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## Environmental and Socio-Economic Stress in the Mountain West

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## ENVIRONMENTAL AND SOCIO-ECONOMIC STRESS IN THE MOUNTAIN WEST

Environment Fact Sheet No. 16 | August 2023

Prepared by: Ayda Atici, Caitlin J. Saladino, Fatma Nasoz, and William E. Brown, Jr.

### PURPOSE:

This fact sheet examines data on environmental and socio-economic risk metrics including which metrics pose the most risk for Nevada counties.<sup>1</sup> The data are retrieved from “System for the Triage of Risks from Environmental and Socio-Economic Stressors” created by the Massachusetts Institute of Technology (MIT) joint program on the science and policy of global change.

### ABOUT THE DATA:

The original report displays how each county in the United States is impacted by 11 different risk metrics

- |  |                                       |
|--|---------------------------------------|
| 1. exposure to airborne particulate matter | 7. temperature stress                 |
| 2. water stress                            | 8. employment in fossil fuels         |
| 3. water quality                           | 9. energy expenditure as share of GDP |
| 4. flood risk                              | 10. wildfire risk                     |
| 5. highly erodible cropland                | 11. endangered species                |
| 6. land disturbance                        |                                       |

The original report assigns each county a number on a scale from 0 to 100 for each given risk metric, with 0 indicating relatively low risk, 50 indicating medium risk, and 100 indicating high risk.<sup>2</sup> This fact sheet shows environmental and socio-economic risk metrics in Nevada counties, and illustrates which metrics pose the greatest risk for each county.

### KEY FINDINGS:

1. The highest environmental and socio-economic risks (100 on the risk metric) Nevada faces are wildfire risks in Elko and temperature stress in Clark and Nye counties.
2. The lowest environmental and socio-economic risks (0 on the risk metric) Nevada faces are flood risk in Clark County, and exposure to airborne particulate matter in Nye County.
3. All of Nevada’s counties have low-to-moderate risk (38 for all counties on the risk metric) for energy expenditure as share of GDP.
4. Clark County – Nevada’s most populous county – is most at-risk for temperature stress (100) and least at-risk for floods (0).
5. Nevada’s counties are most consistently high risk for wildfires, and most consistently low risk for land disturbances.
6. While a majority of Nevada’s counties are moderate risk for endangered species, Washoe County is very high risk (93) for this metric.

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<sup>1</sup> System for the Triage of Risks from Environmental and Socio-Economic Stressors *MIT Joint Program on the Science and Policy of Global Change*. <https://est.mit.edu/8>

<sup>2</sup> Ibid.

Table 1 provides data along with a visualization of 11 different types of environmental and socio-economic risks for each of Nevada’s counties. Each risk metric is measured on a scale of 0 to 100, with 0 (dark blue) meaning there is little to no risk of a given risk metric for a given county, 50 (white) meaning the given county is moderately at risk for the given risk metric, and 100 (dark red) meaning the given county is very high-risk for the given risk metric.

The highest environmental and socio-economic risks (100 on the risk metric) Nevada faces are wildfire risks in Elko and temperature stress in Clark and Nye counties. The lowest environmental and socio-economic risks (0 on the risk metric) Nevada faces are flood risk in Clark County, and exposure to airborne particulate matter in Nye County. All of Nevada’s counties have low-to-moderate risk (38 for all counties on the risk metric) for energy expenditure as share of GDP. Nevada’s counties are most consistently high risk for wildfires, and most consistently low risk for land disturbances. While most Nevada counties are moderate risk for endangered species, Washoe County is very high risk (93) for this metric.

**Table 1: Environmental and Socio-Economic Risk Metrics for Nevada Counties**

NV County	Employment in Fossil Fuels	Endangered Species	Energy Expenditure	Exposure to Airborne Particulate Matter	Flood Risk	Highly Erodible Cropland	Land Disturbance	Temperature Stress	Water Quality	Water Stress	Wildfire Risk
Carson City	45	67	38	6	2	39	10	6	27	78	79
Churchill	53	53	38	14	2	85	8	74	88	88	53
Clark	53	53	38	29	0	39	3	100	97	90	85
Douglas	48	74	38	20	3	39	22	24	86	82	91
Elko	47	87	38	5	16	82	7	37	88	69	100
Esmeralda	96	67	38	6	3	54	3	88	22	71	40
Eureka	85	53	38	3	7	70	8	46	93	86	98
Humboldt	61	53	38	18	2	94	10	55	75	80	99
Lander	66	53	38	12	7	39	5	67	27	77	97
Lincoln	23	53	38	3	38	54	3	99	27	55	91
Lyon	68	53	38	7	1	63	23	63	93	91	90
Mineral	23	53	38	7	10	39	4	59	89	36	49
Nye	40	67	38	0	2	75	3	100	83	55	65
Pershing	18	53	38	14	5	75	5	59	27	76	87
Storey	98	53	38	2	52	39	3	36	38	48	97
Washoe	50	93	38	26	3	39	6	50	96	67	83
White Pine	21	53	38	2	27	39	3	33	80	67	73

Risk Value

\* Adapted from “System for the Triage of Risks from Environmental and Socio-Economic Stressors.” *MIT Joint Program on the Science and Policy of Global Change*. [est.mit.edu/8](http://est.mit.edu/8)