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Figure SI 2. Representative HYSPLIT back-trajectories for high ozone days at the DEPO site. The arrival height is 1500 m AGL, and the arrival time is 17:00 PST (01:00 next day UTC). Part a: approach from the south (July 31, 2013). Part b: approach from the northwest, followed by a sharp turn to the northeast (June 15, 2013). Part c: approach from the southwest (July 9, 2014).

Table SI 1. Passive sampler monitoring periods in 2013 and 2014

Monitoring Period		2013	2014
1	start	June 4, 15:00 (14:40)	June 3, 10:05 (14:15)
	end	June 19, 15:00 (15:30)	June 17, 11:00 (12:30)
2	end	July 3, 8:35 (8:24)	July 1, 12:15 (10:24)
3	end	July 17, 8:55 (8:29)	July 15, 11:30 (9:49)
4	end	July 31, 8:45 (8:25) *	July 29, 12:11 (9:45)
5	end	August 14, 9:11 (8:50) *	August 12, 10:46 (8/11, 9:35) *
6	end	August 28, 9:52 (9:07) *	August 26, 10:58 (9:17) *
7	end	September 11, 9:35 (9:17) *	September 9, 13:16 (10:05)
8	end	September 25, 9:30 (9:22) *	September 23, 11:08 (9:43) *
9	end	na	October 7, 11:40 (14:45) *

Start dates / times (PST) for monitoring periods 2 through 10 correspond to the end times for the preceding period (e.g. 2013 period 3 for the Meadow site was 8:35 on July 3 to 8:55 on July 17).

2013 Flagpole times and 2014 Granite Dome times are listed in parentheses.

Monitoring periods denoted with asterisks (*) were affected by wildland fires.

Table SI 2. Characteristics of the 2013 and 2014 wildland fires that affected air quality at DEPO

Characteristic	Aspen Fire	Rim Fire	French Fire	King Fire
Start date	July 22, 2013	Aug. 17, 2013	July 28, 2014	Sept. 13, 2014
End date (full containment)	Aug. 11, 2013	Oct. 24, 2013	Aug. 17, 2014	Oct. 9, 2014
DEPO smoke impact start	July 22, 2013	Aug. 17, 2013	July 28, 2014	Aug. 30, 2014
DEPO smoke impact end	Aug. 8, 2013	Sept. 5, 2013	Aug. 17, 2014	Sept. 2, 2014
Passive Sampling periods affected	4 ^a and 5 ^a	6 ^a , 7 and 8	5 and 6 ^a	8 ^a and 9
Area burned (ha)	9,227	104,131	5,202	39,546
Latitude	37.2786	37.8572	37.2681	38.7925
Longitude	-119.3181	-120.0864	-119.3339	-120.6022
Fuel type	Mixed conifer and chaparral	Chaparral, oak woodland and mixed conifer	Mixed conifer and chaparral	Timber with brush and grass

^a Only part of the monitoring period was affected.

Table SI 3. Exceedances of the new NAAQS and current CAAQS (both 70 ppb), and the old NAAQS (75 ppb), for O₃ during the 2013 and 2014 monitoring campaigns

date	day-of-year	8-hour O ₃	exceeds new NAAQS and CAAQS	exceeds old NAAQS	8-hour O ₃	exceeds new NAAQS and CAAQS	exceeds old NAAQS	fire in progress
<i>2013 Meadow Site</i>					<i>Flagpole Site</i>			
15-Jun	166	71.1	yes	no	71.1	yes	no	(none)
24-Jul	205	70.6	yes	no	72.7	yes	no	Aspen
31-Jul	212	73.6	yes	no	76.2	yes	yes	Aspen
6-Aug	218	71.4	yes	no	73.2	yes	no	Aspen
20-Sep	263				74.3	yes	no	Rim
<i>2014 Meadow Site</i>					<i>Granite Dome Site</i>			
5-Jun	156	71.8	yes	no	76.5	yes	yes	(none)
8-Jun	159				70.0	yes	no	(none)
9-Jun	160	72.2	yes	no	81.5	yes	yes	(none)
10-Jun	161	74.4	yes	no	74.0	yes	no	(none)
1-Jul	182				81.0	yes	yes	(none)
8-Jul	189				73.9	yes	no	(none)
9-Jul	190				72.0	yes	no	(none)
10-Jul	191				77.3	yes	yes	(none)
25-Jul	206	80.3	yes	yes	82.8	yes	yes	(none)
16-Aug	228				73.7	yes	no	French
27-Aug	239				76.6	yes	yes	(none)
2-Sep	245				70.5	yes	no	(none)
12-Sep	255				74.6	yes	no	(none)
13-Sep	256				70.2	yes	no	King
23-Sep	266				73.3	yes	no	King
7-Oct	280				71.2	yes	no	King

Table SI 4. Smoke (HMS), particulate matter (PM_{2.5}), and Air Quality Index (AQI) values for 2013 and 2014

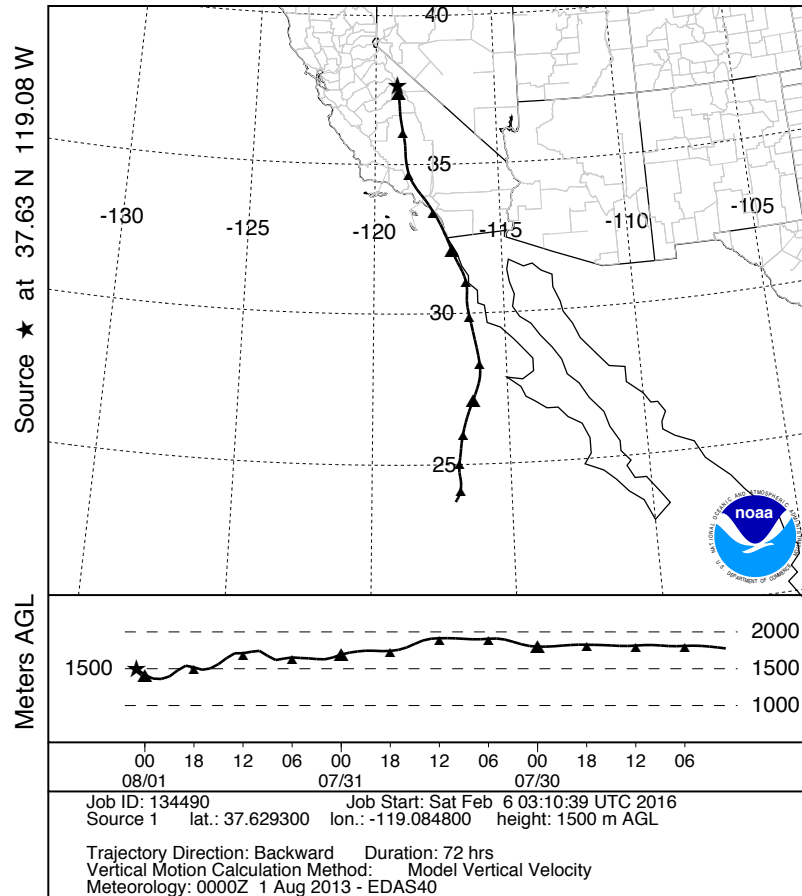
Parameter	2013				2014			
	No fires 6/4- 7/21	Aspen Fire 7/22- 8/10	No fires 8/11- 8/16	Rim Fire 8/17- 10/7	No fires 6/3- 7/27	French Fire 7/28- 8/16	No fires 8/17- 9/12	King Fire 9/13- 10/8
# days	47	20	6	52	54	20	27	26
# days valid	34	20	6	49	45	12	27	26
HMS light (# days)	12	6	0	9	0	6	1	2
HMS medium (# days)	1	5	0	2	0	0	0	1
HMS heavy (# days)	0	1	0	1	0	1	0	0
PM _{2.5} mean (µg m ⁻³)	8.8	41.5	12.8	8.7	8.9	14.4	11.0	6.6
PM _{2.5} 24 h max (µg m ⁻³)	15.2	92.7	16.0	69.6	13.2	21.9	14.2	27.8
PM _{2.5} 24 h min (µg m ⁻³)	4.2	11.7	10.6	1.3	3.8	7.9	6.0	1.6
Number of 24 h means above 35 µg m ⁻³	0	13	0	2	0	0	0	0
PM _{2.5} 1 h max (µg m ⁻³)	62	214	51	132	60	82	51	74
PM _{2.5} 1 h min (µg m ⁻³)	0	0	0	0	0	0	0	0
AQI good (# days)	30	2	2	42	38	5	21	23
AQI moderate (# days)	4	8	4	5	7	7	6	3
AQI UHS (# days)	0	5	0	1	0	0	0	0
AQI unhealthy (# days)	0	5	0	1	0	0	0	0
Passive sampling periods affected		4 ^a , 5 ^a		6 ^a , 7, 8		5, 6 ^a		8 ^a , 9

^a Only part of the monitoring period was affected.

Please see the Methodology section of the text for the relevant HMS and AQI definitions.

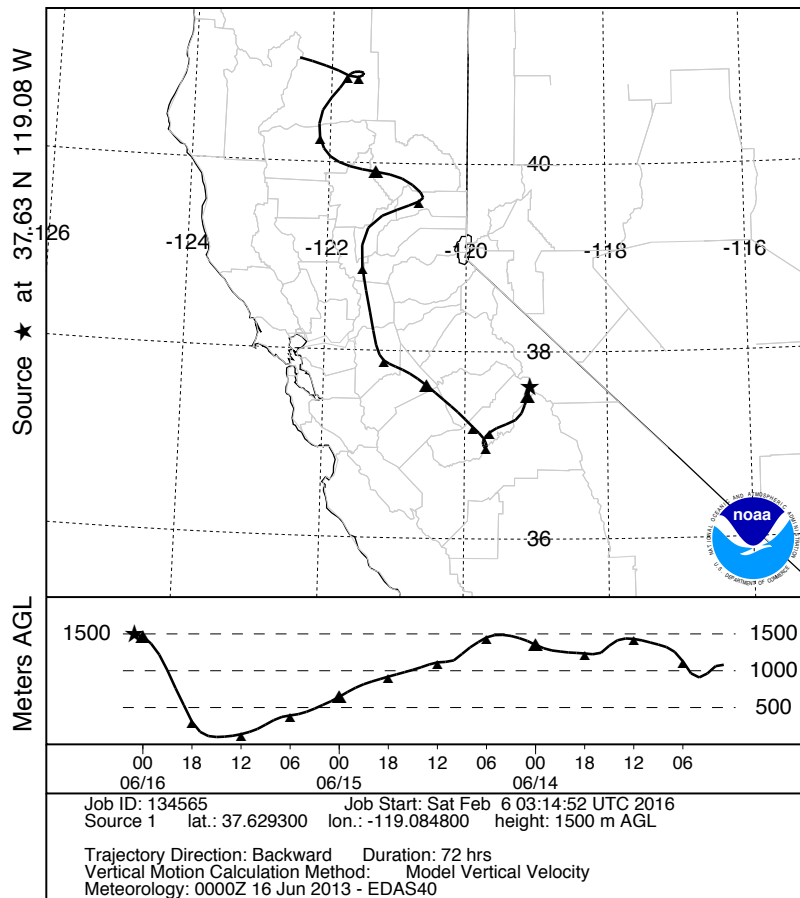
a

NOAA HYSPLIT MODEL
Backward trajectory ending at 0100 UTC 01 Aug 13
EDAS Meteorological Data



b

NOAA HYSPLIT MODEL
Backward trajectory ending at 0100 UTC 16 Jun 13
EDAS Meteorological Data



C

NOAA HYSPLIT MODEL
Backward trajectory ending at 0100 UTC 10 Jul 14
EDAS Meteorological Data

