



Estimated likelihood of drought termination in the PacNW

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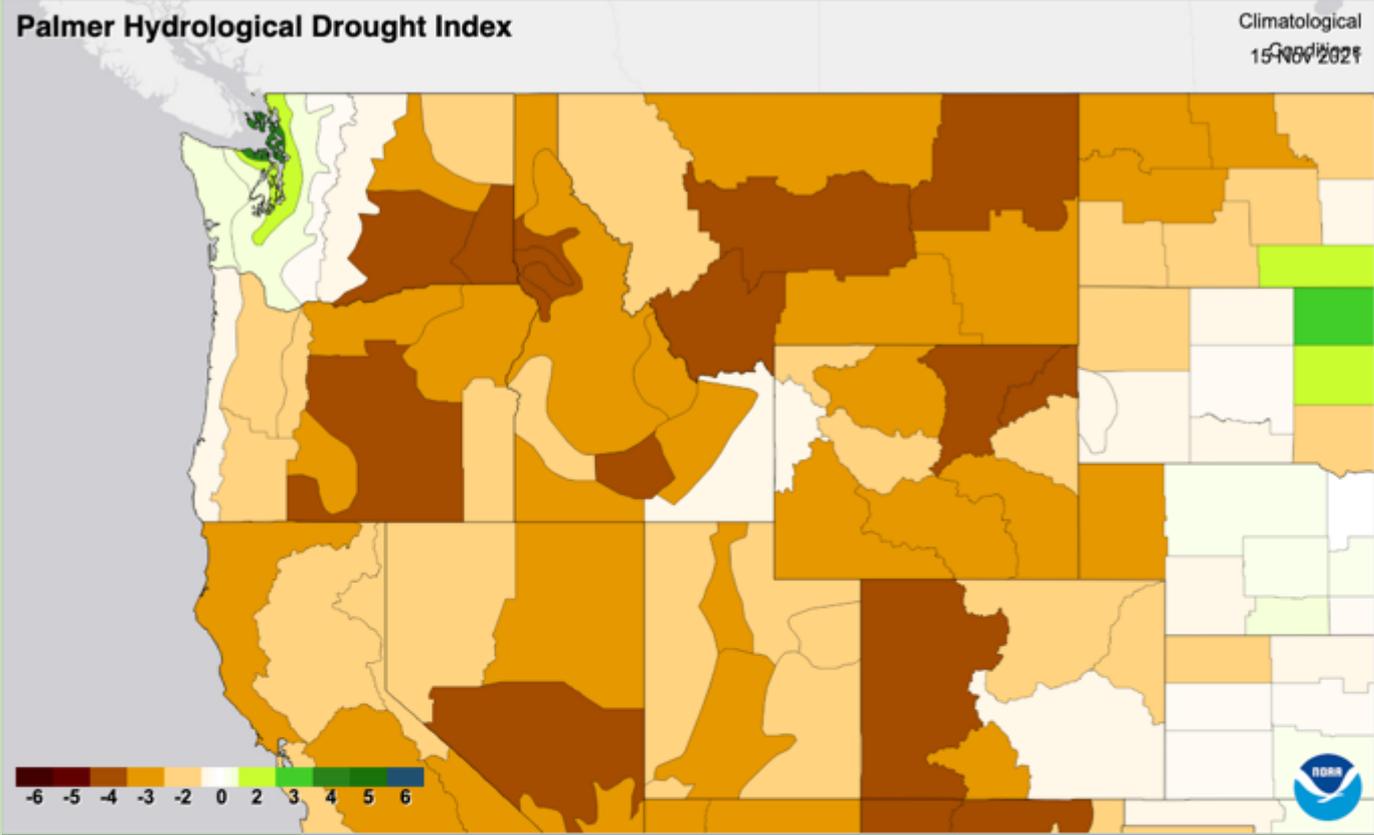
Oregon Climate Services

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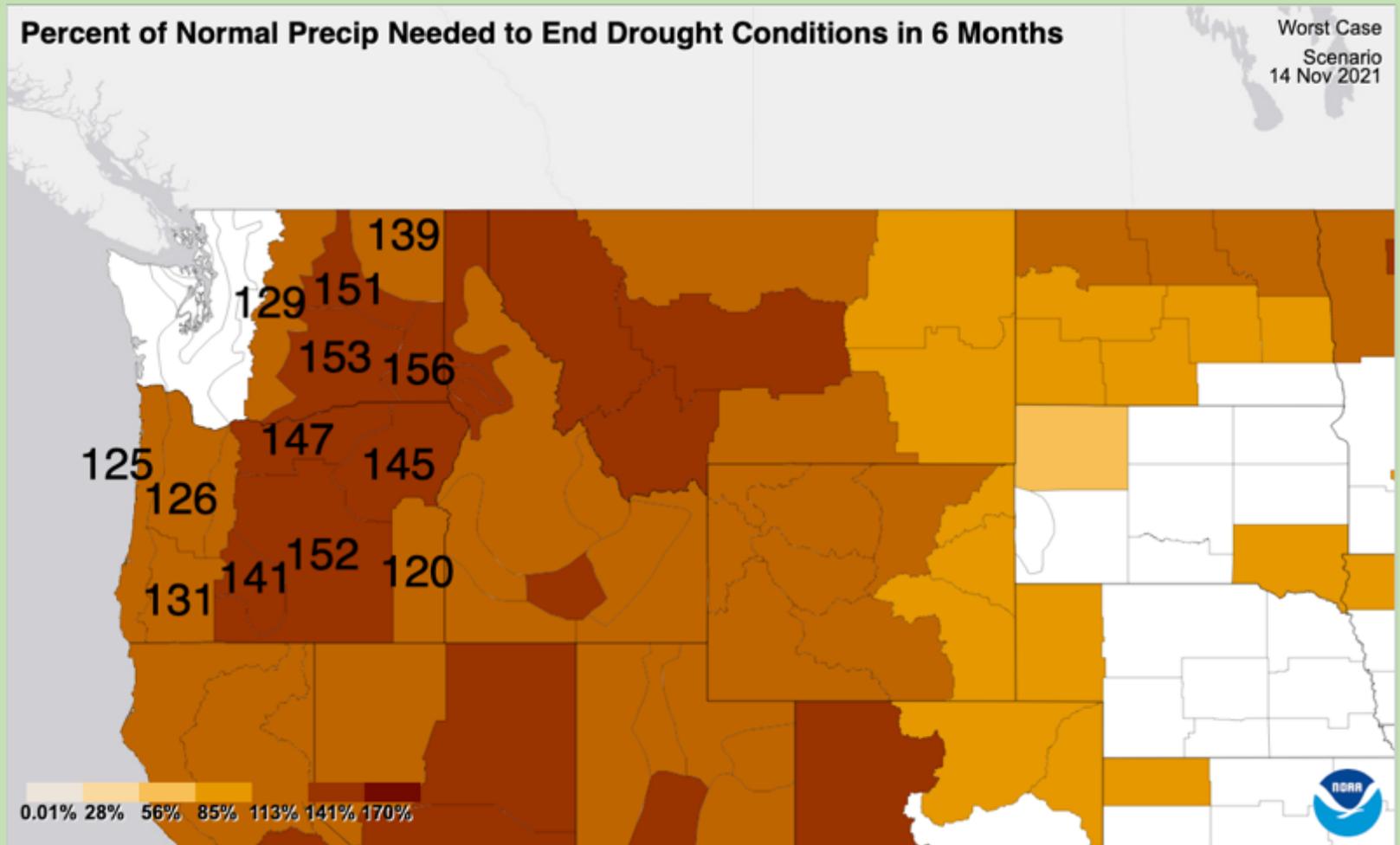
Estimating drought recovery

- We can estimate drought recovery using the recovery of a drought metric which accounts for precipitation and evapotranspiration
 - The Palmer Hydrological Drought Index (PHDI)
- The PHDI is like the PDSI, but considers longer term dryness signals
- PHDI computed only from precipitation and temperature
- PHDI and PDSI one of several indices considered in the US Drought Monitor
- Does not account for snowpack or other indicators of hydrological drought (such as streamflows, groundwater, reservoir levels, etc)
- The estimates I'm about to show are rough estimates based only on precipitation and on scenarios of average temperature
 - Uses the NOAA/NCEI Drought Termination and Amelioration tool and WRCC Climate Outlook Likelihood tool

Current PHDI



These are percentages of average precipitation needed in the next 6 months to recover the PHDI to normal range



City	% Precipitation needed to raise PHDI to -0.5 by Apr 15, 2022	Avg Precipitation for Nov 15-Apr 15	Precipitation needed for Nov 15-Apr 15	% chance of occurrence in the historical precipitation record
Salem, OR	126%	25.29"	31.61"	23%
Medford, OR	131%	10.81"	14.16"	29%
Burns, OR	152%	5.16"	7.84"	22%
Bend, OR	152%	7.64"	11.61"	6%
Enterprise, OR	145%	8.32"	12.06"	4%
Pendleton, OR	147%	8.44"	12.41"	<1%
Yakima, WA	153%	4.62"	7.07"	10%
Spokane, WA	153%	10.29"	15.74"	<1%
Kennewick, WA	153%	4.38"	6.70"	6%

Drought recovery not likely anywhere in the next 6 months by this metric, and even less likely in eastern WA and OR

How to interpret these numbers?

- These numbers should be considered the bare minimum precipitation needed to possibly recover from the drought
 - Use cautiously!
- Summer drought in snowmelt dominated basins strongly dependent on snowpack amount and timing of meltout
- Our multi-year drought has created large deficits in groundwater which will almost certainly not recover with these precipitation amounts
- What is the use of this?
 - It does temper our expectations for what drought recovery reasonably looks like
 - Many people tend to overweight short term precipitation events in assessing drought