



NOAA Atlas 14 Addendum



Precipitation-Frequency Atlas of the United States

Volume 1 Version 5.0: Semiarid Southwest (Arizona,
Southeast California, Nevada, New Mexico,
Utah) Addendum – Update to Version 4.0

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U.S. Department
of Commerce

National Oceanic
and Atmospheric
Administration

National Weather
Service

Silver Spring,
Maryland, 2004
revised 2006
revised 2011

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SUMMARY

The NOAA Atlas 14 Volume 1 Version 5 update reflects changes made to precipitation frequency estimates in the Volume 1 project area. Precipitation frequency estimates and supplementary information for the semiarid California included in Volume 1 were updated with the release of Volume 6, California. Volume 6 information supersedes Volume 1 information for that part of California.

In addition, precipitation and corresponding confidence limits grids of Volume 1 were shifted by 15 seconds to the west and to the north to align them with grids from subsequent NOAA Atlas 14 volumes. Estimates were interpolated to a new grid. Volume 1 Version 5 supersedes information in Version 4.

UPDATES

1. Southeastern California data

Volume 1 estimates in the southeastern semiarid areas of California were updated with the release of Volume 6. A complete description of methodology used for NOAA Atlas 14 Volume 6 is described in Volume 6 documentation posted here: <http://www.nws.noaa.gov/ohd/hdsc/currentpf.htm>.

The maps in Figures 1 and 2 illustrate the differences in estimates for southeastern California between Volume 1 Version 4 and Volume 6 Version 2 for 60-minute and 24-hour durations at the average recurrence interval of 100-years. Specifically, 100-year 60-minute precipitation frequency estimates changed between -1.11 and 1.61 inches; on average, updated estimates are 0.21 inches lower. 100-year 24-hour precipitation frequency estimates changed between -8.71 and 6.38 inches, and, on average, precipitation frequency estimates increased by 0.24 inches.

Precipitation frequency estimates for California in Volume 6 were not adjusted to make a smooth transition from Volume 6 to Volume 1 estimates at the California border with Nevada and Arizona.

2. Grid cell alignment

The center points of grid cells from Volume 1 did not align with the center points of grid cells from subsequent volumes, so it was necessary to shift Volume 1 grids by 15 seconds to the west and by 15 seconds to the north. This shift was coupled with interpolation where the precipitation frequency estimate for each new grid cell was assigned the average of the original surrounding grid cells values. As a result, estimates from Version 4 and Version 5 may be different. Differences are negligible for more than 99.5% of the project area (excluding California). In higher elevation areas, estimates could change up to $\pm 10\%$.

The maps in Figures 3 and 4 illustrate the differences in estimates in inches between Volume 1 Versions 5 and 4 for 60-minute and 24-hour durations at the average recurrence interval of 100-years. 100-year 60-minute precipitation frequency estimates, for example, changed less than ± 0.03 inches for more than 99.5% of grid cells. In the higher elevation areas, the maximum increase was 0.12 inches and the maximum decrease was -0.19 inches. Similarly, for 100-year 24-hour precipitation frequency estimates, differences between new and old estimates are between ± 0.1 inches for more than 99.5% of grid cells; the maximum increase was 0.45 inches and the maximum decrease was -0.53 inches.

Precipitation frequency estimates for Nevada and Arizona in Volume 1 were not adjusted to make a smooth transition from Volume 1 to Volume 6 estimates at the Nevada and Arizona borders with California.

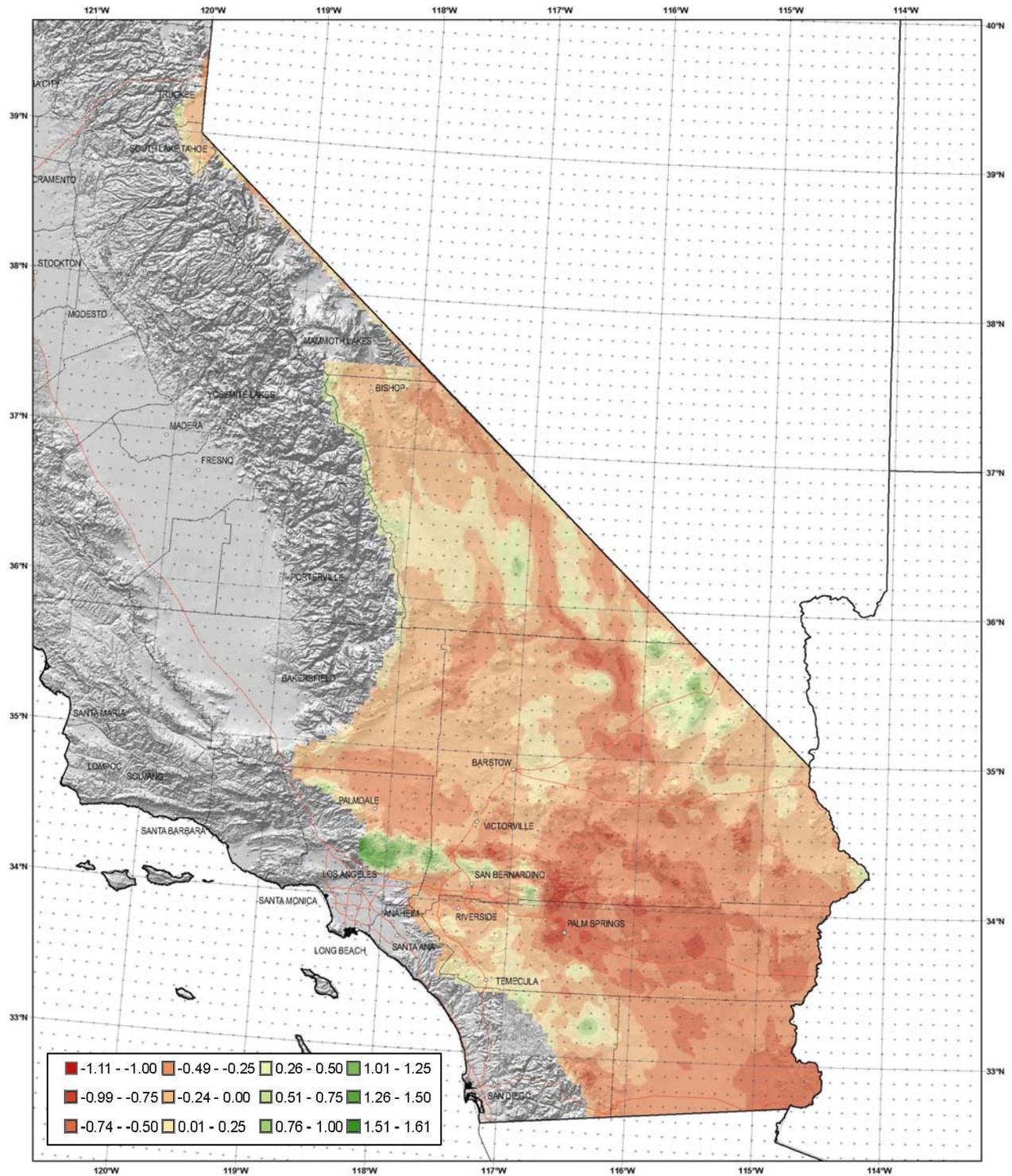


Figure 1. Difference in 100-year 60-minute estimates (in inches) between Volume 6 Version 2 and Volume 1 Version 4 for southeast California.

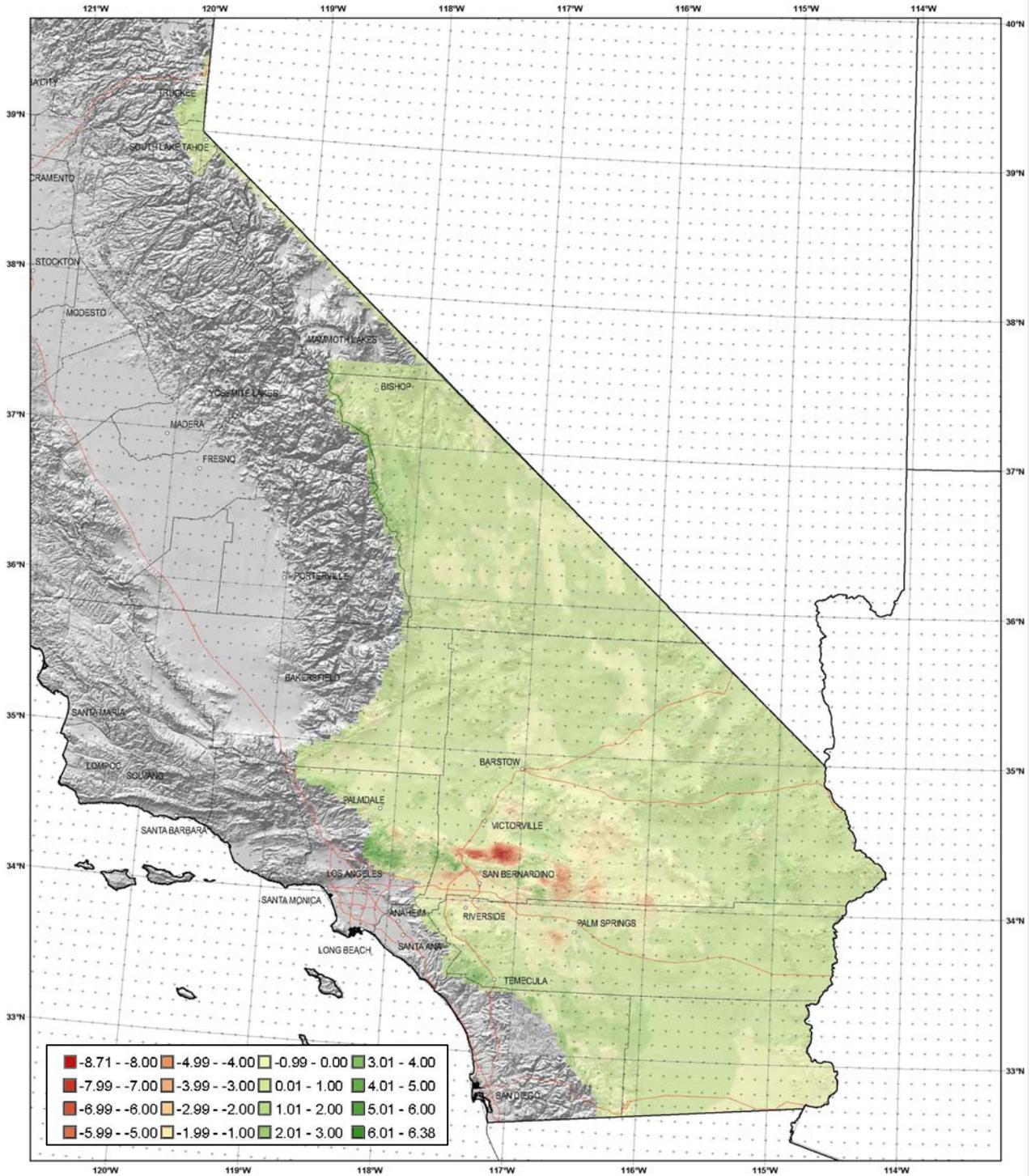


Figure 2. Difference in 100-year 24-hour estimates (in inches) between Volume 6 Version 2 and Volume 1 Version 4 for southeast California.

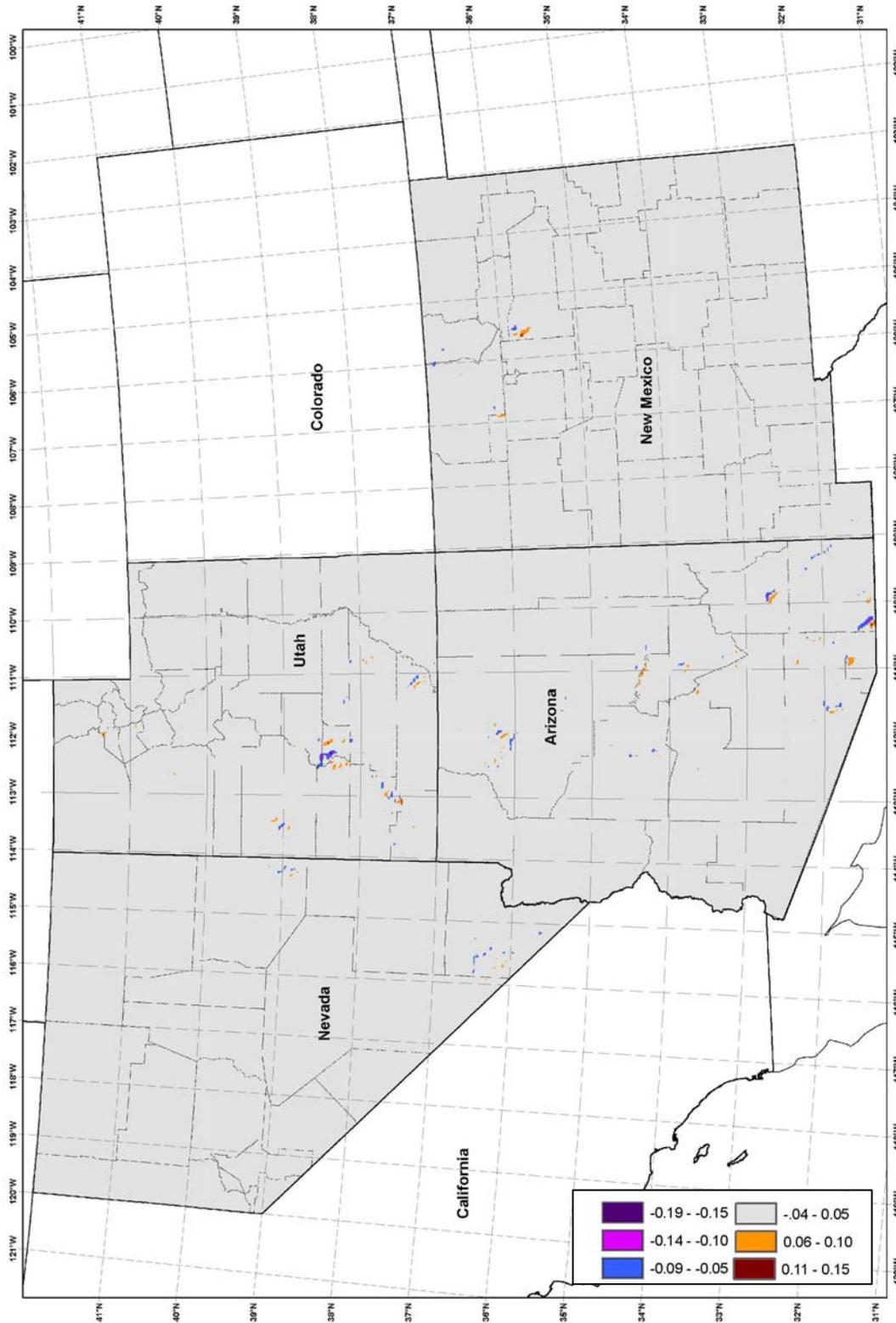


Figure 3. Difference in 100-year 60-minute estimates (in inches) between Volume 1 Versions 5 and 4 for the project area excluding California.

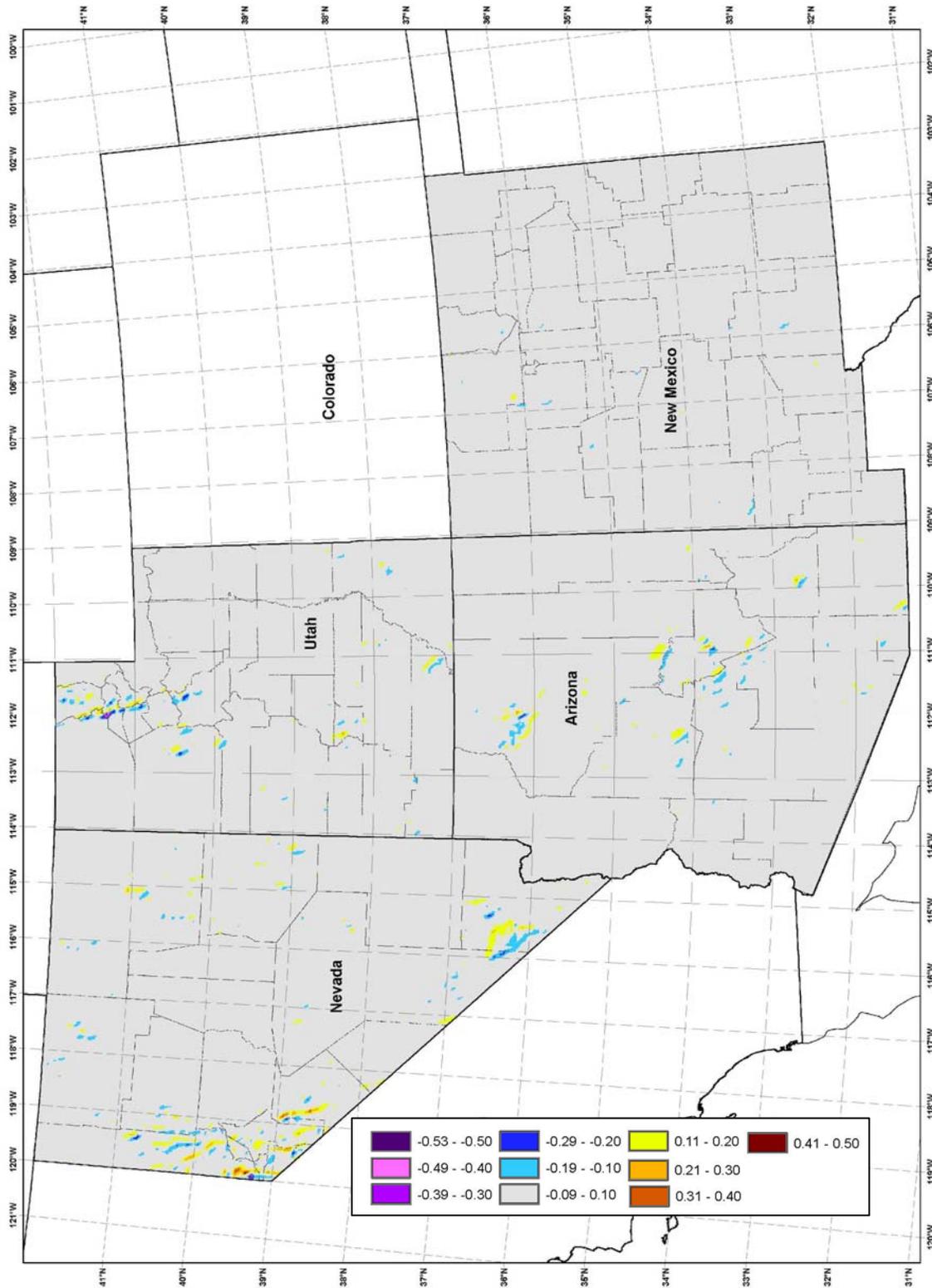


Figure 4. Difference in 100-year 24-hour estimates (in inches) between Volume 1 Versions 5 and 4 for the project area excluding California.