

CalNex Forecast Notes - Wednesday, May 26, 2010

Anticipated Activities of Platforms

WP-3D

Tuesday: scrubbed SoCal afternoon-into-night flight - preflight discovered problem

Wednesday - Friday: No Flights

Saturday: anticipated evening-night flight, 7 pm takeoff

Sunday: anticipated late night-early am flight, 10 PM takeoff

NOAA Twin Otter:

Next possible flight Friday or Saturday

CIRPAS Twin Otter:

NASA King Air:

R/V Atlantis:

Tuesday nite: LA bight

Wednesday: LA bight

Thursday: LA bight

Friday: Port of LA

Local Features:

Saturday: morning offshore outflow from South Coast suggests planned P3 evening flight will be able to examine more seasonally representative recirculation

Sunday: Higher concentrations and lighter flows compared to Saturday

Next week: Weak trough Monday, best opportunities for higher concentrations appear to be on Tues and Wed, possibly Thursday

High hopes: Too early for any certainty but the GFS suggests the general pattern will change with lows shunted more to the north, giving CA for more seasonable weather and decreasing air quality.

Wednesday May 26

- **Large upper low remains offshore of PacNW**
- **Surface flow remains onshore**
- **Clouds slow to clear out**

Thursday May 27

- **Upper low moves over Northern CA**
- **Rain showers north of Pt. Conception**
- **Scattered thunderstorms possible in San Joaquin Valley, Tstorms N of Fresno**
- **Surface flow remains onshore for LA basin**

Friday May 28

- **Upper low moves east Friday/Friday night**
- **Northerly transport flow increases**
- **Gusty north winds for SoCal mountains/deserts**

Weekend

- **Transport flow weakens Saturday NW**
- **Flat ridge builds in for Sunday**
- **Another weak trough Monday? Affect is mainly in the N'ern quarter of state**

Next week

Possibly more seasonal weather with higher pollutant concentrations Tuesday - Thursday

GFS Notes - Extended Outlook Jim Pederson <jrpeders@arb.ca.gov>

Thur 05 pdt

Current prediction for Aluetian Low (985) is not as deep as was predicted yesterday (977)

Trof/Low axis off OR/WA is very similar to yesterday's prediction

Thur 17 pdt

trof at CA coastline is a broader than previous day prediction

AL low 987 mb current prediction vs 975 previous day prediction

Friday 17 pdt

NW flow as trof passes and weakens over NV

Sat 05 pdt

Trof axis over ID/UT

Ridge builds into CA

Expect return of morning offshore winds

Generally NE flow in am

Sunday 05 pdt

NW pressure gradient along the coast may relax slightly compared to Sat morning
General N-S pressure gradient over state weakens

Sunday 17 pdt

Onshore flow returns in afternoon, stronger in N and central CA

Monday 05 pdt

Low approaching BC / WA
Very light NW flow across state in am,
weaker in Southern SJV and South Coast Basin

Monday 1700 pdt

Low off BC/WA coast
Moderate to Strong NW onshore flow returns in afternoon as far S as Pt Conception
Moderate W flow S of Pt Conception

Tuesday 05 pdt

Weak zonal flow, stronger in N

Wed 05 pdt

Hint of the set up of an omega blocking pattern, approaching low shunted N

Thursday 05 pdt

GFS suggests stronger set up of an omega blocking pattern, approaching low shunted N.
Hopes for more seasonal flow patterns over CA

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

LA/SF AIRNOW Site Comparison

Good O3/PM2.5 AQ in LA and Bakersfield throughout most of the FX period with moderate PM2.5 in LA near end of FX period.

Recent O3 analysis underestimating O3. PM2.5 good at both Arvin and Riverside.

LA/SF AIRNOW Ensemble

LA Long-range transport slowly to southeast then some stagnation for ensembles ending Friday afternoon.

SF Long-range transport to north east during FX period.

500m RDF FX 00Z 05/27 (Wen Afternoon)

Local CO/O3 enhancement over Central CA. Descending polluted air over Mexico/AZ.
New IC CO/O3 enhancement offshore.
Low (~5 ppbv/day) background O3 P-L over LA and SF

500m RDF FX 00Z 05/28 (Thu Afternoon)

Local CO/O3 enhancement over Central CA. Descending polluted air over Mexico/AZ.
CO/O3 enhancement remains offshore
Moderate (~5-10 ppbv/day) background O3 P-L over LA. Low (<5ppbv/day) O3 P-L over SF

500m RDF FX 00Z 05/29 (Fri Afternoon)

IC CO/O3 enhancement remains offshore. Next IC transport associated with low CO/O3
Moderate (5-10 ppbv/day) background O3 P-L over LA. Low (<5ppbv/day) O3 P-L over SF

500m RDF FX 00Z 05/30 (Sat Afternoon)

Building high pressure off shore bringing in low CO/O3
Moderate (5-10 ppbv/day) background O3 P-L over LA. Moderate (5-10ppbv/day) O3 P-L over SF

Area Forecast Details

OLD FORECAST PREPARED ON TUESDAY San Francisco Bay Area - Danny Kam
(dkam@airquality.org)

OLD FORECAST PREPARED ON TUESDAY

Wednesday

- W to NW 5 to 10 kt in the early morning; shift S to SW 5kt by late morning and increase to 10kt in the afternoon;
- MBL varying between 500 and 5,500 ft

Thursday

- SW 10kt turns W 5 to 10kt around mid-morning; NW 10kt at night
- MBL 1,500 to 6,000 ft

Friday

- NW wind strengthen into 15kt in the morning and max at 25 kt in the afternoon and early evening
- MBL 1,000 to 2,000 ft

Extended

- Moderate to strong NW continues on Saturday and Sunday

OLD FORECAST PREPARED ON TUESDAY Sacramento Valley - Danny Kam
(dkam@airquality.org)

OLD FORECAST PREPARED ON TUESDAY**Wednesday**

- Light SW onshore through the delta for southern SV in early morning, very light wind mid-morning, S 5kt around late morning, turns W 5 kt in the evening, early evening wind speed between 5 to 10kt (COAMPS indicates 15kt);
- Max aftn temp: 19C
- AM PBL 1,000 to 7,000ft; PM PBL 4,000 to 10,000ft
- Mostly cloudy with cumulus and stratocumulus; 40% chance of rain, decreases though the day
- Good air quality: max 8-hr mean O3 in 0.04 ppm range

Thursday

- S and SE wind between 5 to 10kt; SW 5kt in the afternoon; light variable wind in the evening
- AM PBL 1,000 to 5,000 ft; PM PBL 7,000 ft
- Increasing altostratus and stratus in the morning; breaks into scattered cumulus and cumulonimbus in the afternoon; 70% chance of rain
- Max aftn temp: 17C
- Good air quality: max 8-hr mean O3 in 0.04 ppm range

Friday

- Light NW
- Minimal downslope flow because of countering pressure gradient
- Max aftn temp: 21C
- Partly cloudy becomes mostly clear; 20% chance of precipitation in the morning decreases to none
- Good air quality: max 8-hr mean O3 in 0.04 ppm range

Saturday & Sunday

- NW wind on Saturday
- Downslope flow resumes
- Warming trend
- Mostly sunny over the weekend
- Higher O3 conc, but still good air quality

OLD FORECAST PREPARED ON TUESDAY San Joaquin Valley – Shawn Ferreria
(Shawn.Ferreria@valleyair.org)

OLD FORECAST PREPARED ON TUESDAY

Wednesday, May 26, 2010:

Wind Flow: The 0Z CANSAC model is predicting weak inflow from the Delta and Altamont passes near 12Z tomorrow. Onshore flow is predicted through the passes (Cottonwood and Pacheco). Overnight flow continues out toward the Deserts. Light downslope flow will be prevalent over the mountainous terrain during the evening hours. Winds will be light and variable elsewhere in the District. During the afternoon hours, the onshore flow will strengthen through the passes, especially, Cottonwood and Pacheco. Flow towards the Deserts will also strengthen.

Boundary Layer Mixing Heights: Between Tuesday and Wednesday (overnight), mixing will be minimal between 500 to 1,000 feet, due to the front passing over the District. Maximum boundary layer mixing depths on Wednesday will range between 4,000 and 5,000 feet.

Air quality: Good air quality is predicted District-wide tomorrow.

Thursday through Friday, May 27 and 28, 2010:

Good dispersion conditions are predicted to continue through the early part of the weekend as the trough lingers over California. Maximum mixing depths will remain between 5,000 to 7,000 feet. Surface wind flow will steadily increase from the northwest upon trough passage.

Saturday, May 29, 2010: A ridge from the eastern Pacific will nose toward the District by Saturday, with increasing stability, lighter wind flow and deteriorating dispersion conditions.

OLD FORECAST PREPARED ON TUESDAY Central Coast - Gary Arcemont
(garcemont@co.slo.ca.us)

OLD FORECAST PREPARED ON TUESDAY

Synopsis 5/25 – 5/31: Models indicate persistent trough over west coast US through Memorial Day - NW flow along the coast – W to SW inland
-Windy on Friday with blowing dust in afternoons – Oceano Dunes/Nipomo Mesa &

Sundowner winds possible in canyons Gaviota/Santa Barbara coast

Yesterday, Monday 5/24: Trough NV, NW flow along coast. W to SW flow over interior valleys and mountains.

Today, Tuesday, 5/25: Trough approaching CA. E-NE flow eastern San Luis Obispo County ridgetops/Temblor Range – Chance precip late.

Wednesday: Trough CA, Cloudy – Chance precipitation. SW flow aloft/ interior ridgetops.

Thursday: Trough deepening over CA, Cloudy – Chance precipitation. NW flow aloft.

Friday: Trough over NV, partly cloudy, NW flow aloft. Blowing dust in afternoon/ Moderate AQ – Oceano Dunes/Nipomo Mesa

Saturday: Trough over CO, NW flow aloft. Mostly clear. Offshore flow brings warming to coast, and transport of ozone/precursors to coast/ridgetops. Ozone increases. NE flow eastern San Luis Obispo County ridgetops/Temblor Range.

Sunday: Zonal flow, short wave trough over CA. NE flow eastern San Luis Obispo County ridgetops/Temblor Range. 850 mb temps reach 19 deg C, temperature inversion strengthens. Ozone increases - producing moderate air quality interior valleys/ridgetops.

Monday: Broad trough over CA. NE flow eastern San Luis Obispo County ridgetops/Temblor Range. Marine layer returns, stratus late.

Tuesday: Broad trough over Western US. Night and morning low clouds coast – clear inland.

Air quality: Good air quality with the following exceptions - blowing dust midday/ afternoons-Oceano Dunes/Nipomo Mesa - Moderate AQ – Friday 5/28, moderate air quality interior ridgetops on Sunday 5/30.

Significant features for study: Blowing dust Oceano Dunes/Nipomo Mesa peaking midday/afternoon - Friday 5/28, Ozone increases along Temblor Range ridgetops Saturday 5/29, Sunday 5/30, Monday 5/31.

Current Forecast for SoCal Coastal Waters

Current run of COAMPS suggests that Saturday morning offshore flow will take the LA plume through the SoCal Bight past Catalina and San Nicolaus Islands

OLD FORECAST PREPARED ON TUESDAY for SoCal Coastal Waters

OLD FORECAST PREPARED ON TUESDAY MORNING

+ Wednesday morning (12Z 26 May)

- Marine Low Clouds
 - * OVC/BKN StCu w/ rain Crescent City to Santa Barbara
 - * OVC/BKN St/StCu Santa Barbara to San Diego
- SOCAL Marine Layer Winds
 - * W 0-10 kts inner and outer waters

+ Wednesday afternoon (00Z 27 May)

- Marine Low Clouds
 - * SCT Cu with rain showers Crescent City to Monterey
 - * SCT StCu Monterey to San Diego
- SOCAL Marine Layer Winds
 - * W 10-15 kts inner and outer waters

+ Thursday morning (12Z 27 May)

- Marine Low Clouds
 - * BKN/SCT StCu/Cu w/ rain showers Crescent City to San Luis Obispo
 - * BKN/SCT StCu/Cu San Luis Obispo to San Diego
- SOCAL Marine Layer Winds
 - * WNW 10-15 kts inner and outer waters

+ Thursday afternoon (00Z 28 May)

- Marine Low Clouds
 - * SCT/CLR Cu w/ Isolated rain showers Crescent City to San Luis Obispo
 - * SCT Cu San Luis Obispo to San Diego
- SOCAL Marine Layer Winds
 - * WNW 15-25 kts inner and outer waters

+ Friday morning (12Z 28 May)

- Marine Low Clouds
 - * SCT/CLR St/StCu Crescent City to San Diego
- SOCAL Marine Layer Winds
 - * NW 15-25 kts outer waters
 - * ESE 0-5 kts inner waters

+ Friday afternoon (00Z 29 May)

- Marine Low Clouds
 - * CLR Crescent City to San Diego

South Coast - Kevin Durkee kdurkee@

- **Wednesday:** weak front passed overnight; cloudy but no rain south of Pt. Conception; Miramar AM sounding shows weak inversion at 2550 ft; low-level moisture through day, so only partial clearing with only isolated light rain possible in SoCAB; onshore flow; gusty winds mountains & deserts; cool temps; AQ mostly good
- **Thursday:** continuing cloudy & unseasonably cool (a couple of degrees cooler than Wednesday); slight chance of light rain overnight & through the day; onshore flow; gusty winds mountains & deserts; deeper moist layer; mostly good AQ
- **Friday:** Upper low moves over Great Basin; drier NW flow will start late Thursday night & Friday; warming starts, but only a few degrees higher; northerly surface gradients increase Friday night for winds on Central Coast & I-5 corridor; Moderate Ozone
- **Saturday:** Upper ridge builds; clear skies; northerly surface gradients; warming 10-15 degrees for above normal temps - near 90 degrees F in warmer valleys; AQ mostly Moderate, but some USG possible
- **Sunday:** warming continues with easterly offshore component; some stratus may return to coast Sunday night; USG AQ likely in eastern SoCAB
- **Monday & Tuesday:** temps remain above normal; seem to be heading into a more normal ridging/stagnant pattern for the week; USG AQ likely