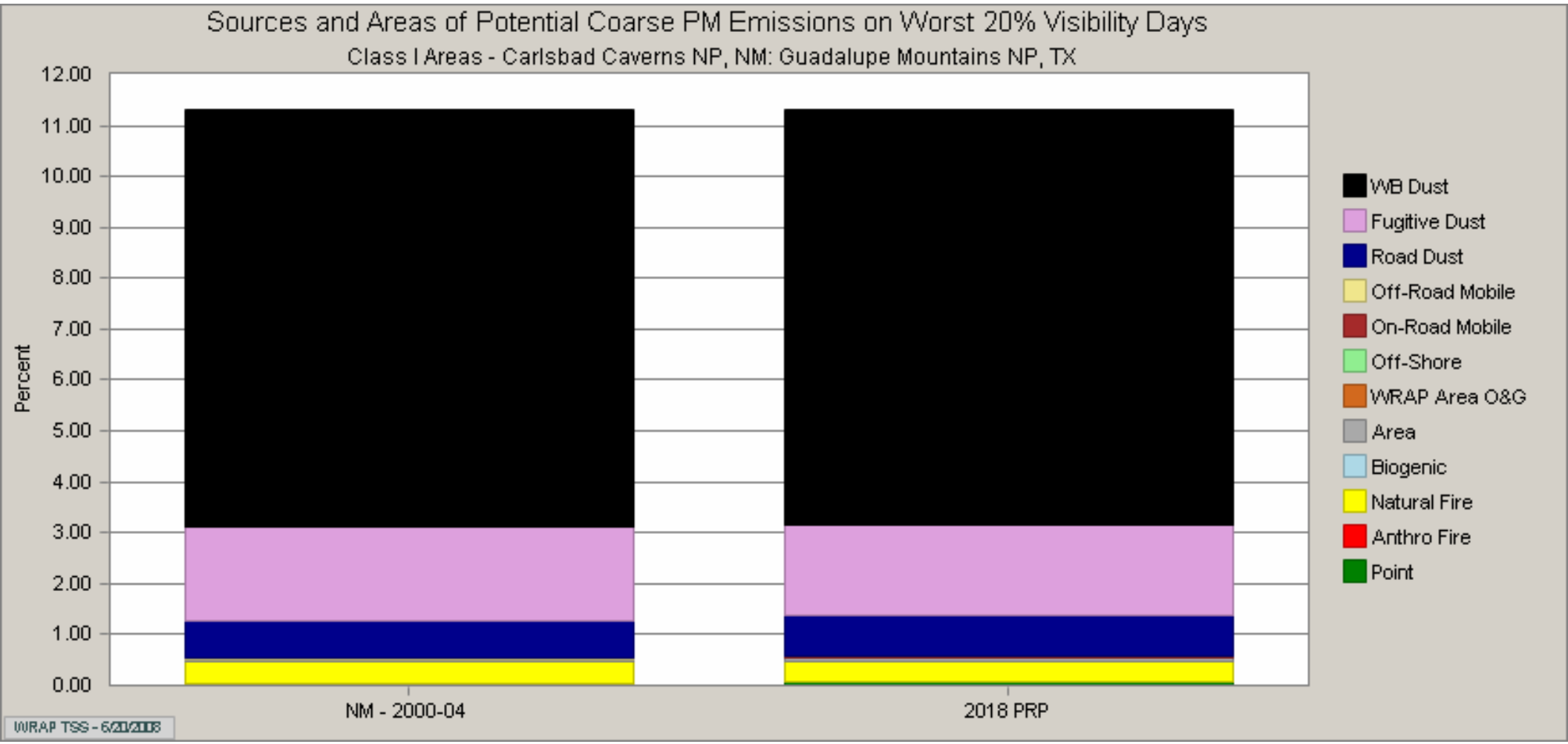
NM - 2000-04
2018 PRP
NV - 2000-04
2018 PRP
OR - 2000-04
2018 PRP
PO - 2000-04
2018 PRP
SD - 2000-04
2018 PRP
UT - 2000-04
2018 PRP
WA - 2000-04
2018 PRP
WY - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2008

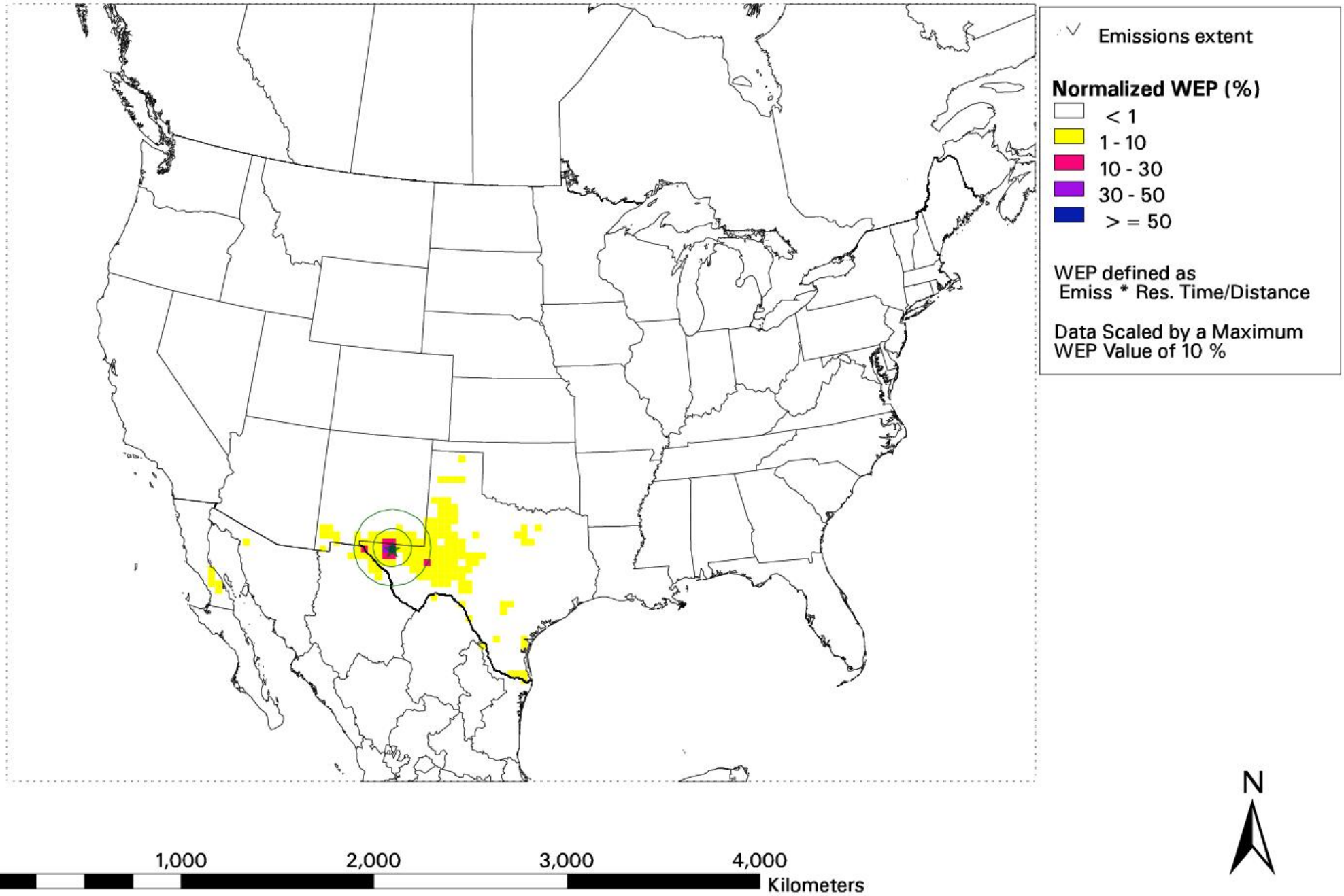

Sources and Areas of Potential Coarse PM Emissions on Worst 20% Visibility Days
Class I Areas - Carlsbad Caverns NP, NM: Guadalupe Mountains NP, TX
Percent
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
NM - 2000-04
2018 PRP
WB Dust
Fugitive Dust
Road Dust
Off-Road Mobile
On-Road Mobile
Off-Shore
WRAP Area O&G
Area
Biogenic
Natural Fire
Anthro Fire
Point
WRAP TSS - 6/21/2018

Guadalupe Mountains National Park, TX

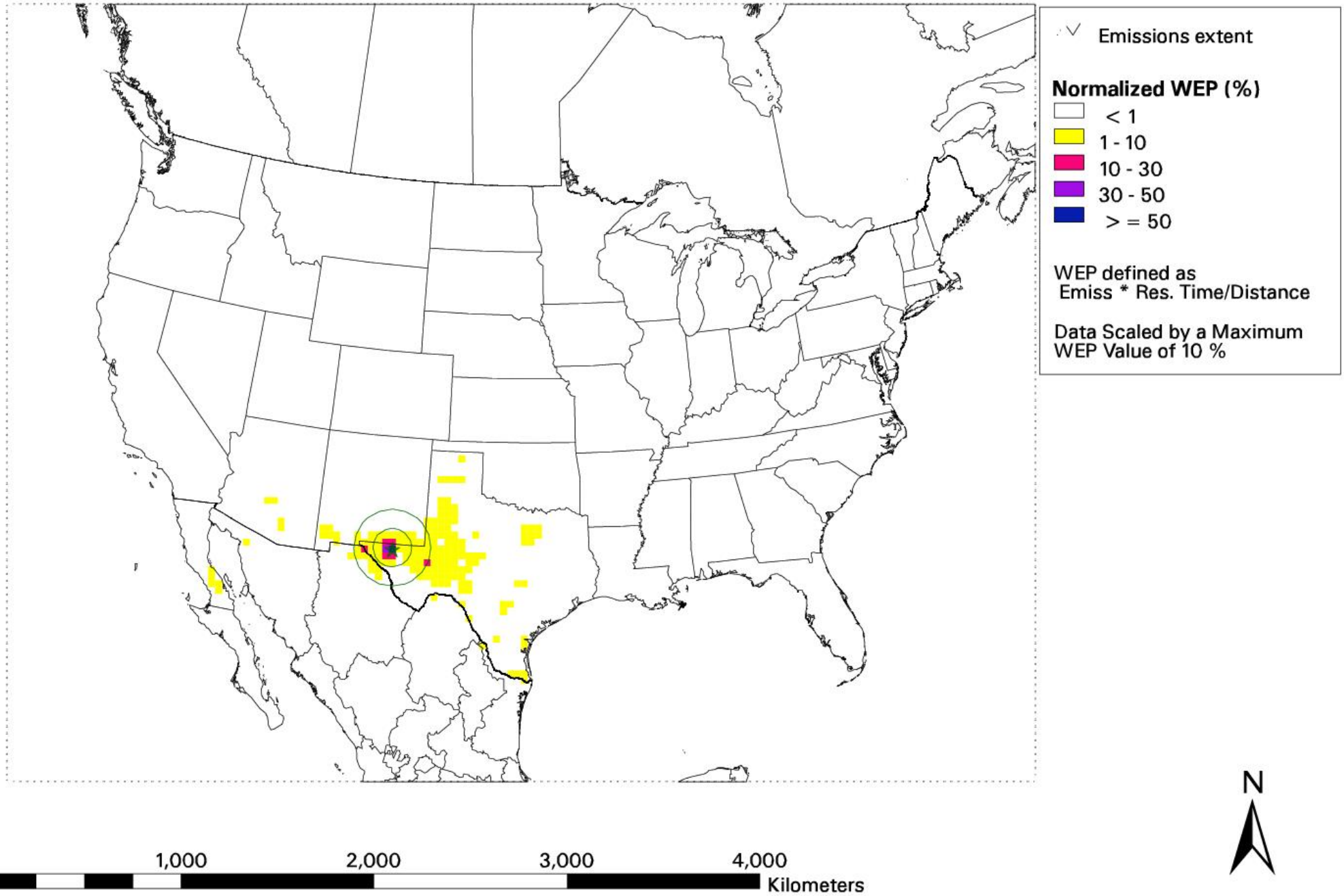
Normalized Weighted Emission Potential (WEP) for Coarse Particulate Matter (PMC)

2000-04 Baseline

20% Worst Visibility Days



Guadalupe Mountains National Park, TX

Normalized Weighted Emission Potential (WEP) for Coarse Particulate Matter (PMC) 2018 Preliminary Reasonable Progress

20% Worst Visibility Days