

Rational for Terrestrial Ecosystem context landscape delineation

When only intersecting ecoregional subsections were considered, 6 of 10 ERUs were not adequately represented in the context landscape based on regional recommendations (the context should contain at least 5-10 times as much area for a given ERU as is represented within the plan unit scale)(USDA FS 2014)¹. Therefore, additional area needed to be appended to the context scale. The nine intersecting subsections are nested in 4 sections. In three of those sections, the Carson NF accounted for less than 15 percent of the context landscape occurring in that section. In the South Central Highlands section only one subsection intersects the Carson NF (Brazos Uplift), and the Carson NF made up a much larger percentage of the context in that section as a result (48.5%, see Table XX). Areas were selected to append to intersecting subsections based on the similarity of their ERU distribution to the ERU distribution at the plan scale within the South Central Highlands, similar elevation, and continuity with the rest of the context scale. Additions were made conservatively, and were not driven strictly by meeting the 5-10 times representation rule of thumb for every ERU. Three criteria were considered when selecting areas to add:

1. All additions are in the South Central Highlands section, with the intent of reducing the percentage of the context in the South Central Highlands made up by the Carson NF to below 20 percent.
2. Additions should bring off-forest ERU levels closer to the 5-10 times criteria, to the extent possible.
3. Only adjacent areas should be considered, and as little as possible should be added.

The intersecting subsections define a landscape that is somewhat hourglass shaped, with gaps to the north and south in the South Central Highlands. Areas were added from the Jemez Mountains to the south and the San Juan Mountains to the north to fill these gaps, and create a more contiguous context landscape. Three adjacent subsections were added, Jemez and San Pedro Mountains, San Juan Mountains – South San Juan Wilderness, and San Juan Mountains South Central. The SFF and MCW ERUs were still marginally underrepresented. Adding additional subsections to the north in their entirety would have increased the context more than necessary, extended it much further north, and would have introduced higher elevations than exist at the plan scale. For these reasons small portions of two 4th code watersheds were added instead. The northern edge of the Piedra and Upper San Juan watersheds were included. The Upper San Juan is part of the water resources context scale, and surrounds the Piedra which does not intersect the forest but is mostly within the terrestrial context scale. The addition of these three full subsections and portions of two subsections defined by watershed boundaries reduced the Carson NF to 18.6 percent of the context in the South Central Highlands, more in line with the amount it represents in the other three sections (see Table XX). The resulting context scale is more contiguous, more evenly distributed across the four ecoregional sections that intersect the Carson NF, and (based on local knowledge) still representative of the Carson NF in terms of climate, vegetation, and landform.

¹ USDA FS. 2014. Scales of Forest Plan Assessment. Southwestern Regional Office.

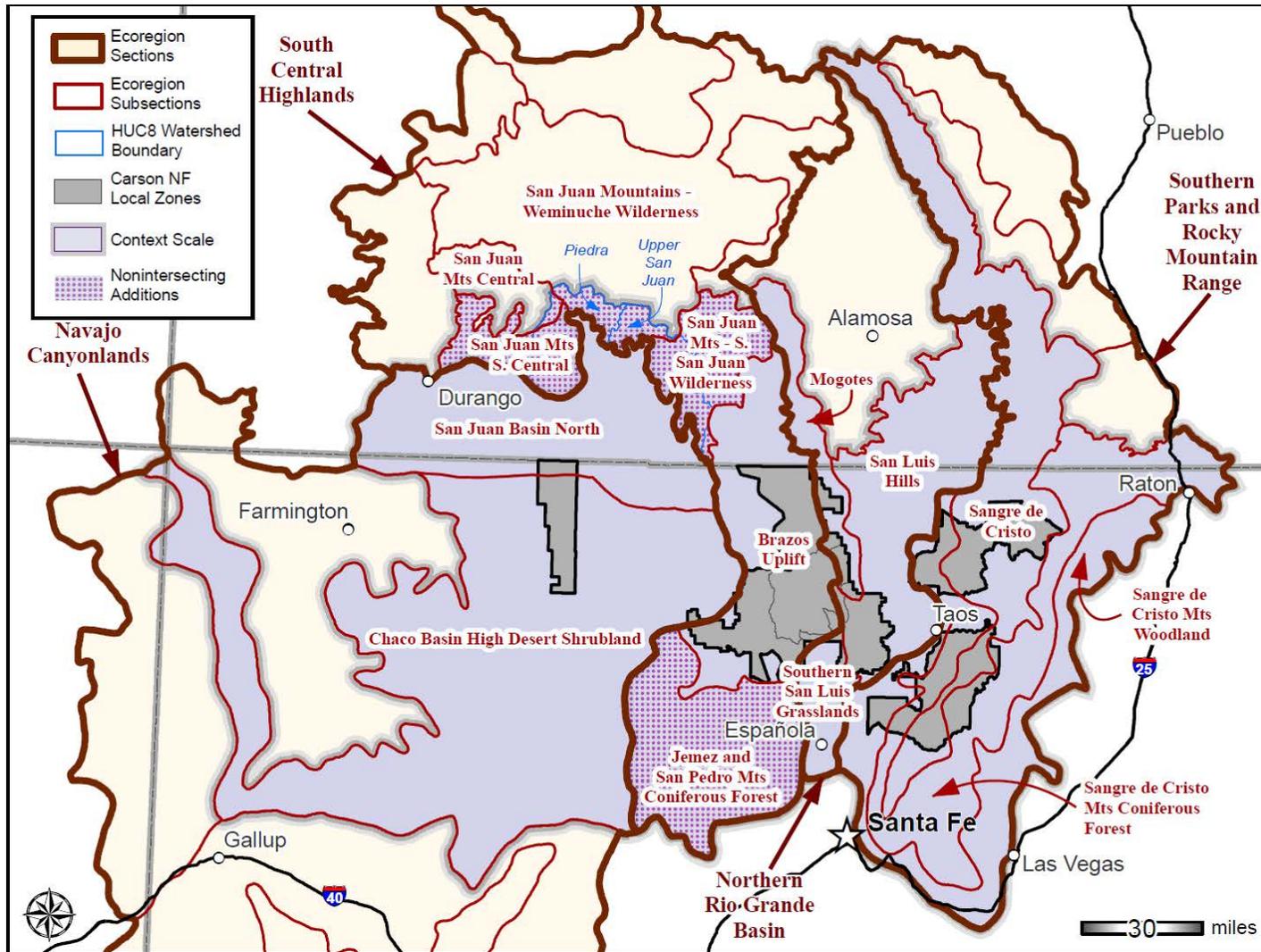


Figure 1. Delineation of the context landscape for terrestrial ecosystems, showing intersecting ecoregional sections, intersecting ecoregional subsections, and non-intersecting portions that were appended to the context landscape.

Table 1. Proportional representation of ERUs within the context scale, by ecoregional section.

	ALP	MSG	BP	SFF	MCW	MCD	PPF	PJO	PJS	SAGE
Total acres in context landscape	67,961	248,090	23,688	1,426,671	1,304,634	1,312,651	2,352,463	897,337	613,853	2,188,690
Acres on Carson NF	9,996	125,351	4,585	289,929	130,959	182,847	312,900	178,196	217,326	59,144
Navajo Canyonlands	2 intersecting subsections (San Juan Basin North, Chaco Basin High Desert Shrubland) 6,197,059 acres total (Carson NF is 165,790 acres or 2.7%)									
Acres in context landscape	0	4829	354	6547	123040	118621	822398	438876	318043	1645675
% of Context Landscape	0%	0.1%	0%	0.1%	2.0%	1.9%	13.3%	7.1%	5.1%	26.6%
Acres on Carson NF	0	0	0	0	0	0	66455	77000	3917	17734
% of Carson NF	0%	0%	0%	0%	0%	0%	40.1%	46.4%	2.4%	10.7%
Proportional Representation ²	N/A	-1	-1	-1	-1	-1	0.50	0.74	-0.37	-0.43
Northern Rio Grande Basin	3 intersecting subsections (Mogotes, San Luis Hills, Southern San Luis Grasslands) 1,809,671 acres total (Carson NF is 221,743 acres or 12.3%)									
Acres in context landscape	0	34789	1261	4916	39897	32786	48490	69840	128602	480306
% of Context Landscape	0%	1.9%	0.1%	0.3%	2.2%	1.8%	2.7%	3.9%	7.1%	26.5%
Acres on Carson NF	0	25869	0	2313	908	2668	29906	20507	96872	38969
% of Carson NF	0%	11.7%	0%	1.0%	0.4%	1.2%	13.5%	9.2%	43.7%	17.6%
Proportional Representation	N/A	0.72	-1	0.59	-0.69	-0.20	0.67	0.41	0.72	-0.20
Southern Parks and Rocky Mountain Range	3 intersecting subsections (Sangre de Cristo, Sangre de Cristo Mountains Coniferous Forest, Sangre de Cristo Mountains Woodland) 4,271,826 acres total (Carson NF is 608,701 acres or 14.2%)									
Acres in context landscape	34233	66449	18046	703677	639955	698632	1044007	211315	65024	24537
% of Context Landscape	0.8%	1.6%	0.4%	16.5%	15.0%	16.4%	24.4%	4.9%	1.5%	0.6%
Acres on Carson NF	9996	23299	4585	211965	105092	86883	70245	19596	42586	1045
% of Carson NF	1.6%	3.8%	0.8%	34.8%	17.3%	14.3%	11.5%	3.2%	7.0%	0.2%
Proportional Representation	0.34	0.42	0.28	0.36	0.07	-0.07	-0.36	-0.21	0.64	-0.54

² Proportional representation is calculated using the formula:

$$\text{Proportional Representation} = \frac{(\% \text{ of Carson NF} - \% \text{ of context landscape})}{(\% \text{ of Carson NF} + \% \text{ of context landscape})}$$
A value of 1 means the percent of the forest covered by an ERU is the same as the percent of the context landscape covered by that ERU. Positive values indicate the proportion of the forest is greater than the proportion of the context (the ERU is more common on forest). Negative values indicate the opposite (the ERU is less common on forest).

South Central Highlands	1 intersecting subsection (Brazos Uplift) 1,218,701 acres total (Carson NF is 590,845 acres or 48.5%)									
Acres in context landscape	4895	113207	804	232055	176321	114234	175882	77316	82721	14868
% of Context Landscape	0.4%	9.3%	0.1%	19.0%	14.5%	9.4%	14.4%	6.3%	6.8%	1.2%
Acres on Carson NF	0	76185	0	75655	24970	93299	146296	61093	73951	1397
% of Carson NF	0%	12.5%	0%	12.4%	4.1%	15.3%	24.0%	10.0%	12.1%	0.2%
Proportional Representation	-1	0.15	-1	-0.21	-0.56	0.24	0.25	0.23	0.28	-0.68
	1 intersecting subsection (Brazos Uplift) plus 3 additional adjacent subsections (Jemez and San Pedro Mountains Coniferous Forest, San Juan Mountains - South San Juan Wilderness, San Juan Mountains South Central) plus selected watersheds from 2 additional subsections (San Juan Mountains - Weminuche Wilderness, San Juan Mountains Central) 3,177,570 acres total (Carson NF is 590,845 acres or 18.6%)									
Acres in context landscape	33709	141998	4019	711316	501353	462498	462336	177305	102184	38137
% of Context Landscape	1.1%	4.5%	0.1%	22.4%	15.8%	14.6%	14.5%	5.6%	3.2%	1.2%
Acres on Carson NF	0	76185	0	75655	24970	93299	146296	61093	73951	1397
% of Carson NF	0%	12.5%	0%	12.4%	4.1%	15.3%	24.0%	10.0%	12.1%	0.2%
Proportional Representation	-1	0.47	-1	-0.29	-0.59	0.03	0.25	0.29	0.58	-0.68