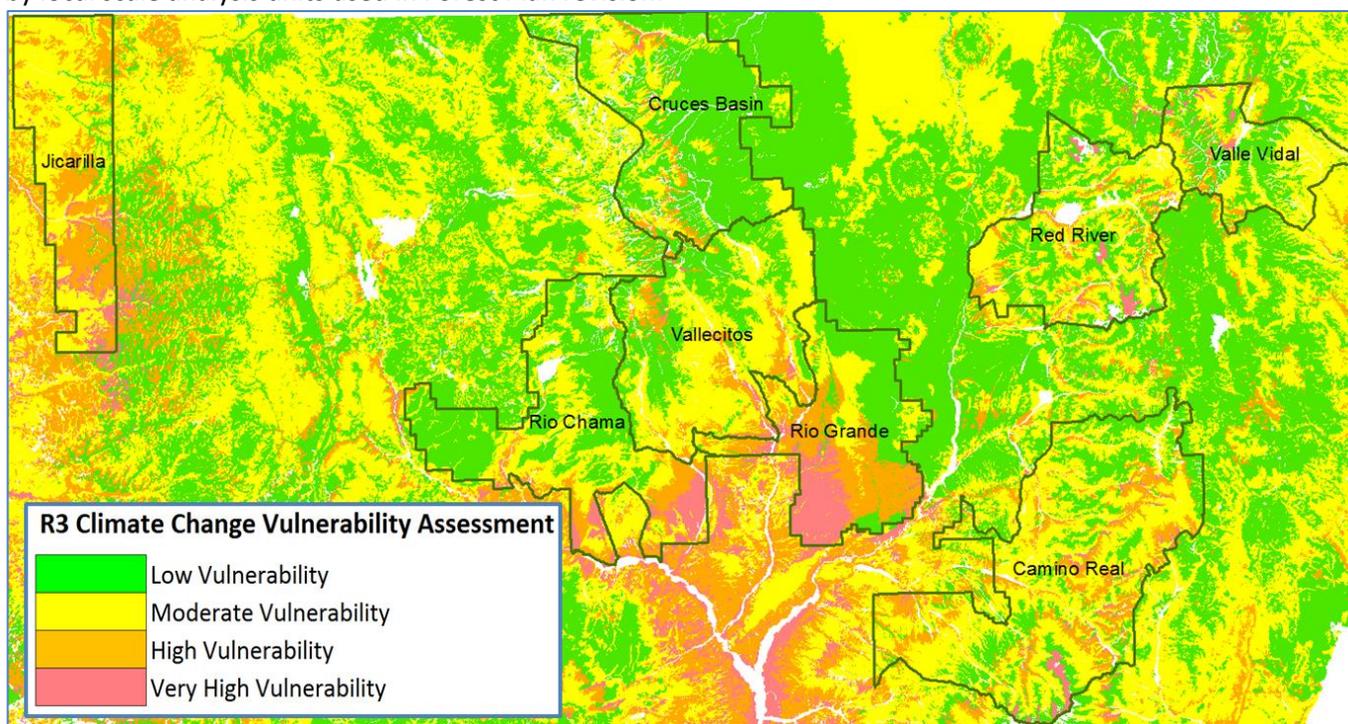


# Climate Change Vulnerability Assessment Carson National Forest – December 2014

The Climate Change Vulnerability Assessment (CCVA) reflects an ecosystems approach to ecosystem vulnerability resulting from projected climate change. This summary provides tabular summaries of the assessment for each major upland Ecological Response Unit (ERU) of the Carson NF. An overview of the project is provided in the accompanying CCVA executive summary (USDA Forest Service 2013).

Figure 1. Patterns of climate change vulnerability on the Carson NF and surrounding lands of north central New Mexico according to the CCVA. The Carson NF is represented by lands within the dark green borders, subdivided by local scale analysis units used in Forest Plan revision.



USDA Forest Service. 2013. Climate change vulnerability assessment – Executive summary. Southwestern Region and Rocky Mountain Research Station briefing paper, on file. Regional Office, Albuquerque NM. 4 pp.

## Ecological Response Units of the Carson National Forest

A total of eight major Ecological Response Units (ERUs) were identified for the Carson NF, with two additional minor ERUs. All of these ERUs occur on non-USFS lands in the greater context area of the Carson. Table 1 lists the ERUs of the Carson NF and their relative contribution to the reporting area.

Table 1. Ecological Response Units of the Carson NF.

Ecological Response Unit	ERU Code	Percent of Carson NF	Acres	Rank
Alpine	ALP	0.6%	9,996	Minor
Bristlecone Pine	BP	0.3%	4,585	Minor
Montane / Subalpine Grassland	MSG	7.9%	125,351	Major
Spruce-Fir Forest	SFF	18.3%	289,929	Major
Mixed Conifer w/ Aspen	MCW	8.3%	130,959	Major
Mixed Conifer – Frequent Fire	MCD	11.5%	182,847	Major
Ponderosa Pine Forest	PPF	19.7%	312,900	Major
PJ Sagebrush	PJS	13.7%	217,326	Major
PJ Woodland (persistent)	PJO	11.2%	178,196	Major
Sage	SAGE	3.7%	59,144	Major

## Reporting Units

This assessment provides three scales of reporting for vulnerability:

- Plan Unit Scale – Includes all land within the administrative boundary of the Carson NF
- Local scale (geographic areas) – Includes all lands within the administrative boundaries of the Carson local scale units.
- Subwatershed (6th-code HUCs) – Includes all lands within 6th-code watersheds that intersect the Carson NF

## Summary of Tabular Reporting

Reporting at each of the three scales provides useful insights for interpretation of climate change vulnerability results for the reporting area. In the tables to follow, vulnerability and uncertainty are reported for each scale and for all ecosystems collectively. In all cases the reporting reflects an all-lands summary, regardless of ownership. For the Plan unit and local scales, reporting is also broken out by ERU. The CCVA results for the subwatershed scale are shown as one vulnerability category for each watershed, representing a composite scoring of vulnerability for all lands.

## Vulnerability at the Plan Unit Scale

### All Ecosystems

<i>Forest</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Carson NF	Low Vulnerability	10%	24%	0%	35%
	Moderate Vulnerability	1%	29%	14%	44%
	High Vulnerability	6%	10%	0%	16%
	Very High Vulnerability	5%	0%	0%	5%
Grand Total		<b>22%</b>	<b>63%</b>	<b>14%</b>	

### Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	17%	43%	0%	61%
	Moderate Vulnerability	0%	29%	8%	37%
	High Vulnerability	0%	2%	0%	2%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		<b>17%</b>	<b>75%</b>	<b>8%</b>	
MCW	Low Vulnerability	5%	43%	0%	48%
	Moderate Vulnerability	0%	36%	12%	48%
	High Vulnerability	1%	3%	0%	4%
	Very High Vulnerability	0%	0%	0%	0%
MCW Total		<b>6%</b>	<b>82%</b>	<b>13%</b>	
MSG	Low Vulnerability	31%	55%	0%	86%
	Moderate Vulnerability	0%	12%	1%	13%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MSG Total		<b>32%</b>	<b>67%</b>	<b>1%</b>	
PJO	Low Vulnerability	19%	25%	0%	45%
	Moderate Vulnerability	0%	34%	21%	54%
	High Vulnerability	0%	1%	0%	1%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>19%</b>	<b>60%</b>	<b>21%</b>	

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
PJS	Low Vulnerability	0%	1%	0%	2%
	Moderate Vulnerability	0%	23%	16%	39%
	High Vulnerability	16%	21%	0%	38%
	Very High Vulnerability	22%	0%	0%	22%
PJS Total		<b>39%</b>	<b>45%</b>	<b>16%</b>	
PPF	Low Vulnerability	4%	21%	0%	25%
	Moderate Vulnerability	0%	28%	20%	48%
	High Vulnerability	3%	19%	0%	22%
	Very High Vulnerability	4%	0%	0%	4%
PPF Total		<b>12%</b>	<b>67%</b>	<b>21%</b>	
SAGE	Low Vulnerability	51%	35%	0%	86%
	Moderate Vulnerability	13%	0%	0%	14%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>65%</b>	<b>35%</b>	<b>0%</b>	
SFF	Low Vulnerability	0%	12%	0%	12%
	Moderate Vulnerability	0%	45%	15%	60%
	High Vulnerability	15%	10%	0%	25%
	Very High Vulnerability	2%	0%	0%	2%
SFF Total		<b>18%</b>	<b>67%</b>	<b>15%</b>	

## Vulnerability at the Local Scale

### Camino Real

All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Camino Real	Low Vulnerability	5%	19%	0%	24%
	Moderate Vulnerability	0%	41%	14%	54%
	High Vulnerability	9%	9%	0%	18%
	Very High Vulnerability	4%	0%	0%	4%
Grand Total		<b>17%</b>	<b>69%</b>	<b>14%</b>	

Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	10%	34%	0%	44%
	Moderate Vulnerability	0%	42%	9%	51%
	High Vulnerability	0%	5%	0%	5%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		<b>10%</b>	<b>80%</b>	<b>9%</b>	
MCW	Low Vulnerability	2%	34%	0%	37%
	Moderate Vulnerability	0%	46%	13%	58%
	High Vulnerability	1%	4%	0%	5%
	Very High Vulnerability	1%	0%	0%	1%
MCW Total		<b>4%</b>	<b>83%</b>	<b>13%</b>	
MSG	Low Vulnerability	37%	29%	0%	66%
	Moderate Vulnerability	0%	17%	9%	26%
	High Vulnerability	0%	8%	0%	8%
	Very High Vulnerability	0%	0%	0%	0%
MSG Total		<b>37%</b>	<b>54%</b>	<b>9%</b>	
PJO	Low Vulnerability	26%	52%	0%	78%
	Moderate Vulnerability	0%	20%	0%	20%
	High Vulnerability	0%	2%	0%	2%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>26%</b>	<b>74%</b>	<b>0%</b>	

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
PJS	Low Vulnerability	1%	2%	0%	3%
	Moderate Vulnerability	0%	45%	24%	69%
	High Vulnerability	14%	12%	0%	26%
	Very High Vulnerability	2%	0%	0%	2%
PJS Total		<b>17%</b>	<b>59%</b>	<b>24%</b>	
PPF	Low Vulnerability	2%	8%	0%	10%
	Moderate Vulnerability	0%	43%	25%	68%
	High Vulnerability	2%	19%	0%	21%
	Very High Vulnerability	1%	0%	0%	1%
PPF Total		<b>4%</b>	<b>71%</b>	<b>25%</b>	
SAGE	Low Vulnerability	84%	16%	0%	99%
	Moderate Vulnerability	0%	0%	0%	1%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>84%</b>	<b>16%</b>	<b>0%</b>	
SFF	Low Vulnerability	1%	10%	0%	11%
	Moderate Vulnerability	0%	41%	12%	54%
	High Vulnerability	21%	10%	0%	31%
	Very High Vulnerability	4%	0%	0%	4%
SFF Total		<b>26%</b>	<b>62%</b>	<b>12%</b>	

## Cruces Basin

All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Cruces Basin	Low Vulnerability	22%	44%	0%	67%
	Moderate Vulnerability	0%	21%	5%	26%
	High Vulnerability	3%	3%	0%	6%
	Very High Vulnerability	1%	0%	0%	1%
Grand Total		<b>26%</b>	<b>69%</b>	<b>5%</b>	

Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	32%	60%	0%	92%
	Moderate Vulnerability	0%	7%	0%	8%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		<b>32%</b>	<b>68%</b>	<b>0%</b>	
MCW	Low Vulnerability	17%	70%	2%	90%
	Moderate Vulnerability	0%	10%	0%	10%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MCW Total		<b>17%</b>	<b>80%</b>	<b>2%</b>	
MSG	Low Vulnerability	34%	59%	0%	93%
	Moderate Vulnerability	0%	6%	0%	7%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MSG Total		<b>34%</b>	<b>66%</b>	<b>0%</b>	
PJO	Low Vulnerability	31%	69%	0%	100%
	Moderate Vulnerability	0%	0%	0%	0%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>31%</b>	<b>69%</b>	<b>0%</b>	
PPF	Low Vulnerability	24%	69%	1%	94%
	Moderate Vulnerability	0%	5%	1%	6%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
PPF Total		<b>24%</b>	<b>74%</b>	<b>2%</b>	
SAGE	Low Vulnerability	100%	0%	0%	100%
	Moderate Vulnerability	0%	0%	0%	0%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>100%</b>	<b>0%</b>	<b>0%</b>	
SFF	Low Vulnerability	0%	6%	0%	6%
	Moderate Vulnerability	0%	55%	16%	71%
	High Vulnerability	11%	10%	0%	22%
	Very High Vulnerability	2%	0%	0%	2%
SFF Total		<b>13%</b>	<b>72%</b>	<b>16%</b>	

## Jicarilla

### All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Jicarilla	Low Vulnerability	5%	0%	0%	6%
	Moderate Vulnerability	5%	33%	18%	56%
	High Vulnerability	5%	26%	0%	31%
	Very High Vulnerability	8%	0%	0%	8%
Grand Total		<b>23%</b>	<b>59%</b>	<b>18%</b>	

### Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
PJO	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	1%	62%	36%	99%
	High Vulnerability	0%	1%	0%	1%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>1%</b>	<b>63%</b>	<b>36%</b>	
PJS	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	1%	0%	2%
	High Vulnerability	25%	64%	0%	89%
	Very High Vulnerability	9%	0%	0%	9%
PJS Total		<b>35%</b>	<b>65%</b>	<b>0%</b>	
PPF	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	10%	4%	14%
	High Vulnerability	11%	57%	0%	68%
	Very High Vulnerability	18%	0%	0%	18%
PPF Total		<b>29%</b>	<b>67%</b>	<b>4%</b>	
SAGE	Low Vulnerability	51%	3%	0%	54%
	Moderate Vulnerability	46%	0%	0%	46%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>97%</b>	<b>3%</b>	<b>0%</b>	

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
SFF	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	0%	0%	0%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	100%	0%	0%	100%
SFF Total		100%	0%	0%	

## Red River

### All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Red River	Low Vulnerability	5%	32%	0%	37%
	Moderate Vulnerability	0%	31%	16%	47%
	High Vulnerability	5%	6%	0%	12%
	Very High Vulnerability	4%	0%	0%	4%
Grand Total		14%	69%	17%	

### Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	10%	52%	1%	63%
	Moderate Vulnerability	0%	26%	12%	37%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		10%	77%	13%	
MCW	Low Vulnerability	4%	49%	1%	53%
	Moderate Vulnerability	0%	27%	14%	41%
	High Vulnerability	1%	4%	0%	5%
	Very High Vulnerability	1%	0%	0%	1%
MCW Total		5%	80%	15%	
MSG	Low Vulnerability	33%	67%	0%	100%
	Moderate Vulnerability	0%	0%	0%	0%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MSG Total		33%	67%	0%	

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
PJO	Low Vulnerability	10%	72%	1%	83%
	Moderate Vulnerability	0%	11%	6%	17%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>10%</b>	<b>83%</b>	<b>8%</b>	
PJS	Low Vulnerability	0%	1%	0%	1%
	Moderate Vulnerability	0%	32%	53%	85%
	High Vulnerability	1%	13%	0%	14%
	Very High Vulnerability	0%	0%	0%	0%
PJS Total		<b>1%</b>	<b>46%</b>	<b>53%</b>	
PPF	Low Vulnerability	2%	29%	0%	31%
	Moderate Vulnerability	0%	19%	21%	40%
	High Vulnerability	4%	19%	0%	23%
	Very High Vulnerability	6%	0%	0%	6%
PPF Total		<b>12%</b>	<b>67%</b>	<b>21%</b>	
SAGE	Low Vulnerability	74%	26%	0%	100%
	Moderate Vulnerability	0%	0%	0%	0%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>74%</b>	<b>26%</b>	<b>0%</b>	
SFF	Low Vulnerability	1%	19%	0%	20%
	Moderate Vulnerability	0%	44%	17%	61%
	High Vulnerability	10%	8%	0%	18%
	Very High Vulnerability	1%	0%	0%	1%
SFF Total		<b>12%</b>	<b>71%</b>	<b>17%</b>	

## Rio Chama

### All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Rio Chama	Low Vulnerability	20%	25%	0%	45%
	Moderate Vulnerability	0%	24%	12%	36%
	High Vulnerability	3%	8%	0%	11%
	Very High Vulnerability	8%	0%	0%	8%
Grand Total		<b>31%</b>	<b>57%</b>	<b>12%</b>	

Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	29%	54%	0%	83%
	Moderate Vulnerability	0%	16%	1%	17%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		<b>29%</b>	<b>70%</b>	<b>1%</b>	
MCW	Low Vulnerability	20%	44%	0%	64%
	Moderate Vulnerability	0%	33%	2%	36%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MCW Total		<b>20%</b>	<b>78%</b>	<b>2%</b>	
MSG	Low Vulnerability	34%	65%	0%	98%
	Moderate Vulnerability	0%	1%	0%	2%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MSG Total		<b>34%</b>	<b>66%</b>	<b>0%</b>	
PJO	Low Vulnerability	52%	38%	0%	89%
	Moderate Vulnerability	0%	7%	3%	10%
	High Vulnerability	0%	1%	0%	1%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>52%</b>	<b>46%</b>	<b>3%</b>	
PJS	Low Vulnerability	0%	1%	0%	1%
	Moderate Vulnerability	0%	25%	13%	38%
	High Vulnerability	11%	18%	0%	29%
	Very High Vulnerability	31%	0%	0%	31%
PJS Total		<b>42%</b>	<b>44%</b>	<b>13%</b>	
PPF	Low Vulnerability	11%	31%	0%	42%
	Moderate Vulnerability	0%	35%	21%	56%
	High Vulnerability	0%	2%	0%	2%
	Very High Vulnerability	0%	0%	0%	0%
PPF Total		<b>11%</b>	<b>68%</b>	<b>21%</b>	
SAGE	Low Vulnerability	90%	5%	0%	95%
	Moderate Vulnerability	4%	1%	0%	5%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>94%</b>	<b>6%</b>	<b>0%</b>	

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
SFF	Low Vulnerability	0%	2%	0%	2%
	Moderate Vulnerability	0%	54%	24%	79%
	High Vulnerability	8%	11%	0%	19%
	Very High Vulnerability	1%	0%	0%	1%
SFF Total		<b>8%</b>	<b>67%</b>	<b>24%</b>	

## Rio Grande

All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Rio Grande	Low Vulnerability	12%	16%	0%	28%
	Moderate Vulnerability	0%	11%	11%	23%
	High Vulnerability	15%	16%	0%	31%
	Very High Vulnerability	18%	0%	0%	18%
Grand Total		<b>45%</b>	<b>44%</b>	<b>11%</b>	

Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	0%	1%	0%	1%
	Moderate Vulnerability	0%	26%	33%	59%
	High Vulnerability	2%	38%	0%	39%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		<b>2%</b>	<b>65%</b>	<b>33%</b>	
MCW	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	27%	19%	46%
	High Vulnerability	10%	32%	0%	42%
	Very High Vulnerability	11%	0%	0%	11%
MCW Total		<b>21%</b>	<b>60%</b>	<b>19%</b>	
MSG	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	0%	0%	0%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	100%	0%	0%	100%
MSG Total		<b>100%</b>	<b>0%</b>	<b>0%</b>	

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
PJO	Low Vulnerability	6%	41%	1%	48%
	Moderate Vulnerability	0%	23%	28%	51%
	High Vulnerability	0%	1%	0%	1%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>6%</b>	<b>66%</b>	<b>29%</b>	
PJS	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	11%	9%	20%
	High Vulnerability	25%	25%	0%	50%
	Very High Vulnerability	30%	0%	0%	30%
PJS Total		<b>55%</b>	<b>36%</b>	<b>9%</b>	
PPF	Low Vulnerability	0%	2%	0%	2%
	Moderate Vulnerability	0%	28%	46%	74%
	High Vulnerability	3%	22%	0%	25%
	Very High Vulnerability	0%	0%	0%	0%
PPF Total		<b>3%</b>	<b>51%</b>	<b>46%</b>	
SAGE	Low Vulnerability	50%	49%	0%	99%
	Moderate Vulnerability	1%	1%	0%	1%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>50%</b>	<b>50%</b>	<b>0%</b>	
SFF	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	79%	0%	79%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	21%	0%	0%	21%
SFF Total		<b>21%</b>	<b>79%</b>	<b>0%</b>	

## Valle Vidal

### All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Valle Vidal	Low Vulnerability	2%	35%	0%	38%
	Moderate Vulnerability	0%	36%	14%	50%
	High Vulnerability	5%	4%	0%	9%
	Very High Vulnerability	3%	0%	0%	3%
Grand Total		<b>10%</b>	<b>75%</b>	<b>15%</b>	

Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	6%	58%	1%	65%
	Moderate Vulnerability	0%	17%	17%	35%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		<b>6%</b>	<b>76%</b>	<b>18%</b>	
MCW	Low Vulnerability	3%	61%	1%	65%
	Moderate Vulnerability	0%	25%	9%	34%
	High Vulnerability	0%	1%	0%	1%
	Very High Vulnerability	0%	0%	0%	0%
MCW Total		<b>4%</b>	<b>86%</b>	<b>10%</b>	
MSG	Low Vulnerability	5%	78%	0%	83%
	Moderate Vulnerability	0%	17%	0%	17%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MSG Total		<b>5%</b>	<b>95%</b>	<b>0%</b>	
PJO	Low Vulnerability	13%	82%	3%	98%
	Moderate Vulnerability	0%	2%	0%	2%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>13%</b>	<b>84%</b>	<b>3%</b>	
PJS	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	0%	100%	100%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
PJS Total		<b>0%</b>	<b>0%</b>	<b>100%</b>	
PPF	Low Vulnerability	1%	34%	1%	35%
	Moderate Vulnerability	0%	45%	20%	65%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
PPF Total		<b>1%</b>	<b>79%</b>	<b>20%</b>	
SFF	Low Vulnerability	0%	15%	0%	15%
	Moderate Vulnerability	0%	47%	18%	65%
	High Vulnerability	11%	9%	0%	20%
	Very High Vulnerability	0%	0%	0%	0%
SFF Total		<b>11%</b>	<b>71%</b>	<b>18%</b>	

## Vallecitos

### All Ecosystems

<i>Local Unit</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
Vallecitos	Low Vulnerability	10%	25%	0%	35%
	Moderate Vulnerability	0%	32%	20%	52%
	High Vulnerability	4%	8%	0%	12%
	Very High Vulnerability	1%	0%	0%	1%
Grand Total		<b>15%</b>	<b>65%</b>	<b>20%</b>	

### Major Ecological Response Units

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
MCD	Low Vulnerability	19%	38%	0%	57%
	Moderate Vulnerability	0%	32%	10%	42%
	High Vulnerability	0%	2%	0%	2%
	Very High Vulnerability	0%	0%	0%	0%
MCD Total		<b>19%</b>	<b>71%</b>	<b>10%</b>	
MCW	Low Vulnerability	6%	36%	0%	42%
	Moderate Vulnerability	0%	45%	13%	58%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
MCW Total		<b>6%</b>	<b>82%</b>	<b>13%</b>	
MSG	Low Vulnerability	32%	27%	0%	59%
	Moderate Vulnerability	0%	35%	4%	39%
	High Vulnerability	0%	1%	0%	1%
	Very High Vulnerability	1%	0%	0%	1%
MSG Total		<b>33%</b>	<b>63%</b>	<b>4%</b>	
PJO	Low Vulnerability	10%	29%	0%	40%
	Moderate Vulnerability	0%	33%	27%	60%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
PJO Total		<b>10%</b>	<b>62%</b>	<b>27%</b>	

<i>ERU</i>	<i>Vulnerability Category</i>	<i>Uncertainty Category</i>			<i>Total</i>
		<i>Low</i>	<i>Mod</i>	<i>High</i>	
PJS	Low Vulnerability	0%	8%	0%	8%
	Moderate Vulnerability	0%	30%	27%	57%
	High Vulnerability	9%	21%	0%	30%
	Very High Vulnerability	5%	0%	0%	5%
PJS Total		<b>15%</b>	<b>59%</b>	<b>27%</b>	
PPF	Low Vulnerability	3%	23%	0%	26%
	Moderate Vulnerability	0%	30%	30%	61%
	High Vulnerability	2%	10%	0%	12%
	Very High Vulnerability	2%	0%	0%	2%
PPF Total		<b>6%</b>	<b>63%</b>	<b>30%</b>	
SAGE	Low Vulnerability	100%	0%	0%	100%
	Moderate Vulnerability	0%	0%	0%	0%
	High Vulnerability	0%	0%	0%	0%
	Very High Vulnerability	0%	0%	0%	0%
SAGE Total		<b>100%</b>	<b>0%</b>	<b>0%</b>	
SFF	Low Vulnerability	0%	0%	0%	0%
	Moderate Vulnerability	0%	36%	5%	42%
	High Vulnerability	31%	23%	0%	53%
	Very High Vulnerability	5%	0%	0%	5%
SFF Total		<b>35%</b>	<b>59%</b>	<b>5%</b>	

## Vulnerability at the Subwatershed Scale – All Ecosystems

The following table gives composite vulnerability scores for each 6<sup>th</sup>-level watershed that intersects the Carson NF. As with the previous tables, these results represent all lands regardless of ownership.

<i>6th-Level HUC</i>	<i>HUC Name</i>	<i>Composite Vulnerability Category</i>
110800010302	Leandro Creek	Moderate Vulnerability
110800010403	Headwaters Van Bremmer Creek	Low Vulnerability
110800020101	Headwaters Moreno Creek	Moderate Vulnerability
110800020102	Outlet Moreno Creek	Moderate Vulnerability
110800020103	Headwaters Cieneguilla Creek	Moderate Vulnerability
110800020105	Eagle Nest Lake	Moderate Vulnerability
110800020201	Greenwood Canyon	Moderate Vulnerability
110800020202	Middle Ponil Creek	Moderate Vulnerability
110800020203	Headwaters North Ponil Creek	Moderate Vulnerability
110800020205	Outlet North Ponil Creek	Moderate Vulnerability
110800020207	Headwaters Cerrososo Creek	Moderate Vulnerability
110800040101	Upper Coyote Creek	Moderate Vulnerability

<b>6th-Level HUC</b>	<b>HUC Name</b>	<b>Composite Vulnerability Category</b>
110800040301	Luna Creek	Moderate Vulnerability
110800040302	Quemado Canyon-Mora River	Moderate Vulnerability
110800040303	Vigil Creek-Mora River	Moderate Vulnerability
110800040304	Rio La Casa	Low Vulnerability
110800040305	Rio La Casa-Mora River	Moderate Vulnerability
130100021103	Cove Lake Reservoir	Moderate Vulnerability
130100021104	Punche Arroyo	Moderate Vulnerability
130100050202	Beaver Creek	Moderate Vulnerability
130100050203	Toltec Creek-Rio de Los Pinos	Moderate Vulnerability
130100050204	City of Ortiz-Rio de Los Pinos	Moderate Vulnerability
130100050301	Canada Tio Grande-Rio San Antonio	Moderate Vulnerability
130100050302	Canada de Los Ranchos-Rio San Antonio	Moderate Vulnerability
130100050303	San Antonio Cemetery-Rio San Antonio	Moderate Vulnerability
130100050404	Bighorn Creek	Low Vulnerability
130201010102	Comanche Creek	Moderate Vulnerability
130201010103	Comanche Creek-Costillo Creek	Moderate Vulnerability
130201010104	Latir Creek-Costillo Creek	Moderate Vulnerability
130201010202	130201010202	Moderate Vulnerability
130201010205	Urraca Canyon	Moderate Vulnerability
130201010206	Latir Creek	Moderate Vulnerability
130201010301	Upper Red River	Moderate Vulnerability
130201010302	Cabresto Creek	Moderate Vulnerability
130201010303	Middle Red River	Moderate Vulnerability
130201010304	Lower Red River	Moderate Vulnerability
130201010401	Arroyo Punche	Moderate Vulnerability
130201010405	Red River-Rio Grande	Moderate Vulnerability
130201010501	Rito de la Olla	Moderate Vulnerability
130201010502	Headwaters Rio Grande de Rancho	Moderate Vulnerability
130201010503	Rio Chiquito	Moderate Vulnerability
130201010504	Outlet Rio Grande del Rancho	Moderate Vulnerability
130201010601	Headwaters Rio Fernando del Taos	Moderate Vulnerability
130201010602	La Junta Creek-Rio Pueblo de Taos	Moderate Vulnerability
130201010603	Rita del Gato	Very High Vulnerability
130201010604	Outlet Rio Fernando del Taos	Moderate Vulnerability
130201010605	Rio Fernando del Taos-Rio Pueblo del Taos	Moderate Vulnerability
130201010606	Arroyo Seco-Rio Pueblo de Taos	Moderate Vulnerability
130201010607	Arroyo del Alameda-Rio Pueblo de Taos	Moderate Vulnerability
130201010701	Headwaters Arroyo Hondo	Moderate Vulnerability
130201010702	Outlet Arroyo Hondo	Moderate Vulnerability
130201010703	Arroyo Hondo-Rio Grande	Moderate Vulnerability
130201010706	Cerros de Taos Ranch	Moderate Vulnerability
130201010707	Mauby Hot Springs-Rio Grande	Moderate Vulnerability
130201010708	Town of Carson	Moderate Vulnerability
130201010801	Lamy Canyon-Arroyo Aguaje de la Petaca	Moderate Vulnerability
130201010802	Martinez Canyon-Arroyo Aguaje de la Petaca	Moderate Vulnerability
130201010803	Canon de Tio Gordito-Arroyo Aguaje de la Petaca	Moderate Vulnerability
130201010804	Indian Lake	Moderate Vulnerability

<b>6th-Level HUC</b>	<b>HUC Name</b>	<b>Composite Vulnerability Category</b>
130201010805	Carson Reservoir-Arroyo Aguaje de la Petaca	Moderate Vulnerability
130201010806	Soctt Arroyo-Arroy Aguaje de la Petaca	High Vulnerability
130201010901	La Junta Creek	Moderate Vulnerability
130201010902	La Junta Canyon-Rio Pueblo	Moderate Vulnerability
130201010903	Osha Canyon-Rio Pueblo	Moderate Vulnerability
130201010904	Headwaters Rio Santa Barbara	High Vulnerability
130201010905	Outlet Rio Santa Barbara	Moderate Vulnerability
130201010906	Rio Santa Barbara-Rio Pueblo	Moderate Vulnerability
130201010907	Canada del Oso Sarco	Moderate Vulnerability
130201010908	Canada del Oso Sarco-Embudo Creek	Moderate Vulnerability
130201010909	Arroyo la Mina-Embudo Creek	High Vulnerability
130201011003	Rio Quemado	Moderate Vulnerability
130201011004	Santa Cruz Reservoir-Santa Cruz River	High Vulnerability
130201011101	Canada Comanche	Moderate Vulnerability
130201011102	Canada Comanche-Rio Grande	Moderate Vulnerability
130201011103	Rio Truchas	Moderate Vulnerability
130201011104	Rio Truchas-Rio Grande	Moderate Vulnerability
130201011105	Arroyo del Palacio-Rio Grande	Moderate Vulnerability
130201020101	East Fork Brazos	Moderate Vulnerability
130201020102	West Fork Brazos	Moderate Vulnerability
130201020103	Gavilan Creek	Moderate Vulnerability
130201020104	Gavilan Creek-Rio Brazos	Moderate Vulnerability
130201020203	Wolf Creek	Moderate Vulnerability
130201020501	Cedar Grove Cemetery-Arroyo Blanco	Moderate Vulnerability
130201020502	Headwaters Rio Cebolla	Moderate Vulnerability
130201020503	Outlet Rio Cebolla	Moderate Vulnerability
130201020701	Upper Rio Nutrias	Moderate Vulnerability
130201020708	Huckbay Canyon-Rio Chama	Moderate Vulnerability
130201020901	Montoya Canyon-Canjilon Creek	Moderate Vulnerability
130201020902	Lopez Canyon-Canjilon Creek	Moderate Vulnerability
130201020903	Martinez Canyon	Moderate Vulnerability
130201020904	Martinez Canyon-Canjilon Creek	Moderate Vulnerability
130201020905	Arroyo del Yeso-Arroyo Seco	Moderate Vulnerability
130201021002	Ojito Canyon-Abiquiu Reservoir	Moderate Vulnerability
130201021003	Rio Puerco-Abiquiu Reservoir	Moderate Vulnerability
130201021006	Canones Creek-Abiquiu Reservoir	Moderate Vulnerability
130201021101	Arroyo Seco	Moderate Vulnerability
130201021102	Headwaters El Rito	Moderate Vulnerability
130201021103	Outlet El Rito	High Vulnerability
130201021201	Arroyo del Cobre	High Vulnerability
130201021203	Arroyo del Cobre-Rio Chama	High Vulnerability
130201021204	Madera Canon	Moderate Vulnerability
130201021205	El Rito-Rio Chama	High Vulnerability
130201021301	Canada Biscara-Rio Tusas	Moderate Vulnerability
130201021302	Canada del Aqua-Rio Tusas	Moderate Vulnerability
130201021303	Canada de Los Comanches	Moderate Vulnerability
130201021304	Canada de los Comanches-Rio Tusas	Moderate Vulnerability

<b>6th-Level HUC</b>	<b>HUC Name</b>	<b>Composite Vulnerability Category</b>
130201021305	Rio Vallecitos-Rio Tusas	High Vulnerability
130201021401	Jarosa Creek-Rio Vallecitos	Moderate Vulnerability
130201021402	Canada Alamosa-Rio Vallecitos	Moderate Vulnerability
130201021403	Canada de Agua-Rio Vallecitos	Moderate Vulnerability
130201021404	Rio Tusas-Rio Vallecitos	Moderate Vulnerability
130201021501	Canada de Los Comanches	High Vulnerability
130201021502	Upper Rio Ojo Caliente	High Vulnerability
130201021503	Canada Las Lemitas	Very High Vulnerability
130201021504	Middle Rio Ojo Caliente	Very High Vulnerability
130201021506	Lower Rio Ojo Caliente	Very High Vulnerability
140801010801	Carracas Canyon	Moderate Vulnerability
140801010803	San Juan River-Navajo Reservoir	Moderate Vulnerability
140801010901	Headwaters Canon Bancos	Moderate Vulnerability
140801010902	Cabresto Canyon	Moderate Vulnerability
140801010903	Outlet Canon Bancos	Moderate Vulnerability
140801011003	Vaqueros Canyon	Moderate Vulnerability
140801011004	Vaqueros Canyon-La Jara Creek	High Vulnerability
140801011005	La Fragua Canyon	Moderate Vulnerability
140801011006	La Jara Canyon	Moderate Vulnerability
140801011602	Canon Bancos-Navajo Reservoir	Moderate Vulnerability
140801011603	La Jara Canyon-Navajo Reservoir	Moderate Vulnerability
140801011701	Upper Goberndador Canyon	Moderate Vulnerability
140801030303	Wild Horse Canyon-Tapicito Creek	High Vulnerability
140801030403	Ciruelas Canyon-Arroyo Companero	High Vulnerability
140801030404	Munoz Creek	High Vulnerability
140801030405	Martinez Canyon-Carrizo Canyon	Moderate Vulnerability