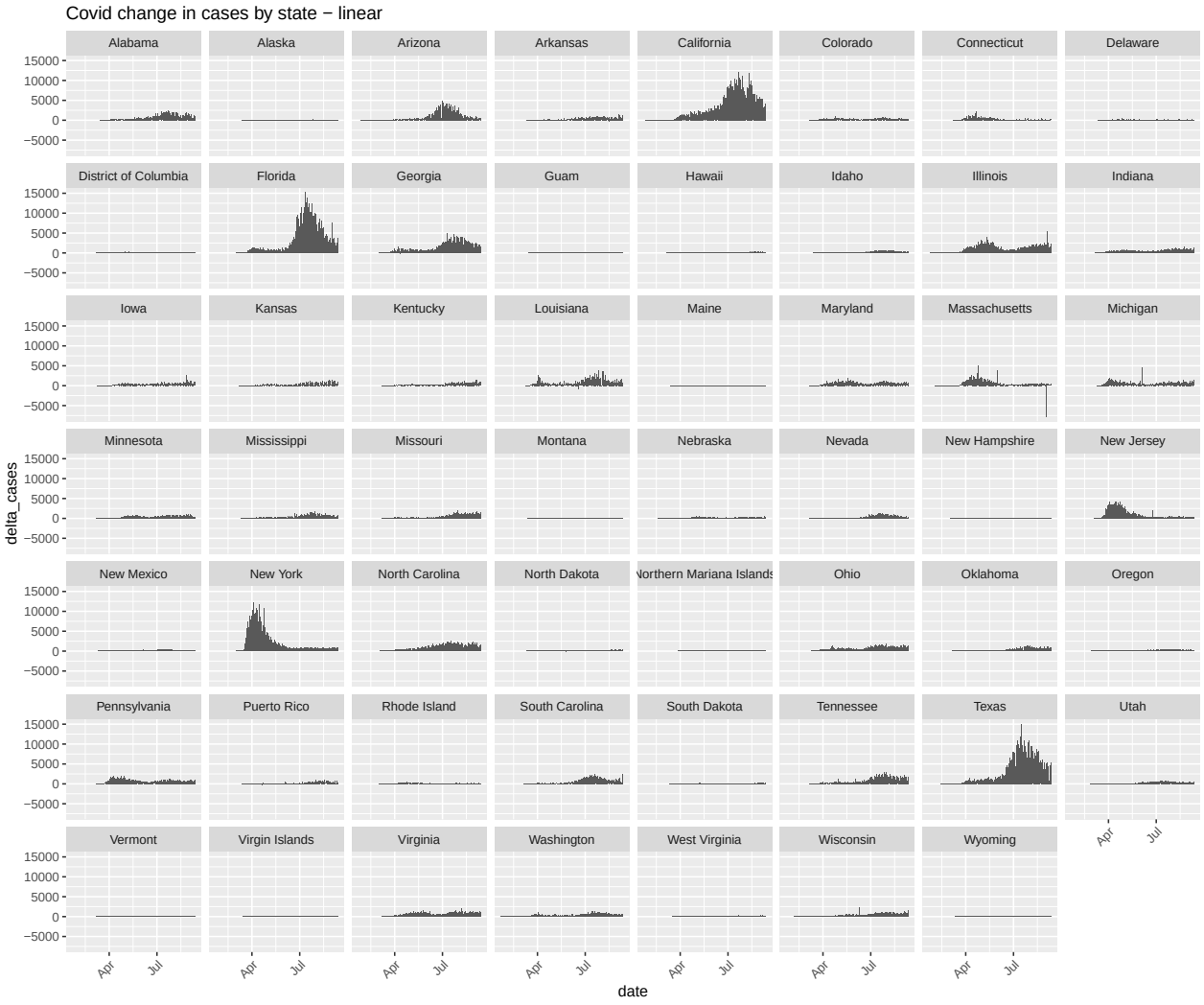
Change Analysis

Another experiment to look at rate of change. Idea here is to compare the reported change against the cumulative sum.

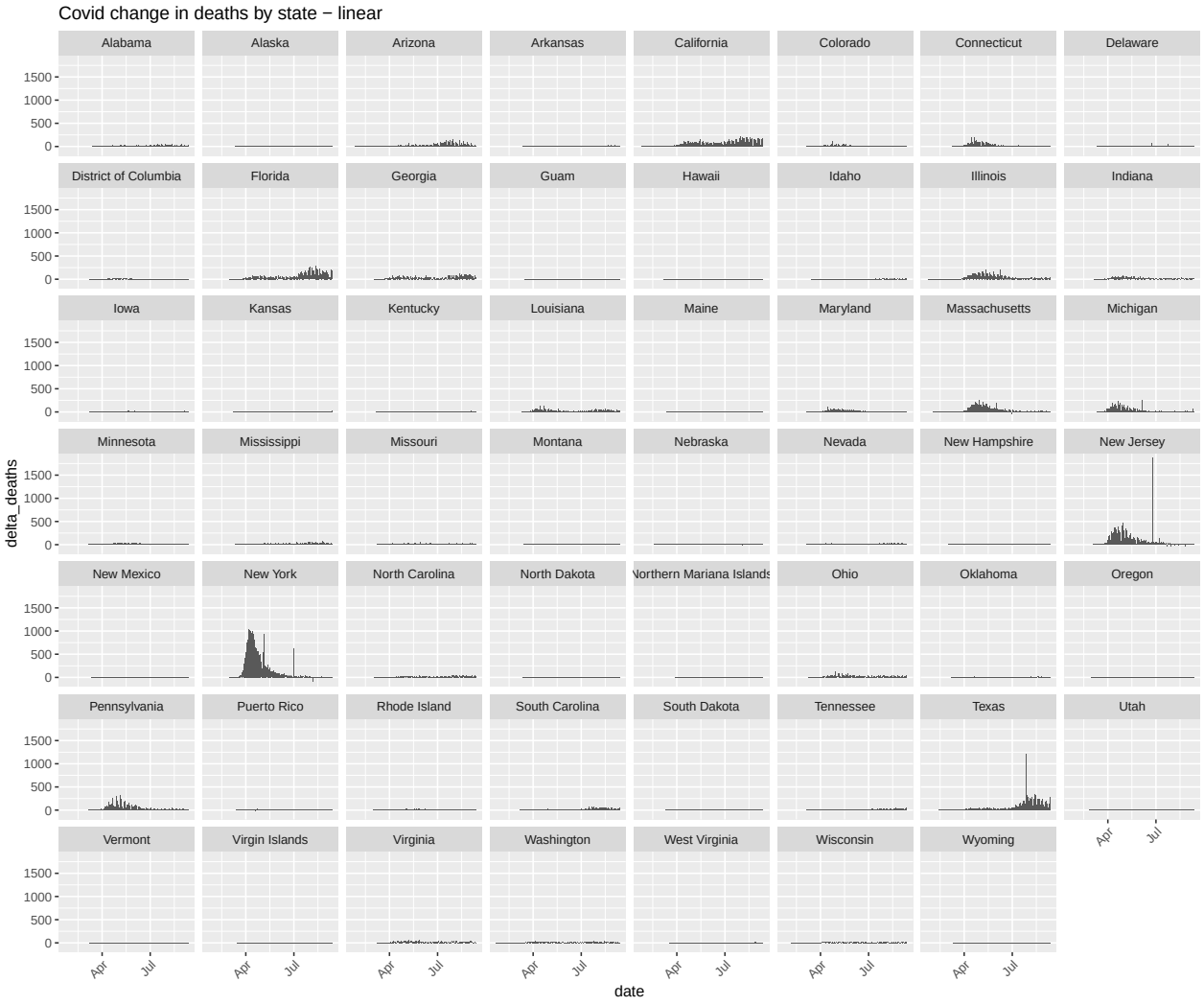
Last date for states data is 2020-09-11

Extract daily changes

Daily Cases



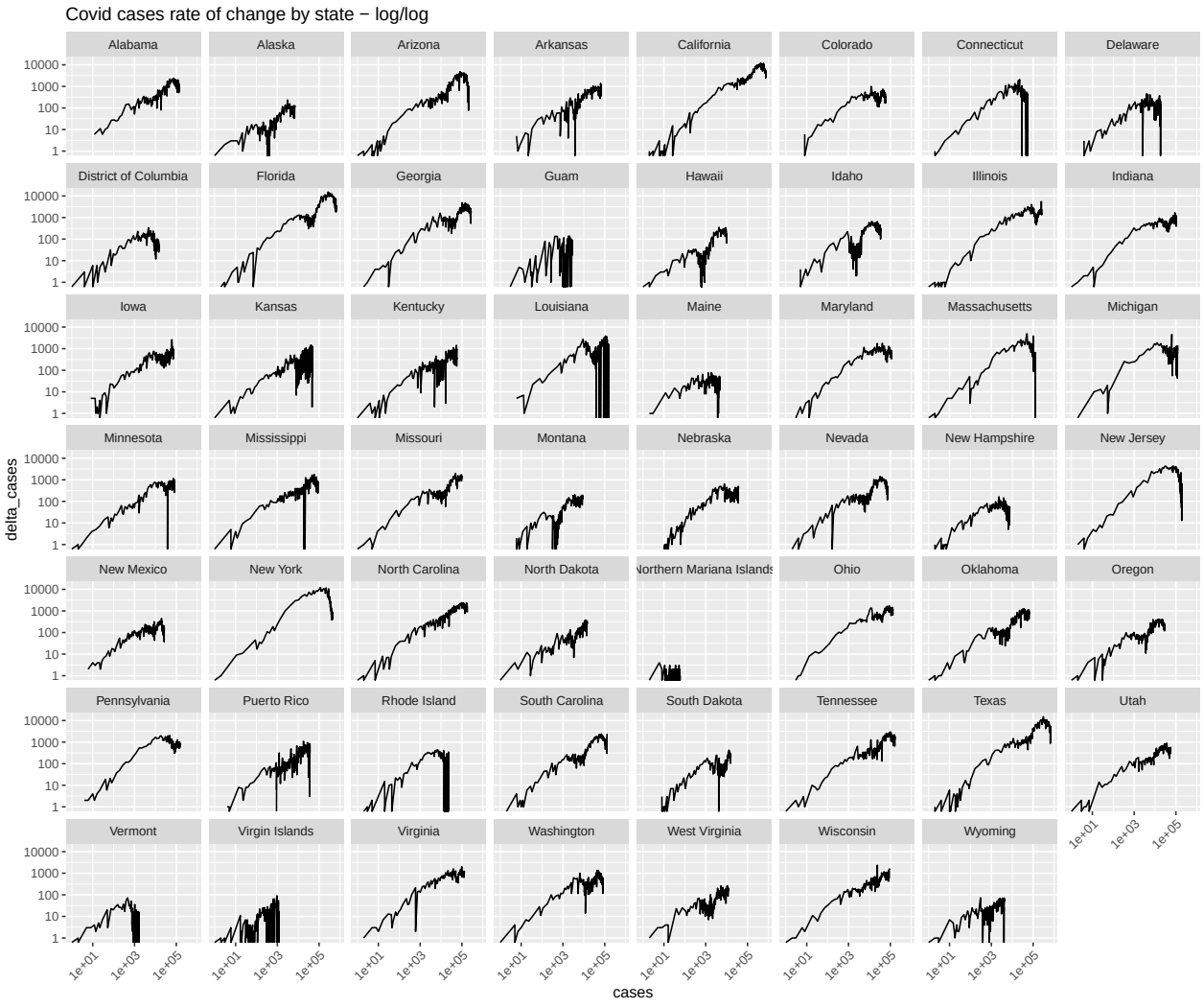
Daily Deaths



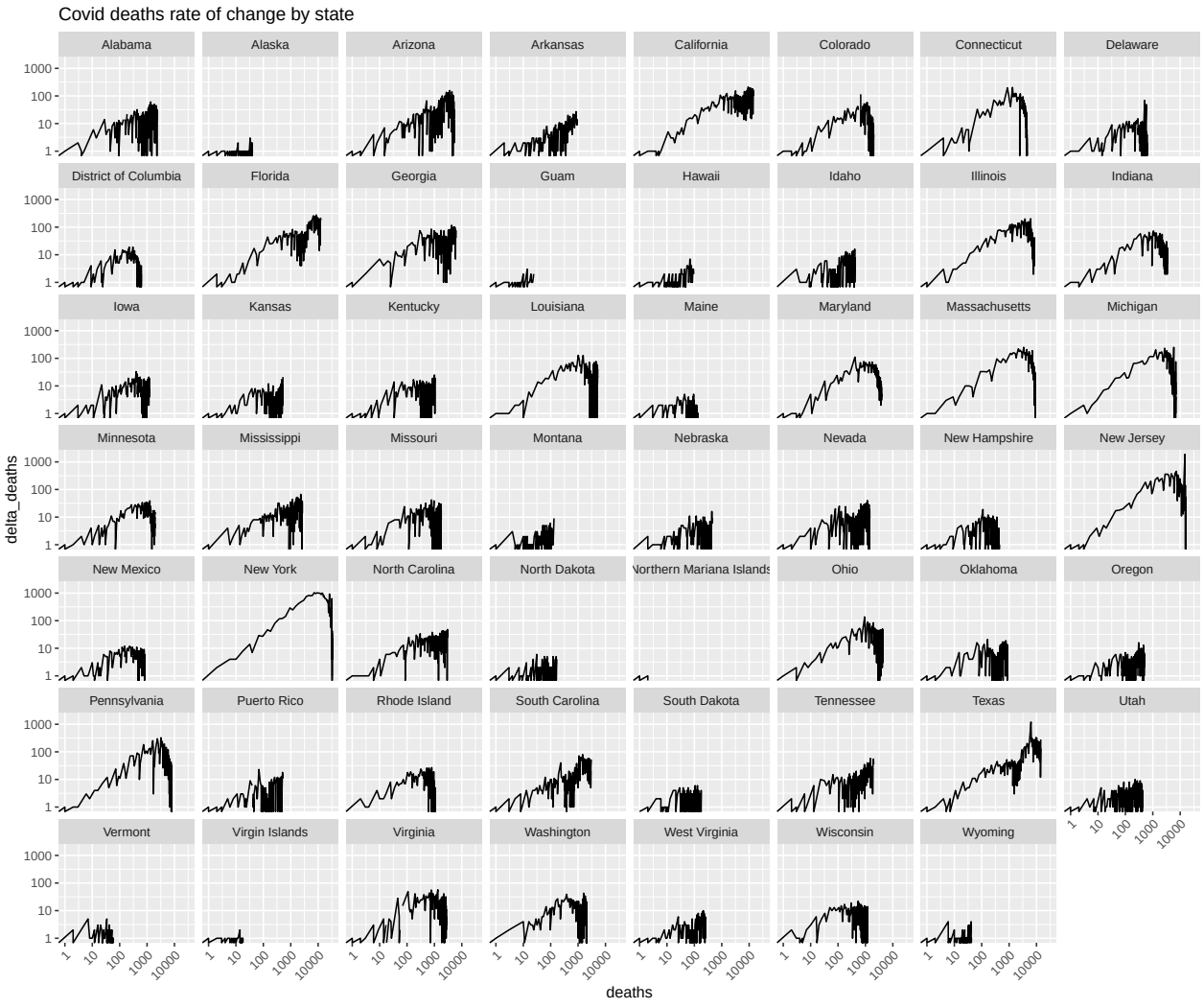
Log of Change Over Cumulative Sum

Linear values are skewed by higher-magnitude values, so use a log(10) on each axis. this better fits the exponential nature of the data anyway.

Log/Log of Cases Over Cumulative Sum



Log/Log of Deaths over Cumulative Sum

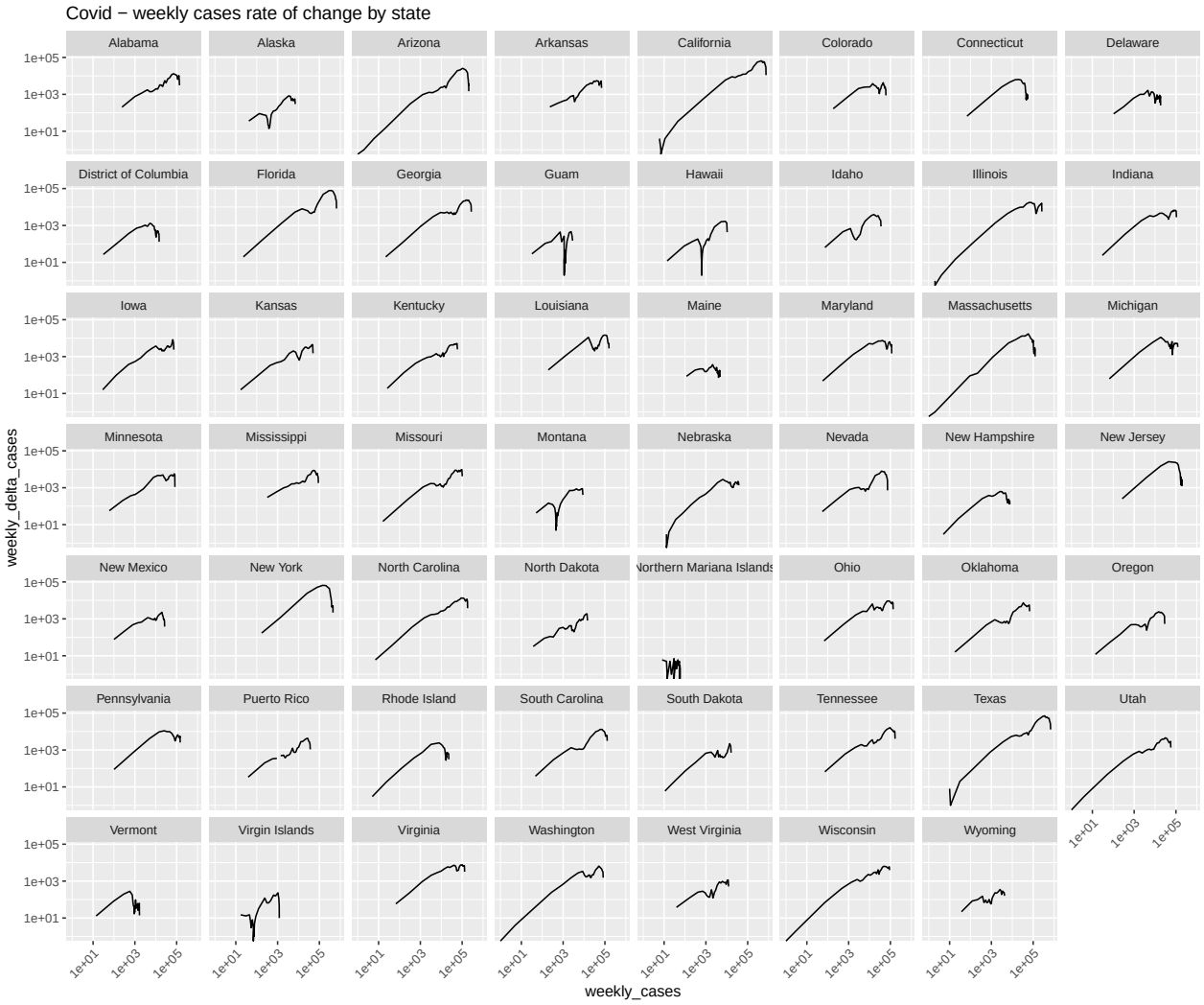


Weekly Rate of Changes

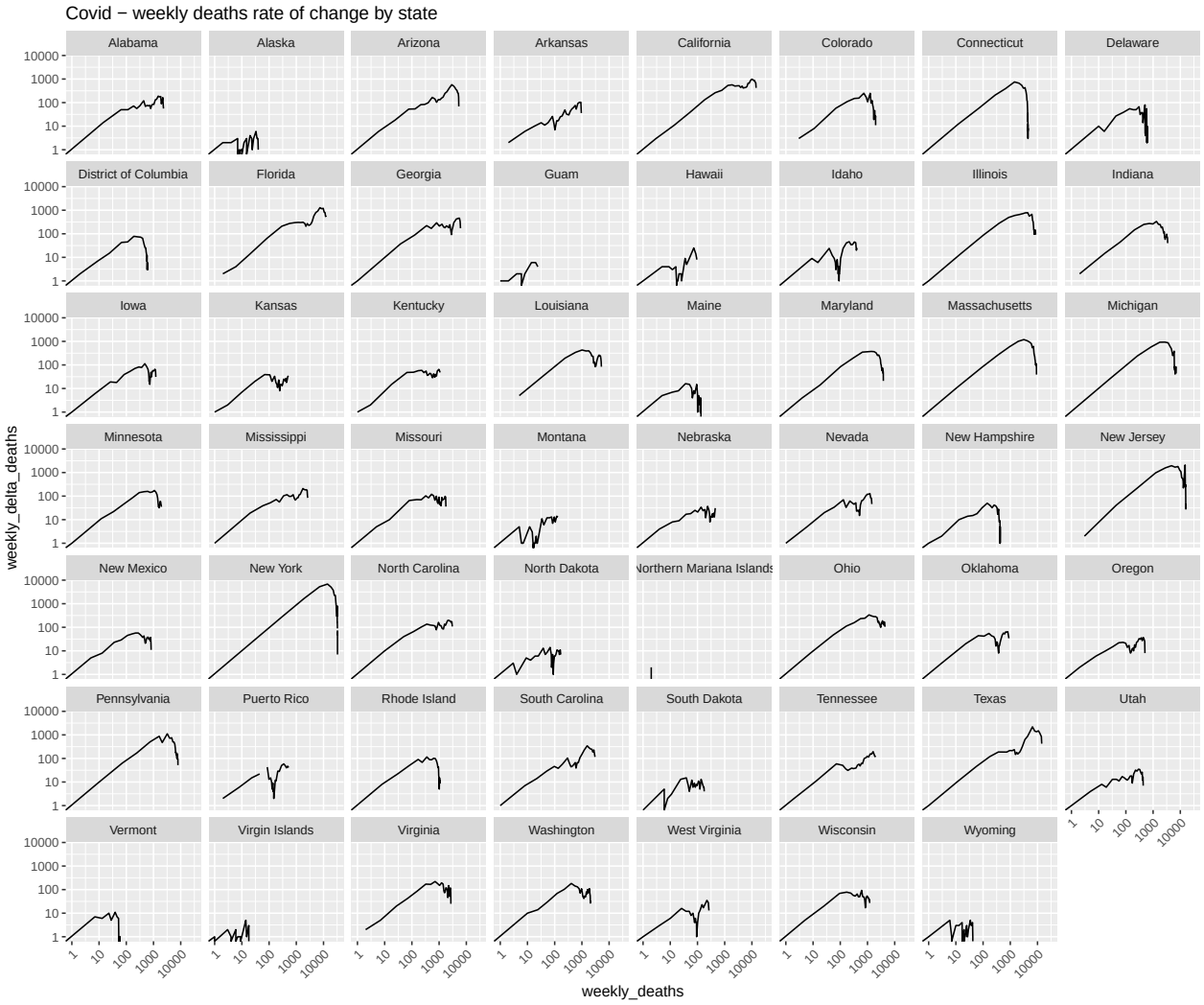
In order to smooth out the curves in the previous graphs, look at them on a weekly basis.

```
## `summarise()` regrouping output by 'state' (override with `.groups` argument)
```

Weekly Range of Change of Cases by State

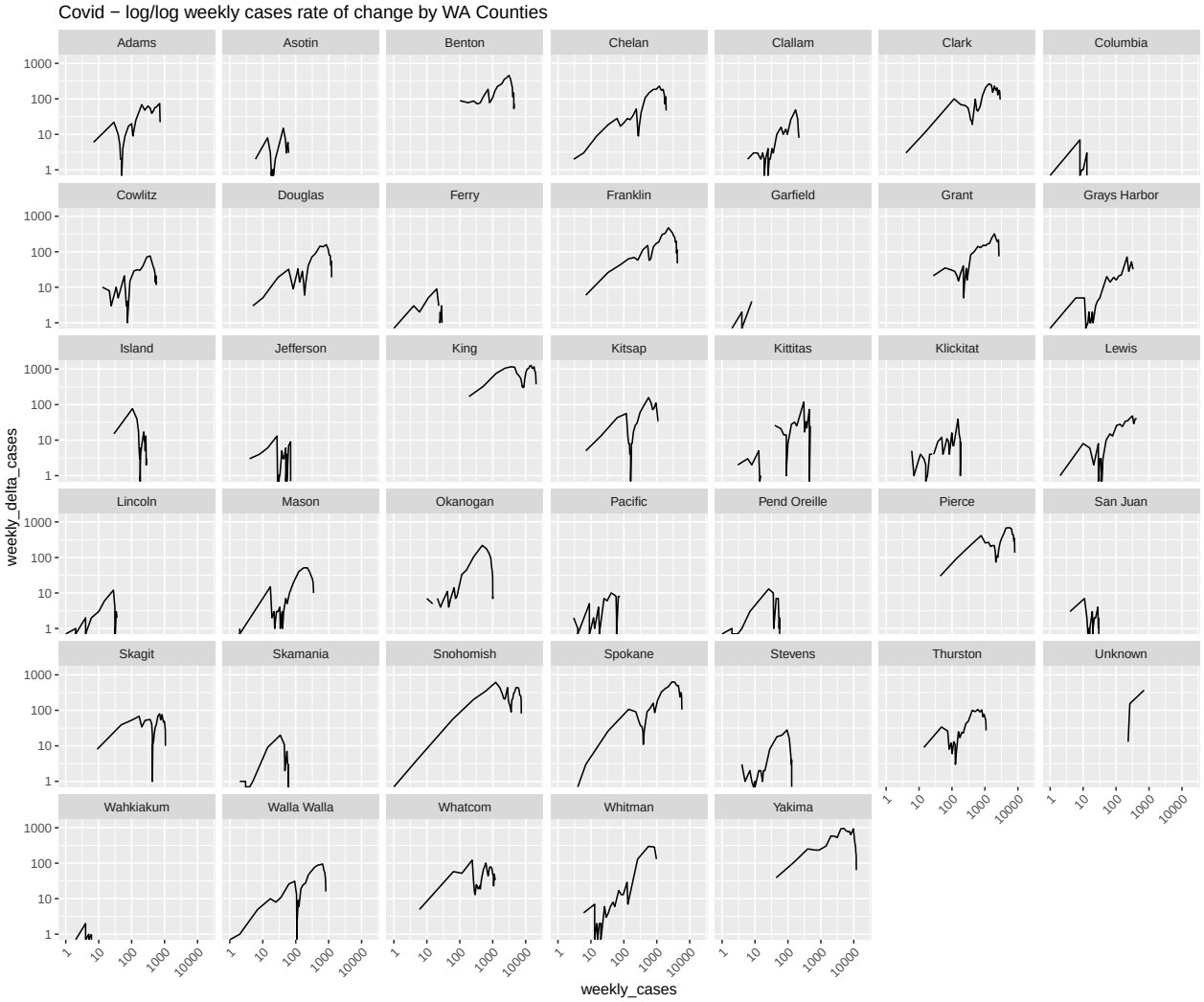


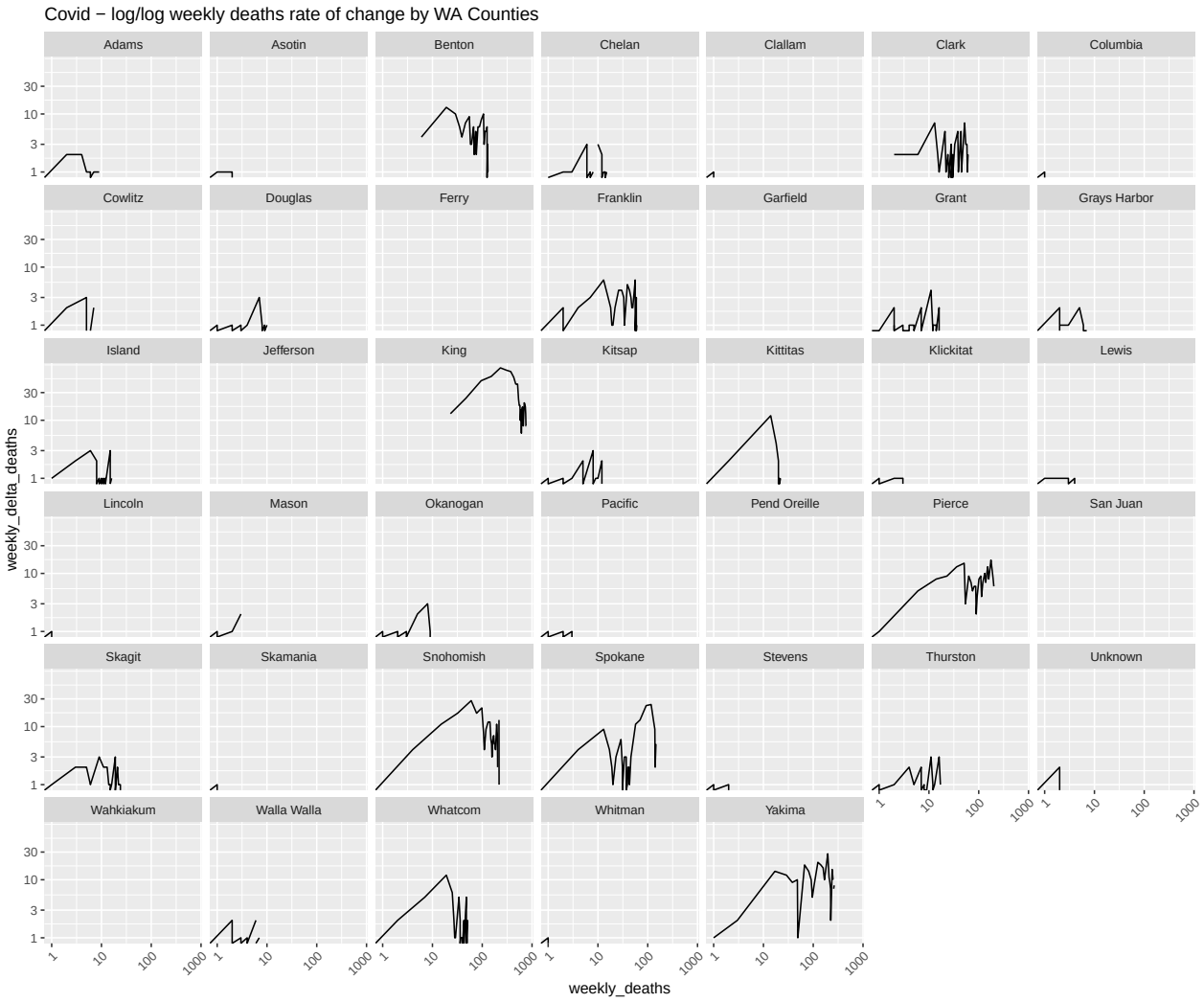
Weekly Range of Change of Deaths by State



Washington Counties

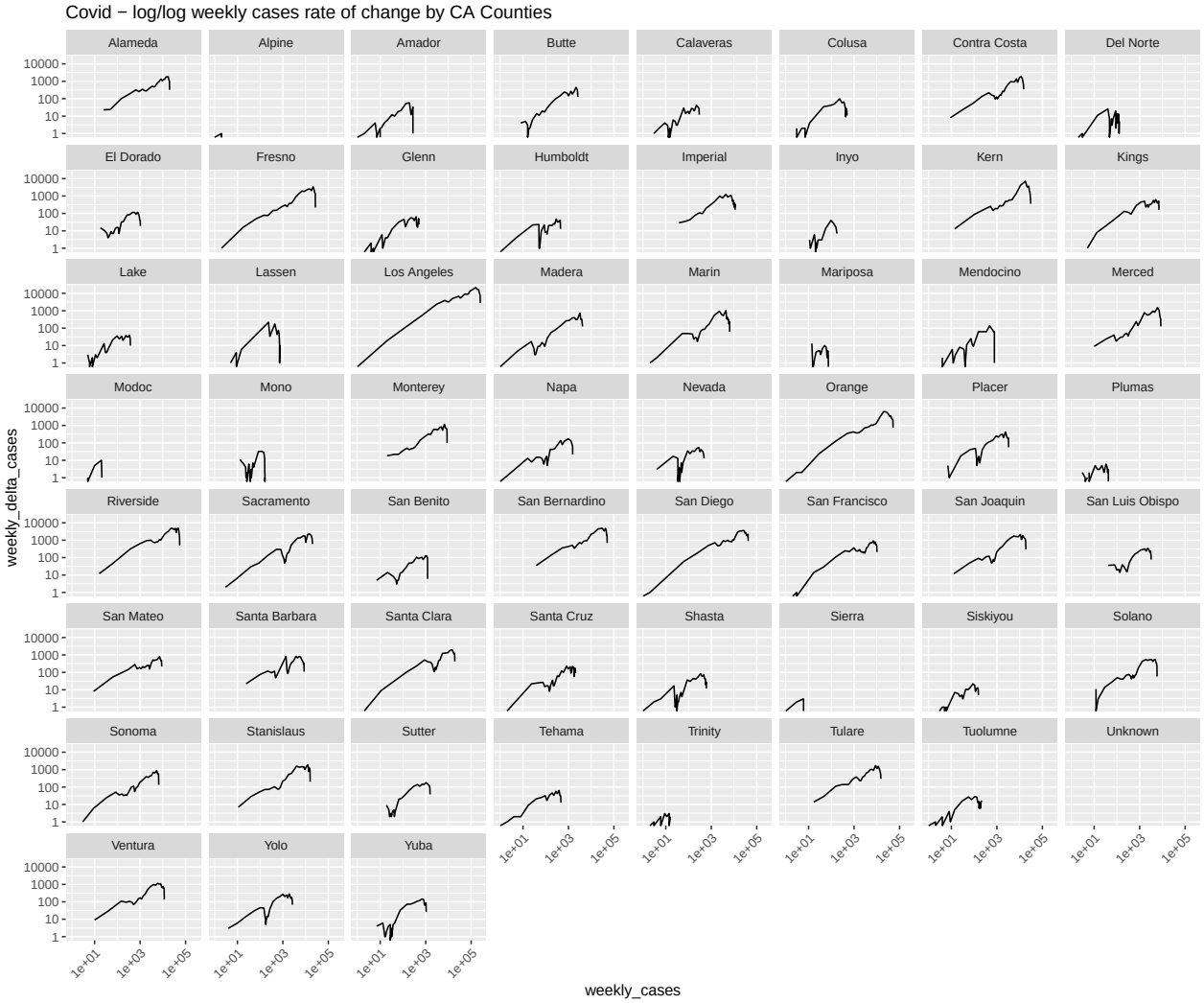
```
## `summarise()` regrouping output by 'county' (override with `.groups` argument)
```

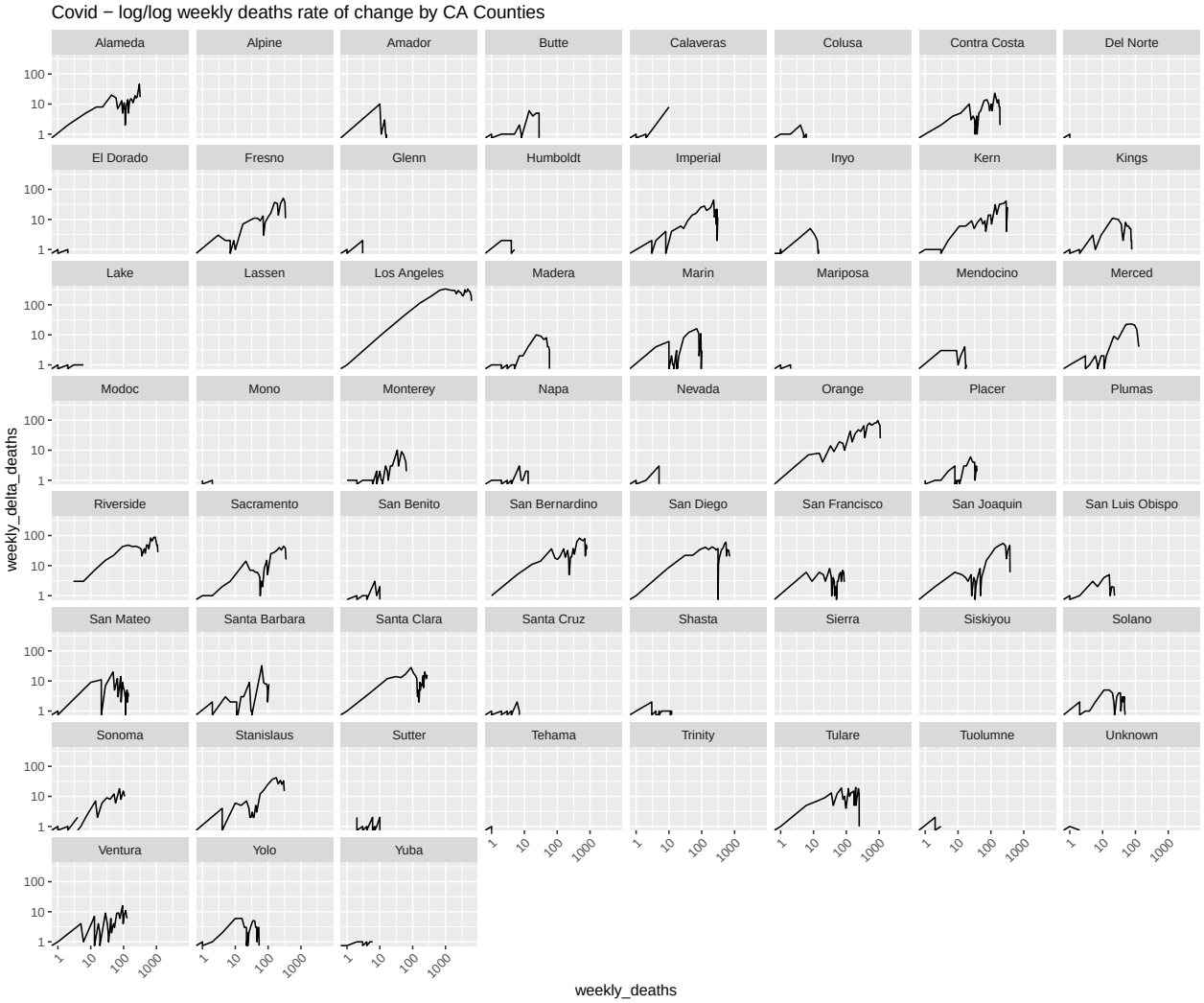

Covid − log/log weekly cases rate of change by WA Counties
Adams
Asotin
Benton
Chelan
Clallam
Clark
Columbia
Cowlitz
Douglas
Ferry
Franklin
Garfield
Grant
Grays Harbor
Island
Jefferson
King
Kitsap
Kittitas
Klickitat
Lewis
Lincoln
Mason
Okanogan
Pacific
Pend Oreille
Pierce
San Juan
Skagit
Skamania
Snohomish
Spokane
Stevens
Thurston
Unknown
Wahkiakum
Walla Walla
Whatcom
Whitman
Yakima
weekly_delta_cases
weekly_cases
1
10
100
1000
10000



California Counties

```
## `summarise()` regrouping output by 'county' (override with `.groups` argument)
```


Covid − log/log weekly cases rate of change by CA Counties
Alameda
Alpine
Amador
Butte
Calaveras
Colusa
Contra Costa
Del Norte
El Dorado
Fresno
Glenn
Humboldt
Imperial
Inyo
Kern
Kings
Lake
Lassen
Los Angeles
Madera
Marin
Mariposa
Mendocino
Merced
Modoc
Mono
Monterey
Napa
Nevada
Orange
Placer
Plumas
Riverside
Sacramento
San Benito
San Bernardino
San Diego
San Francisco
San Joaquin
San Luis Obispo
San Mateo
Santa Barbara
Santa Clara
Santa Cruz
Shasta
Sierra
Siskiyou
Solano
Sonoma
Stanislaus
Sutter
Tehama
Trinity
Tulare
Tuolumne
Unknown
Ventura
Yolo
Yuba
10000
1000
100
10
1
1e+01
1e+03
1e+05
weekly_delta_cases
weekly_cases


Covid − log/log weekly deaths rate of change by CA Counties
Alameda
Alpine
Amador
Butte
Calaveras
Colusa
Contra Costa
Del Norte
El Dorado
Fresno
Glenn
Humboldt
Imperial
Inyo
Kern
Kings
Lake
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San Joaquin
San Luis Obispo
San Mateo
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Sierra
Siskiyou
Solano
Sonoma
Stanislaus
Sutter
Tehama
Trinity
Tulare
Tuolumne
Unknown
Ventura
Yolo
Yuba
100
10
1
1
10
100
1000
weekly_delta_deaths
weekly_deaths