

CalNex Forecast Notes - Saturday, May 15, 2010

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

Saturday May 15

- Weak ridging over the state
- Onshore flow increases by afternoon
- Transport flow turns W late

Sunday May 16

- Trough axis just offshore
- Increase in onshore flow
- Coastal stratus more widespread

Monday May 17

- Trough axis moves through late Monday
- Rain starts on the North Coast and spreads SE
- Precip confined mainly N of Pt Conception

Tuesday-Wednesday May 18-19

- Trough moves east into NV
- Transport and surface flow turns N/NW
- Ridge builds in for Wed

Anticipated Activities

WP-3D

Sat: No Flight

Sun: southern San Joaquin Valley

Mon: tentative No Fly

Tue: tentative No Fly

Wed: platforms comparison flights

note: evening & night flights begin May 22 for 10-14 days

NASA King Air

Wed: platforms comparison flights

R/V Atlantis

Sat: area between Pt. Conception and LaJolla

Sun: area between Pt. Conception and LaJolla

note: Uncertainties/retrospective: Low cloud predictions from the models have

not been as reliable as nowcasting based on sat pics or forecasting by experienced humans. WRF/Flexpart versions sometimes disagree on outflow location due to quite minor differences in winds.

Local Features:

Sunday:

Southern SJV: USG O3 levels several counties in southern SJV; perhaps some O3 aloft (2000-3000') from Sat as winds light; SLO flow into Kern & Kings Counties

Mojave Desert: RAQMS predicts elevated production of bkg O3 in Mojave Desert; might be good to take eastern route (Tehachapi & Cajon Passes) back to Ontario (weaker flow in Tejon Pass forecast now compared to yesterday); forecasted air flow at 700mb suggests good transport from LA basin into Mojave Desert

Wednesday:

reminder: forecasters need to ID areas with clear skies for intercomparison of aircraft platform measurements

Large Scale Transport Notes - Brad Pierce (brad.pierce@noaa.gov))

LA/Fresno AIRNOW Site Comparison

Moderate O3/PM2.5 LA AQ during FX period

Good O3/PM2.5 AQ during FX period

RAQMS likely underpredicting LA O3 P-L during middle part of FX period

LA/SF AIRNOW Ensemble

Intermediate (24hr) LA transport route to south turning East during FX period. Stagnation over western AZ for ensemble ending Sun. Advection into NV for ensemble ending Mon/Tues

SF Ensemble shows southward transport to Baja for ensembles ending Sun.

Majority of ensemble shows stagnation over Southern CA /AZ boarder for ensemble ending Mon. Increased dispersion on Tues

500m RDF FX 00Z 05/16 (Sat Afternoon)

Intercontinental CO enhancement remaining offshore, advection of SF pollution to the East and LA pollution to South at 500m

Enhanced (10-15 ppbv/day) background O3 P-L East of SF and Moderate South of LA
Some PM2.5 enhancement in AZ

500m RDF FX 00Z 05/17 (Sun Afternoon)

Intercontinental CO enhancement moving onshore, LA and SF O3 P-L enhancement moving into NV at 500m
Elevated (10-15 ppbv/day) background O3 P-L NE of LA, and East of SF
O3 enhancement (>60ppbv) over Central CA
Some PM2.5 enhancement over Southern CA

500m RDF FX 00Z 05/18 (Mon Afternoon)

New Intercontinental CO enhancement offshore, advection of SF and LA O3 P-L enhancement into NV/UT at 500m
Moderate (5-10 ppbv/day) background O3 P-L NE of LA&SF
O3 enhancement (>60ppbv) advected into NV/UT
PM2.5 enhancement over South Eastern CA and NV/UT

500m RDF FX 00Z 05/19 (Tues Afternoon)

New Intercontinental CO enhancement offshore, advection of SF and LA O3 P-L into UT/WY at 500m
PM2.5 enhancement offshore
Moderate (5-10 ppbv/day) background O3 P-L NE of LA&SF
O3 enhancement (>60ppbv) advected into UT and WY

Forecast Details

San Francisco Bay Area - NWS forecast

Saturday

- LOW CLOUDS BLANKET OUR ENTIRE COASTLINE...AS WELL AS INLAND AREAS BELOW 2000 FEET
- MARINE LAYER WILL BECOME SHALLOWER TODAY AS THE UPPER RIDGE OVERHEAD STRENGTHENS SLIGHTLY.
- PERSISTENT ONSHORE FLOW
- LITTLE OR NO CLEARING NEAR THE OCEAN. MOST INLAND AREAS SHOULD CLEAR BY MIDDAY.

Sunday

- AS TROUGH APPROACHES, THE MARINE LAYER WILL DEEPEN.

Monday

- MODELS HAVE BEEN TRENDING WETTER. THERE ARE STILL SOME TIMING AND QPF DIFFERENCES

Tuesday

- FOR THE MOST PART TUESDAY WILL BE DRY

Wednesday

- TEMPERATURES WILL CONTINUE TO TREND UPWARD UNDER SHORTWAVE RIDGING BUT HIGHS WILL NOT CLIMB BACK TO NORMAL BEFORE ANOTHER COOL TROUGH MOVES IN FROM THE WNW THURSDAY AND THURSDAY NIGHT.

Sacramento Valley - NWS forecast

Saturday

- SLIGHT SYNOPTIC WARMING. THIS SHOULD BE LARGELY OFFSET HOWEVER BY INCREASING HIGH CLOUD COVER
- SOME INSTABILITY OVER THE MOUNTAINS MAY LEAD TO SOME ISOLATED SHOWERS ALONG SIERRA CREST

Sunday

- INCREASING CLOUD COVER...BUT SHOULD REMAIN DRY EXCEPT A SLIGHT CHANCE OF SHOWERS ALONG THE NORTHERN MOUNTAINS

Monday

- UPPER LEVEL TROUGH; SOME PPTN BUT MODELS VARY ON TIMING AND AMOUNT

Tuesday

- AFTER THIS SYSTEM MOVES THROUGH...A FEW MORE SHORTWAVES MOVE THROUGH THE PACIFIC NORTHWEST BRINGING A CHANCE OF PRECIPITATION PRIMARILY TOWARDS THE NORTHERN SAC VALLEY AND SURROUNDING MOUNTAINS. THIS REGIME SUPPORTS ONSHORE FLOW AND TEMPS AROUND TO SLIGHTLY COOLER THAN NORMAL THROUGH NEXT WEEK.

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

Saturday May 15

Surface Winds: The surface observations this morning show light NW winds in the northern and central SJV, with light SE flow in the southern SJV. The wind profilers also show a general NW wind flow at the higher elevations, except for Tracy showing a southerly flow. CANSAC shows a light NW flow across the SJV

throughout the day, and increasing throughout the day. Inflow from the Delta and Pacheco Pass by 17:00.

Boundary Layer Mixing: The aircraft soundings from Fresno and Bakersfield were not available today. Mixing should improve to 4,500 feet along the eastern portion of the SJV, and up to 2,500 feet on the western portion of the SJV.

Air Quality: Expected to be mostly in the Moderate category, with USG in Kern County and perhaps Tulare County.

Sunday May 16

Surface Winds: CANSAC again shows a light NW flow for the majority of the day throughout the SJV. By 17:00 flow should increase into SJV via the Delta, Altamont, and Pacheco Passes. CANSAC shows flow from SLO County into Kings and Kern Counties (see image on last slide).

Boundary Layer Mixing: Mixing should be similar to Saturday.

Air Quality: This should be the poorest air quality day in the FX period. Expecting USG throughout the central and southern portions of the SJV, with Moderate air quality in the north.

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Central Coast - Gary Arcemont (garcemont@co.slo.ca.us)

NO FORECAST TODAY

SoCal Coastal Waters - Lee Eddington (Lee.Eddington@navy.mil)

+ Saturday afternoon (00Z 16 May)

- Marine Low Clouds

- * BKN/OVC St Crescent City to Point Arguello
- * SCT/BKN patchy St Point Arguello to San Diego

- SOCAL Marine Layer Winds

- * W 8-12 kts inner waters
- * WNW 10-20 kts outer waters

+ Sunday morning (12Z 16 May)

- Marine Low Clouds

- * SCT/BKN StCu Crescent City to San Francisco
- * BKN/OVC St/StCu San Francisco to San Diego

- SOCAL Marine Layer Winds

- * LT VAR inner waters
- * NW 10-15 kts outer waters

+ Sunday afternoon (00Z 17 May)

- Marine Low Clouds

- * SCT/BKN StCu Crescent City to San Diego

- SOCAL Marine Layer Winds

- * W 8-12 kts inner waters
- * WNW 10-15 kts outer waters

+ Monday morning (12Z 17 May)

- Marine Low Clouds

- * BKN/OVC St/StCu Crescent City to San Diego

- SOCAL Marine Layer Winds

- * SE 0-10 inner waters
- * NW 10-15 kts outer waters

+ Monday afternoon (00Z 18 May)

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

- SOCAL Marine Layer Winds
 - * W 5-10 kts inner waters
 - * WNW 8-12 kts outer waters

+ Tuesday morning (12Z 18 May)

- Marine Low Clouds
 - * SCT/BKN StCu Crescent City to San Diego

- SOCAL Marine Layer Winds
 - * LT VAR inner waters
 - * NW 10-15 kts outer waters

+ Tuesday afternoon (00Z 19 May)

- Marine Low Clouds
 - * SCT/BKN StCu Crescent City to San Diego

South Coast - Kevin Durkee (kdurkee@aqmd.gov)
NO FORECAST TODAY