

TYPE	DATE	TIME		AGENCY	DESCRIPTION	PAGE
Area Forecast Discussion	8/18/2018	0341	MST	Phoenix	Models are still consistent in showing a surge of Gulf moisture Monday night into Tuesday as the ridge becomes centered over New Mexico...At the current moment, it is difficult to pick out a specific day or two for the most elevated thunderstorm chances through the end of next week, but it does appear at least lower grade monsoon thunderstorm activity will return through the remainder of the work week besides possibly Tuesday.	42
Area Forecast Discussion	8/18/2018	1315	MST	Phoenix	Next Monday also looks to be a very low grade monsoon day with pretty much all expected convection to stay over higher terrain areas east of Phoenix.	45
Area Forecast Discussion	8/18/2018	1329	PDT	San Diego	Monsoonal moisture may return by the middle of next week, rekindling the chance for mountain and desert thunderstorms.	48
Area Forecast Discussion	8/18/2018	1840	MST	Phoenix	Models are still consistent in showing a surge of Gulf moisture Monday night into Tuesday as the ridge becomes centered over New Mexico.	50
Area Forecast Discussion	8/18/2018	2111	PDT	San Diego	The net result will be a slight warming early next week, and then a possible return of some monsoonal moisture by midweek. The chance of thunder returns to the mts by Tue afternoon as a result of the shift back to SE flow aloft.	53
Area Forecast Discussion	8/19/2018	0348	MST	Phoenix	...instability will be fairly limited until a low-level moisture surge from the Gulf of California is able to push in overnight as the ridge pushes into New Mexico.	55
Area Forecast Discussion	8/19/2018	1304	MST	Phoenix	Monday will be a transition day as the aforementioned upper level high drifts east and our flow patterns shifts to the southeast. An increase in moisture near Tucson may be enough to generate storms and an outflow to our SE. This could possibly bring some dust toward Phoenix but chances of an outflow making it this far north on Monday are low.	58
Area Forecast Discussion	8/19/2018	1350	PDT	San Diego	This will briefly throw parts of southeastern CA into a monsoonal flow. Based on blended TPW imagery...Moisture is already beginning to increase over eastern portions of the CWA and will likley continue into Tue morning as an easterly wave rides north into the Lower Colorado River Valley. The latest WRFEMS shows some convective showers firing late tomorrow over the lower deserts, with much more activity creeping north along the mountains and desert areas on Tuesday. We are already forecast to be on the edge of this activity, so any shift to the east would leave the entire area dry.	61
Area Forecast Discussion	8/19/2018	2130	PDT	San Diego	High pressure over Southern California will shift southeast to Texas by Tuesday. This will allow some monsoonal moisture to return, sparking new thunderstorm activity over the mountains and deserts on Monday and Tuesday...An earlier forecast update was to tweak the thunderstorm chances for Monday and Tuesday afternoons over the Peninsular Ranges of SB-Riv-SD Counties. A slight chance of thunderstorms also over the lower deserts due to the monsoonal moisture creeping into the area. Tropical moisture with PWATS nearing 2" will clip SE CA along with moderate instability will bring the potential for heavy rain with any thunderstorms that do develop.	63

TYPE	DATE	TIME		AGENCY	DESCRIPTION	PAGE
Area Forecast Discussion	8/20/2018	0325	PDT	San Diego	Southwestern California will be on the western fringe of a more substantial influx of monsoonal moisture into southern Arizona on Tuesday...The current forecast favors the global models in taking the more substantial moisture into Arizona on Tuesday with southwestern California on the western edge of that moisture.	65
Area Forecast Discussion	8/20/2018	0331	MST	Phoenix	Models continue to show this afternoon and evening will be very active across northern Mexico and possibly just south of Tucson this evening. An inverted trough is also shown moving northward out of Mexico into southern Arizona sometime after midnight. A strong moisture surge will accompany this inverted trough, partly coming from the convection over northern Mexico and also from a Gulf surge.	67
Area Forecast Discussion	8/20/2018	0609	MST	Phoenix	The forecast scenario for tonight and Tuesday is rather complex with multiple factors coming into play.	70
Area Forecast Discussion	8/20/2018	0852	PDT	San Diego	By midday our attention will turn east where an increase in monsoonal moisture and instability will lead to isolated thunderstorms in the mountains and deserts this afternoon. Any thunderstorms are capable of rain intense enough to produce a flash flood, but they will be quite isolated. A thunderstorm complex in Sonora tonight will turn into an easterly wave that moves northward into southwest Arizona Tuesday. Most of the thunderstorm action will stay in Imperial Valley or Arizona,	73
Area Forecast Discussion	8/20/2018	1321	PDT	San Diego	An increase in monsoonal moisture and instability have created a small chance of thunderstorms in the mountains and deserts this afternoon...	75
Area Forecast Discussion	8/20/2018	1351	MST	Phoenix	There is excellent agreement between mesoscale models that deep convection will begin over southern AZ/northern Sonora this afternoon, aided by the increase in moisture, and then subsequently send an outflow boundary to the north towards Phoenix around 8 pm this evening.	77
Area Forecast Discussion	8/20/2018	1418	MST	Phoenix	Southeast California/Southwest Arizona including KIPL and KBLH: Expect moderate to very breezy southerly winds at KBLH near 10-15kt with gusts to 22-27kt through most of the period. The winds at KIPL will favor the southeast to south near 7-12kt.	80
Special Weather Statement	8/20/2018	1812	MST	Phoenix	Trained Spotter identified Dust Storm near Seeley	83
Dust Advisory	8/20/2018	1820	MST	Phoenix	Dust Advisory for southwestern Imperial County...Line of Dust from Ocotillo to Gordon's Well...	84

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FXUS65 KPSR 181041

AFDPSR

## Area Forecast Discussion

National Weather Service Phoenix AZ

341 AM MST Sat Aug 18 2018

## .SYNOPSIS...

Very isolated thunderstorms will be possible today over the higher terrain north and east of Phoenix. High pressure centered over Arizona will keep most of the region dry for Sunday and Monday as temperatures over the lower deserts approach 110 degrees. Moisture returns to the region on Tuesday to increase thunderstorm chances and gradually decrease in temperatures back closer to normal for the second half of next week.

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## .DISCUSSION...

Another quiet night has settled across the region as a ridge of high pressure over the Pacific coast merges with high pressure centered over Sonora. Temperatures are a few degrees warmer than last night in the upper 80s to lower 90s across the lower deserts under mostly clear skies, with high clouds streaming in from the south into far eastern Maricopa and Gila Counties. Significant drying continues to occur at midlevels and upper levels in response to west-northwest flow associated with the ridge. However, surface dew points in the mid to upper 60s with healthy boundary layer moisture continues to keep PWAT values around 1.5-1.7 inches across the lower deserts and 1.2-1.5 inches over the higher terrain. Moisture should continue to decrease today as the ridge consolidates over southeast California with 5-10 knot winds above 700 mb becoming more north-northwest this afternoon. Hi-res models develop isolated thunderstorms along the Mogollon Rim with the lingering moisture in place, but the lack of strong steering flow should keep these storms out of the lower deserts. The north-northwest steering flow should bring isolated showers and thunderstorms into Gila County later this afternoon and early evening, but the flood threat will be lower than it has been over the last several days. High temperatures today may approach 110 degrees closer to the center of the ridge in southeast California, with mid 100s over the lower deserts of Arizona.

Temperatures will increase at least a few more degrees and PWAT levels will drop another 0.3-0.4 inches on Sunday and Monday as the ridge slowly pushes to the east in response to a trough moving into the Pacific Northwest. Although the H850 ridge will remain around 5940 dam, 850 mb temperatures should increase another 3 deg C today to around 30-31 deg C for the Phoenix metro. This will support high temperatures approaching 110 degrees for Phoenix and

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111-113 over the lower deserts of southwest Arizona and southeast California for both days. Although these temperatures are just below excessive heat thresholds, people will need to exercise caution during outdoor activities considering these will be the hottest days we have seen in over ten days. These dry conditions combined with weak steering flow should keep the entire region dry for Sunday and most likely for Monday as well unless the center of the ridge is able to push far enough east to allow storms to develop over the higher terrain of Gila County.

Models are still consistent in showing a surge of Gulf moisture Monday night into Tuesday as the ridge becomes centered over New Mexico. Although models appear to be backing off a bit on a weak shortwave rotating around the southern edge of the ridge, decent 10-15 knot southeast steering flow should support at least isolated thunderstorms. The GFS has merged a bit towards the ECMWF in keeping the ridge centered to our east which places the region in a persistent southeasterly flow aloft. This would support a gradual decrease in temperatures back closer to normal and at least isolated thunderstorms over the higher terrain and perhaps the lower deserts. At the current moment, it is difficult to pick out a specific day or two for the most elevated thunderstorm chances through the end of next week, but it does appear at least lower grade monsoon thunderstorm activity will return through the remainder of the work week besides possibly Tuesday.

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.AVIATION...

South-Central Arizona including KPHX, KIWA, and KSDL:

Light flow across the Phoenix area tonight with no showers or storms anticipated. Overall a quiet night. The quiet weather is expected to continue into Saturday. Storms will likely develop during the afternoon well north/east of Phoenix over the higher terrain, but remain well outside of area terminals through the evening hours. There is an outside chance an outflow boundary could come down from the northeast in the 23Z-03Z window.

Southeast California/Southwest Arizona including KIPL and KBLH:

Light winds with just few/sct mid and high clouds through Saturday. No significant impacts expected to area terminals.

Aviation Discussion not updated for amended TAFs.

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.FIRE WEATHER...

Monday through Friday:

An increase in available moisture during the first half of next week brings a chance of isolated thunderstorms back to the lower deserts in addition to increasing minimum relative humidity values back above 20 percent over the lower deserts. The best chances

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for storms across the entire region currently appears to be on Tuesday, but thunderstorms will be possible over higher terrain locations nearly each afternoon next week. Wind speeds will be typical for mid-summer with the usual afternoon breezes. Temperatures will remain slightly above normal through the extended period.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

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DISCUSSION...Hopper

AVIATION...Iniguez

FIRE WEATHER...Wilson/Hernandez

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FXUS65 KPSR 182015

AFDPSR

Area Forecast Discussion

National Weather Service Phoenix AZ

115 PM MST Sat Aug 18 2018

.SYNOPSIS...

Very isolated thunderstorms will be possible today over the higher terrain north and east of Phoenix. High pressure centered over Arizona will keep most of the region dry for Sunday and Monday as temperatures over the lower deserts approach 110 degrees. Moisture returns to the region on Tuesday to increase thunderstorm chances and gradually decrease in temperatures back closer to normal for the second half of next week.

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.DISCUSSION...

Early this afternoon it was still quiet across the area with just a bit of cumulus developing over the lower deserts. Convection was starting to fire to our north along the Rim and into the far east-central mountains. Surface dewpoints over the central deserts were mostly mid 60s and steering flow aloft was light from the west. Morning plot data indicated the high had shifted south with the axis near the Mexican border, leaving the light westerly flow in place over southern Arizona and this was reflected by the morning Phoenix sounding. By early evening the flow aloft was forecast to become more northerly but remain light. So, isolated storms may develop over higher terrain east of Phoenix this evening with a very outside chance that one or two might drift into the northern fringes of the Phoenix area. Still, we really don't expect storms into the central lower deserts tonight.

For Sunday, continued light north flow will keep drier air filtering into the area with PWAT values dropping well below 1.5 inches, especially over northern Maricopa County and southern Gila County. MLCAPE becomes minimal as the atmosphere becomes a bit more stable. Given weak flow aloft and minimal CAPE, we really don't expect storms into the area Sunday afternoon and evening and POPs will stay in the single digits. This trend is supported by NAEFS POPs as well as MOS numbers. 500mb heights will hover around 593-594dm on Sunday, not especially high but sufficient to allow high temps to climb near 110 over the hotter deserts. We look to stay just below excessive heat warning thresholds Sunday and will go with 109 for Phoenix which is 5 degrees above normal. Drier air moving in and good

amounts of sunshine will help temps climb.

Next Monday also looks to be a very low grade monsoon day with pretty much all expected convection to stay over higher terrain areas east of Phoenix. Guidance is consistent in calling for the upper high to re-orient with the center over far east-central Arizona. This will set up a weak southerly steering flow across the area with lightest winds over south-central Arizona. With the atmosphere staying relatively dry and marginally unstable, storm chances will be very slim, especially over the deserts and it will remain hot again with high temps similar to Sunday's readings. Again, heat risk guidance suggests that we will stay below excessive heat warning thresholds on Monday as the hottest deserts again approach or slightly exceed 110.

Models are still consistent in showing a surge of Gulf moisture Monday night into Tuesday as the ridge becomes centered over New Mexico. Although models appear to be backing off a bit on a weak shortwave rotating around the southern edge of the ridge, decent 10-15 knot southeast steering flow should support at least isolated thunderstorms. The GFS has merged a bit towards the ECMWF in keeping the ridge centered to our east which places the region in a persistent southeasterly flow aloft. This would support a gradual decrease in temperatures back closer to normal and at least isolated thunderstorms over the higher terrain and perhaps the lower deserts. At the current moment, it is difficult to pick out a specific day or two for the most elevated thunderstorm chances through the end of next week, but it does appear at least lower grade monsoon thunderstorm activity will return through the remainder of the work week besides possibly Tuesday.

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.AVIATION...

South-Central Arizona including KPHX, KIWA, and KSDL:

Weak flow will allow for little downslope east winds this morning. Drier air should keep any isolated storms today over the high terrain north and east of Phoenix. The Phoenix metro, especially across north Phoenix, could see modest outflow winds from the north or northeast between 00-03Z, but at this point confidence is not high enough to include in TAFs.

Southeast California/Southwest Arizona including KIPL and KBLH:

Light winds with just few/sct mid and high clouds through Saturday. No significant impacts expected to area terminals.

Aviation Discussion not updated for amended TAFs.

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.FIRE WEATHER...

Monday through Friday:

An increase in available moisture during the first half of next week brings a chance of isolated thunderstorms back to the lower deserts in addition to increasing minimum relative humidity values back above 20 percent over the lower deserts. The best chances for storms across the entire region currently appears to be on Tuesday, but thunderstorms will be possible over higher terrain locations nearly each afternoon next week. Wind speeds will be typical for mid-summer with the usual afternoon breezes. Temperatures will remain slightly above normal through the extended period.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

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DISCUSSION...CB/Hopper

AVIATION...Kuhlman

FIRE WEATHER...Wilson/Hernandez

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FXUS66 KSGX 182029

AFDSGX

Area Forecast Discussion

National Weather Service San Diego CA

129 PM PDT Sat Aug 18 2018

.SYNOPSIS...

High pressure will strengthen over the area through tonight, continuing to dry and stabilize the atmosphere. Onshore flow and a shallow marine layer will continue areas of night and morning low clouds over coastal and western valley areas into the upcoming week. Daytime temperatures will be near, to a bit above average, while overnight lows continue between 5 and 10 degrees higher than average due to the elevated sea surface temperatures. Monsoonal moisture may return by the middle of next week, rekindling the chance for mountain and desert thunderstorms.

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.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...  
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO  
COUNTIES...

Satellite imagery at midday showed marine stratus hanging onto coastal San Diego County and still over a good chunk of the inner waters. Farther to the east...patchy cumulus clouds were bubbling over the mts. Except for the desert passes where westerly winds were occasionally gusting 25-30 MPH, winds were mostly light.

Latest available Hires WRFEMS and HRRR runs are showing a couple of showers popping over the mts this afternoon, so the small chance will remain in the forecast. Otherwise, look for dry weather with moderate to high humidity and little temp change through Monday.

Strengthening high pressure aloft over SoCal through tonight will begin to shift back to the SE through Tue as a trough deepens over the PacNW. The net result will be a slight warming early next week, and then a possible return of some monsoonal moisture by midweek. The chance of thunder returns to the mts by Tue afternoon as a result of the shift back to SE flow aloft.

Looking at the 12Z ECMWF/GFS runs...both handle the overall pattern similarly, and both suggest less mid-level moisture will return to the area than this past week. However, enough is there to leave the forecast as is. Other features of note...Both models trend 500H

lower and show increasing SW flow aloft into next weekend. This should result in gradual cooling and decreasing thunder chances over the mts.

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.AVIATION...

182030Z...Coasts/Valleys...Low clouds will redevelop and spread inland after 01Z with bases 1000-1400 feet MSL and spread not as far inland overnight. Local vis restrictions along inland edge of cloud deck. Scatter out Sunday by 17Z.

Mountains/Deserts...Mostly clear through Sunday, but with some cumulus clouds over the mountains through 01Z and again Sunday between 19-00Z. Bases near 10000 feet MSL.

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.MARINE...

No hazardous marine weather is expected through Thursday.

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.BEACHES...

Beach Hazard Statement will continue through this evening for elevated surf and strong rip currents. A 3-4 ft/15-16 second period swell from 180 degrees will bring surf of 3-6 ft, with isolated sets to 7 ft, mainly along the south facing beaches of Northern Orange County, and strong rip currents. Surf will lower tonight through Sunday.

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.SKYWARN...

Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

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.SGX WATCHES/WARNINGS/ADVISORIES...

CA...Beach Hazards Statement through this evening for Orange County Coastal Areas-San Diego County Coastal Areas.

PZ...NONE.

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FXUS65 KPSR 190140

AFDPSR

## Area Forecast Discussion

National Weather Service Phoenix AZ

640 PM MST Sat Aug 18 2018

.UPDATE...

Slightly increased PoPs across lower elevation areas for the next few hours. The 19.00Z KPSR sounding showed a statically unstable atmosphere in place with MLCAPE of around 1500 J/kg and essentially no CIN. There was a deeper isothermal layer for parcels to rise through, which likely helps explain the overall lack in convective activity. Showers/storms that have generated so far this afternoon depicted a rapid weakening as they moved southward out of the mountains. However, looking at the TPHX data, there are clearly several weak outflow boundaries meandering through the area. Outflow intersections with mid/upper level support from far tail end of the trough moving through the western US appears to be enough to spark some additional convective development. Thus while coverage will be on the low end, and the intensity of any activity mostly weak, there is enough to warrant at least a slight chance (10%) of showers/storms through about 9 PM.

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.SYNOPSIS...

Very isolated thunderstorms will be possible today over the higher terrain north and east of Phoenix. High pressure centered over Arizona will keep most of the region dry for Sunday and Monday as temperatures over the lower deserts approach 110 degrees. Moisture returns to the region on Tuesday to increase thunderstorm chances and gradually decrease in temperatures back closer to normal for the second half of next week.

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.DISCUSSION...

For Sunday, continued light north flow will keep drier air filtering into the area with PWAT values dropping well below 1.5 inches, especially over northern Maricopa County and southern Gila County. MLCAPE becomes minimal as the atmosphere becomes a bit more stable. Given weak flow aloft and minimal CAPE, we really don't expect storms into the area Sunday afternoon and evening and POPs will stay in the single digits. This trend is supported by NAEFS POPs as well as MOS numbers. 500mb heights will hover around 593-594dm on Sunday, not especially high but sufficient to allow high temps to climb near 110 over the hotter deserts. We look to stay just below excessive heat warning thresholds Sunday and will go with 109 for Phoenix

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which is 5 degrees above normal. Drier air moving in and good amounts of sunshine will help temps climb.

Next Monday also looks to be a very low grade monsoon day with pretty much all expected convection to stay over higher terrain areas east of Phoenix. Guidance is consistent in calling for the upper high to re-orient with the center over far east-central Arizona. This will set up a weak southerly steering flow across the area with lightest winds over south-central Arizona. With the atmosphere staying relatively dry and marginally unstable, storm chances will be very slim, especially over the deserts and it will remain hot again with high temps similar to Sunday's readings. Again, heat risk guidance suggests that we will stay below excessive heat warning thresholds on Monday as the hottest deserts again approach or slightly exceed 110.

Models are still consistent in showing a surge of Gulf moisture Monday night into Tuesday as the ridge becomes centered over New Mexico. Although models appear to be backing off a bit on a weak shortwave rotating around the southern edge of the ridge, decent 10-15 knot southeast steering flow should support at least isolated thunderstorms. The GFS has merged a bit towards the ECMWF in keeping the ridge centered to our east which places the region in a persistent southeasterly flow aloft. This would support a gradual decrease in temperatures back closer to normal and at least isolated thunderstorms over the higher terrain and perhaps the lower deserts. At the current moment, it is difficult to pick out a specific day or two for the most elevated thunderstorm chances through the end of next week, but it does appear at least lower grade monsoon thunderstorm activity will return through the remainder of the work week besides possibly Tuesday.

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.AVIATION...

South-Central Arizona including KPHX, KIWA, and KSDL:

Drier air moving into the region from the northwest is expected to keep convective activity well away from the greater Phoenix area (up over the Rim Country and White Mountains). Westerly winds (with some gustiness at times) to linger later into the night than usual, then return earlier-than-usual on Sunday. Skies to remain mainly clear (outside of a few patches of high cirrus) through the day on Sunday.

Southeast California/Southwest Arizona including KIPL and KBLH:

Light diurnally-driven winds with just a few high cirrus clouds from time-to-time through Sunday. No significant impacts expected to area terminals.

Aviation Discussion not updated for amended TAFs.

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.FIRE WEATHER...

Tuesday through Saturday:

An increase in available moisture during the first half of next week brings a chance of isolated thunderstorms back to the lower deserts in addition to increasing minimum relative humidity values back above 20 percent over the lower deserts. The best chances for storms across the entire region currently appears to be on Tuesday, but thunderstorms will be possible over higher terrain locations nearly each afternoon next week. Wind speeds will be typical for mid-summer with the usual afternoon breezes. Temperatures will remain slightly above normal through the extended period.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

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DISCUSSION...Iniguez/CB/Hopper

AVIATION...Percha

FIRE WEATHER...Percha/Wilson/Hernandez

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FXUS66 KSGX 190412

AFDSGX

## Area Forecast Discussion

National Weather Service San Diego CA

911 PM PDT Sat Aug 18 2018

## .SYNOPSIS...

High pressure will strengthen over the area through tonight, continuing to dry and stabilize the atmosphere. Onshore flow and a shallow marine layer will continue areas of night and morning low clouds over coastal and western valley areas into the upcoming week. Daytime temperatures will be near, to a bit above normal, while overnight lows continue between 5 and 10 degrees higher than normal due to the elevated sea surface temperatures. Monsoonal moisture may return by the middle of next week, rekindling the chance for mountain and desert thunderstorms.

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.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...  
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO  
COUNTIES...

Strengthening high pressure aloft over SoCal through tonight will begin to shift back to the SE through Tue as a trough deepens over the PacNW. The net result will be a slight warming early next week, and then a possible return of some monsoonal moisture by midweek. The chance of thunder returns to the mts by Tue afternoon as a result of the shift back to SE flow aloft.

Looking at the 12Z ECMWF/GFS runs...both handle the overall pattern similarly, and both suggest less mid-level moisture will return to the area than this past week. However, enough is there to leave the forecast as is. Other features of note...Both models trend 500H lower and show increasing SW flow aloft into next weekend. This should result in gradual cooling and decreasing thunder chances over the mts.

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## .AVIATION...

190400Z...Coasts/Valleys...Low clouds will redevelop and spread inland after 06Z with bases 1200-1600 feet MSL and spread inland 10-20 miles. Brief vis restrictions along inland edge of cloud deck. Clouds will scatter to the coast by 18Z Sunday.

Mountains/Deserts...Mostly clear through Sunday, but with some cumulus clouds over the mountains Sunday afternoon. Bases near 10000 feet MSL.

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.MARINE...

No hazardous marine weather is expected through Thursday.

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.BEACHES...

Beach Hazard Statement has expired and surf will gradually diminish through Sunday. However dangerous rip currents will still be a concern at the beaches.

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.SKYWARN...

Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

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.SGX WATCHES/WARNINGS/ADVISORIES...

CA...NONE.

PZ...NONE.

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jmb/jad

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FXUS65 KPSR 191048

AFDPSR

## Area Forecast Discussion

National Weather Service Phoenix AZ

348 AM MST Sun Aug 19 2018

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## .SYNOPSIS...

Above normal temperatures and drier conditions are expected across the region today as high pressure remains centered over Arizona. High temperatures over the lower deserts will approach 110 degrees with a some spots over southeast California a few degrees warmer. Moisture returns to the region by Tuesday morning to increase thunderstorm chances through the rest of next week with temperatures decreasing back closer to normal.

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## .DISCUSSION...

Drier air continues to filter into the region as the mid-to-upper level ridge of high pressure currently centered over southeast California slowly pushes east today. PWAT values are currently between 1.2-1.8 inches over the lower deserts, but significant drying at all levels due to westerly flow in the boundary layer and northerly flow aloft will cause PWAT values to drop another 0.5 inches or so by this afternoon. Instability will therefore be much lower today across the state, so convective development will be hard to come by even for the higher terrain north and east of Phoenix where PWAT values will drop towards 0.5 inches. Any rogue shower or thunderstorm that is able to develop will have a difficult time pushing into the lower deserts given weak 5-10 knot steering flow out of the north-northeast. The main weather impact for today will be the heat as high temperatures increase towards 110 degrees over the Phoenix metro and lower 110s over the lower deserts of southwest Arizona and southeast California. Forecast 850 mb temperatures today of 29-30 deg C are a bit lower than models showed yesterday, so we have high confidence that we should remain below excessive heat thresholds. Nevertheless, caution should be exercised during outdoor activities today as this will be the hottest day we have seen since August 7th.

Monday will be similar to today as the ridge gradually pushes east in response to a trough digging into the Pacific Northwest. Temperatures should be within a degree of today's as 850 mb temperatures will not change much. Moisture will still be limited tomorrow afternoon with PWAT values only increasing 0.1-0.2 inches and steering flow remaining fairly weak before becoming southeasterly by tomorrow evening. Very isolated thunderstorms will be possible over the higher terrain of Gila County, but the limited moisture keeps even their POPs below 10 percent. There is



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an outside chance that a thunderstorm that develops closer to Tucson may be able to push in from the southeast late tomorrow night into Tuesday morning, but instability will be fairly limited until a low-level moisture surge from the Gulf of California is able to push in overnight as the ridge pushes into New Mexico.

At least isolated to scattered thunderstorm activity is expected to resume on Tuesday once deeper moisture is in place, allowing temperatures to decrease back into the lower to mid 100s. The ridge will continue to push farther east into west Texas as well to support relatively strong southeasterly flow aloft that may increase shear to 20-30 knots for both Tuesday and Wednesday. Therefore, storms that develop to our southeast on these days may be more organized and stronger than usual, capable of producing damaging winds and our beloved blowing dust impacts. We will likely see a shortwave or two rotating around the ridge at some point between Tuesday and Thursday morning. This wave may have some connection with a vorticity tail that breaks off from the trough over the eastern two-thirds of the U.S. as a front pushes into the Southern Plains. However, it is too difficult to pinpoint whether these waves will occur with maximum daytime heating or not. These shortwaves may also be convectively reinforced by MCVs over Mexico that push into the region to complicate the forecast further. Regardless, Tuesday and/or Wednesday show some potential for being fairly active thunderstorm days.

Beyond the middle of next week, the GFS continues to merge towards the ECMWF in keeping the ridge centered to our east which places the region in a persistent southeasterly flow aloft. This would support a continued slight decrease in temperatures and at least isolated thunderstorms activity over the lower deserts with greater coverage over higher terrain into Thursday and possibly Friday and Saturday. At the current moment, it is difficult to pick out a specific day or two for the most elevated thunderstorm chances beyond Wednesday, but it does appear that at least lower grade monsoon thunderstorm activity will persist into next weekend.

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**.AVIATION...**

South-Central Arizona including KPHX, KIWA, and KSDL:  
Latest guidance suggests light and variable winds will prevail overnight. Much drier air will move into the region Sunday, which will essentially turn off the Monsoon for a day across much of Arizona. No aviation weather impacts anticipated at the terminals.

Southeast California/Southwest Arizona including KIPL and KBLH:  
No aviation weather impacts expected. Diurnal winds and mainly clear skies will prevail at both KIPL and KBLH through at least Sunday evening.

Aviation Discussion not updated for amended TAFs.

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.FIRE WEATHER...

Tuesday through Saturday:

An increase in available moisture during the first half of next week brings a chance of isolated thunderstorms back to the lower deserts in addition to increasing minimum relative humidity values back above 20 percent over the lower deserts. The best chances for storms across the entire region currently appears to be on Tuesday, but thunderstorms will be possible over higher terrain locations nearly each afternoon next week. Wind speeds will be typical for mid-summer with the usual afternoon breezes. Temperatures will remain slightly above normal through the extended period.

&amp;&amp;

.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

&amp;&amp;

.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

&amp;&amp;

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DISCUSSION...Hopper

AVIATION...Hirsch

FIRE WEATHER...Percha/Wilson/Hernandez

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FXUS65 KPSR 192004

AFDPSR

Area Forecast Discussion

National Weather Service Phoenix AZ

104 PM MST Sun Aug 19 2018

.SYNOPSIS...

Above normal temperatures are expected across the region on Sunday and Monday as high pressure remains centered over Arizona. Highs over the lower deserts will approach 110 degrees with some spots over southeast California a few degrees warmer. Moisture returns to the region by Tuesday morning to increase thunderstorm chances through the rest of next week with temperatures decreasing back closer to normal.

&amp;&amp;

.DISCUSSION...

Satellite imagery this afternoon shows scattered cumulus over the higher terrain of the Desert Southwest while dry northerly flow advects across the region. This is in response to an upper level high which is centered just to our west over Southern California. The dry northerly flow is apparent in our 12Z sounding taken from Phoenix this morning with RH values generally less than 5% above 500 mb! Not surprisingly, nearly all the 1.53 inches of PW recorded in today's sounding is in the lower half of the atmosphere (1000-500 mb) with the majority of the CAPE in the lower elevations and little (< 500 J/kg) along the Mogollon Rim.

Looking at mesoscale models, only isolated activity is expected in the higher terrain this afternoon. Whatever does form will have a light NW steering flow which is certainly not conducive to lower elevation convective activity. A few CAMs show light activity from Mohave and Yavapai Counties weakening as it moves into La Paz and Maricopa late this afternoon. This looks reasonable as outflows will likely be far too weak to break the convective cap that remains over the lower elevations. Otherwise, all other areas should remain dry. Besides this, temperatures will be very warm, about 5 degrees above normal, with highs just below 110 for Phoenix and likely exceeding that in SE California.

Monday will be a transition day as the aforementioned upper level high drifts east and our flow patterns shifts to the southeast. An increase in moisture near Tucson may be enough to generate storms and an outflow to our SE. This could possibly bring some dust toward Phoenix but chances of an outflow making it this far north on Monday are low. By late Monday night into Tuesday morning, models show a shortwave moving through and bringing a pronounced increase in moisture. It is not clear whether this wave will be enough to generate convective activity but the NAM and

**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

GFS do show some precipitation falling in south-central and southwest AZ Tuesday morning. For now, have bumped up PoPs slightly for the Tuesday morning timeframe but is something we'll need to watch.

Depending on how Tuesday morning shakes out, at least scattered thunderstorm activity is expected to resume during the afternoon. The ridge will continue to push farther east into west Texas as well to support relatively strong southeasterly flow aloft that may increase shear to 20-30 knots for Tuesday. Therefore, storms that develop may be more organized and stronger than usual, capable of producing damaging winds and blowing dust.

We will likely see a shortwave or two rotating around the ridge at some point between Wednesday and Thursday. This wave may have some connection with a vorticity tail that breaks off from the trough over the eastern two-thirds of the U.S. as a front pushes into the Southern Plains. However, it is too difficult to pinpoint whether these waves will occur with maximum daytime heating or not. These shortwaves may also be convectively reinforced by MCVs over Mexico that push into the region to complicate the forecast further.

Beyond the middle of next week, the GFS continues to merge towards the ECMWF in keeping the ridge centered to our east which places the region in a persistent southeasterly flow aloft. This would support continued below normal temperatures and at least isolated thunderstorm activity over the lower deserts with greater coverage over higher terrain Friday and Saturday. At the current moment, it is difficult to pick out a specific day or two for the most elevated thunderstorm chances beyond Wednesday, but it does appear that at least lower grade monsoon thunderstorm activity will persist into the weekend.

&&

.AVIATION...

South-Central Arizona including KPHX, KIWA, and KSDL:

Much drier air will move into the region today, which will essentially turn off the Monsoon for a day across much of Arizona. No aviation weather impacts are anticipated at the terminals while diurnally driven winds dominate.

Southeast California/Southwest Arizona including KIPL and KBLH:

No aviation weather impacts expected. Diurnal winds and mainly clear skies will prevail at both KIPL and KBLH through at least Monday morning.

Aviation Discussion not updated for amended TAFs.

&&

.FIRE WEATHER...

Tuesday through Saturday:

An increase in available moisture during the first half of next week brings a chance of thunderstorms back to the lower deserts in addition to increasing minimum relative humidity values back above 20 percent over the lower deserts. The best chances for storms across the entire region currently appears to be on Tuesday, but thunderstorms will be possible over higher terrain locations nearly each afternoon next week. Wind speeds will be typical for mid-summer with the usual afternoon breezes. Temperatures will remain slightly above normal through the extended period.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

&&

\$\$

DISCUSSION...Wilson/Hopper

AVIATION...Kuhlman

FIRE WEATHER...Percha/Wilson/Hernandez

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FXUS66 KSGX 192053

AFDSGX

## Area Forecast Discussion

National Weather Service San Diego CA

150 PM PDT Sun Aug 19 2018

## .SYNOPSIS...

High pressure aloft over Southern California will shift southeast to the Rio Grande Valley by Tuesday. This will allow some monsoonal moisture to return, possibly sparking more thunderstorm activity over the mountains and deserts. At the same time, a trough will develop over the Pacific Northwest and slowly broaden over the West Coast through the week, bringing a drying trend, along with slightly cooler weather later in the week. The night and morning low clouds along the coast are expected to decrease a bit into Wednesday, then become more widespread during the latter half of the week.

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.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...  
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO  
COUNTIES...

Some patchy marine clouds near the Coast and cumulus over the mountain crests were being detected in satellite imagery early this afternoon, otherwise skies were clear. Winds were generally light with temps close to values observed yesterday.

High pressure aloft over SoCal today is headed SE and will be centered over West TX by Tue. This will briefly throw parts of southeastern CA into a monsoonal flow. Based on blended TPW imagery...Moisture is already beginning to increase over eastern portions of the CWA and will likely continue into Tue morning as an easterly wave rides north into the Lower Colorado River Valley. The latest WRFEMS shows some convective showers firing late tomorrow over the lower deserts, with much more activity creeping north along the mountains and desert areas on Tuesday. We are already forecast to be on the edge of this activity, so any shift to the east would leave the entire area dry. For now, low POPS are in place for mts/lower deserts.

Once the easterly wave passes, there is a shift in the upper-level flow to predominantly westerly through the week. This becomes even more pronounced early next week as both the GFS/ECMWF models show a marked shift in the pattern over the Western Hemisphere. If the models are correct...This shift will allow the strong subtropical high to set up over the Lower Mississippi Valley, while a longwave trough develops over the West to end August. Besides driving any Monsoonal activity completely out of the region, it would bring widespread and substantial cooling. Lets see if a few more model runs keep this trend.

**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

In the meantime...Don't look for any meaningful changes in the weather across SoCal this week. Humidity will likely remain elevated with onshore flow and a warmer than average sea surface. Daytime temps will be within a few degrees of average, while overnight lows continue 3 to 7 degrees above average.

Despite the low POPS, PW values of near two inches will be available if thunderstorms develop on our desert slopes on Tuesday. Even on Monday, the threat for any thunderstorms looks to be in the lower deserts. The passage of a wave on Tuesday increases forcing in this potentially rich CAPE environment. The only wild card that could enhance updrafts even more would be enough afternoon sun (which could be in short supply). The main threat area for severe convection and Flash Flooding at this time appears to be the Borrego Desert areas, the Coachella Valley, and adjacent mountains.

&&

.AVIATION...

192030Z...Coasts/Valleys...Coastal low clouds will gather tonight after 06Z with bases around 1200 feet MSL and moving into western valleys overnight. Scatter out by 16-17Z Monday.

Mountains/Deserts...Cumulus clouds based at around 10000 feet MSL through 01Z today. Cumulus clouds over mountains and moving into deserts after 19Z Monday, growing into isolated thunderstorms. Bases around 9000 feet growing to 35000 feet.

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.MARINE...

No hazardous marine weather is expected through Friday.

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.SKYWARN...

Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

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.SGX WATCHES/WARNINGS/ADVISORIES...

CA...NONE.

PZ...NONE.

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PUBLIC...10

AVIATION/MARINE...MM

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498

FXUS66 KSGX 200432

AFDSGX

## Area Forecast Discussion

National Weather Service San Diego CA

930 PM PDT Sun Aug 19 2018

## .SYNOPSIS...

High pressure over Southern California will shift southeast to Texas by Tuesday. This will allow some monsoonal moisture to return, sparking new thunderstorm activity over the mountains and deserts on Monday and Tuesday. A drier pattern will then develop Wednesday and continue through the end of the week, with warm and dry conditions for SoCal. Night and morning low clouds will continue, mainly near the immediate coast.

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.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...  
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO  
COUNTIES...

It was a very warm day today with temperatures about 5 to 10 degrees above normal in several locations. Thermal tied a record high today at 113. Slightly cooler conditions through the remainder of the week as high pressure shifts east, yet still a few degrees above normal for this time of the year for most locations.

An earlier forecast update was to tweak the thunderstorm chances for Monday and Tuesday afternoons over the Peninsular Ranges of SB-Riv-SD Counties. A slight chance of thunderstorms also over the lower deserts due to the monsoonal moisture creeping into the area. Tropical moisture with PWATS nearing 2" will clip SE CA along with moderate instability will bring the potential for heavy rain with any thunderstorms that do develop. Otherwise, no other changes were made to the ongoing forecast.

&amp;&amp;

## .AVIATION...

200330Z...Coasts/Valleys...Stratus, with bases around 1200 ft MSL and tops near 1700 ft MSL, will develop along the coast tonight and push around 15 miles inland by early Monday morning. Low VIS of 3-5 SM BR will develop where stratus nears higher terrain. Conditions will improve by late Monday morning as the stratus clears towards the coast.

Mountains/Deserts...TSRA may develop Monday afternoon, with bases around 8000 ft MSL and tops near 35000 ft MSL. Strong up/downdrafts and gusty surface winds are possible near storms, along with lightning and reduced VIS. Conditions will improve Monday evening.



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.MARINE...

No hazardous marine weather is expected through Friday.

&amp;&amp;

.SKYWARN...

Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

&amp;&amp;

.SGX WATCHES/WARNINGS/ADVISORIES...

CA...NONE.

PZ...NONE.

&amp;&amp;

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PUBLIC...JMB

AVIATION/MARINE...JJT

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FXUS66 KSGX 201025

AFDSGX

## Area Forecast Discussion

National Weather Service San Diego CA

325 AM PDT Mon Aug 20 2018

## .SYNOPSIS...

Southwestern California will be on the western fringe of a more substantial influx of monsoonal moisture into southern Arizona on Tuesday. This will bring a slight chance of thunderstorms this afternoon and early evening and again Tuesday afternoon, mainly along the desert slopes of the mountains of Riverside and San Diego Counties. Onshore lower level flow and drier southwest flow aloft will then prevail for much of the week. Areas of night and morning coastal low clouds and fog will spread into the western valleys at times. There will be gusty southwest to west winds in the afternoon and evening in the mountains and deserts for the latter half of the week.

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.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...  
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO  
COUNTIES...

## .SHORT TERM (Today through Wednesday)...

Early this morning, high pressure aloft is centered over Arizona with a low pressure system moving into the Pacific Northwest. The high pressure will move eastward, moving over Texas on Tuesday as the trough of low pressure over the Pacific Northwest expands towards the southwest. The NAM is alone in taking more substantial moisture farther towards the west than the other models across northern Mexico into the southwestern states. The current forecast favors the global models in taking the more substantial moisture into Arizona on Tuesday with southwestern California on the western edge of that moisture. A slight chance of thunderstorms is retained for this afternoon and early evening and again Tuesday afternoon, mainly along the desert slopes of the mountains of Riverside and San Diego Counties.

The marine layer and weak onshore flow will bring some slow deepening of the marine layer into Tuesday with areas of night and morning coastal low clouds and fog spreading a little farther into the western valleys for late tonight in to Wednesday morning. This will also spread slow cooling inland through Tuesday.

For late Tuesday and Wednesday, drier southwest flow aloft will develop bringing a more substantial decrease in monsoonal moisture. On Wednesday, high pressure aloft over Texas will begin to expand westward with the ridge axis to the south of Southern California. This will bring some warming to the valleys as the

**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

marine layer becomes a little shallower.

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.LONG TERM (Thursday through Sunday)...

Subtropical high pressure will remain centered to the south of Southern California with a trough of low pressure near the Pacific Northwest coast. This will maintain onshore lower level flow across Southern California with dry southwest to west flow aloft. There will be minor day to day temperature changes with high temperatures remaining a few degrees above average.

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.AVIATION...

201030Z...Coasts/Valleys...Stratus will continue through 16-18Z within 25-30 miles of the coast. Bases will be 1200-1500 ft MSL with tops to 1800 ft MSL. Local vis 2-4 miles will occur in the valleys through 16Z. After 18Z, mostly clear skies will prevail until stratus develops again tonight between 03Z and 06Z and spreads up to 25 miles inland by 12Z Tue with similar bases compared to this morning.

Mountains/Deserts...There is a slight chance of thunderstorms this afternoon over mainly the mountains, with CB bases 8000-9000 ft MSL and tops to 40000 ft MSL, along with strong up/downdrafts and local surface gusts to 30 kt. Otherwise, mostly SCT clouds above 10000 ft MSL will prevail with mostly unrestricted vis.

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.MARINE...

No hazardous marine weather is expected through Friday.

&&

.SKYWARN...

Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

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.SGX WATCHES/WARNINGS/ADVISORIES...

CA...NONE.

PZ...NONE.

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PUBLIC...17

AVIATION/MARINE...Maxwell

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428

FXUS65 KPSR 201031

AFDPSR

## Area Forecast Discussion

National Weather Service Phoenix AZ

331 AM MST Mon Aug 20 2018

## .SYNOPSIS...

Above normal temperatures are expected again today across the region. Highs over the lower deserts will range between 105 and 110 degrees with the warmest readings over southeast California. Substantial moisture returns to the region starting tonight with shower and thunderstorm chances returning on Tuesday. Storm chances remain across south central Arizona through the rest of the week, but will mostly be focused across the higher terrain north and east of Phoenix.

&amp;&amp;

## .DISCUSSION...

The upper level high center is currently situated over central Arizona, but will drift southeast over the next day or two. Last evening, several thunderstorm complexes developed across northern Mexico just south of the high. As the high shifts southeast, our flow will quickly turn southeasterly with moisture levels beginning to increase from the current 1.00-1.40" PWATS. Models continue to show this afternoon and evening will be very active across northern Mexico and possibly just south of Tucson this evening. An inverted trough is also shown moving northward out of Mexico into southern Arizona sometime after midnight. A strong moisture surge will accompany this inverted trough, partly coming from the convection over northern Mexico and also from a Gulf surge.

The forecast scenario for tonight and Tuesday is rather complex with multiple factors coming into play. Current thinking is we may see showers and thunderstorms overnight tonight across south-central Arizona forming along the northern edge of the inverted trough and/or from gravity waves produced from convection to the south. Models are starting to show this possibility more in the latest runs, but there is still quite a bit of discrepancy among models. Even if storms don't develop tonight over southern Arizona, the moisture surge will be significant with PWATS rising to between 1.75-2.00" by mid morning Tuesday. PoPs have been increased some for tonight, but may end up having to be raised even more if the 12Z runs show more model consensus.

The rest of Tuesday is even more uncertain as we could either see a very active storm day with flooding concerns across south-central and eastern Arizona, or we may end up mostly cloudy lacking sufficient instability for widespread storm activity. At

**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

this point models are generally showing the latter will happen due to too much moisture and overall fairly cloudy conditions. If tonight ends up being fairly quiet and cloud cover is less during the day Tuesday, Tuesday afternoon and evening should be very active with heavy rainfall producing storms mainly from Maricopa County eastward. PoPs have been raised on Tuesday, but given the uncertainty, chances mostly fall between 30-40%. Winds aloft are initially strong Tuesday morning with 20-30kts out of the south/southeast at 500mb and a 50kt upper level jet across western Arizona providing ample divergence aloft over central Arizona. We can't rule out a few strong wind producing storms early Tuesday morning, but this is not a favorable time of day for strong to severe storms. Winds aloft gradually weaken during the day Tuesday while the steering flow veers out of the south/southwest. This should lead to mostly heavy rainfall producing storms later in the day Tuesday with localized strong gusty winds still possible within any microbursts. High temperatures on Tuesday will drop several degrees from today's readings with temperatures topping out around 100 degrees in the Phoenix area to around 105 across the western deserts.

The high center will continue shifting eastward on Wednesday with our flow aloft turning solely out of the southwest. This will bring drier air into the region, but we should still have sufficient moisture for afternoon and evening storms mostly across the high terrain north and east of Phoenix. Similar conditions are seen for Thursday and Friday, but storm chances should diminish each day with the lower deserts likely staying dry. Temperatures will remain fairly steady through the rest of the week as 500mb heights lower from 594dm on Wednesday to 588dm on Saturday. These lower heights are due to a developing Pacific low well off the California coast. Though it is around a week away, both the GFS and European show a more significant Pacific trough digging southeastward into the Pacific Northwest early next week. This will definitely be something to watch for the middle part of next week.

&&

.AVIATION...

South-Central Arizona including KPHX, KIWA, and KSDL:

A slight increase in convection is anticipated today across Arizona as deeper moisture returns to the region. However, activity will generally remain well outside of the Phoenix area. There is a slight chance an outflow boundary could reach central Arizona this evening with a shift to southerly winds, though the greater likelihood is that westerly winds will persist through the evening.

Southeast California/Southwest Arizona including KIPL and KBLH:

Southerly and southeasterly flow will predominate across southeastern California. Latest model guidance suggests sustained

**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

winds will increase to around 15 kt Monday afternoon. Otherwise, no aviation weather impacts expected.

Aviation Discussion not updated for amended TAFs.

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.FIRE WEATHER...

Wednesday through Sunday:

An increase in available moisture during the middle and end of the upcoming workweek to keep chances of thunderstorms elevated over the region, in addition to keeping minimum relative humidity values above 20 percent over the lower deserts. The best chances for storms across the entire region currently appears to be on Tuesday. Some drying and a reduction in convective activity is possible for next Saturday and Sunday. Wind speeds will be typical for mid-summer with the usual afternoon breezes. Temperatures will remain near-normal through the entire period.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

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DISCUSSION...Kuhlman

AVIATION...Hirsch

FIRE WEATHER...Percha

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FXUS65 KPSR 201309

AFDPSR

Area Forecast Discussion

National Weather Service Phoenix AZ

609 AM MST Mon Aug 20 2018

.UPDATE...

Updated 12Z aviation and fire weather discussions.

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.SYNOPSIS...

Above normal temperatures are expected again today across the region. Highs over the lower deserts will range between 105 and 110 degrees with the warmest readings over southeast California. Substantial moisture returns to the region starting tonight with shower and thunderstorm chances returning on Tuesday. Storm chances remain across south central Arizona through the rest of the week, but will mostly be focused across the higher terrain north and east of Phoenix.

&amp;&amp;

.DISCUSSION...

The upper level high center is currently situated over central Arizona, but will drift southeast over the next day or two. Last evening, several thunderstorm complexes developed across northern Mexico just south of the high. As the high shifts southeast, our flow will quickly turn southeasterly with moisture levels beginning to increase from the current 1.00-1.40" PWATS. Models continue to show this afternoon and evening will be very active across northern Mexico and possibly just south of Tucson this evening. An inverted trough is also shown moving northward out of Mexico into southern Arizona sometime after midnight. A strong moisture surge will accompany this inverted trough, partly coming from the convection over northern Mexico and also from a Gulf surge.

The forecast scenario for tonight and Tuesday is rather complex with multiple factors coming into play. Current thinking is we may see showers and thunderstorms overnight tonight across south-central Arizona forming along the northern edge of the inverted trough and/or from gravity waves produced from convection to the south. Models are starting to show this possibility more in the latest runs, but there is still quite a bit of discrepancy among models. Even if storms don't develop tonight over southern Arizona, the moisture surge will be significant with PWATS rising to between 1.75-2.00" by mid morning Tuesday. PoPs have been increased some for tonight, but may end up having to be raised

**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

even more if the 12Z runs show more model consensus.

The rest of Tuesday is even more uncertain as we could either see a very active storm day with flooding concerns across south-central and eastern Arizona, or we may end up mostly cloudy lacking sufficient instability for widespread storm activity. At this point models are generally showing the latter will happen due to too much moisture and overall fairly cloudy conditions. If tonight ends up being fairly quiet and cloud cover is less during the day Tuesday, Tuesday afternoon and evening should be very active with heavy rainfall producing storms mainly from Maricopa County eastward. PoPs have been raised on Tuesday, but given the uncertainty, chances mostly fall between 30-40%. Winds aloft are initially strong Tuesday morning with 20-30kts out of the south/southeast at 500mb and a 50kt upper level jet across western Arizona providing ample divergence aloft over central Arizona. We can't rule out a few strong wind producing storms early Tuesday morning, but this is not a favorable time of day for strong to severe storms. Winds aloft gradually weaken during the day Tuesday while the steering flow veers out of the south/southwest. This should lead to mostly heavy rainfall producing storms later in the day Tuesday with localized strong gusty winds still possible within any microbursts. High temperatures on Tuesday will drop several degrees from today's readings with temperatures topping out around 100 degrees in the Phoenix area to around 105 across the western deserts.

The high center will continue shifting eastward on Wednesday with our flow aloft turning solely out of the southwest. This will bring drier air into the region, but we should still have sufficient moisture for afternoon and evening storms mostly across the high terrain north and east of Phoenix. Similar conditions are seen for Thursday and Friday, but storm chances should diminish each day with the lower deserts likely staying dry. Temperatures will remain fairly steady through the rest of the week as 500mb heights lower from 594dm on Wednesday to 588dm on Saturday. These lower heights are due to a developing Pacific low well off the California coast. Though it is around a week away, both the GFS and European show a more significant Pacific trough digging southeastward into the Pacific Northwest early next week. This will definitely be something to watch for the middle part of next week.

&&

.AVIATION...

South-Central Arizona including KPHX, KIWA, and KSDL:

Light and variable winds this morning with a brief period of easterly winds this morning will become westerly at 10 knots by the afternoon with gusts generally remaining below 15 knots. Moisture will increase today to allow at least isolated to scattered thunderstorms to develop over southern Arizona this afternoon. These storms may be capable of pushing southerly



**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

outflows (and crosswinds) into the Phoenix sites later tonight after 03Z with the latest HRRR runs even showing a line of thunderstorms pushing through. However, most hi-res and global models show this convection dissipating well south of Phoenix which seems most reasonable at this time.

The forecast for the overnight hours is rather uncertain, so for now we have vicinity showers and southwest winds with broken to overcast clouds above 10 kft after 06Z. However, there are many possible scenarios overnight depending on how convection and moisture return evolves this afternoon and evening, including prevailing showers and thunderstorms for several hours. We do have better confidence that showers and thunderstorms will occur at some point late in the overnight hours or just after sunrise, so we have added in a PROB30 group after 12Z. However, this may need to be moved up or removed depending on how storms evolve tonight.

Southeast California/Southwest Arizona including KIPL and KBLH:

Southerly and southeasterly flow will predominate at KBLH and KIPL, respectively. Winds this afternoon will be sustained to 15-20 knots with gusts to 25 knots possible at KBLH. A few hi-res models show convection that develops over northern Mexico may move into the vicinity of KIPL, but the vast majority of models keep this activity out so the forecast remains thunderstorm free for now. Aside from that, no aviation weather impacts expected.

Aviation Discussion not updated for amended TAFs.

&&

.FIRE WEATHER...

Wednesday through Sunday:

Ample moisture during the middle of this week will keep chances of thunderstorms elevated over the region, in addition to keeping minimum relative humidity values above 20 percent over the lower deserts of south central Arizona. Significant drying is expected over southeast California and possibly southwest Arizona for Thursday and beyond, with a reduction in convective activity spreading further east later this week into the weekend aside from the higher terrain north and east of Phoenix. Wind speeds will be typical for mid-summer with the usual afternoon breezes aside from stronger winds with thunderstorm outflows. Temperatures will remain near to slightly below normal through the period.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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FXUS66 KSGX 201552

AFDSGX

## Area Forecast Discussion

National Weather Service San Diego CA

852 AM PDT Mon Aug 20 2018

## .SYNOPSIS...

Southwestern California will be on the western fringe of monsoonal moisture, which will bring a slight chance of thunderstorms today and Tuesday in the mountains and deserts. Dry and fair weather will follow for the rest of the week, with a medium extent of coastal clouds nights and mornings.

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.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...  
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO  
COUNTIES...

Coastal clouds snuck into the southern and western corners of the Inland Empire this morning. The marine layer deepened to about 2000 feet overnight thanks to a weak coastal eddy. The marine inversion is relatively strong and the cloud is thicker too, so clear out will come a bit slower this morning. By midday our attention will turn east where an increase in monsoonal moisture and instability will lead to isolated thunderstorms in the mountains and deserts this afternoon. Any thunderstorms are capable of rain intense enough to produce a flash flood, but they will be quite isolated. A thunderstorm complex in Sonora tonight will turn into an easterly wave that moves northward into southwest Arizona Tuesday. Most of the thunderstorm action will stay in Imperial Valley or Arizona, but we're close enough on its western fringes to mention a small chance of thunderstorms over our lower desert and eastern slopes of the mountains. Not a whole lot of change occurs this week in the overall pattern, which features a weak low-pressure trough over the Pacific Northwest along with a high-pressure ridge over New Mexico and Texas. This set up effectively cuts off the monsoon flow which will keep our forecast dry Wednesday and beyond. The rather stagnant holding pattern will mean no discernible temperature trends or changes in the marine layer this week. Coastal clouds will continue pretty much as is each night and morning covering coastal and western valley areas, playing peek-a-boo with the Inland Empire. At the same time, winds aloft increase, which will increase mountain/desert winds during afternoons/evenings after Tuesday. Next week that Pac NW trough appears to deepen a little further, which would bring cooler weather, stronger mountain/desert breezes and a more extensive coverage of coastal clouds if it pans out as currently depicted.

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**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

.AVIATION...

201550Z...Coasts/Valleys...OVC012-015 Tops 022 through 19Z at KSAN, KSNA and KCRQ. After 19Z...SCT015. Stratus reforms after 01Z and spreads 25 miles inland through 14Z Tuesday with similar bases and tops.

South winds 5-10 kt near the coast this morning shifting southwest after 19Z.

Mountains/Deserts...SCT100 this afternoon with a small chance of a thunderstorm over the mountains with CB bases 8000-9000 ft MSL and tops to 40000 ft MSL.

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.MARINE...

No hazardous marine weather is expected through Friday.

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.SKYWARN...

Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

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.SGX WATCHES/WARNINGS/ADVISORIES...

CA...NONE.

PZ...NONE.

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PUBLIC...MM

AVIATION/MARINE...Moede

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FXUS66 KSGX 202021

AFDSGX

## Area Forecast Discussion

National Weather Service San Diego CA

121 PM PDT Mon Aug 20 2018

## .SYNOPSIS...

Southwestern California will be on the western fringe of monsoonal moisture, which will bring a slight chance of thunderstorms today and Tuesday in the mountains and deserts. Dry and fair weather will follow for the rest of the week, with coastal clouds nights and mornings.

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.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...  
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO  
COUNTIES...

High clouds from Mexico have migrated north today and so far only some fair weather cumulus have developed over the mountains. An increase in monsoonal moisture and instability have created a small chance of thunderstorms in the mountains and deserts this afternoon, but right now those cumulus clouds don't look too interested. A thunderstorm complex in Sonora tonight will turn into an easterly wave that moves northward into Arizona Tuesday. Most of the thunderstorm action will stay in Imperial Valley or Arizona, but we're close enough on its western fringes to mention a small chance of thunderstorms over our lower desert and eastern slopes of the mountains. Not a whole lot of change occurs this week in the overall pattern, which features a weak low-pressure trough over the Pacific Northwest along with a high- pressure ridge over New Mexico and Texas. This set up effectively cuts off the monsoon flow which will keep our forecast dry Wednesday and beyond. The rather stagnant holding pattern will mean no discernible temperature trends or changes in the marine layer this week. Westerly winds aloft increase later this week, which will increase mountain/desert winds during afternoons/evenings. Coastal clouds will continue pretty much as is each night and morning covering coastal and western valley areas, playing peek-a-boo with the Inland Empire. Next week that Pac NW trough appears to deepen a little further, which would bring cooler weather, stronger mountain/desert breezes and a more extensive coverage of coastal clouds if it pans out as currently depicted.

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## .AVIATION...

202020Z...Coasts/Valleys...SCT012 near the coast this evening becoming BKN-OVC012-015 tops 022 after 03Z and spreading 25 miles inland through 14Z Tuesday. A brief period of 4SM BR BKN010 at KONT

**August 20, 2018 Exceptional Event, Imperial County**

between 12Z-16Z Tuesday.

Above the marine layer...BKN200 through Tuesday morning.

Mountains/Deserts...SCT100 BKN200 through Tuesday morning. Small chance for an thunderstorm Tuesday afternoon CB bases 10000 ft MSL and tops to 40000 ft MSL.

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.MARINE...

No hazardous marine weather is expected through Friday.

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.SKYWARN...

Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

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.SGX WATCHES/WARNINGS/ADVISORIES...

CA...NONE.

PZ...NONE.

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PUBLIC...MM

AVIATION/MARINE...Moede

# IOWA STATE UNIVERSITY

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Department of Agronomy

## Department of Agronomy

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□

770

FXUS65 KPSR 202051

AFDPSR

Area Forecast Discussion

National Weather Service Phoenix AZ

151 PM MST Mon Aug 20 2018

**.SYNOPSIS...**

Substantial moisture returns to the region this evening bringing a chance of showers and thunderstorms to all areas of south-central AZ tonight through Tuesday. The upper level flow pattern then shifts to the southwest on Wednesday bringing some drying and lower grade monsoon conditions Thursday and Friday. Storm chances will remain across portions of south-central Arizona during this period but will mostly be focused across the higher terrain north and east of Phoenix.

&amp;&amp;

**.DISCUSSION...**

A look at the upper level pattern this afternoon reveals high pressure is currently moving over eastern Arizona and into New Mexico. This is acting to shift our steering flow to the southeast which is already allowing moisture from Mexico to stream into our area. The 12Z sounding from Phoenix today shows PWs are already up 0.5 inches from just 12 hours ago while the upper level 700 mb flow has shifted to the southeast.

There is excellent agreement between mesoscale models that deep convection will begin over southern AZ/northern Sonora this afternoon, aided by the increase in moisture, and then subsequently send an outflow boundary to the north towards Phoenix around 8 pm this evening. New convection could fire off on this outflow as it moves northwest but should also weaken as it does so. The reasoning here lies within the increasing CIN to the north with about 100 J/kg forecast around Phoenix this evening. Several runs from the HRRR model did show convection making it into Phoenix this evening, however, this model remains an outlier. So while storms are unlikely for the metro, they are certainly not out of the question.

A secondary wave of convection will quickly follow tonight associated with a shortwave rotating up through Mexico. Nearly all models show some activity overnight in south-central AZ, however, there are differences in timing and location. Some solutions point to weak overnight convection beginning as early as midnight to as late as 5-8 AM Tuesday morning. At this point, convection will most likely be centered over Maricopa County Tuesday morning but it is not out of the question for this area to shift a bit west or east as it rotates through. One thing to note is that moisture will be high, between 1.75 and 2.0 inches, so whatever

**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

does develop will be very efficient at producing heavy rain.

Although, the GFS shows the steering flow around 10 to 20 kts so flash flooding should remain isolated and not widespread.

Depending on how Tuesday morning plays out will largely influence what will happen in the afternoon. Several models show considerable cloudiness over our area from the morning through much of the afternoon. This will undoubtedly put a damper on afternoon convection with storms being confined to the higher elevations and locations that do clear out early enough.

The aforementioned upper level high will continue shifting eastward on Wednesday with our flow aloft turning solely out of the southwest. This will bring drier air into the region, but we should still have sufficient moisture for afternoon and evening storms mostly across the high terrain north and east of Phoenix. Similar conditions are seen for Thursday and Friday. Temperatures will remain fairly steady through the rest of the week as 500mb heights lower from 594dm on Wednesday to 588dm on Saturday. These lower heights are due to a developing Pacific low well off the California coast. Though it is around a week away, both the GFS and European show a more significant Pacific trough digging southeastward into the Pacific Northwest early next week. This will definitely be something to watch for the middle part of next week.

&&

.AVIATION...

South-Central Arizona including KPHX, KIWA, and KSDL:

As we transition back into a little more active storm regime, expect a chance of showers and storms in the region beginning tonight around 04Z and continuing on and off through Tuesday afternoon. Expect periodic episodes of gusty southwesterly to southeasterly outflow winds beginning tonight around 04Z with gusts of 20-28kt. Nighttime visibilities may also be temporarily reduced to 3-5sm in areas of blowing dust from the south, although not to the extent of including them in the TAFs. Expect BKN-OVC decks from 8-10kft on Tuesday morning near 15Z with thunderstorms in the vicinity. For this afternoon no impacts are expected with breezy westerly winds at 6-12kt gusting to 15-18kt. Otherwise skies will be partly cloudy FEW-SCT decks at 10-16kft and BKN high clouds near 20-25kft.

Southeast California/Southwest Arizona including KIPL and KBLH:

Expect moderate to very breezy southerly winds at KBLH near 10-15kt with gusts to 22-27kt through most of the period. The winds at KIPL will favor the southeast to south near 7-12kt. Skies will be mostly clear with FEW-SCT high clouds near 20kft.

Aviation Discussion not updated for amended TAFs.

&amp;&amp;

.FIRE WEATHER...

Wednesday through Sunday:

Ample moisture during the middle of this week will keep chances of thunderstorms elevated over the region, in addition to keeping minimum relative humidity values above 20 percent over the lower deserts of south central Arizona. Significant drying is expected over southeast California and possibly southwest Arizona for Thursday and beyond, with a reduction in convective activity

spreading further east later this week into the weekend aside from the higher terrain north and east of Phoenix. Wind speeds will be typical for mid-summer with the usual afternoon breezes aside from stronger winds with thunderstorm outflows. Temperatures will remain near to slightly below normal through the period.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

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DISCUSSION...Wilson/Kuhlman

AVIATION...Sawtelle

FIRE WEATHER...Hopper/Percha

# IOWA STATE UNIVERSITY

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FXUS65 KPSR 202118

AFDPSR

Area Forecast Discussion

National Weather Service Phoenix AZ

218 PM MST Mon Aug 20 2018

.UPDATE...Updated Fire Weather Discussion.

&amp;&amp;

.SYNOPSIS...

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**August 20, 2018 Exceptional Event, Imperial County****Appendix A**

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Aviation Discussion not updated for amended TAFs.

&&

.FIRE WEATHER...

Thursday through Monday :

As Monsoon conditions continue expect the best chances for thunderstorms to be focused over the high terrain areas north and east of Phoenix along with continued slight chances of storms over the lower deserts. Max temperatures are expected a little below normal through the period. Min RH values across SE CA will stay in the mid to upper teens and above or well above 20 percent elsewhere. Overnight recover will be fair across SE CA and good to excellent elsewhere. Expect typically breezy upslope winds each afternoon.

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.SPOTTER INFORMATION STATEMENT...

Spotters should follow standard reporting procedures.

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.PSR WATCHES/WARNINGS/ADVISORIES...

AZ...None.

CA...None.

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\$\$

DISCUSSION...Wilson/Kuhlman

AVIATION...Sawtelle

FIRE WEATHER...Sawtelle

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Weather Forecast Office

## Local Storm Report

- Go Back • Print Friendly • **Version: Latest** Older  • Font: A **A** A A •
- Turn Dictionary On •

NWUS55 KPSR 210112

LSRPSR

PRELIMINARY LOCAL STORM REPORT

NATIONAL WEATHER SERVICE PHOENIX AZ

612 PM MST MON AUG 20 2018

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	....MAG....	..COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			

0606 PM	DUST STORM	1 WNW SEELEY	32.79N 115.69W
08/20/2018		IMPERIAL	CA TRAINED SPOTTER

NEAR-ZERO VISIBILITY IN BLOWING DUST.

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JR



US Dept of Commerce  
 National Oceanic and Atmospheric Administration  
 National Weather Service  
 Phoenix Weather Forecast Office  
 P.O. Box 52025, Phoenix, AZ 85072  
 (602) 275-0073  
[w-psr.webmaster@noaa.gov](mailto:w-psr.webmaster@noaa.gov)

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WWUS55 KPSR 210121  
DSWPSR

Dust Advisory  
National Weather Service Phoenix AZ  
620 PM PDT Mon Aug 20 2018

CAC025-210200-  
/O.NEW.KPSR.DS.Y.0078.180821T0120Z-180821T0200Z/  
Imperial CA-  
620 PM PDT Mon Aug 20 2018

The National Weather Service in Phoenix has issued a

- \* Dust Advisory for...  
Southwestern Imperial County in southeastern California...
- \* Until 700 PM PDT.
- \* At 620 PM PDT, a wall of dust was along a line extending from  
Ocotillo to 9 miles northwest of Gordon's Well, moving north at 35  
mph.
- HAZARD...Less than three miles visibility with strong wind in  
excess of 40 mph.
- SOURCE...Doppler radar.
- IMPACT...Hazardous travel.
- \* This includes the following highways...  
CA Interstate 8 between mile markers 5 and 66.  
CA Route 78 between mile markers 1 and 39.  
CA Route 111 between mile markers 3 and 36.

Locations impacted include...  
El Centro, Brawley, Imperial, Plaster City, Ocotillo, Holtville,  
Westmorland, El Centro Naval Airfield, Ocotillo Wells, Calipatria,  
Coyote Wells, Alamo, Seeley, Wiest and Heber.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Blowing dust brings reduced visibility, leading to dangerous driving  
conditions. If driving, avoid blowing dust if possible. If caught in  
dense blowing dust, pull off the road, turn off your lights and keep  
your foot off the brake.

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LAT...LON 3312 11609 3312 11608 3318 11608 3319 11513  
3271 11504 3269 11610