

CalNex Forecast Notes - Saturday, June 19, 2010

Anticipated Flights

NOAA P3

Sat:

Sun:

Mon:

NOAA Twin Otter

Sat: afternoon flight in Sac w/ CARES

Sun: No Flight

Mon: morning & afternoon flights in Sac Valley

CARES DOE G-1 and NASA B200

Sat: Flights likely

Sun: No Flights

Mon: Sac/N SJV flights with NW winds forecast

Local Features

Friday retrospective

- USG for O₃ occurred at Ash Mountain (elevated site in eastern Tulare County)

Saturday

- SF/Sac emissions likely transport to N Sac Valley (west of Cool)
- Lawrence Livermore Natl Lab still conducting prescribed grass burns (200-300 acres) when winds OK

Sunday

- high background CO & O₃ descending over SoCal
- Southern Sac Valley eddy Sat am centered between Davis and Fairfield
- Lawrence Livermore Natl Lab still conducting prescribed grass burns (200-300 acres) when winds OK

Monday

- light NW winds clear SF emissions from Sac Valley and carry fresh Sac and SF emissions to SJV
- high background CO & O₃ descending over Sonora Desert (east and southeast of LA)

- enhanced bkg O3 production in San Francisco and Los Angeles

Midweek

- USG for O3 possible in southern SJV

Synoptic Overview for California - Jason Branz (jbranz@arb.ca.gov)

Saturday June 19

- Trough axis moves through CA
- Onshore flow continues, stronger N
- Marine layer deeper in the north

Sunday June 20

- Trough moves into nrn NV
- Transport flow turns W/NW in the north
- Onshore flow continues for the south

Monday June 21

- Weak trough remains over the west coast
- Weak onshore flow continues

Beyond...

- Ridge builds Tuesday for the south
- Another trough digs in for Wed-Thurs
- GFS is stronger, Euro keeps storm track well north

Large Scale Transport Notes - Leon Dolislager (ldolisl@arb.ca.gov)

500m RDF FX 00Z 06/20 (Sat Afternoon)

High O3/CO air over southern SJV and SoCal. Low O3 over Northern CA. Low (0-5ppbv/day) background O3 P-L over LA&SF. Descending air over southern SJV and LA.

500m RDF FX 00Z 06/21 (Sun Afternoon)

High O3/CO air over Southern CA. Enhanced O3/CO moving onshore over Northern CA. Moderate (10-15ppbv/day) background O3 P-L over SF. Low (~5ppbv/day) background O3 P-L over LA. Descending air over LA.

500m RDF FX 00Z 06/22 (Mon Afternoon)

High O3/moderate CO air over Southern CA and into NV. Enhanced O3/CO moving onshore over Northern CA

Enhanced (15-20ppbv/day) background O3 P-L over SF and LA. Descending air south and east of LA. New N-S line of descending air from Oregon border through Monterey.

RAQMS Reverse Domain Filling forecasts will continue to be posted by 6:40am (Pacific) @ http://raqms-ops.ssec.wisc.edu/RDF_products/CalNex/RDF/ Go to YYYYMM

Area Forecast Details

Sacramento Valley - NWS and AQMD forecast from Friday

Saturday

- COOL MID/UPPER LOW ALONG THE OREGON COAST EARLY THIS MORNING WILL SKIRT THE OR/CA BORDER THIS AFTERNOON AND TONIGHT BEFORE MOVING INTO EASTERN OREGON LATER SUNDAY...

OTHERWISE...UNSEASONABLY COOL TEMPERATURES WILL CONTINUE THROUGH THE WEEKEND BEFORE BEGINNING TO MODERATE EARLY NEXT WEEK AS THE AIRMASS

WARMS IN RESPONSE TO RISING HEIGHTS ALOFT AND WEAKENED ONSHORE FLOW.

A BAGGY TROUGH LINGERS WHICH MAY LIMIT THE AMOUNT OF WARMING. MARINE STRATUS MOVING THROUGH THE DELTA THIS MORNING...BRINGING MVFR CIGS POSSIBLY EXTENDING AS FAR EAST AS KMRH...BEFORE DISPERSING BY AROUND 18Z. LOCAL SOUTHWEST GUSTS THROUGH DELTA/STRAIT OF CARQUINEZ UP TO 30-35 KT.

- AM: Still good onshore flow from N. Bay and E. Bay toward SV; Sac Cnty at 8kt, upvalley outflow; eddy along I-80 west of Davis at 15Z
- Afternoon: Weaker onshore allows better push from Bay Area toward the foothills; flow from Sac Dtn to Cool should be ideal in afternoon between 21Z and 00Z; a bit of calming early aftn also allows brief buildup before slightly increased onshore flow in late afternoon; SW3kt in early aftn and WSW5kt in late aftn for Sac Cnty; light and variable for N. SV due to sfc divergence
- Evening: light onshore continues from N. Bay to Sac Cnty
- AM PBL 1,500ft, PM PBL 3,000 to 5,000ft
- MBL 1,000ft

- Cirrus north of forecast area in AM, few cirrus/altocumulus in afternoon (7.4 to 8.4km)
- Max aftn temp 26C; good air quality

Sunday

- AM: Light onshore decreases, Sac Cnty to become calm after early morning SW flow; N5kt wind along W. SV
- PM: Bay Area onshore increases a bit, clips into lower Sac Cnty by late afternoon and heads toward SJV; light NW flow Sac Cnty initially outflow toward foothills, outflow to SJV in late aftn with stronger wind; lighter N. wind along W. SV, light NW develops in the rest of the valley
- AM PBL below 500ft; PM PBL 3,000 to 6,000ft, lower in N. SV
- MBL 500ft
- Clear, few cirrus in afternoon
- Max aftn temp 29C; moderate air quality

Monday

- Some light north wind, onshore at night on Monday
- Mostly clear
- Max aftn temp: 30C; moderate air quality

Extended

- Very light wind on Tuesday with some onshore, stronger onshore flow on Wednesday afternoon
- Max aftn temp warms to low 30C; moderate air quality

Sacramento Trajectory (Sat)
 Sacramento Trajectory (Sun)

San Joaquin Valley - Jon Klassen (Jon.Klassen@valleyair.org)

Saturday June 19

Surface Winds: The surface observations this morning show light NW flow to calm conditions throughout the SJV. The wind profilers also show similar conditions above the surface. CANSAC shows light NW flow throughout the day with inflow via Altamont and Pacheco passes increasing into the afternoon. Winds should pick up by the evening. Outflow over Tehachapi.

Boundary Layer Mixing: Morning aircraft soundings indicated a 5 F inversion in Fresno from the surface to 500 feet, and a 3 F inversion in Bakersfield from the surface to 500 feet. CANSAC indicates that mixing should improve to 3,000 feet across the SJV by the afternoon.

Air Quality: Good to Moderate ozone air quality is expected across the SJV.

Sunday June 20

Surface Winds: CANSAC shows similar conditions to Saturday, but with an inflow into the northern SJV from the Sacramento area by the afternoon. Calmer winds projected for the southern SJV.

Boundary Layer Mixing: CANSAC indicates that mixing should improve to 2,500 feet to 3,500 feet across the SJV.

Air Quality: Good to Moderate ozone air quality is expected across the SJV.

Monday June 21

Surface Winds: CANSAC shows Delta inflow in the morning followed by light inflow into the northern SJV from the Sacramento area. Winds are expected to be lighter due to building stability.

Boundary Layer Mixing: CANSAC indicates that mixing should improve to 2,500 feet to 3,500 feet across the SJV.

Air Quality: Good to Moderate ozone air quality is expected across the SJV.

Tuesday and Wednesday June 22-23

Surface Winds: GFS shows surface winds to be light and predominately from the N.

Boundary Layer Mixing: Mixing conditions should slightly deteriorate due to building stability.

Air Quality: Expected to have Good to Moderate ozone, with USG ozone possible in the southern SJV.

Potential Targets for next Flight Day

The LLNL prescribed burn SW of Tracy is scheduled to continue today, given that they are within their prescription. Burning was not conducted yesterday due to high winds.

Central Coast -

(NO FORECAST TODAY)

SoCal Coastal Waters -

+ Saturday afternoon (00Z 20 June)

- Marine Low Clouds
 - * SCT/CLR Cu/StCu Crescent City to Point Arena
 - * SCT/CLR St/StCu Point Arena to San Diego
- SOCAL Marine Layer Winds

- * NW 15-30 kts outer waters
- * W 10-15 kts inner waters

+ Sunday morning (12Z 20 June)

- Marine Low Clouds
 - * BKN/SCT StCu Crescent City to San Simeon
 - * SCT/CLR StCu San Simeon to Palos Verdes
 - * BKN/SCT StCu/St Palos Verdes to San Diego
- SOCAL Marine Layer Winds
 - * NW 15-30 kts outer waters
 - * SE 0-10 kts inner waters

+ Sunday afternoon (00Z 21 June)

- Marine Low Clouds
 - * BKN/SCT StCu Crescent City to Point Arguello
 - * SCT/CLR StCu Point Arguello to Laguna Beach
 - * BKN/SCT St/StCu Laguna Beach to San Diego
- SOCAL Marine Layer Winds
 - * NW 15-30 kts outer waters
 - * W 10-15 kts inner waters

+ Monday morning (12Z 21 June)

- Marine Low Clouds
 - * OVC/BKN StCu Crescent City to San Diego
- SOCAL Marine Layer Winds
 - * NW 10-25 kts outer waters
 - * SE 0-10 kts inner waters

+ Monday afternoon (00Z 22 June)

- Marine Low Clouds
 - * BKN/SCT StCu Crescent City to San Diego
- SOCAL Marine Layer Winds
 - * NW 10-25 kts outer waters
 - * W 5-10 kts inner waters

+ Tuesday morning (12Z 22 June)

- Marine Low Clouds
 - * OVC/BKN StCu/St Crescent City to San Diego
- SOCAL Marine Layer Winds
 - * NW 10-20 kts outer waters

* SE 0-10 kts inner waters

+ Tuesday afternoon (00Z 23 June)

- Marine Low Clouds
 - * BKN/SCT StCu/St Crescent City to Point Arguello
 - * SCT/CLR StCu Point Arguello to San Diego

- SOCAL Marine Layer Winds
 - * NW 5-15 kts outer waters
 - * W 5-10 kts inner waters

South Coast Basin - (forecast from Friday's call)

Saturday: troughing aloft continues; deep marine layer & more persistent; widespread AM low clouds coast through valleys, lingering at beaches into afternoon; cooler; N gradient component increases again in evening; ozone mostly good to moderate

Sunday-Tuesday: upper low in Pac NW shifts eastward but persistent trough aloft lingers over So. Cal., although maybe weakening; onshore gradients; may see a couple of degrees of warming each day, but still below normal temps; shrinking marine layer for only patchy morning low clouds in the valleys; mostly moderate ozone but USG possible inland

Wednesday: trough flattens (?); shrinking marine layer; weaker onshore flow; more significant warming; ozone moderate to possible USG inland