Summer 2021 Outlook
Winter 2021-22 Preview

MARK O’MALLEY
NATIONAL WEATHER SERVICE
PHOENIX, AZ
WWW.WEATHER.GOV/PHOENIX
New Normals (1991-2020)

U.S. Annual Precipitation Compared to 20th-Century Average

Difference from average (%)

-10 -5 0 5 10

30-year Normal compared to 1901-2000

NOAA Climate.gov
Data: NCEI
Outlook: Jul/Aug/Sep 2021

Better odds for above normal temperatures
Recent Monsoon Rainfall following Weak-Moderate La Niña Winters
(Jul-Sep Percent Avg Precipitation)

2001

2006

2009

2012

2017

2018
Outlook: Jul/Aug/Sep 2021

Red dots = Monsoon following Weak-MDT La Niña

Three-month averages
Slightly better odds of above average precipitation
El Niño/La Niña Outlook – May 2021

Early–June 2020 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C

- La Niña Forecast Probability
- Neutral Forecast Probability
- El Niño Forecast Probability
- La Niña Climatology
- Neutral Climatology
- El Niño Climatology

Season

Probability (%)
Outlook: Jan/Feb/Mar 2022

- Three-month averages
  - Shading indicates chances of above or below normal

Better odds for above normal temperatures

No notable tilt in odds in precipitation outcome
Summary

• Odds favor a warmer than average summer based on model output, but especially trends over the past 20 years

• A slight push in odds towards a wetter monsoon exists, but randomness of thunderstorms will probably still result in some communities falling below average

• Best case: monsoon would help resolve soil moisture deficits and contribute to inflow/side flow into regional reservoirs

• ~40% chance of La Niña redeveloping fall/winter 2021-22 with ~40% chance of ENSO neutral

• If La Niña does reemerge, drier conditions would be likely again next winter

Special Thanks to Nancy Selover for contributions as MTC co-chair and ICG member serving the people of Arizona