ESHID-602485

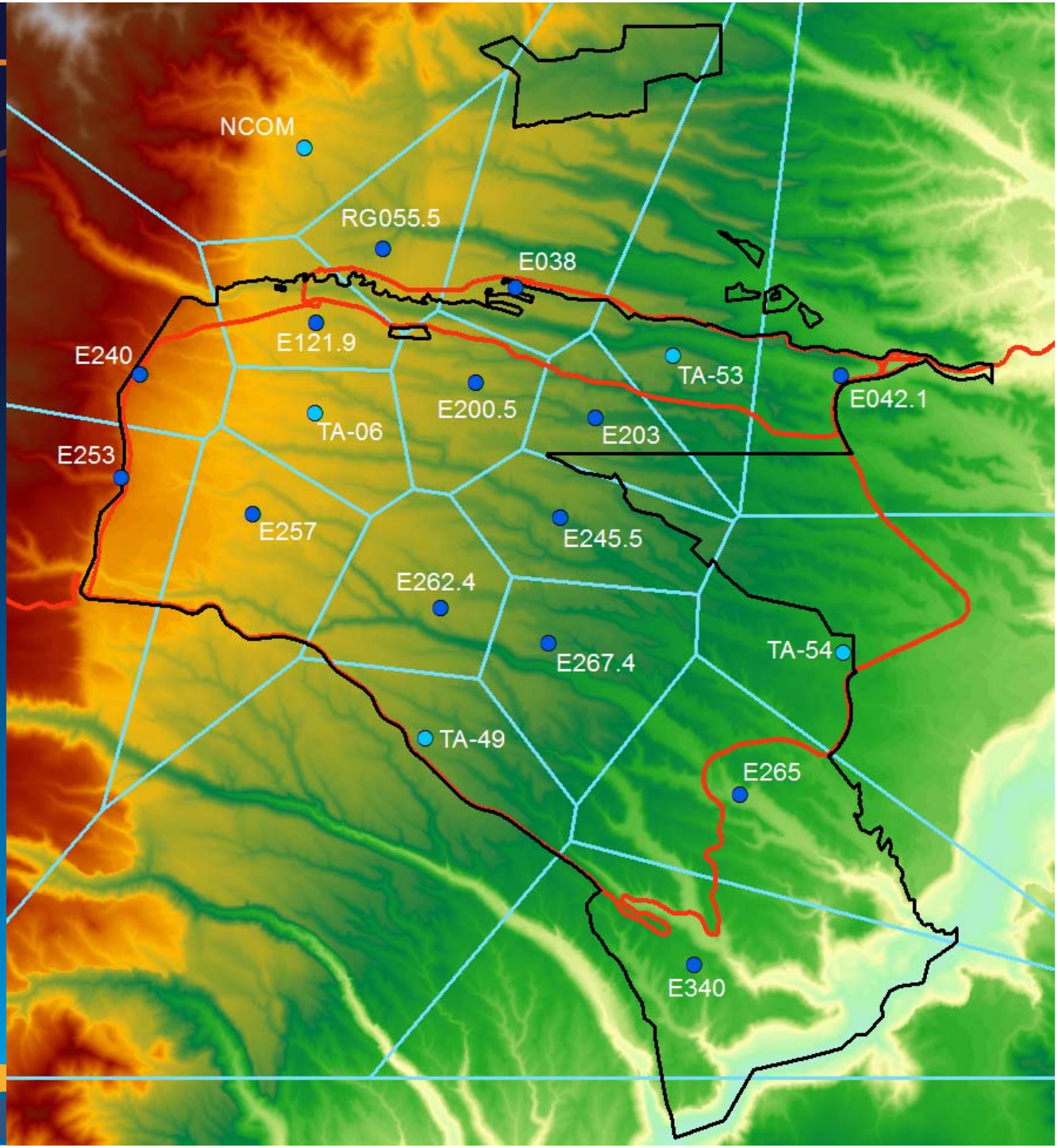
Los Alamos NATIONAL LABORATORY EST.1943

Precipitation Network and 2016 Monitoring Year

Amanda White

LA-UR-17-24959

Summer Precipitation Network



Legend

- Met Towers
- Extended Network
- LANL Boundary
- Major Roads
- Summer Theissen Polygons
- Elevation

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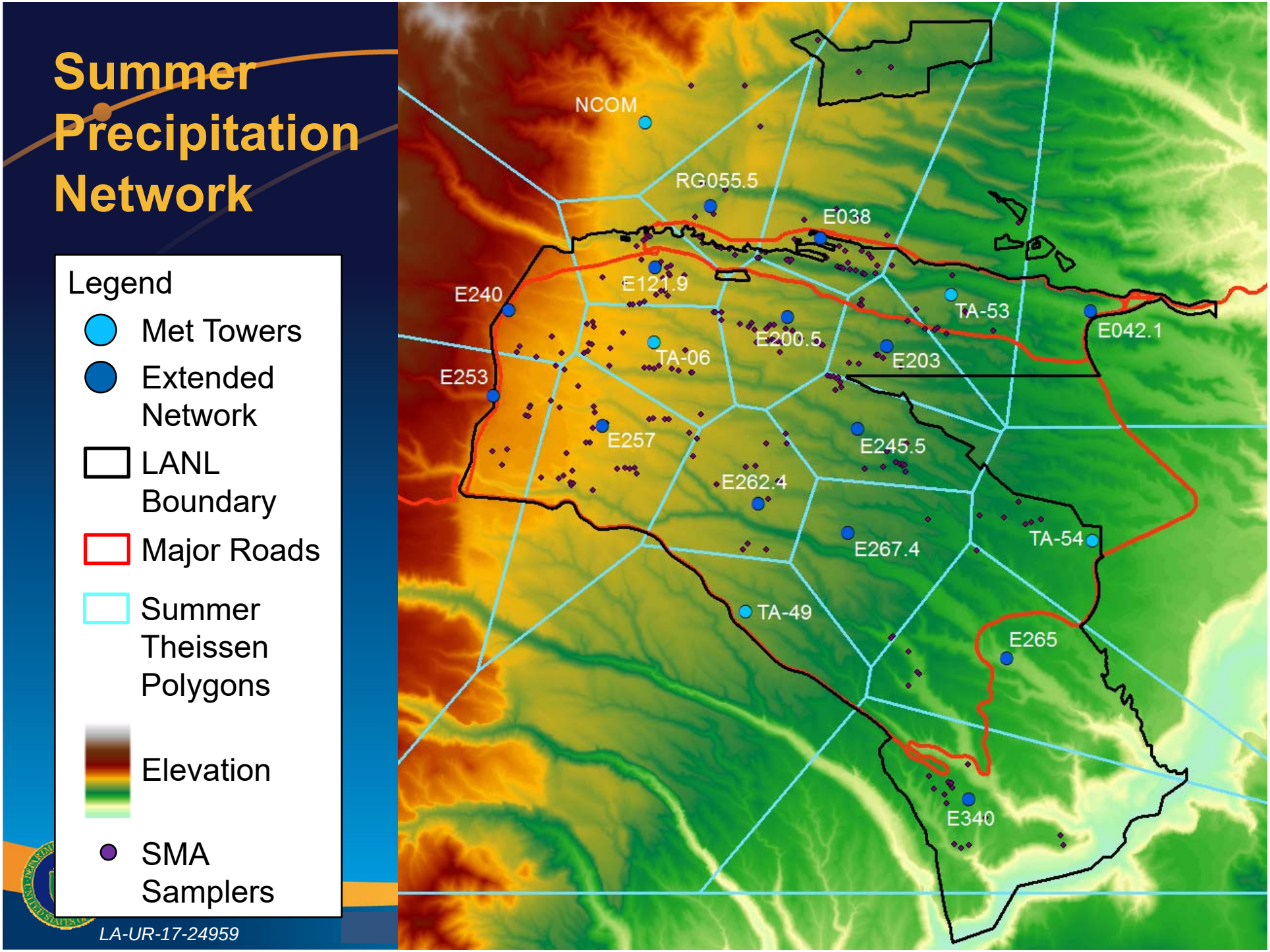
Summer Precipitation Network



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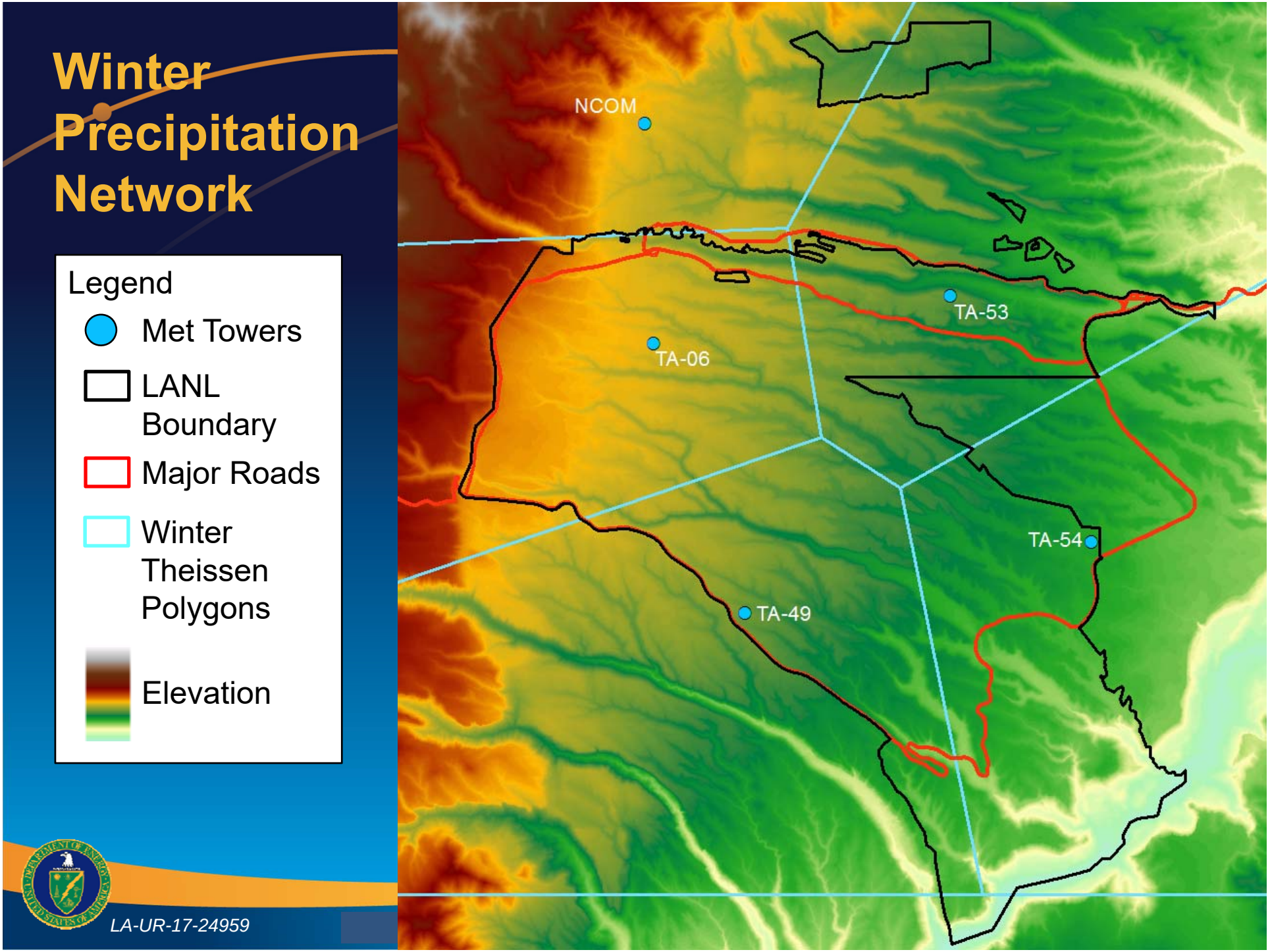
Winter Precipitation Network



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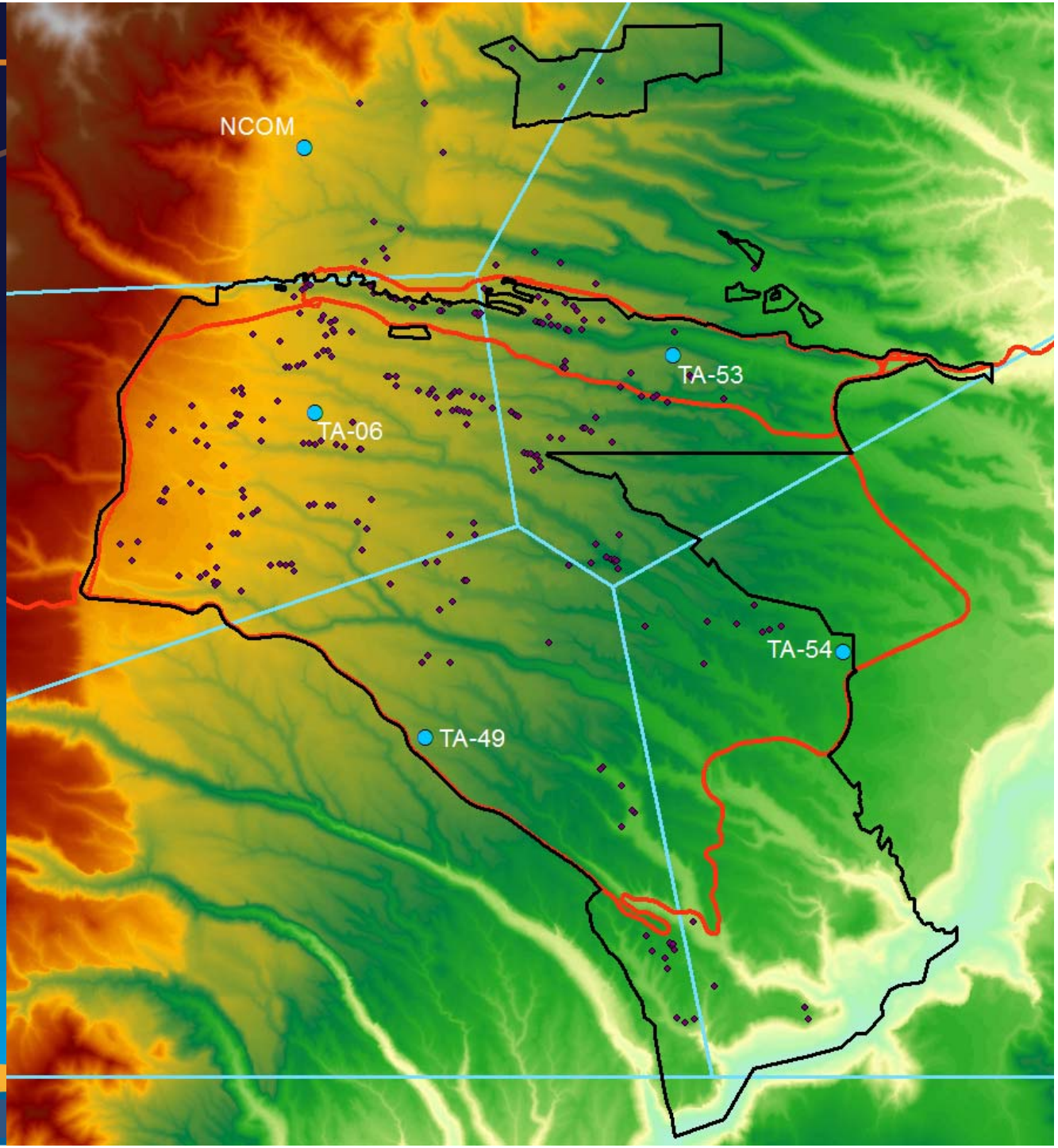
Winter Precipitation Network



Legend

- Met Towers
- LANL Boundary
- Major Roads
- Winter Theissen Polygons
- Elevation
- SMA Samplers

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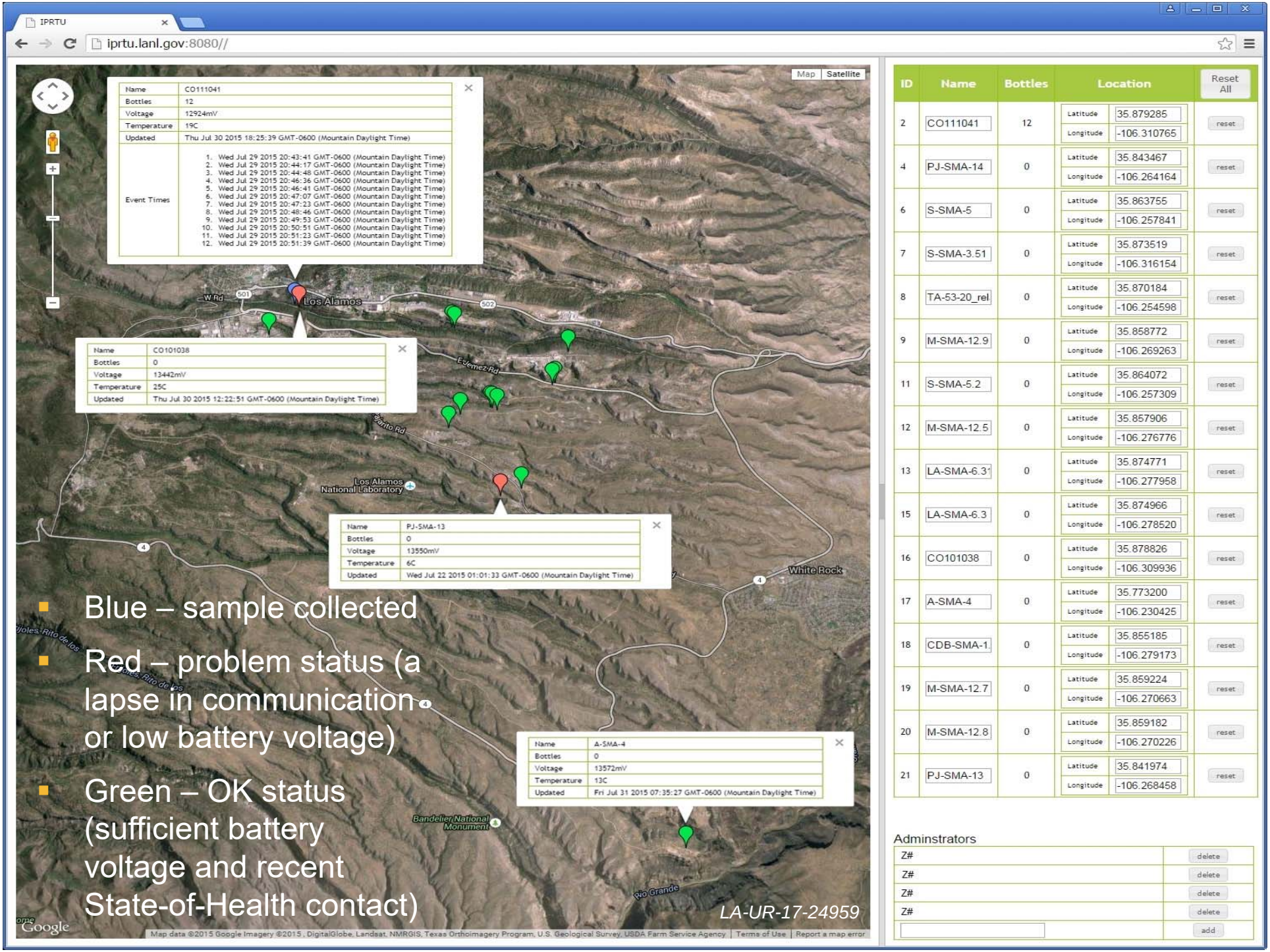

- Blue – sample collected
- Red – problem status (a lapse in communication or low battery voltage)
- Green – OK status (sufficient battery voltage and recent State-of-Health contact)

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ID	Name	Bottles	Location		Reset All
2	CO111041	12	Latitude	35.879285	reset
			Longitude	-106.310765	
4	PJ-SMA-14	0	Latitude	35.843467	reset
			Longitude	-106.264164	
6	S-SMA-5	0	Latitude	35.863755	reset
			Longitude	-106.257841	
7	S-SMA-3.51	0	Latitude	35.873519	reset
			Longitude	-106.316154	
8	TA-53-20_rel	0	Latitude	35.870184	reset
			Longitude	-106.254598	
9	M-SMA-12.9	0	Latitude	35.858772	reset
			Longitude	-106.269263	
11	S-SMA-5.2	0	Latitude	35.864072	reset
			Longitude	-106.257309	
12	M-SMA-12.5	0	Latitude	35.857906	reset
			Longitude	-106.276776	
13	LA-SMA-6.31	0	Latitude	35.874771	reset
			Longitude	-106.277958	
15	LA-SMA-6.3	0	Latitude	35.874966	reset
			Longitude	-106.278520	
16	CO101038	0	Latitude	35.878826	reset
			Longitude	-106.309936	
17	A-SMA-4	0	Latitude	35.773200	reset
			Longitude	-106.230425	
18	CDB-SMA-1	0	Latitude	35.855185	reset
			Longitude	-106.279173	
19	M-SMA-12.7	0	Latitude	35.859224	reset
			Longitude	-106.270663	
20	M-SMA-12.8	0	Latitude	35.859182	reset
			Longitude	-106.270226	
21	PJ-SMA-13	0	Latitude	35.841974	reset
			Longitude	-106.268458	

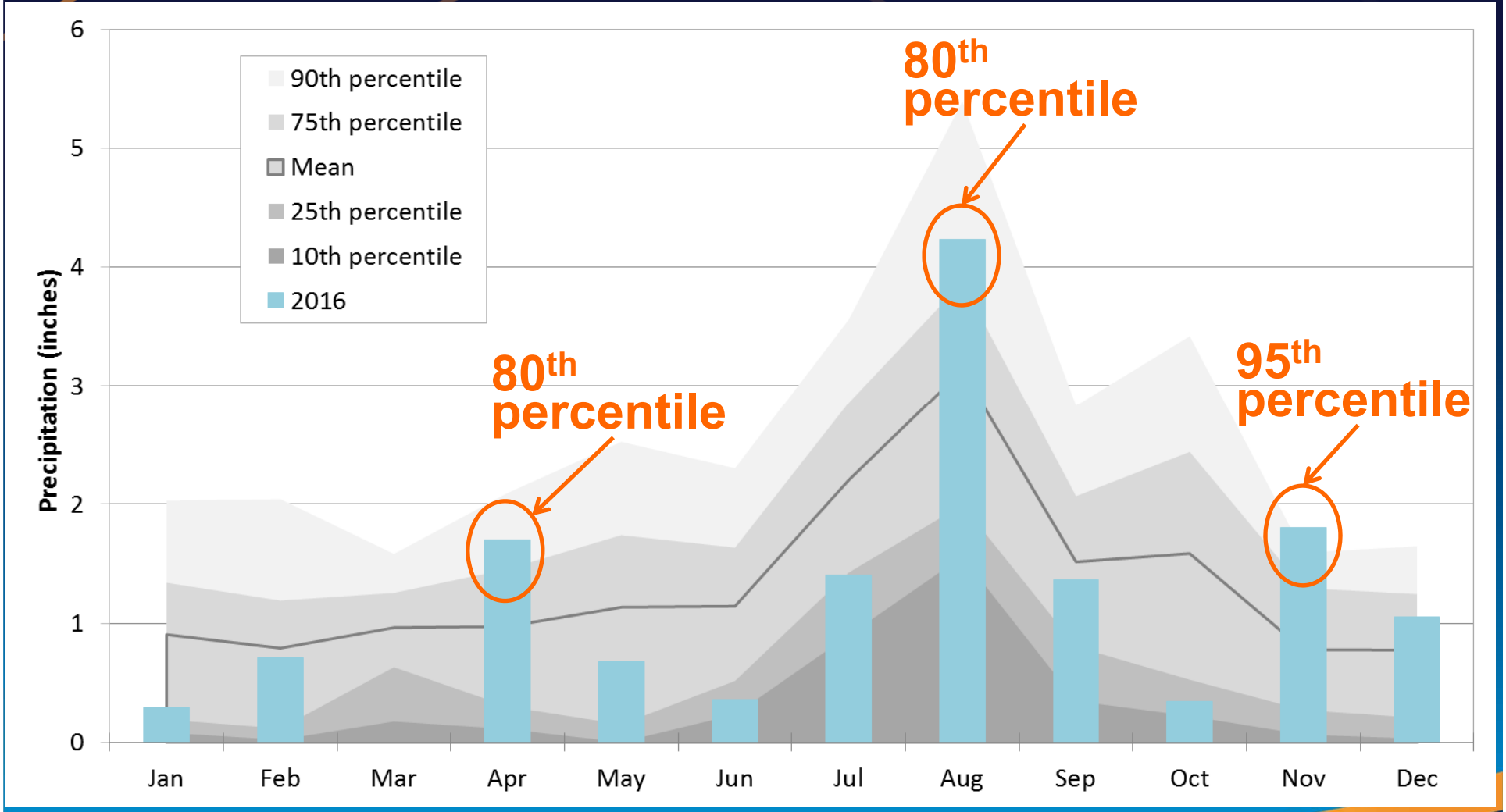
Adminstrators

Z#	delete
Z#	delete
Z#	delete
Z#	delete
	add

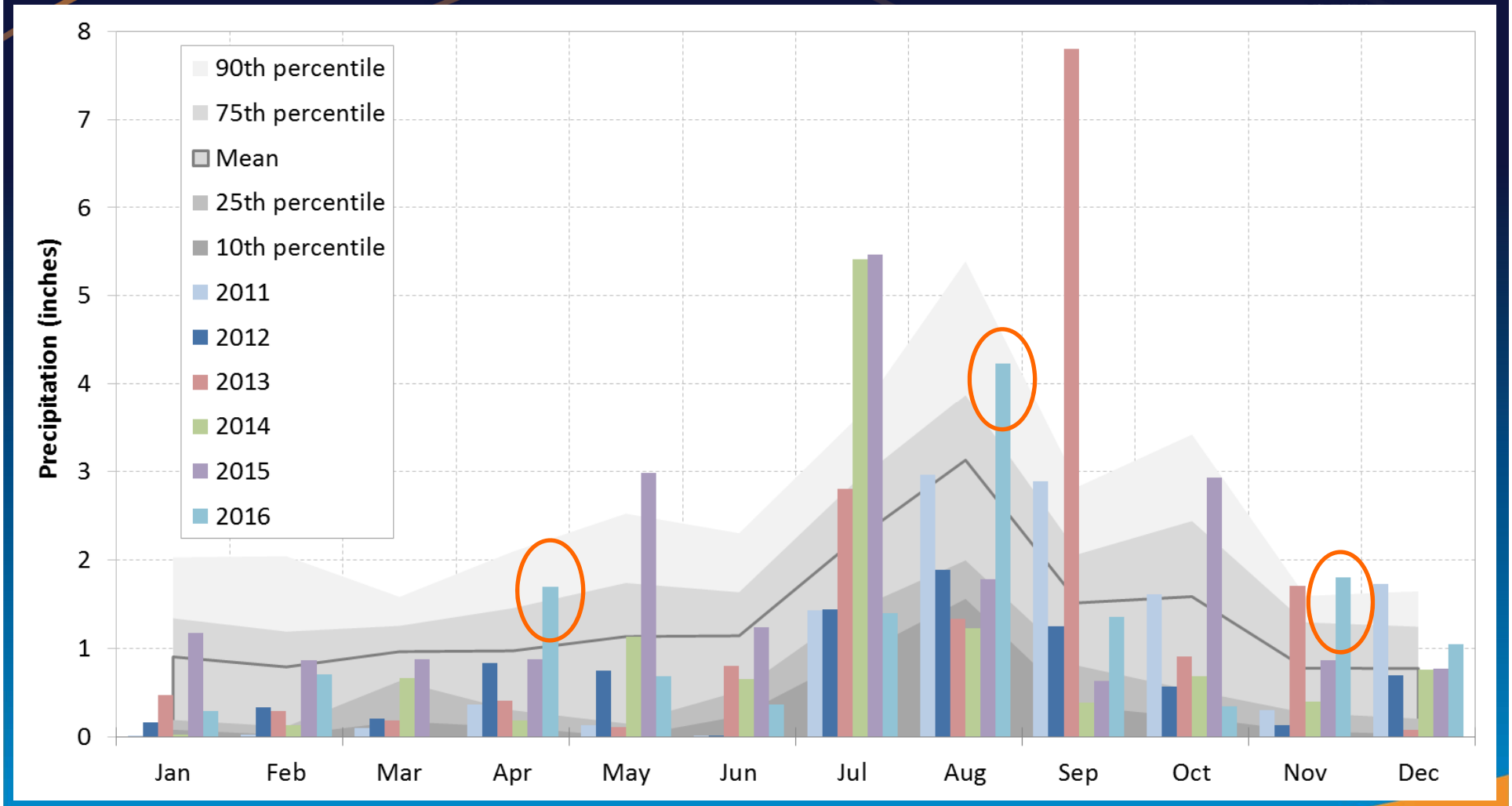
Remote Telemetry Units (RTUs)

- Currently
  - 65 locations
  - Upgrading hardware and software
- Future
  - 100+ locations by end of monitoring year
  - Determine cause of false alarms
  - Refine programming such that network can heal mostly on its own

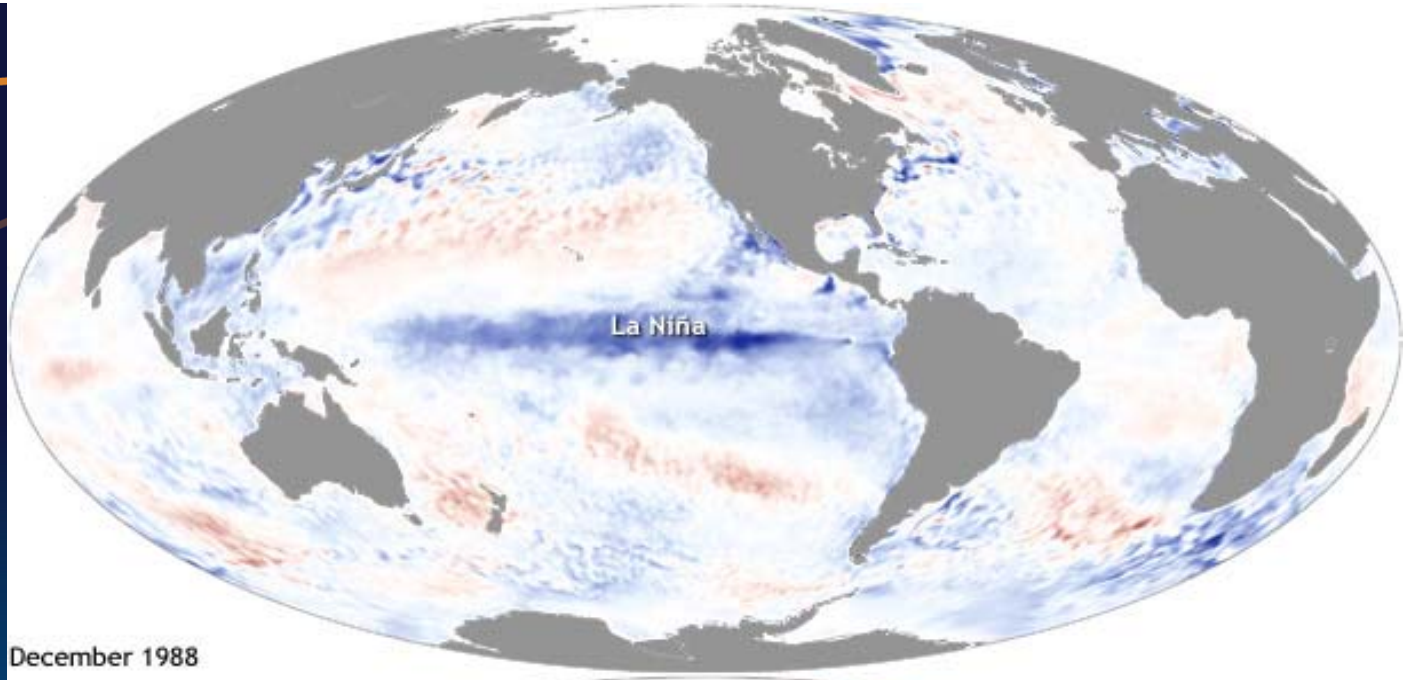
2016 Monitoring Year



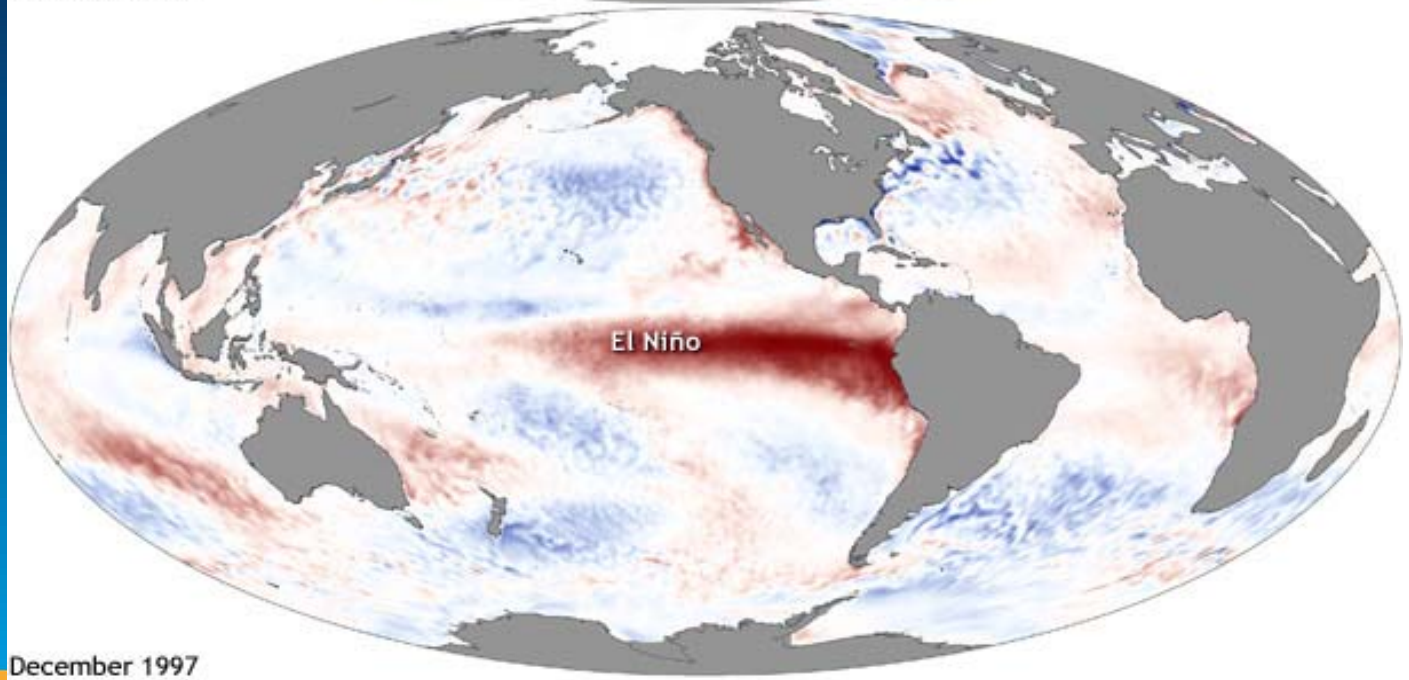
2016 Compared to Past Years



ENSO (El Niño Southern Oscillation)



December 1988



December 1997

Difference from average temperature (°F)

-9 0 9

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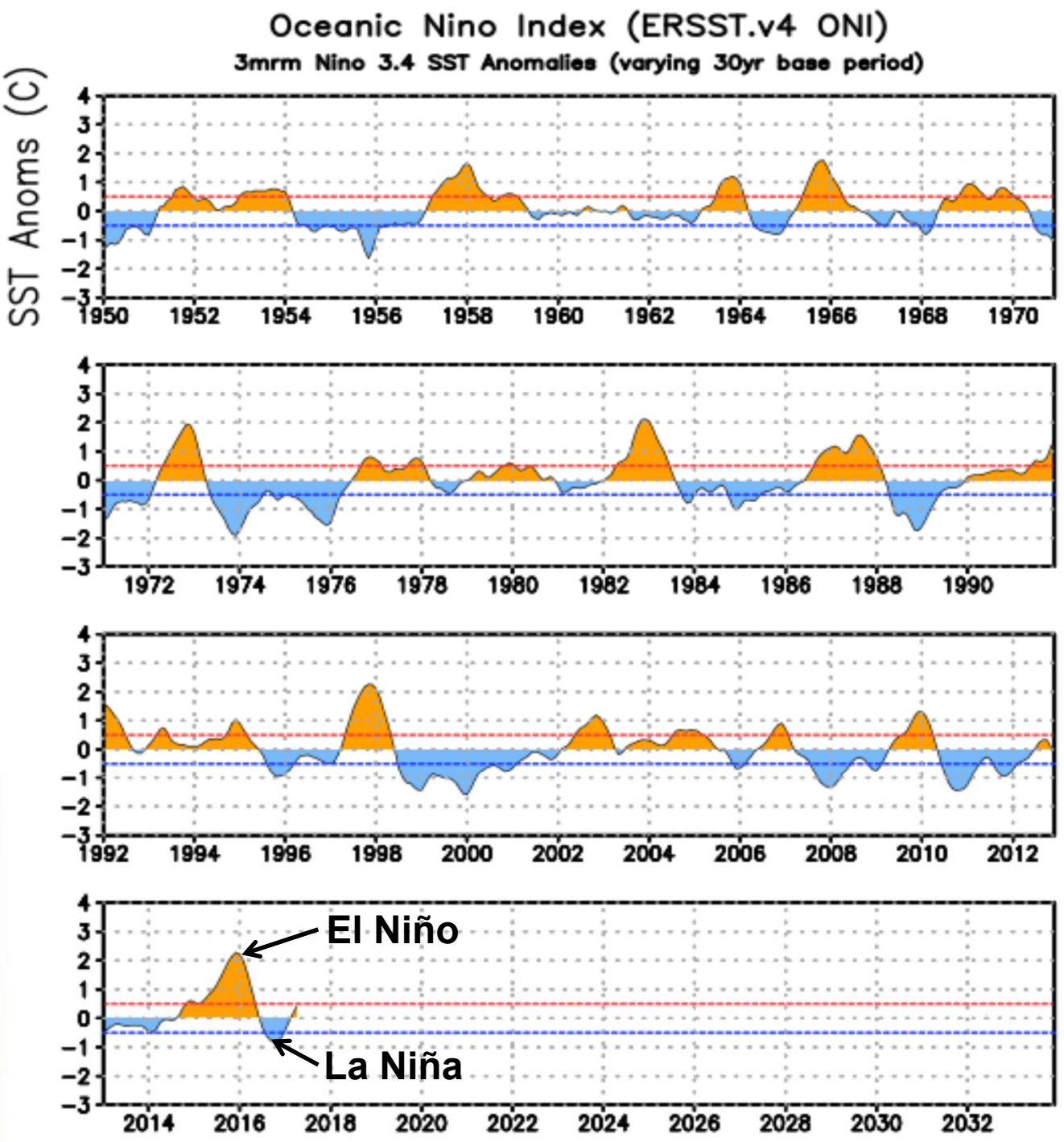
2016 ENSO Conditions

*Anomalies are computed with respect to the 1981-2010 averages by NOAA Climate Prediction Center



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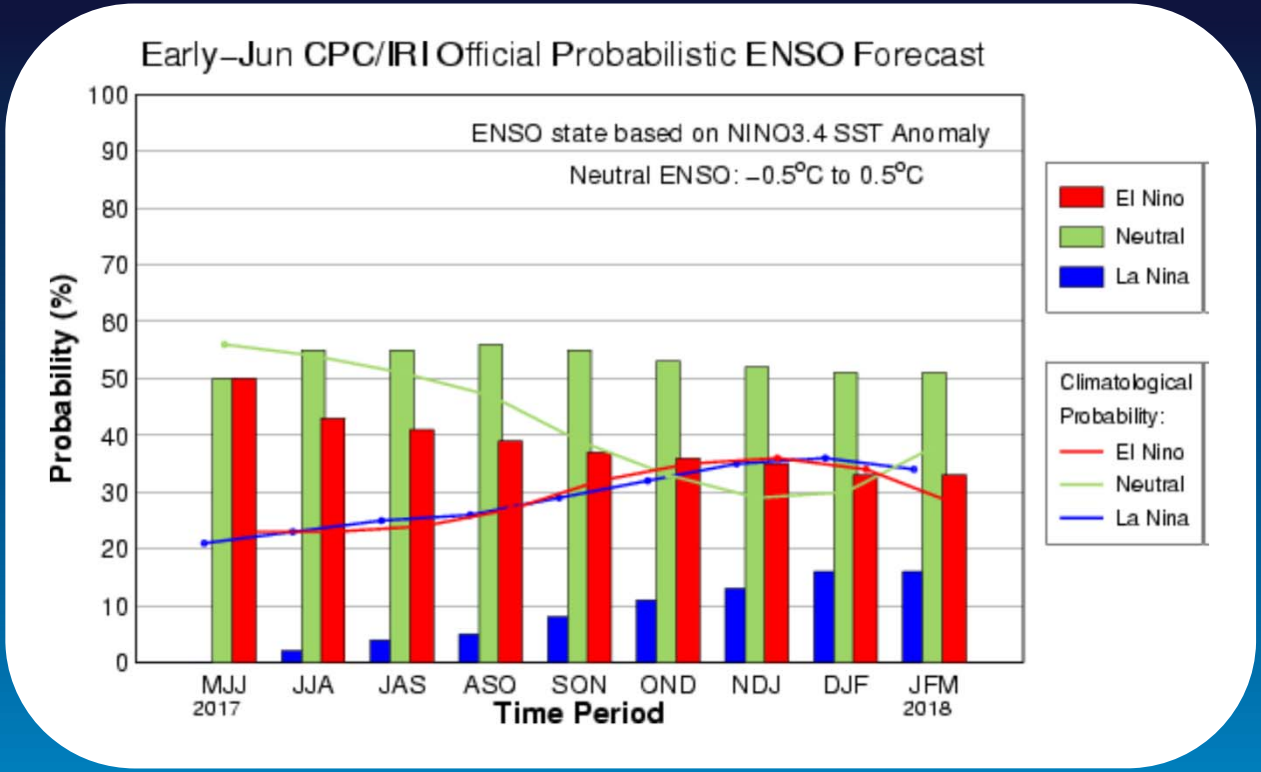
Current ENSO Conditions

ENSO-neutral is favored (~50 to 55% chance) through the Northern Hemisphere fall 2017, with diminishing chances for El Niño through 2017.



*Anomalies are computed with respect to the 1981-2010 averages by NOAA Climate Prediction Center

U.S. Seasonal Outlooks

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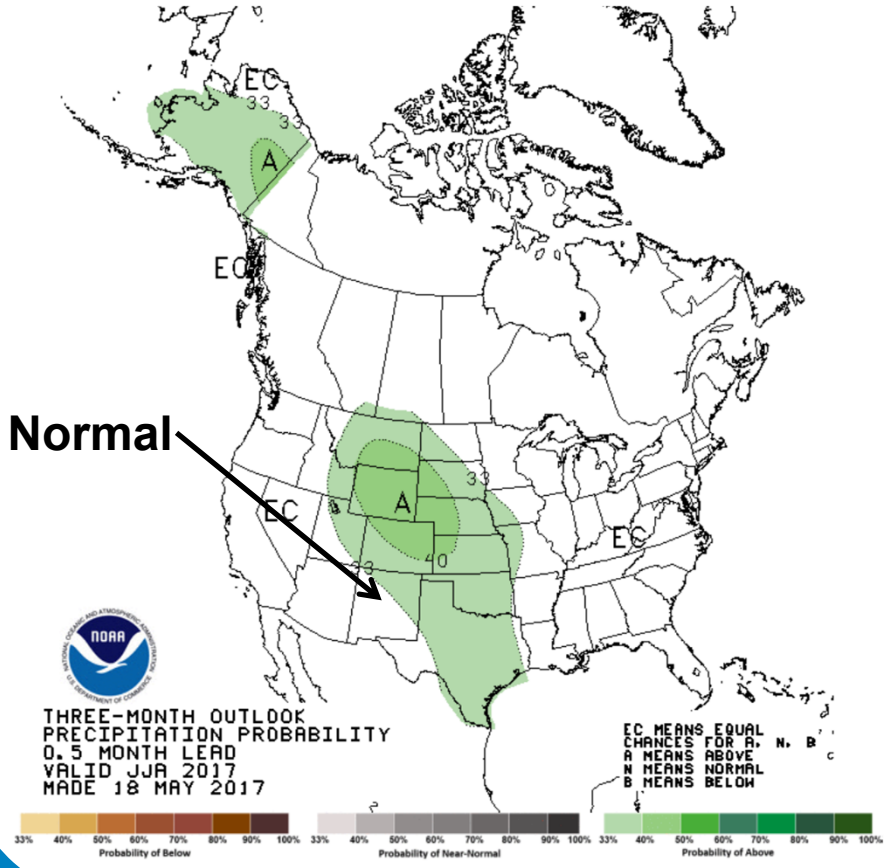
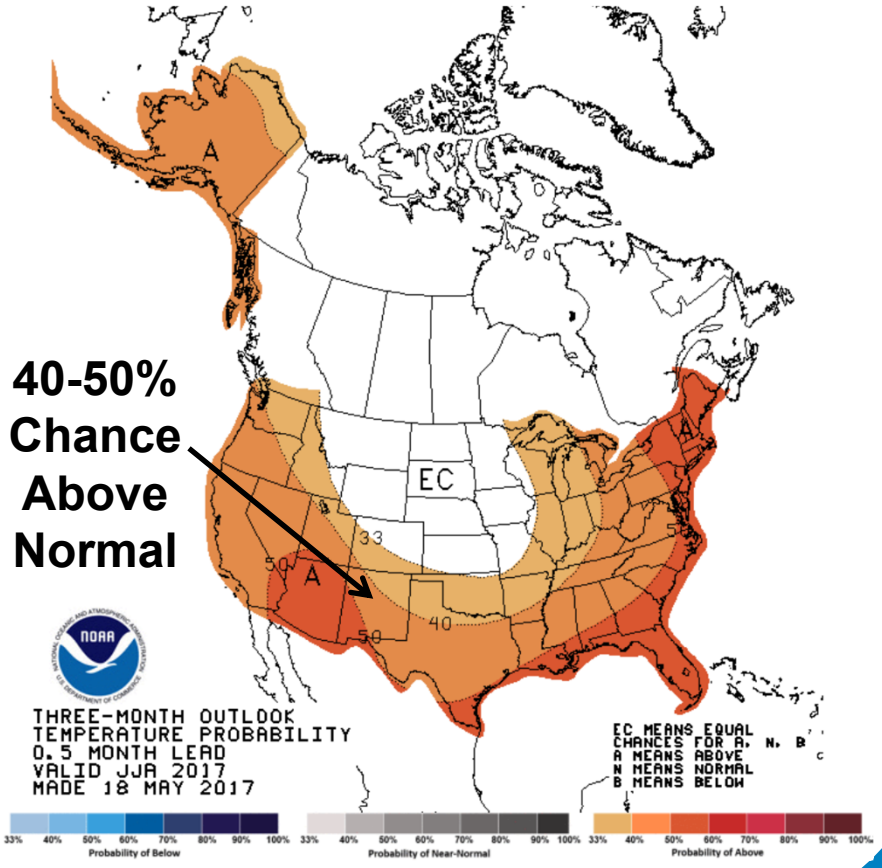
Precipitation

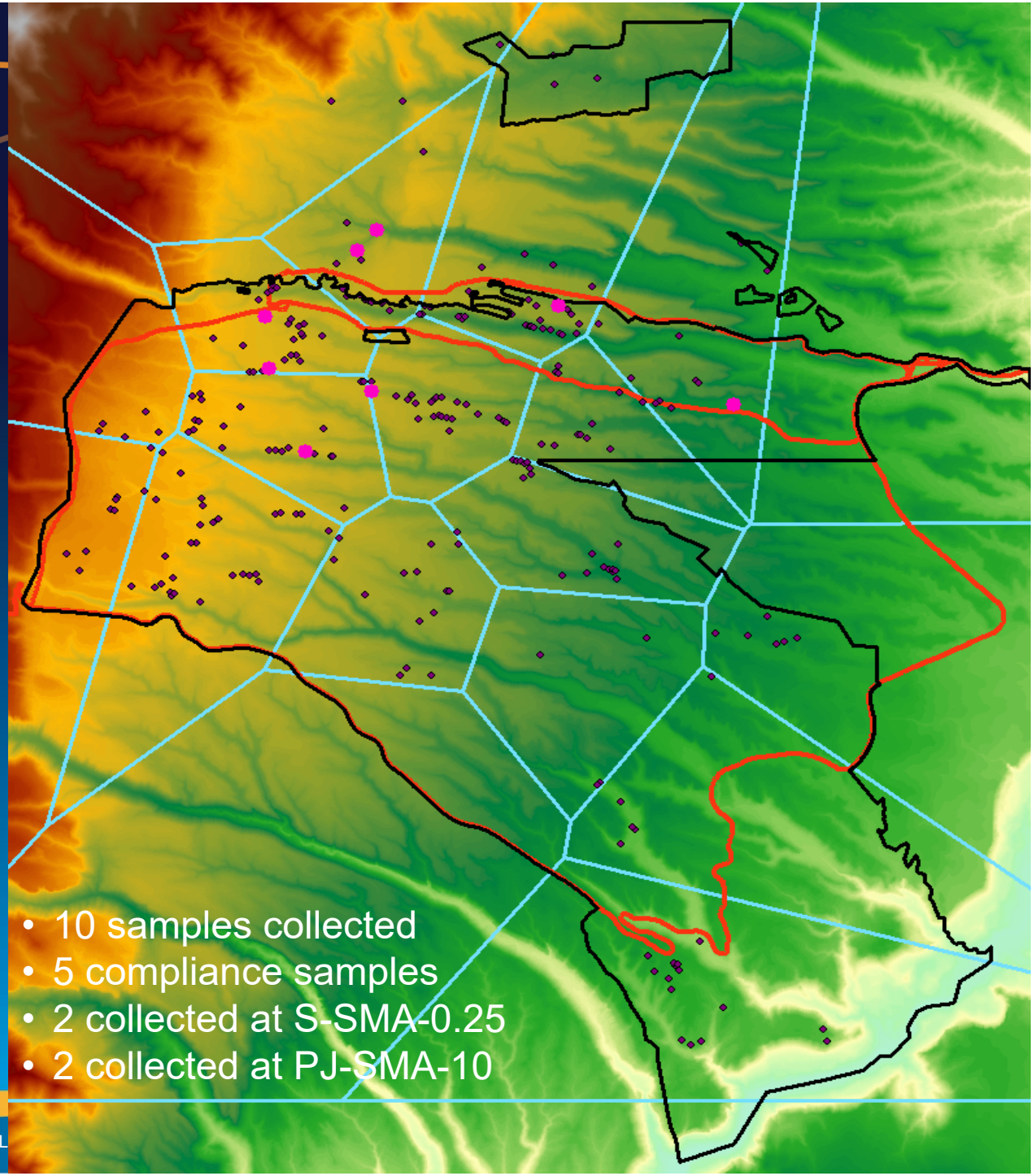


Temperature



*NOAA Climate Prediction Center

IP Samples Collected in 2016



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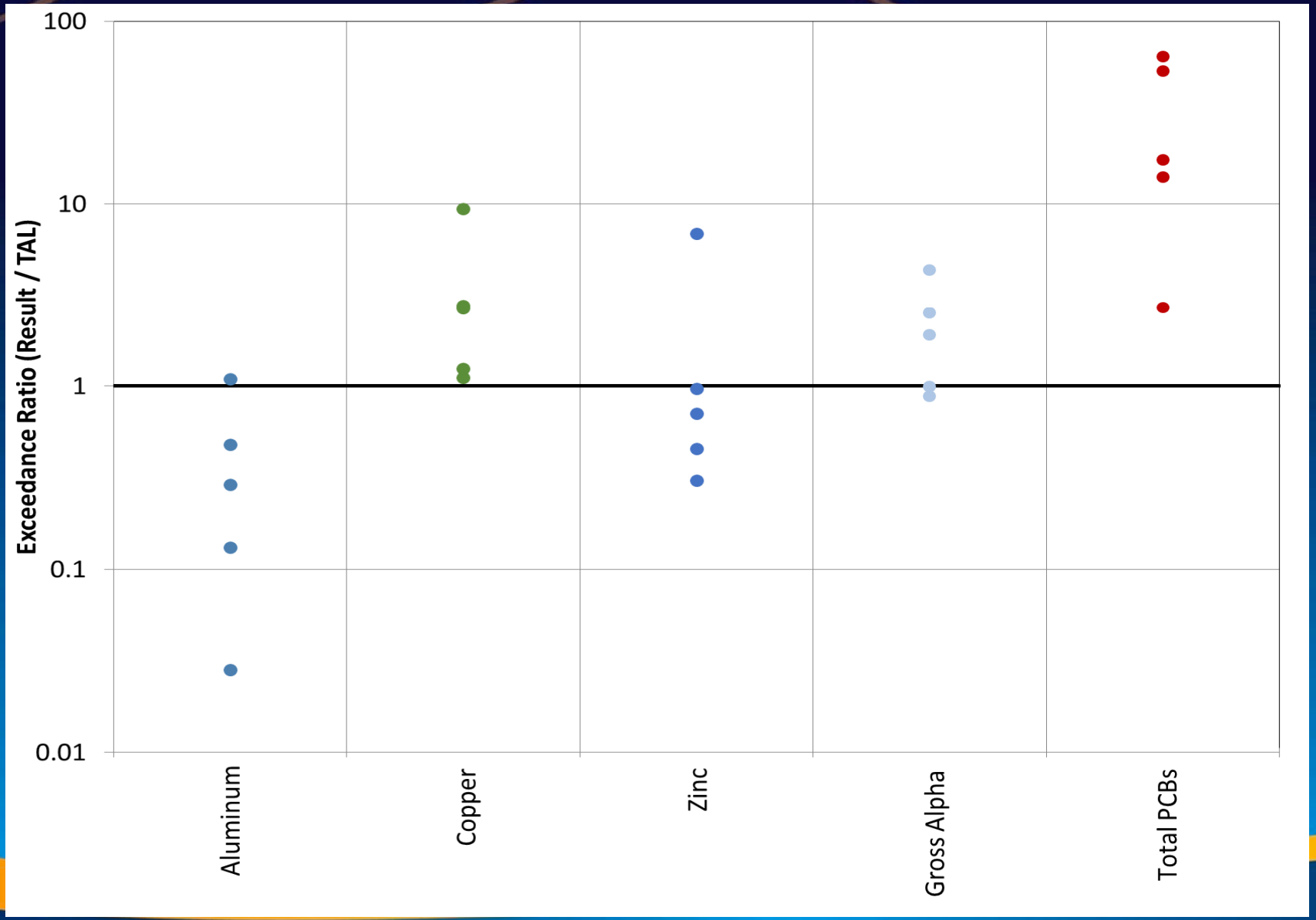
IP Results from 2016



IP Results from 2016

- Aluminum and gross alpha – associated with local geology
- Copper and zinc – associated with urban areas
- PCBs – associated with humans (in the atmosphere, precipitation, and runoff)