

# Visualizing FEMA NRI Data

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## FEMA National Risk Index Scores for Counties in California

### Set up

```
# Load necessary libraries
library(tidyverse)
library(here)
library(janitor)
library(ggplot2)
```

### Import and read data

```
# Read data frame
nri <- read.csv(here("data", "National_Risk_Index_Counties_807384124455672111.csv")) %>%
    clean_names()
```

## Identify variables of interest and consider which data types they are

Variables of interest	Type of data
State name	Character
State name abbreviation	Character
County name	Character
National Risk Index Score Composite	Numeric
National Risk Index Rating Composite	Categorical
Expected Annual Loss Score Composite	Numeric

If you just want to type the table yourself in the text area of your .qmd file (outside of an R chunk), you use pipes (|) and hyphens (-).

```
| State name | State name abbreviation | County name | National Risk Index Score Composite | | |
|---|---|---|---|---|---|
| California | CA | Los Angeles | 100.00 | Very High | 99.8 |

## Data cleaning and wrangling

::: {.cell}

```{.r .cell-code}
head(nri)

  objectid national_risk_index_id state_name state_name_abbreviation
1          1                      C01001    Alabama                  AL
2          2                      C01003    Alabama                  AL
3          3                      C01005    Alabama                  AL
4          4                      C01007    Alabama                  AL
5          5                      C01009    Alabama                  AL
6          6                      C01011    Alabama                  AL
  state_fips_code county_name county_type county_fips_code
1              1     Autauga      County             1
2              1     Baldwin      County             3
3              1    Barbour      County             5
4              1      Bibb       County             7
5              1    Blount       County             9
6              1   Bullock      County            11
  state_county_fips_code population_2020 building_value agriculture_value
```

1	1001	58764	10241406107	27630646
2	1003	231365	51602300760	155012958
3	1005	25160	5441822473	135914589
4	1007	22239	3532630882	5410008
5	1009	58992	8773489059	312712010
6	1011	10326	1771888929	86549172
	area_sq_mi	national_risk_index_value_composite		
1	610.4705		20510899	
2	2047.7388		253268744	
3	913.6465		15998576	
4	632.4868		12672467	
5	657.1966		28705360	
6	631.4545		8886364	
	national_risk_index_score_composite	national_risk_index_rating_composite		
1		57.56997	Relatively Low	
2		96.72392	Relatively High	
3		48.12341	Relatively Low	
4		39.12214	Very Low	
5		68.47964	Relatively Low	
6		25.25445	Very Low	
	national_risk_index_state_percentile_composite			
1		57.56997		
2		96.72392		
3		48.12341		
4		39.12214		
5		68.47964		
6		25.25445		
	expected_annual_loss_score_composite	expected_annual_loss_rating_composite		
1		59.87005	Relatively Low	
2		96.62748	Relatively High	
3		30.53837	Very Low	
4		31.00248	Very Low	
5		62.34530	Relatively Low	
6		13.55198	Very Low	
	expected_annual_loss_state_percentile_composite			
1		56.716418		
2		97.014925		
3		25.373134		
4		28.358209		
5		61.194030		
6		4.477612		
	expected_annual_loss_total_composite			
1		19756570		

```

2          237391155
3          8923878
4          8993704
5          21294674
6          5129262
  expected_annual_loss_building_value_composite
1          13853500
2          208447115
3          5555196
4          6128569
5          13369031
6          2505802
  expected_annual_loss_population_composite
1          0.41282130
2          1.93225863
3          0.17833720
4          0.20599759
5          0.52810234
6          0.08431265
  expected_annual_loss_population_equivalence_composite
1          5655652
2          26471943
3          2443220
4          2822167
5          7235003
6          1155084
  expected_annual_loss_agriculture_value_composite
1          247418.66
2          2472095.78
3          925462.65
4          42968.15
5          690639.40
6          1468376.94
  expected_annual_loss_rate_building_composite
1          0.001518479
2          0.004534566
3          0.001145945
4          0.001947465
5          0.001710553
6          0.001587520
  expected_annual_loss_rate_population_composite
1          7.025071e-06
2          8.351560e-06

```

```

3          7.088124e-06
4          9.262898e-06
5          8.952101e-06
6          8.165084e-06
    expected_annual_loss_rate_agriculture_composite
1          0.010051949
2          0.017902190
3          0.007643666
4          0.008915745
5          0.002479223
6          0.019045111
    expected_annual_loss_rate_national_percentile_composite
1          49.72153
2          97.74134
3          23.70050
4          66.95545
5          54.17698
6          69.09035
social_vulnerability_and_community_resilience_adjusted_expected_annual_loss_rate_national_percentile_composite
1
2
3
4
5
6
    social_vulnerability_score social_vulnerability_rating
1          38.04071           Relatively Low
2          44.24300           Relatively Moderate
3          96.37405           Very High
4          75.25445           Relatively High
5          69.33842           Relatively High
6          97.55089           Very High
    social_vulnerability_state_percentile community_resilience_score
1          9.701493          55.12087
2          9.701493          93.00254
3          88.805970         11.16412
4          41.044776         22.16921
5          29.850746         15.64885
6          94.029851         33.14249
    community_resilience_rating community_resilience_state_percentile
1          Relatively Moderate          76.119403
2          Very High                  100.000000
3          Very Low                  4.477612

```

4	Relatively Low	26.865672
5	Very Low	11.940299
6	Relatively Low	47.761194
	community_resilience_value	community_risk_factor_value
1	2.494860	1.038181
2	2.643844	1.066884
3	2.328449	1.792783
4	2.383784	1.409038
5	2.354619	1.348007
6	2.422163	1.732484
	avalanche_number_of_events	avalanche_annualized_frequency
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	avalanche_exposure_impacted_area_sq_mi	avalanche_exposure_building_value
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	avalanche_exposure_population	avalanche_exposure_population_equivalence
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	avalanche_exposure_total	avalanche_historic_loss_ratio_buildings
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	avalanche_historic_loss_ratio_population	
1	NA	
2	NA	
3	NA	
4	NA	

5		NA
6		NA
	avalanche_historic_loss_ratio_total_rating	
1		Not Applicable
2		Not Applicable
3		Not Applicable
4		Not Applicable
5		Not Applicable
6		Not Applicable
	avalanche_expected_annual_loss_building_value	
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	avalanche_expected_annual_loss_population	
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	avalanche_expected_annual_loss_population_equivalence	
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	avalanche_expected_annual_loss_total avalanche_expected_annual_loss_score	
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	avalanche_expected_annual_loss_rating	
1		Not Applicable
2		Not Applicable
3		Not Applicable
4		Not Applicable
5		Not Applicable

6		Not Applicable	
	avalanche_expected_annual_loss_rate_building		
1		NA	
2		NA	
3		NA	
4		NA	
5		NA	
6		NA	
	avalanche_expected_annual_loss_rate_population		
1		NA	
2		NA	
3		NA	
4		NA	
5		NA	
6		NA	
	avalanche_expected_annual_loss_rate_national_percentile		
1		NA	
2		NA	
3		NA	
4		NA	
5		NA	
6		NA	
	avalanche_hazard_type_risk_index_value	avalanche_hazard_type_risk_index_score	
1		NA	NA
2		NA	NA
3		NA	NA
4		NA	NA
5		NA	NA
6		NA	NA
	avalanche_hazard_type_risk_index_rating	coastal_flooding_number_of_events	
1	Not Applicable	NA	
2	Not Applicable	NA	
3	Not Applicable	NA	
4	Not Applicable	NA	
5	Not Applicable	NA	
6	Not Applicable	NA	
	coastal_flooding_annualized_frequency		
1		NA	
2		3.684142	
3		NA	
4		NA	
5		NA	
6		NA	

```

coastal_flooding_exposure_impacted_area_sq_mi
1                               NA
2                               10.82263
3                               NA
4                               NA
5                               NA
6                               NA

coastal_flooding_exposure_building_value  coastal_flooding_exposure_population
1                               NA          NA
2                               8509063318      21575.48
3                               NA          NA
4                               NA          NA
5                               NA          NA
6                               NA          NA

coastal_flooding_exposure_population_equivalence
1                               NA
2                               295584089100
3                               NA
4                               NA
5                               NA
6                               NA

coastal_flooding_exposure_total
1                               NA
2                               304093152418
3                               NA
4                               NA
5                               NA
6                               NA

coastal_flooding_historic_loss_ratio_buildings
1                               NA
2                               0.003426414
3                               NA
4                               NA
5                               NA
6                               NA

coastal_flooding_historic_loss_ratio_population
1                               NA
2                               9.07843e-06
3                               NA
4                               NA
5                               NA
6                               NA

coastal_flooding_historic_loss_ratio_total_rating

```

1		Not Applicable
2		Relatively Moderate
3		Not Applicable
4		Not Applicable
5		Not Applicable
6		Not Applicable
	coastal_flooding_expected_annual_loss_building_value	
1		NA
2		3704943
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_expected_annual_loss_population	
1		NA
2		0.02522454
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_expected_annual_loss_population_equivalence	
1		NA
2		3455576.4
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_expected_annual_loss_total	
1		NA
2		4050520
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_expected_annual_loss_score	
1		NA
2		88.77551
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_expected_annual_loss_rating	
1		Not Applicable

2		Relatively High
3		Not Applicable
4		Not Applicable
5		Not Applicable
6		Not Applicable
	coastal_flooding_expected_annual_loss_rate_building	
1		NA
2		7.179802e-05
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_expected_annual_loss_rate_population	
1		NA
2		1.090249e-07
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_expected_annual_loss_rate_national_percentile	
1		NA
2		80.78231
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_hazard_type_risk_index_value	
1		NA
2		4321434
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_hazard_type_risk_index_score	
1		NA
2		85.8
3		NA
4		NA
5		NA
6		NA
	coastal_flooding_hazard_type_risk_index_rating cold_wave_number_of_events	
1	Not Applicable	7.00000
2	Relatively High	12.34417

3		Not Applicable	7.00000
4		Not Applicable	9.00000
5		Not Applicable	17.00000
6		Not Applicable	7.00000
	cold_wave_annualized_frequency	cold_wave_exposure_impacted_area_sq_mi	
1		0.3684211	610.4705
2		0.8066419	1674.8440
3		0.3684211	913.6465
4		0.4736842	632.4868
5		0.8947368	657.1966
6		0.3684211	631.4545
	cold_wave_exposure_building_value	cold_wave_exposure_population	
1		10241406107	58764
2		51602300760	231365
3		5441822473	25160
4		3532630882	22239
5		8773489059	58992
6		1771888929	10326
	cold_wave_exposure_population_equivalence		
1		8.050668e+11	
2		3.169700e+12	
3		3.446920e+11	
4		3.046743e+11	
5		8.081904e+11	
6		1.414662e+11	
	cold_wave_exposure_agriculture_value	cold_wave_exposure_total	
1		27630646	8.153358e+11
2		155012958	3.221458e+12
3		135914589	3.502697e+11
4		5410008	3.082123e+11
5		312712010	8.172766e+11
6		86549172	1.433246e+11
	cold_wave_historic_loss_ratio_buildings		
1		8.092943e-07	
2		9.993118e-07	
3		9.406519e-08	
4		1.467217e-06	
5		7.003454e-07	
6		5.403364e-08	
	cold_wave_historic_loss_ratio_population		
1		1.205327e-07	
2		1.423183e-07	
3		2.603147e-08	

```

4          3.253437e-07
5          1.400142e-07
6          3.195900e-08
  cold_wave_historic_loss_ratio_agriculture
1          0.0012865245
2          0.0007783064
3          0.0008913502
4          0.0007783064
5          0.0007783064
6          0.0008738362
  cold_wave_historic_loss_ratio_total_rating
1          Relatively Low
2          Relatively Low
3          Very Low
4          Relatively Low
5          Relatively Low
6          Relatively Low
  cold_wave_expected_annual_loss_building_value
1          3053.58872
2          38166.04884
3          188.58962
4          2455.16968
5          5497.68686
6          35.27323
  cold_wave_expected_annual_loss_population
1          0.026570536
2          0.257519251
3          0.002456934
4          0.034896855
5          0.075248916
6          0.001237968
  cold_wave_expected_annual_loss_population_equivalence
1          364016.35
2          3528013.74
3          33660.00
4          478086.91
5          1030910.15
6          16960.17
  cold_wave_expected_annual_loss_agriculture_value
1          13096.649
2          94509.770
3          44633.408
4          1994.632

```

5		217766.870
6		27863.672
	cold_wave_expected_annual_loss_total	cold_wave_expected_annual_loss_score
1		380166.59
2		3660689.56
3		78482.00
4		482536.72
5		1254174.70
6		44859.11
	cold_wave_expected_annual_loss_rating	
1		Relatively Low
2		Relatively Moderate
3		Very Low
4		Relatively Low
5		Relatively Moderate
6		Very Low
	cold_wave_expected_annual_loss_rate_building	
1		2.981611e-07
2		7.396191e-07
3		3.465560e-08
4		6.949975e-07
5		6.266249e-07
6		1.990713e-08
	cold_wave_expected_annual_loss_rate_population	
1		4.521567e-07
2		1.113043e-06
3		9.765240e-08
4		1.569174e-06
5		1.275578e-06
6		1.198885e-07
	cold_wave_expected_annual_loss_rate_agriculture	
1		0.0004739900
2		0.0006096895
3		0.0003283931
4		0.0003686929
5		0.0006963815
6		0.0003219404
	cold_wave_expected_annual_loss_rate_national_percentile	
1		51.36139
2		51.63985
3		86.63366
4		30.94059
5		76.67079

6		87.46906
1	cold_wave_hazard_type_risk_index_value	cold_wave_hazard_type_risk_index_score
2	394681.80	28.18066
3	3905529.87	80.31170
4	140701.18	13.83588
5	679912.34	39.66285
6	1690635.75	63.51781
	77717.69	10.05089
1	cold_wave_hazard_type_risk_index_rating	drought_number_of_events
2	Relatively Low	784
3	Relatively Moderate	609
4	Very Low	1463
5	Relatively Low	931
6	Relatively Low	854
	Very Low	1106
1	drought_annualized_frequency	drought_exposure_impacted_area_sq_mi
2	25.16116	610.4705
3	15.57565	1674.8440
4	47.86185	913.6465
5	29.52790	632.4868
6	28.33446	657.1966
	39.17002	631.4545
1	drought_exposure_agriculture_value	drought_exposure_total
2	12838924	12838924
3	117727632	117727632
4	10715521	10715521
5	2369531	2369531
6	15967913	15967913
	60006545	60006545
1	drought_historic_loss_ratio_agriculture	
2	0.000324501	
3	0.000424452	
4	0.000589763	
5	0.000410236	
6	0.000348237	
	0.000460271	
1	drought_historic_loss_ratio_total_rating	
2	Relatively Moderate	
3	Relatively Low	
4	Relatively Moderate	
5	Relatively Moderate	
6	Relatively Moderate	

```

drought_expected_annual_loss_agriculture_value
1                      106181.58
2                      663703.74
3                      304273.58
4                      27361.43
5                      161945.56
6                     1077019.10

drought_expected_annual_loss_total drought_expected_annual_loss_score
1                      106181.58          48.09302
2                      663703.74          75.78295
3                      304273.58          63.68992
4                      27361.43           33.24031
5                      161945.56          54.17054
6                     1077019.10          85.36434

drought_expected_annual_loss_rating
1             Relatively Low
2             Relatively Moderate
3             Relatively Low
4             Relatively Low
5             Relatively Low
6             Relatively Moderate

drought_expected_annual_loss_rate_agriculture
1                  0.0038428918
2                  0.0042816017
3                  0.0022387117
4                  0.0050575588
5                  0.0005178744
6                  0.0124440139

drought_expected_annual_loss_rate_national_percentile
1                  65.45736
2                  67.16279
3                  54.38760
4                  70.97674
5                  33.61240
6                  85.95349

drought_hazard_type_risk_index_value drought_hazard_type_risk_index_score
1                  110235.72          45.64249
2                  708094.68          74.52290
3                  545496.46          70.03817
4                  38553.29           33.87405
5                  218303.68          55.18448
6                 1865918.21          90.99873

drought_hazard_type_risk_index_rating earthquake_number_of_events

```

1	Relatively Low	NA
2	Relatively Moderate	NA
3	Relatively Moderate	NA
4	Relatively Low	NA
5	Relatively Low	NA
6	Relatively High	NA
	earthquake_annualized_frequency	earthquake_exposure_impacted_area_sq_mi
1	0.001897	610.4705
2	0.001262	1674.8440
3	0.001397	913.6465
4	0.002262	632.4868
5	0.002587	657.1966
6	0.001693	631.4545
	earthquake_exposure_building_value	earthquake_exposure_population
1	17389364250	58805
2	88075559159	231767
3	9883965773	25223
4	6126312123	22293
5	15015589156	59134
6	3111958158	10357
	earthquake_exposure_population_equivalence	earthquake_exposure_total
1	8.056285e+11	8.230179e+11
2	3.175208e+12	3.263283e+12
3	3.455551e+11	3.554391e+11
4	3.054141e+11	3.115404e+11
5	8.101358e+11	8.251514e+11
6	1.418909e+11	1.450029e+11
	earthquake_historic_loss_ratio_buildings	
1	0.014152456	
2	0.006040816	
3	0.010088041	
4	0.019326856	
5	0.013814331	
6	0.015491384	
	earthquake_historic_loss_ratio_population	
1	1.566277e-04	
2	6.094363e-05	
3	1.116029e-04	
4	1.701636e-04	
5	9.799669e-05	
6	1.951592e-04	
	earthquake_historic_loss_ratio_total_rating	
1	Relatively Low	

2		Very Low
3		Relatively Low
4		Relatively Low
5		Relatively Low
6		Relatively Low
	earthquake_expected_annual_loss_building_value	
1		466855.91
2		671444.84
3		139294.66
4		267826.12
5		536622.23
6		81617.06
	earthquake_expected_annual_loss_population	
1		0.0174723
2		0.0178254
3		0.0039325
4		0.0085808
5		0.0149915
6		0.0034220
	earthquake_expected_annual_loss_population_equivalence	
1		239370.51
2		244207.98
3		53875.25
4		117556.96
5		205383.55
6		46881.40
	earthquake_expected_annual_loss_total	earthquake_expected_annual_loss_score
1	706226.4	67.63614
2	915652.8	71.25619
3	193169.9	45.35891
4	385383.1	57.33292
5	742005.8	68.62624
6	128498.5	38.21163
	earthquake_expected_annual_loss_rating	
1	Relatively Low	
2	Relatively Low	
3	Very Low	
4	Relatively Low	
5	Relatively Low	
6	Very Low	
	earthquake_expected_annual_loss_rate_building	
1	4.558514e-05	
2	1.301192e-05	

3		2.559706e-05
4		7.581492e-05
5		6.116406e-05
6		4.606217e-05
	earthquake_expected_annual_loss_rate_population	
1		2.973300e-07
2		7.704450e-08
3		1.562997e-07
4		3.858447e-07
5		2.541277e-07
6		3.313965e-07
	earthquake_expected_annual_loss_rate_national_percentile	
1		55.01238
2		31.68317
3		43.50248
4		72.71040
5		71.07054
6		52.87748
	earthquake_hazard_type_risk_index_value	
1		733191.0
2		976895.0
3		346311.7
4		543019.2
5		1000228.7
6		222621.5
	earthquake_hazard_type_risk_index_score	
1		67.84351
2		72.39186
3		53.72137
4		62.43639
5		72.77354
6		45.48346
	earthquake_hazard_type_risk_index_rating	hail_number_of_events
1	Relatively Low	100.40305
2	Relatively Low	56.99235
3	Very Low	67.72260
4	Relatively Low	122.15326
5	Relatively Low	180.73870
6	Very Low	83.29802
	hail_annualized_frequency	hail_exposure_impacted_area_sq_mi
1	2.646739	610.4705
2	1.462595	1674.8440
3	1.779561	913.6465

4	3.214698	632.4868
5	4.756310	657.1966
6	2.191940	631.4545
	<i>hail_exposure_building_value</i> <i>hail_exposure_population</i>	
1	10241406107	58764
2	51602300760	231365
3	5441822473	25160
4	3532630882	22239
5	8773489059	58992
6	1771888929	10326
	<i>hail_exposure_population_equivalence</i> <i>hail_exposure_agriculture_value</i>	
1	8.050668e+11	27630646
2	3.169700e+12	155012958
3	3.446920e+11	135914589
4	3.046743e+11	5410008
5	8.081904e+11	312712010
6	1.414662e+11	86549172
	<i>hail_exposure_total</i> <i>hail_historic_loss_ratio_buildings</i>	
1	8.153358e+11	4.677834e-06
2	3.221458e+12	3.896846e-06
3	3.502697e+11	2.291055e-06
4	3.082123e+11	2.584154e-06
5	8.172766e+11	9.416817e-07
6	1.433246e+11	2.816460e-06
	<i>hail_historic_loss_ratio_population</i> <i>hail_historic_loss_ratio_agriculture</i>	
1	3.858473e-08	6.953655e-05
2	3.858473e-08	7.280498e-06
3	3.858473e-08	2.781710e-04
4	3.416060e-10	1.227620e-04
5	4.474400e-10	3.953458e-05
6	3.858473e-08	1.569340e-04
	<i>hail_historic_loss_ratio_total_rating</i>	
1	Relatively Low	
2	Very Low	
3	Relatively Low	
4	Very Low	
5	Very Low	
6	Relatively Low	
	<i>hail_expected_annual_loss_building_value</i> <i>hail_expected_annual_loss_population</i>	
1	125690.01	5.958791e-03
2	255149.06	1.149748e-02
3	22985.10	1.772234e-03
4	29559.95	2.457714e-05

5	39266.63	1.254589e-04
6	11036.79	8.811446e-04
	hail_expected_annual_loss_population_equivalence	
1	81635.4307	
2	157515.4420	
3	24279.6104	
4	336.7068	
5	1718.7868	
6	12071.6806	
	hail_expected_annual_loss_agriculture_value	hail_expected_annual_loss_total
1	4931.998	212257.43
2	1407.645	414072.15
3	61966.929	109231.63
4	2165.053	32061.71
5	58848.685	99834.10
6	29788.054	52896.53
	hail_expected_annual_loss_score	hail_expected_annual_loss_rating
1	48.34109	Relatively Low
2	65.27132	Relatively Low
3	33.11628	Very Low
4	13.48837	Very Low
5	31.50388	Very Low
6	20.00000	Very Low
	hail_expected_annual_loss_rate_building	
1	1.227273e-05	
2	4.944529e-06	
3	4.223786e-06	
4	8.367688e-06	
5	4.475600e-06	
6	6.228828e-06	
	hail_expected_annual_loss_rate_population	
1	1.014021e-07	
2	4.969411e-08	
3	7.043857e-08	
4	1.105137e-09	
5	2.126710e-09	
6	8.533261e-08	
	hail_expected_annual_loss_rate_agriculture	
1	1.784974e-04	
2	9.080821e-06	
3	4.559255e-04	
4	4.001941e-04	
5	1.881881e-04	

6		3.441749e-04
	hail_expected_annual_loss_rate_national_percentile	
1		24.58915
2		16.18605
3		43.47287
4		32.93023
5		38.60465
6		40.86822
	hail_hazard_type_risk_index_value	hail_hazard_type_risk_index_score
1	220361.68	44.30662
2	441766.81	63.19975
3	195828.61	41.38041
4	45176.16	13.10433
5	134577.02	31.71120
6	91642.38	24.01399
	hail_hazard_type_risk_index_rating	heat_wave_number_of_events
1	Relatively Low	157.0000
2	Relatively Low	120.7742
3	Relatively Low	146.0000
4	Very Low	157.0000
5	Very Low	94.0000
6	Very Low	146.0000
	heat_wave_annualized_frequency	heat_wave_exposure_impacted_area_sq_mi
1	9.526316	610.4705
2	9.294483	1674.8440
3	8.947368	913.6465
4	9.473684	632.4868
5	5.894737	657.1966
6	8.947368	631.4545
	heat_wave_exposure_building_value	heat_wave_exposure_population
1	10241406107	58764
2	51602300760	231365
3	5441822473	25160
4	3532630882	22239
5	8773489059	58992
6	1771888929	10326
	heat_wave_exposure_population_equivalence	
1	8.050668e+11	
2	3.169700e+12	
3	3.446920e+11	
4	3.046743e+11	
5	8.081904e+11	
6	1.414662e+11	

	heat_wave_exposure_agriculture_value	heat_wave_exposure_total
1	27630646	8.153358e+11
2	155012958	3.221458e+12
3	135914589	3.502697e+11
4	5410008	3.082123e+11
5	312712010	8.172766e+11
6	86549172	1.433246e+11
	heat_wave_historic_loss_ratio_buildings	
1	6.75528e-10	
2	6.98075e-10	
3	6.75528e-10	
4	6.75528e-10	
5	7.20391e-10	
6	6.75528e-10	
	heat_wave_historic_loss_ratio_population	
1	2.36052e-07	
2	1.02924e-07	
3	1.38172e-07	
4	1.21107e-07	
5	1.17213e-07	
6	1.42389e-07	
	heat_wave_historic_loss_ratio_agriculture	
1	7.44074e-06	
2	4.85805e-07	
3	4.20060e-06	
4	3.20575e-05	
5	9.78287e-06	
6	8.18823e-06	
	heat_wave_historic_loss_ratio_total_rating	
1	Relatively High	
2	Relatively Moderate	
3	Relatively Moderate	
4	Relatively Moderate	
5	Relatively Moderate	
6	Relatively Moderate	
	heat_wave_expected_annual_loss_building_value	
1	65.90645	
2	326.15029	
3	32.89145	
4	22.60792	
5	37.25676	
6	10.70965	
	heat_wave_expected_annual_loss_population	

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1          0.15841898
2          0.26406483
3          0.03728973
4          0.03058909
5          0.04886485
6          0.01577129

heat_wave_expected_annual_loss_population_equivalence
1          2170340.1
2          3617688.2
3          510869.3
4          419070.6
5          669448.4
6          216066.6

heat_wave_expected_annual_loss_agriculture_value
1          1958.5685
2          701.3291
3          5108.2707
4          1643.1293
5          18033.3570
6          6340.8758

heat_wave_expected_annual_loss_total heat_wave_expected_annual_loss_score
1          2172364.5          86.82074
2          3618715.7          91.75515
3          516010.4          59.61899
4          420736.3          56.58963
5          687519.0          67.55153
6          222418.2          43.16052

heat_wave_expected_annual_loss_rating
1          Relatively Moderate
2          Relatively Moderate
3          Relatively Low
4          Relatively Low
5          Relatively Low
6          Relatively Low

heat_wave_expected_annual_loss_rate_building
1          6.435293e-09
2          6.320460e-09
3          6.044198e-09
4          6.399740e-09
5          4.246516e-09
6          6.044199e-09

heat_wave_expected_annual_loss_rate_population
1          2.695851e-06

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2		1.141334e-06
3		1.482104e-06
4		1.375471e-06
5		8.283300e-07
6		1.527337e-06
	heat_wave_expected_annual_loss_rate_agriculture	
1		7.088392e-05
2		4.524325e-06
3		3.758442e-05
4		3.037203e-04
5		5.766762e-05
6		7.326327e-05
	heat_wave_expected_annual_loss_rate_national_percentile	
1		50.28107
2		32.26109
3		73.76640
4		62.08620
5		85.75890
6		86.66458
	heat_wave_hazard_type_risk_index_value	heat_wave_hazard_type_risk_index_score
1	2255308.0	85.90238
2	3860748.6	92.19653
3	925094.7	69.46050
4	592833.3	59.69814
5	926780.1	69.49261
6	385335.9	49.96789
	heat_wave_hazard_type_risk_index_rating	hurricane_number_of_events
1	Relatively Moderate	26
2	Relatively Moderate	100
3	Relatively Low	42
4	Relatively Low	22
5	Relatively Low	12
6	Relatively Low	40
	hurricane_annualized_frequency	hurricane_exposure_impacted_area_sq_mi
1	0.07914897	610.4705
2	0.23635980	1674.8440
3	0.11480027	913.6465
4	0.06567182	632.4868
5	0.03861104	657.1966
6	0.12178739	631.4545
	hurricane_exposure_building_value	hurricane_exposure_population
1	10238974847	58748.67
2	51601828725	231362.82

3	5441822473	25160.00
4	3532630882	22239.00
5	8773228158	58989.06
6	1771888929	10326.00
	hurricane_exposure_population_equivalence	
1	8.048568e+11	
2	3.169671e+12	
3	3.446920e+11	
4	3.046743e+11	
5	8.081501e+11	
6	1.414662e+11	
	hurricane_exposure_agriculture_value	hurricane_exposure_total
1	27499630	8.151232e+11
2	154998947	3.221427e+12
3	135914589	3.502697e+11
4	5410008	3.082123e+11
5	311686938	8.172350e+11
6	86507256	1.433246e+11
	hurricane_historic_loss_ratio_buildings	
1	0.000817589	
2	0.011967574	
3	0.001038720	
4	0.000193193	
5	0.000123335	
6	0.001835101	
	hurricane_historic_loss_ratio_population	
1	6.50e-07	
2	8.82e-06	
3	7.62e-07	
4	1.61e-07	
5	9.70e-08	
6	8.88e-07	
	hurricane_historic_loss_ratio_agriculture	
1	0.02389528	
2	0.04418233	
3	0.02879113	
4	0.02133846	
5	0.01500499	
6	0.02658374	
	hurricane_historic_loss_ratio_total_rating	
1	Relatively Low	
2	Very High	
3	Relatively Moderate	

4		Very Low
5		Relatively Low
6		Relatively Moderate
	hurricane_expected_annual_loss_building_value	
1		633591.11
2		150899001.47
3		612108.31
4		43837.45
5		42636.47
6		403182.75
	hurricane_expected_annual_loss_population	
1		0.0028929092
2		0.4994660984
3		0.0021024458
4		0.0002298890
5		0.0002250358
6		0.0011369581
	hurricane_expected_annual_loss_population_equivalence	
1		39632.856
2		6842685.549
3		28803.507
4		3149.480
5		3082.991
6		15576.326
	hurricane_expected_annual_loss_agriculture_value	
1		52355.321
2		1684756.880
3		490513.304
4		7579.473
5		176218.599
6		280371.138
	hurricane_expected_annual_loss_total	hurricane_expected_annual_loss_score
1		725579.28
2		159426443.90
3		1131425.12
4		54566.41
5		221938.06
6		699130.21
	hurricane_expected_annual_loss_rating	
1		Relatively Low
2		Very High
3		Relatively Low
4		Very Low

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5           Relatively Low
6           Relatively Low
  hurricane_expected_annual_loss_rate_building
1           6.186564e-05
2           2.924269e-03
3           1.124822e-04
4           1.240929e-05
5           4.859693e-06
6           2.275440e-04
  hurricane_expected_annual_loss_rate_population
1           4.922928e-08
2           2.158780e-06
3           8.356303e-08
4           1.033720e-08
5           3.814684e-09
6           1.101063e-07
  hurricane_expected_annual_loss_rate_agriculture
1           0.0018948280
2           0.0108684906
3           0.0036089820
4           0.0014010095
5           0.0005635172
6           0.0032394433
  hurricane_expected_annual_loss_rate_national_percentile
1           68.89336
2           98.87324
3           79.35614
4           55.57344
5           60.24145
6           81.73038
  hurricane_hazard_type_risk_index_value hurricane_hazard_type_risk_index_score
1           753282.76           72.09011
2           170089467.65          99.24906
3           2028399.60           79.97497
4           76886.11            50.06258
5           299173.96           62.99541
6           1211231.81           76.17856
  hurricane_hazard_type_risk_index_rating ice_storm_number_of_events
1           Relatively Low           28
2           Very High             11
3           Relatively Low           27
4           Very Low              28
5           Relatively Low           36

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6	Relatively Low	34
ice_storm_annualized_frequency	ice_storm_exposure_impacted_area_sq_mi	
1	0.4020250	610.4705
2	0.1809756	1674.8440
3	0.3916563	913.6465
4	0.4130497	632.4868
5	0.5246322	657.1966
6	0.4938238	631.4545
ice_storm_exposure_building_value	ice_storm_exposure_population	
1	10241406107	58764.00
2	51602300760	231365.00
3	5439743279	25143.57
4	3532630882	22239.00
5	8773489059	58992.00
6	1771888929	10326.00
ice_storm_exposure_population_equivalence	ice_storm_exposure_total	
1	8.050668e+11	8.153082e+11
2	3.169700e+12	3.221303e+12
3	3.444669e+11	3.499066e+11
4	3.046743e+11	3.082069e+11
5	8.081904e+11	8.169639e+11
6	1.414662e+11	1.432381e+11
ice_storm_historic_loss_ratio_buildings		
1	1.201483e-05	
2	4.461639e-06	
3	5.359539e-06	
4	1.068534e-05	
5	9.940137e-06	
6	4.727637e-06	
ice_storm_historic_loss_ratio_population		
1	3.820473e-08	
2	3.771703e-08	
3	3.771703e-08	
4	3.936282e-08	
5	2.131958e-08	
6	3.787451e-08	
ice_storm_historic_loss_ratio_total_rating		
1	Very Low	
2	Very Low	
3	Very Low	
4	Very Low	
5	Very Low	
6	Very Low	

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ice_storm_expected_annual_loss_building_value
1                      49468.681
2                      50479.951
3                     12631.747
4                     16407.910
5                     45018.026
6                     4127.112

ice_storm_expected_annual_loss_population
1                  0.0009025715
2                  0.0019456564
3                  0.0004006165
4                  0.0003805396
5                  0.0006505543
6                  0.0001926839

ice_storm_expected_annual_loss_population_equivalence
1                  12365.229
2                  26655.493
3                  5488.445
4                  5213.392
5                  8912.594
6                  2639.770

ice_storm_expected_annual_loss_total ice_storm_expected_annual_loss_score
1                  61833.910          44.78507
2                  77135.444          49.45018
3                  18120.193          22.55915
4                  21621.303          25.15828
5                  53930.620          42.01933
6                  6766.881          13.16228

ice_storm_expected_annual_loss_rating
1             Relatively Low
2             Relatively Low
3             Very Low
4             Very Low
5             Relatively Low
6             Very Low

ice_storm_expected_annual_loss_rate_building
1           4.830263e-06
2           9.782500e-07
3           2.321235e-06
4           4.644672e-06
5           5.131143e-06
6           2.329216e-06

ice_storm_expected_annual_loss_rate_population

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1		1.535926e-08
2		8.409467e-09
3		1.592275e-08
4		1.711136e-08
5		1.102784e-08
6		1.866007e-08
	ice_storm_expected_annual_loss_rate_national_percentile	
1		48.95035
2		25.49150
3		35.05498
4		45.45152
5		50.88304
6		31.52283
	ice_storm_hazard_type_risk_index_value ice_storm_hazard_type_risk_index_score	
1	64194.80	42.98567
2	82294.54	48.28391
3	32485.57	29.59014
4	30465.23	28.59047
5	72698.83	45.61813
6	11723.51	16.42786
	ice_storm_hazard_type_risk_index_rating landslide_number_of_events	
1	Relatively Low	NA
2	Relatively Low	NA
3	Relatively Low	NA
4	Relatively Low	NA
5	Relatively Low	NA
6	Very Low	NA
	landslide_annualized_frequency landslide_exposure_impacted_area_sq_mi	
1	0.6080374	9.844736
2	0.2870436	10.837740
3	0.5232044	4.677953
4	1.1925173	6.499175
5	1.0733445	21.192289
6	0.2357571	2.169914
	landslide_exposure_building_value landslide_exposure_population	
1	241709146	1369.4124
2	272324884	1291.8727
3	77638194	360.6112
4	135044989	963.4599
5	563453473	4049.5775
6	29943314	158.9033
	landslide_exposure_population_equivalence landslide_exposure_total	
1	18760950535	19002659681

2	17698656060	17970980944
3	4940373499	5018011693
4	13199400340	13334445328
5	55479211700	56042665173
6	2176975246	2206918560
	landslide_historic_loss_ratio_buildings	
1	0.000813948	
2	0.001726323	
3	0.000501755	
4	0.000406387	
5	0.000043044	
6	0.000258224	
	landslide_historic_loss_ratio_population	
1	3.002444e-07	
2	3.002444e-07	
3	3.002444e-07	
4	3.002444e-07	
5	2.837848e-06	
6	3.002444e-07	
	landslide_historic_loss_ratio_total_rating	
1	Relatively Low	
2	Very Low	
3	Relatively Low	
4	Relatively Low	
5	Very Low	
6	Very Low	
	landslide_expected_annual_loss_building_value	
1	8024.6890	
2	3754.0146	
3	2217.9510	
4	8793.2167	
5	1831.6780	
6	385.4514	
	landslide_expected_annual_loss_population	
1	1.854463e-05	
2	3.217201e-06	
3	5.576693e-06	
4	4.962253e-05	
5	8.665683e-04	
6	2.481168e-06	
	landslide_expected_annual_loss_population_equivalence	
1	254.06138	
2	44.07565	

3		76.40069
4		679.82862
5		11871.98599
6		33.99201
	landslide_expected_annual_loss_total	landslide_expected_annual_loss_score
1	8278.7504	72.50155
2	3798.0902	64.12166
3	2294.3517	57.07635
4	9473.0453	73.64991
5	13703.6639	77.12601
6	419.4434	33.79888
	landslide_expected_annual_loss_rating	
1	Very Low	
2	Very Low	
3	Very Low	
4	Relatively Low	
5	Relatively Low	
6	Very Low	
	landslide_expected_annual_loss_rate_building	
1	7.835534e-07	
2	7.274898e-08	
3	4.075750e-07	
4	2.489141e-06	
5	2.087742e-07	
6	2.175370e-07	
	landslide_expected_annual_loss_rate_population	
1	3.155780e-10	
2	1.390530e-11	
3	2.216492e-10	
4	2.231329e-09	
5	1.468959e-08	
6	2.402836e-10	
	landslide_expected_annual_loss_rate_national_percentile	
1	95.71695	
2	84.94724	
3	93.73060	
4	96.39975	
5	44.90999	
6	89.29236	
	landslide_hazard_type_risk_index_value	landslide_hazard_type_risk_index_score
1	8594.8429	73.50509
2	4052.1204	65.07634
3	4113.2745	65.39440

4	13347.8764	77.86260
5	18472.6292	80.97964
6	726.6789	40.77608
	landslide_hazard_type_risk_index_rating	lightning_number_of_events
1	Relatively Low	105420.70
2	Relatively Low	548407.39
3	Relatively Low	94050.16
4	Relatively Low	80557.59
5	Relatively Low	162157.24
6	Very Low	42493.65
	lightning_annualized_frequency	lightning_exposure_impacted_area_sq_mi
1	68.50062	610.4705
2	84.28896	1674.8440
3	69.38481	913.6465
4	71.06225	632.4868
5	63.77048	657.1966
6	68.49618	631.4545
	lightning_exposure_building_value	lightning_exposure_population
1	10241406107	58764
2	51602300760	231365
3	5441822473	25160
4	3532630882	22239
5	8773489059	58992
6	1771888929	10326
	lightning_exposure_population_equivalence	lightning_exposure_total
1	8.050668e+11	8.153082e+11
2	3.169700e+12	3.221303e+12
3	3.446920e+11	3.501338e+11
4	3.046743e+11	3.082069e+11
5	8.081904e+11	8.169639e+11
6	1.414662e+11	1.432381e+11
	lightning_historic_loss_ratio_buildings	
1	2.532506e-08	
2	1.511820e-08	
3	7.326266e-08	
4	2.527066e-08	
5	3.292619e-08	
6	4.379312e-08	
	lightning_historic_loss_ratio_population	
1	1.416246e-08	
2	1.480652e-08	
3	9.890247e-09	
4	8.500586e-09	

```

5           1.041512e-08
6           9.487407e-09
lightning_historic_loss_ratio_total_rating
1           Relatively Moderate
2           Relatively Moderate
3           Relatively Moderate
4           Relatively Low
5           Relatively Low
6           Relatively Low
lightning_expected_annual_loss_building_value
1           17599.257
2           66256.325
3           27919.940
4           6348.319
5           18442.755
6           5307.712
lightning_expected_annual_loss_population
1           0.056417769
2           0.292857143
3           0.017403203
4           0.013444601
5           0.039285714
6           0.006701067
lightning_expected_annual_loss_population_equivalence
1           772923.43
2           4012142.86
3           238423.89
4           184191.03
5           538214.28
6           91804.62
lightning_expected_annual_loss_total lightning_expected_annual_loss_score
1           790522.69           83.36437
2           4078399.18          98.85164
3           266343.83          56.02110
4           190539.35          46.67908
5           556657.04          75.82247
6           97112.33          29.11235
lightning_expected_annual_loss_rating
1           Relatively Moderate
2           Very High
3           Relatively Low
4           Relatively Low
5           Relatively Moderate

```

6	Relatively Low	
lightning_expected_annual_loss_rate_building		
1	1.718441e-06	
2	1.283980e-06	
3	5.130623e-06	
4	1.797051e-06	
5	2.102100e-06	
6	2.995511e-06	
lightning_expected_annual_loss_rate_population		
1	9.600737e-07	
2	1.265780e-06	
3	6.917012e-07	
4	6.045506e-07	
5	6.659499e-07	
6	6.489509e-07	
lightning_expected_annual_loss_rate_national_percentile		
1	30.32278	
2	18.83923	
3	84.17132	
4	40.96834	
5	44.81688	
6	63.40782	
lightning_hazard_type_risk_index_value	lightning_hazard_type_risk_index_score	
1	820705.8	81.67939
2	4351177.4	98.85496
3	477496.7	67.87532
4	268477.1	52.70356
5	750377.3	79.83461
6	168245.6	40.23537
lightning_hazard_type_risk_index_rating	inland_flooding_number_of_events	
1	Relatively Moderate	26
2	Very High	83
3	Relatively Moderate	7
4	Relatively Low	16
5	Relatively Moderate	36
6	Relatively Low	10
inland_flooding_annualized_frequency		
1	0.9285714	
2	2.9642857	
3	0.2500000	
4	0.5714286	
5	1.2857143	
6	0.3571429	

```

inland_flooding_exposure_impacted_area_sq_mi
1          38.44449
2          85.53793
3          18.65115
4          18.42915
5          43.12943
6          19.52088

inland_flooding_exposure_building_value inland_flooding_exposure_population
1          10232864388          1665.0948
2          51511106459          14431.5515
3          5438301142           369.6507
4          3531074563           737.4141
5          8765463116           860.7218
6          1771341753           345.5152

inland_flooding_exposure_population_equivalence
1          22811799317
2          197712256042
3          5064214722
4          10102573407
5          11791889263
6          4733557945

inland_flooding_exposure_agriculture_value inland_flooding_exposure_total
1          6060224.0          33050723929
2          551359.4          249223913860
3          4234244.9          10506750109
4          1526254.2          13635174223
5          16709859.6          20574062238
6          10562149.8          6515461848

inland_flooding_historic_loss_ratio_buildings
1          0.0011421256
2          0.0003079860
3          0.0028986128
4          0.0023290457
5          0.0008724106
6          0.0022741030

inland_flooding_historic_loss_ratio_population
1          2.61034e-06
2          2.17315e-06
3          3.72513e-06
4          2.10199e-06
5          3.72513e-06
6          3.72513e-06

inland_flooding_historic_loss_ratio_agriculture

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```

1          0.010956987
2          0.010762316
3          0.010292012
4          0.001206870
5          0.000778774
6          0.010283332

  inland_flooding_historic_loss_ratio_total_rating
1          Relatively Moderate
2          Relatively Low
3          Relatively Moderate
4          Relatively Moderate
5          Relatively High
6          Relatively Low

  inland_flooding_expected_annual_loss_building_value
1          10852415
2          47027498
3          3940882
4          4699448
5          9831964
6          1438648

  inland_flooding_expected_annual_loss_population
1          0.0040360020
2          0.0929657099
3          0.0003442492
4          0.0008857355
5          0.0041223867
6          0.0004596746

  inland_flooding_expected_annual_loss_population_equivalence
1          55293.227
2          1273630.225
3          4716.215
4          12134.576
5          56476.698
6          6297.542

  inland_flooding_expected_annual_loss_agriculture_value
1          61658.810
2          17589.786
3          10894.725
4          1052.566
5          16731.263
6          38790.748

  inland_flooding_expected_annual_loss_total
1          10969367

```

2	48318718
3	3956493
4	4712635
5	9905172
6	1483736
	inland_flooding_expected_annual_loss_score
1	67.69802
2	91.89356
3	38.30446
4	44.02847
5	65.43936
6	13.70668
	inland_flooding_expected_annual_loss_rating
1	Relatively Low
2	Relatively Moderate
3	Very Low
4	Relatively Low
5	Relatively Low
6	Very Low
	inland_flooding_expected_annual_loss_rate_building
1	0.0010596607
2	0.0009113450
3	0.0007241843
4	0.0013302969
5	0.0011206447
6	0.0008119288
	inland_flooding_expected_annual_loss_rate_population
1	6.868154e-08
2	4.018141e-07
3	1.368240e-08
4	3.982803e-08
5	6.988044e-08
6	4.451623e-08
	inland_flooding_expected_annual_loss_rate_agriculture
1	2.231537e-03
2	1.134730e-04
3	8.015861e-05
4	1.945590e-04
5	5.350374e-05
6	4.481932e-04
	inland_flooding_expected_annual_loss_rate_national_percentile
1	76.36139
2	60.82921

3		39.26361
4		89.07797
5		80.10520
6		51.26856
	inland_flooding_hazard_type_risk_index_value	
1		11388191
2		51550451
3		7093133
4		6640280
5		13352237
6		2570549
	inland_flooding_hazard_type_risk_index_score	
1		65.52163
2		92.20738
3		50.76336
4		48.91858
5		69.46565
6		20.16539
	inland_flooding_hazard_type_risk_index_rating	strong_wind_number_of_events
1	Relatively Low	49
2	Relatively Moderate	60
3	Relatively Low	58
4	Relatively Low	52
5	Relatively Low	166
6	Very Low	60
	strong_wind_annualized_frequency	strong_wind_exposure_impacted_area_sq_mi
1	1.279727	610.4705
2	1.882677	1674.8440
3	1.526485	913.6465
4	1.367932	632.4868
5	4.361082	657.1966
6	1.571969	631.4545
	strong_wind_exposure_building_value	strong_wind_exposure_population
1	10241406107	58764
2	51602300760	231365
3	5441822473	25160
4	3532630882	22239
5	8773489059	58992
6	1771888929	10326
	strong_wind_exposure_population_equivalence	
1	8.050668e+11	
2	3.169700e+12	
3	3.446920e+11	

4		3.046743e+11
5		8.081904e+11
6		1.414662e+11
	<b>strong_wind_exposure_agriculture_value</b>	<b>strong_wind_exposure_total</b>
1		27630646
2		155012958
3		135914589
4		5410008
5		312712010
6		86549172
	<b>strong_wind_historic_loss_ratio_buildings</b>	
1		1.576726e-05
2		2.185529e-06
3		8.337606e-06
4		9.292704e-06
5		2.748161e-06
6		1.052940e-04
	<b>strong_wind_historic_loss_ratio_population</b>	
1		3.890399e-07
2		2.689778e-07
3		1.846388e-07
4		1.391838e-07
5		2.429975e-07
6		2.527365e-07
	<b>strong_wind_historic_loss_ratio_agriculture</b>	
1		1.776860e-04
2		3.198717e-05
3		3.036987e-05
4		1.050690e-04
5		1.174150e-05
6		4.599721e-05
	<b>strong_wind_historic_loss_ratio_total_rating</b>	
1		Relatively Low
2		Relatively Low
3		Relatively Low
4		Relatively Low
5		Relatively Moderate
6		Relatively Moderate
	<b>strong_wind_expected_annual_loss_building_value</b>	
1		195914.49
2		179826.63
3		67764.38
4		44981.27

```

5                               103628.96
6                               295398.80
  strong_wind_expected_annual_loss_population
1                               0.027760286
2                               0.100709192
3                               0.006975858
4                               0.004238693
5                               0.061731416
6                               0.004132055
  strong_wind_expected_annual_loss_population_equivalence
1                               380315.91
2                               1379715.92
3                               95569.26
4                               58070.09
5                               845720.40
6                               56609.16
  strong_wind_expected_annual_loss_agriculture_value
1                               6374.6304
2                               8099.9786
3                               6481.9744
4                               784.1054
5                               16351.8036
6                               6260.7546
  strong_wind_expected_annual_loss_total strong_wind_expected_annual_loss_score
1                               582605.0      56.68217
2                               1567642.5     85.42636
3                               169815.6      22.69767
4                               103835.5      16.46512
5                               965701.2      73.05426
6                               358268.7      40.89922
  strong_wind_expected_annual_loss_rating
1                               Relatively Moderate
2                               Relatively Moderate
3                               Relatively Low
4                               Very Low
5                               Relatively Moderate
6                               Relatively Low
  strong_wind_expected_annual_loss_rate_building
1                               1.912965e-05
2                               3.484857e-06
3                               1.245252e-05
4                               1.273308e-05
5                               1.181160e-05

```

6		1.667141e-04
	strong_wind_expected_annual_loss_rate_population	
1		4.724029e-07
2		4.352827e-07
3		2.772599e-07
4		1.905973e-07
5		1.046437e-06
6		4.001603e-07
	strong_wind_expected_annual_loss_rate_agriculture	
1		2.307087e-04
2		5.225356e-05
3		4.769153e-05
4		1.449361e-04
5		5.229030e-05
6		7.233755e-05
	strong_wind_expected_annual_loss_rate_national_percentile	
1		45.95349
2		8.27907
3		43.68992
4		44.89922
5		17.55039
6		97.02326
	strong_wind_hazard_type_risk_index_value	
1		604849.6
2		1672492.2
3		304442.5
4		146308.1
5		1301771.5
6		620694.8
	strong_wind_hazard_type_risk_index_score	
1		51.68575
2		85.11450
3		29.93003
4		16.31679
5		78.88041
6		52.44911
	strong_wind_hazard_type_risk_index_rating	tornado_number_of_events
1	Relatively Low	43
2	Relatively High	82
3	Relatively Low	41
4	Very Low	33
5	Relatively Moderate	51
6	Relatively Moderate	22

	tornado_annualized_frequency	tornado_exposure_impacted_area_sq_mi
1	0.5112290	442.5852
2	1.3442028	1263.1049
3	0.7965739	605.5448
4	0.6002962	435.2331
5	0.7179991	511.7147
6	0.5808771	412.6413
	tornado_exposure_building_value	tornado_exposure_population
1	10241406107	58764
2	51602300760	231365
3	5441822473	25160
4	3532630882	22239
5	8773489059	58992
6	1771888929	10326
	tornado_exposure_population_equivalence	tornado_exposure_agriculture_value
1	8.050668e+11	27630646
2	3.169700e+12	155012958
3	3.446920e+11	135914589
4	3.046743e+11	5410008
5	8.081904e+11	312712010
6	1.414662e+11	86549172
	tornado_exposure_total	tornado_historic_loss_ratio_buildings
1	8.153358e+11	2.804855e-04
2	3.221458e+12	6.134908e-05
3	3.502697e+11	1.623183e-04
4	3.082123e+11	4.628963e-04
5	8.172766e+11	4.235818e-04
6	1.433246e+11	2.403525e-04
	tornado_historic_loss_ratio_population	
1	3.714784e-06	
2	1.115528e-06	
3	5.251746e-06	
4	8.391096e-06	
5	6.604502e-06	
6	8.338736e-06	
	tornado_historic_loss_ratio_agriculture	
1	5.701380e-05	
2	3.534510e-06	
3	1.112236e-05	
4	1.125625e-04	
5	1.052845e-04	
6	3.422153e-05	
	tornado_historic_loss_ratio_total_rating	

```

1           Relatively Moderate
2           Relatively Moderate
3           Relatively High
4           Relatively High
5           Relatively High
6           Relatively High
tornado_expected_annual_loss_building_value
1           1468539.0
2           4255415.1
3           703619.5
4           981629.4
5           2668293.2
6           247382.8
tornado_expected_annual_loss_population
1           0.11159903
2           0.34693082
3           0.10525443
4           0.11202104
5           0.27974162
6           0.05001688
tornado_expected_annual_loss_population_equivalence
1           1528907.0
2           4752951.9
3           1441985.7
4           1534688.3
5           3832460.9
6           685231.6
tornado_expected_annual_loss_agriculture_value
1           805.3535
2           736.4817
3           1204.1735
4           365.5588
5           23639.2138
6           1720.4682
tornado_expected_annual_loss_total  tornado_expected_annual_loss_score
1           2998251.1           76.46512
2           9009103.9           92.65116
3           2146809.4           68.86822
4           2516683.3           72.55814
5           6524394.1           89.11628
6           934334.4            46.04651
tornado_expected_annual_loss_rating
1           Relatively Moderate

```

2		Relatively High
3		Relatively Moderate
4		Relatively Moderate
5		Relatively Moderate
6		Relatively Low
	tornado_expected_annual_loss_rate_building	
1		1.433923e-04
2		8.246561e-05
3		1.292985e-04
4		2.778749e-04
5		3.041314e-04
6		1.396153e-04
	tornado_expected_annual_loss_rate_population	
1		1.899105e-06
2		1.499496e-06
3		4.183403e-06
4		5.037144e-06
5		4.742026e-06
6		4.843781e-06
	tornado_expected_annual_loss_rate_agriculture	
1		2.914711e-05
2		4.751098e-06
3		8.859781e-06
4		6.757085e-05
5		7.559420e-05
6		1.987851e-05
	tornado_expected_annual_loss_rate_national_percentile	
1		74.88372
2		52.74419
3		50.26357
4		78.04651
5		81.79845
6		43.65891
	tornado_hazard_type_risk_index_value	tornado_hazard_type_risk_index_score
1	3112728	74.10941
2	9611666	92.84351
3	3848763	78.62595
4	3546101	77.16285
5	8794926	92.01654
6	1618719	56.74300
	tornado_hazard_type_risk_index_rating	tsunami_number_of_events
1	Relatively Moderate	NA
2	Relatively High	NA

3	Relatively Moderate	NA
4	Relatively Moderate	NA
5	Relatively High	NA
6	Relatively Low	NA
	tsunami_annualized_frequency	tsunami_exposure_impacted_area_sq_mi
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	tsunami_exposure_building_value	tsunami_exposure_population
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	tsunami_exposure_population_equivalence	tsunami_exposure_total
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	tsunami_historic_loss_ratio_buildings	tsunami_historic_loss_ratio_population
1	NA	NA
2	NA	NA
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
	tsunami_historic_loss_ratio_total_rating	
1	Not Applicable	
2	Insufficient Data	
3	Not Applicable	
4	Not Applicable	
5	Not Applicable	
6	Not Applicable	
	tsunami_expected_annual_loss_building_value	
1	NA	
2	NA	
3	NA	

```

4                               NA
5                               NA
6                               NA
  tsunami_expected_annual_loss_population
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
  tsunami_expected_annual_loss_population_equivalence
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
  tsunami_expected_annual_loss_total tsunami_expected_annual_loss_score
1                               NA                               NA
2                               NA                               NA
3                               NA                               NA
4                               NA                               NA
5                               NA                               NA
6                               NA                               NA
  tsunami_expected_annual_loss_rating
1           Not Applicable
2           Insufficient Data
3           Not Applicable
4           Not Applicable
5           Not Applicable
6           Not Applicable
  tsunami_expected_annual_loss_rate_building
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
  tsunami_expected_annual_loss_rate_population
1                               NA
2                               NA
3                               NA
4                               NA

```

5		NA
6		NA
	tsunami_expected_annual_loss_rate_national_percentile	
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	tsunami_hazard_type_risk_index_value	tsunami_hazard_type_risk_index_score
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	tsunami_hazard_type_risk_index_rating	volcanic_activity_number_of_events
1	Not Applicable	NA
2	Insufficient Data	NA
3	Not Applicable	NA
4	Not Applicable	NA
5	Not Applicable	NA
6	Not Applicable	NA
	volcanic_activity_annualized_frequency	
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	volcanic_activity_exposure_impacted_area_sq_mi	
1		NA
2		NA
3		NA
4		NA
5		NA
6		NA
	volcanic_activity_exposure_building_value	
1		NA
2		NA
3		NA
4		NA
5		NA

```
6                               NA
volcanic_activity_exposure_population
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_exposure_population_equivalence
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_exposure_total
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_historic_loss_ratio_buildings
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_historic_loss_ratio_population
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_historic_loss_ratio_total_rating
1                     Not Applicable
2                     Not Applicable
3                     Not Applicable
4                     Not Applicable
5                     Not Applicable
6                     Not Applicable
```

```

volcanic_activity_expected_annual_loss_building_value
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA

volcanic_activity_expected_annual_loss_population
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA

volcanic_activity_expected_annual_loss_population_equivalence
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA

volcanic_activity_expected_annual_loss_total
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA

volcanic_activity_expected_annual_loss_score
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA

volcanic_activity_expected_annual_loss_rating
1                     Not Applicable
2                     Not Applicable
3                     Not Applicable
4                     Not Applicable
5                     Not Applicable
6                     Not Applicable

volcanic_activity_expected_annual_loss_rate_building

```

```

1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_expected_annual_loss_rate_population
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_expected_annual_loss_rate_national_percentile
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_hazard_type_risk_index_value
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_hazard_type_risk_index_score
1                               NA
2                               NA
3                               NA
4                               NA
5                               NA
6                               NA
volcanic_activity_hazard_type_risk_index_rating wildfire_number_of_events
1           Not Applicable                               NA
2           Not Applicable                               NA
3           Not Applicable                               NA
4           Not Applicable                               NA
5           Not Applicable                               NA
6           Not Applicable                               NA
wildfire_annualized_frequency wildfire_exposure_impacted_area_sq_mi
1           0.0005687112                           23.109638

```

2	0.0031362165	61.616328
3	0.0006879368	27.486905
4	0.0009985845	8.969916
5	0.0015509504	36.198025
6	0.0012051260	19.917920
	wildfire_exposure_building_value	wildfire_exposure_population
1	1367162952	10559.815
2	4042927648	43778.385
3	897476471	5651.492
4	432512644	4526.371
5	780301610	9153.991
6	215030507	2705.883
	wildfire_exposure_population_equivalence	wildfire_exposure_agriculture_value
1	144669469075	4004713
2	599763874653	22529897
3	77425435224	28611591
4	62011278410	1181323
5	125409675029	50366257
6	37070594475	14336605
	wildfire_exposure_total	wildfire_historic_loss_ratio_buildings
1	146040636740	0.1
2	603829332198	0.1
3	78351523285	0.1
4	62444972377	0.1
5	126240342895	0.1
6	37299961587	0.1
	wildfire_historic_loss_ratio_population	
1	0.000117135	
2	0.000117135	
3	0.000117135	
4	0.000117135	
5	0.000117135	
6	0.000117135	
	wildfire_historic_loss_ratio_agriculture	
1	0.007141184	
2	0.007141184	
3	0.007141184	
4	0.007141184	
5	0.007141184	
6	0.007141184	
	wildfire_historic_loss_ratio_total_rating	
1	Very Low	
2	Relatively Moderate	

3		Very Low	
4		Relatively Low	
5		Relatively Low	
6		Relatively Low	
	wildfire_expected_annual_loss_building_value		
1		30029.76	
2		1282742.39	
3		21611.96	
4		25794.98	
5		73511.67	
6		17730.73	
	wildfire_expected_annual_loss_population		
1		0.0004537281	
2		0.0158468116	
3		0.0003026951	
4		0.0004965110	
5		0.0014068456	
6		0.0003232653	
	wildfire_expected_annual_loss_population_equivalence		
1		6216.075	
2		217101.320	
3		4146.923	
4		6802.200	
5		19273.784	
6		4428.735	
	wildfire_expected_annual_loss_agriculture_value		
1		16.406169	
2		470.262851	
3		150.438881	
4		8.942955	
5		581.805384	
6		134.908015	
	wildfire_expected_annual_loss_total	wildfire_expected_annual_loss_score	
1		36262.24	47.10560
2		1500313.98	91.12595
3		25909.32	41.66667
4		32606.12	45.45165
5		93367.26	62.46819
6		22294.38	38.45420
	wildfire_expected_annual_loss_rating		
1		Very Low	
2		Relatively Moderate	
3		Very Low	

4		Very Low
5		Relatively Low
6		Very Low
	wildfire_expected_annual_loss_rate_building	
1		2.932191e-06
2		2.485824e-05
3		3.971456e-06
4		7.301918e-06
5		8.378841e-06
6		1.0000668e-05
	wildfire_expected_annual_loss_rate_population	
1		7.721192e-09
2		6.849269e-08
3		1.203081e-08
4		2.232614e-08
5		2.384807e-08
6		3.130596e-08
	wildfire_expected_annual_loss_rate_agriculture	
1		5.937671e-07
2		3.033700e-06
3		1.106863e-06
4		1.653039e-06
5		1.860515e-06
6		1.558744e-06
	wildfire_expected_annual_loss_rate_national_percentile	
1		41.34860
2		67.93893
3		45.64249
4		49.45929
5		51.14504
6		53.88041
	wildfire_hazard_type_risk_index_value	wildfire_hazard_type_risk_index_score
1	37646.77	45.73791
2	1600660.46	90.77608
3	46449.79	48.85496
4	45943.25	48.66412
5	125859.68	65.04453
6	38624.65	46.08779
	wildfire_hazard_type_risk_index_rating	winter_weather_number_of_events
1	Very Low	26.00000
2	Relatively Moderate	10.57465
3	Very Low	16.00000
4	Very Low	47.00000

5	Relatively Low	68.00000
6	Very Low	18.00000
	winter_weather_annualized_frequency	
1	1.3684211	
2	0.6862108	
3	0.8421053	
4	2.4736842	
5	3.5789474	
6	0.9473684	
	winter_weather_exposure_impacted_area_sq_mi	
1	610.4705	
2	1674.8440	
3	913.6465	
4	632.4868	
5	657.1966	
6	631.4545	
	winter_weather_exposure_building_value winter_weather_exposure_population	
1	10241406107	58764
2	51602300760	231365
3	5441822473	25160
4	3532630882	22239
5	8773489059	58992
6	1771888929	10326
	winter_weather_exposure_population_equivalence	
1	8.050668e+11	
2	3.169700e+12	
3	3.446920e+11	
4	3.046743e+11	
5	8.081904e+11	
6	1.414662e+11	
	winter_weather_exposure_agriculture_value winter_weather_exposure_total	
1	27630646	8.153358e+11
2	155012958	3.221458e+12
3	135914589	3.502697e+11
4	5410008	3.082123e+11
5	312712010	8.172766e+11
6	86549172	1.433246e+11
	winter_weather_historic_loss_ratio_buildings	
1	1.606919e-07	
2	4.162683e-07	
3	8.594241e-07	
4	1.675972e-07	
5	7.260871e-08	

6		5.595547e-07
	winter_weather_historic_loss_ratio_population	
1		3.977501e-09
2		3.950781e-08
3		4.565266e-09
4		2.901881e-09
5		3.985606e-09
6		3.597021e-09
	winter_weather_historic_loss_ratio_agriculture	
1		1.040342e-06
2		1.307012e-06
3		2.060673e-06
4		9.905277e-07
5		4.666358e-07
6		1.063787e-06
	winter_weather_historic_loss_ratio_total_rating	
1		Very Low
2		Very Low
3		Very Low
4		Very Low
5		Very Low
6		Very Low
	winter_weather_expected_annual_loss_building_value	
1		2252.0264
2		12111.8084
3		3938.3861
4		1464.5668
5		2279.9032
6		939.2863
	winter_weather_expected_annual_loss_population	
1		3.198463e-04
2		5.402479e-03
3		9.672598e-05
4		1.596391e-04
5		8.414780e-04
6		3.518795e-05
	winter_weather_expected_annual_loss_population_equivalence	
1		4381.895
2		74013.965
3		1325.146
4		2187.055
5		11528.249
6		482.075

```

winter_weather_expected_annual_loss_agriculture_value
1                      39.33630
2                     119.90379
3                     235.85370
4                     13.25666
5                     522.25093
6                     87.22432

winter_weather_expected_annual_loss_total
1                   6673.257
2                   86245.677
3                   5499.386
4                   3664.879
5                  14330.403
6                   1508.586

winter_weather_expected_annual_loss_score
1                   13.095975
2                  61.114551
3                  11.207430
4                   8.947368
5                  21.486068
6                   5.727554

winter_weather_expected_annual_loss_rating
1                   Very Low
2            Relatively Moderate
3                   Very Low
4                   Very Low
5            Relatively Low
6                   Very Low

winter_weather_expected_annual_loss_rate_building
1           2.198943e-07
2           2.347145e-07
3           7.237256e-07
4           4.145825e-07
5           2.598628e-07
6           5.301045e-07

winter_weather_expected_annual_loss_rate_population
1           5.442896e-09
2           2.335046e-08
3           3.844435e-09
4           7.178338e-09
5           1.426427e-08
6           3.407704e-09

winter_weather_expected_annual_loss_rate_agriculture

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1          1.423647e-06
2          7.735082e-07
3          1.735308e-06
4          2.450395e-06
5          1.670070e-06
6          1.007801e-06
  winter_weather_expected_annual_loss_rate_national_percentile
1                      27.73994
2                      16.93498
3                      62.29102
4                      37.12074
5                      27.33746
6                      53.77709
  winter_weather_hazard_type_risk_index_value
1                  6928.050
2                 92014.103
3                 9859.205
4                 5163.951
5                 19317.477
6                 2613.600
  winter_weather_hazard_type_risk_index_score
1                  9.038829
2                  59.325271
3                 11.807766
4                  6.938256
5                 20.878421
6                  3.755570
  winter_weather_hazard_type_risk_index_rating national_risk_index_version
1           Very Low             December 2025
2 Relatively Low             December 2025
3           Very Low             December 2025
4           Very Low             December 2025
5           Very Low             December 2025
6           Very Low             December 2025
  shape_area shape_length
1 2208589004      249970.3
2 5730946668      923868.3
3 3257908650      320882.9
4 2311979257      227920.1
5 2456905601      292630.4
6 2262905807      249092.9
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