



# ***DUST MITIGATION HANDBOOK***

March 5, 2019

Annual Dust Storm Conference  
Central Arizona College

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Hubs



First...

Some news



# Colorado River Drought Contingency Plan

- Known as the DCP
- Seven states and Mexico are participating in the plan
- Each state has their own plan on how Colorado River water will be distributed as water shortages are realized
- The first level of water shortage is when the elevation of Lake Mead is below 1075' on Jan. 1

# DCP

- Projected that even with latest storms, Lake Mead will fall below 1075' January 1, 2020
- Lowest priority rights for CAP water will be suspended
- Pinal County Irrigation Districts will be affected
- 35 to 40% of cropland will lay fallow (not planted to crops)

More likelihood of localized dust storms and PM10 non-attainment

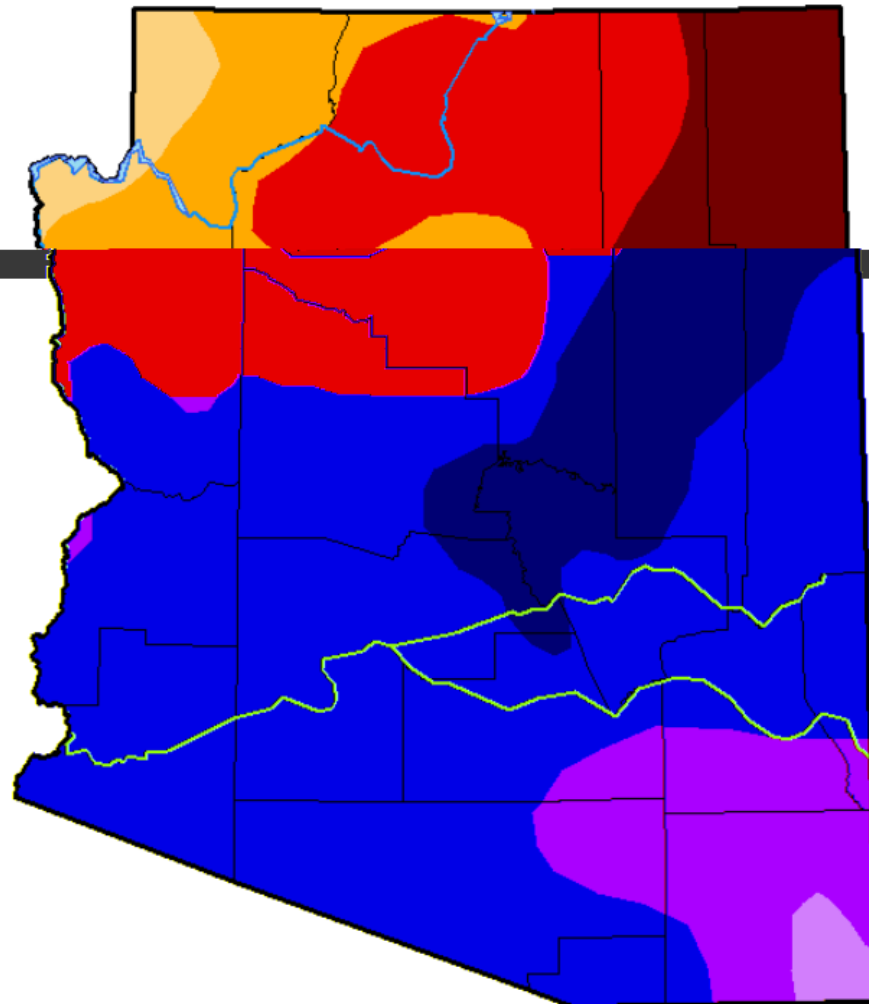


## More news...

- Vast areas of Arizona went to D3 and D4 on the National Drought Monitor
- D4 areas existed in Arizona from April 10, 2018 until mid-January 2019

# U.S. Drought Monitor Arizona

**July 10, 2018**  
(Released Thursday, Jul. 12, 2018)  
Valid 8 a.m. EDT



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.00	100.00	100.00	97.05	73.62	15.71
<b>Last Week</b> <i>07-03-2018</i>	0.00	100.00	100.00	97.05	73.62	15.71
<b>3 Months Ago</b> <i>04-10-2018</i>	0.00	100.00	100.00	92.63	47.56	3.98
<b>Start of Calendar Year</b> <i>01-02-2018</i>	0.00	100.00	100.00	28.66	0.00	0.00
<b>Start of Water Year</b> <i>09-26-2017</i>	45.38	54.62	10.69	0.00	0.00	0.00
<b>One Year Ago</b> <i>07-11-2017</i>	35.55	64.45	29.87	0.23	0.00	0.00

*Intensity:*

- D0 Abnormally Dry
- D3 Extreme Drought
- D1 Moderate Drought
- D4 Exceptional Drought
- D2 Severe Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

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<http://droughtmonitor.unl.edu/>





## And more...

- Research conducted on the Jornada Experimental Range in New Mexico shows temperature increases and higher precipitation variability both increase shrub production over grasses. (Gheradi, L. and Sala, O.E., 2015)
- Marginal grasslands may convert to shrublands and reference grasslands may see more shrub invasion.
- Grasslands offer more protection of the soil surface to wind and water erosion.

# Announcing USDA's One-Stop Shop Handbook (web page) on Wind Erosion

- Hosted and sponsored by SW and SP Climate Hubs
- Combination of USDA's efforts in wind erosion control
- Agency Consideration from NRCS, Climate Hubs, FSA, ARS, RMA, others?

# Wind Erosion Handbook

- Hazards and concerns of airborne particulates
- Understanding Wind Erosion
  - Climate, Wind Events, Soil Movement
- Modeling and predicting wind erosion
- Measuring airborne particulates
- Conservation Planning & Resource Concerns
- Controlling wind erosion
  - Cropland, Rangeland, Pastureland, unpaved surfaces
- USDA Programs to address wind erosion
- Glossary of Terms

# Wind Erosion (Dust) Mitigation

- Active Cropland
- Temporarily abandoned/fallow cropland
- Permanently abandoned cropland
- Range and pastureland
- Non-paved surfaces (feedlots, roads, farmsteads)

# Conservation Practices

- Complete list of practices can be found on the NRCS Field Office Technical Guide (FOTG)
- Definition and basic implementation guidelines are described in the Practice Standard
- Detailed site-specific installation instructions are developed as a practice specification.

# Wind Erosion Mitigation Cropland

- Vegetative Barrier 601
- Surface Roughening 609
- Stripcropping 585
- Residue and Tillage Management, No-till-329
- Residue and Tillage Management, Reduced Till 345
- Multi-Story Cropping 379
- Mulching 484
- Herbaceous Wind Barriers 603
- Hedgerow Planting 422
- Field Operations Emissions Reduction 376
- Field Border 386
- Cross Wind Trap Strips 589C
- Cross Wind Ridges 588
- Cover Crop 340
- Conservation Crop Rotation 328
- Conservation Cover 327
- Amending Soil Properties with Gypsum Products 333
- Alley Cropping 311
- Windbreak

# Wind Erosion Mitigation Rangeland

- Watering Facility 614
- Water Well 642
- Trails and Walkways 575
- Road/Trail/Landing Closure and Treatment 654
- Riparian Herbaceous Cover 390
- Riparian Forest Buffer 391
- Restoration and Management of Rare or Declining Habitats 643
- Recreation Area Improvement 562
- Range Planting 550
- Prescribed Grazing 528
- Prescribed Burning 338
- Mulching 484
- Land Reclamation, Landslide Treatment 453
- Integrated Pest Management 595
- Herbaceous Weed Control 315
- Heavy Use Area Protection 561
- Grazing Land Mechanical Treatment 548
- Critical Area Planting 342
- Brush Management 314
- Access Control 472
- Critical Area Planting 342



# Questions?

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