

**Table S1.** Bureau of Land Management regional Land Health Standards (LHS), number of allotments (according to a LHS dataset compiled by the national BLM office in 2008) in each region, and sources outlining LHS. Parentheses indicate which state- or region-specific LHS standards were placed into Upland (U), Riparian (R), or Biodiversity (B) categories. We did not include water quality, air quality, seedings, exotic plant communities, ecosystem components, wild horse/burro, or cultural resources in our categorization or analyses.

<b>BLM LHS Regions</b>	<b>LHS Standards</b>	<b>Number of Allotments</b>	<b>Source</b>
Arizona	Uplands (U) Riparian (R) Biodiversity – native species, special status species, desired species (B)	795	<a href="http://rangelandswest.arid.arizona.edu/rangelandswest/jsp/hottopics/legal/policy/azstandards/azstandardsstandards.jsp">http://rangelandswest.arid.arizona.edu/rangelandswest/jsp/hottopics/legal/policy/azstandards/azstandardsstandards.jsp</a>
Northwestern California and Central California Regions	Soils (U) Species (B) Riparian (R) Water Quality	331	<a href="http://www.blm.gov/ca/st/en/prog/grazing.html">http://www.blm.gov/ca/st/en/prog/grazing.html</a>
Northeastern California and Northwestern Nevada Regions	Upland Soils (U) Streams (R) Water Quality Riparian and Wetland Sites (R) Biodiversity (B)	116	<a href="http://www.blm.gov/ca/st/en/prog/grazing.html">http://www.blm.gov/ca/st/en/prog/grazing.html</a>
California Desert Region	Upland Soils (U) Riparian and Wetland (R) Stream Channel Morphology (R) Native Species (B)	51	Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration (43 CFR 4180), Section 4180.2 (f)
Colorado	Upland Soils (U) Riparian Systems (R) Native Plant and Animal Communities (B) Threatened and Endangered Species (B) Water Quality	2088	<a href="http://www.blm.gov/co/st/en/BLM_Programs/grazing/rm_stds_guidelines.html">http://www.blm.gov/co/st/en/BLM_Programs/grazing/rm_stds_guidelines.html</a>
Idaho	Watersheds (U) Riparian and Wetlands (R) Stream Channel/Floodplain (R) Native Plant Communities (B) Seedings Exotic Plant Communities Water Quality Threatened and Endangered Plant and Animal Species (B)	1945	<a href="http://www.blm.gov/pgdata/etc/medialib/blm/id/publications.Par.91993.File.dat/SGFinal.pdf">http://www.blm.gov/pgdata/etc/medialib/blm/id/publications.Par.91993.File.dat/SGFinal.pdf</a>
Montana (including North Dakota and South Dakota)	Uplands (U) Riparian and Wetlands (R) Water Quality Air Quality	5000	<a href="http://www.blm.gov/mt/st/en/prog/grazing.1.html">http://www.blm.gov/mt/st/en/prog/grazing.1.html</a>

	Native Plant and Animal Habitat or Biodiversity (B)		
New Mexico	Upland Sites (U) Biotic Communities including Threatened and Endangered Species (B) Riparian Sites (R)	2152	<a href="http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/nmso/nmso_planning/nmso_misc_planning.Par.47309.File.dat/memo-RMPA.pdf">http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/nmso/nmso_planning/nmso_misc_planning.Par.47309.File.dat/memo-RMPA.pdf</a>
Nevada – Mojave and Southern Great Basin	Soils (U) Ecosystem Components Habitat/Biota (B) Wild Horse/Burros	80	<a href="http://www.blm.gov/nv/st/en/prog/grazing/grazing_s_gs.html">http://www.blm.gov/nv/st/en/prog/grazing/grazing_s_gs.html</a>
Nevada – Sierra Front and Northwestern Nevada	Soils (U) Riparian/Wetlands (R) Water Quality Plant /Animal Habitat (B) Special Status/Threatened and Endangered Species (B)	184	<a href="http://www.blm.gov/nv/st/en/prog/grazing/grazing_s_gs.html">http://www.blm.gov/nv/st/en/prog/grazing/grazing_s_gs.html</a>
Nevada – Northeastern Great Basin	Uplands (U) Riparian/Wetlands (R) Habitat (B) Cultural Resources Healthy Wild Horse/Burros	482	<a href="http://www.blm.gov/nv/st/en/prog/grazing/grazing_s_gs.html">http://www.blm.gov/nv/st/en/prog/grazing/grazing_s_gs.html</a>
Oregon and Washington	Uplands (U) Riparian (R) Ecological Processes (B) Water Quality Habitat for Threatened and Endangered Species (B)	1810	<a href="http://www.blm.gov/or/resources/recreation/csnm/files/rangeland_standards.pdf">http://www.blm.gov/or/resources/recreation/csnm/files/rangeland_standards.pdf</a>
Utah	Upland Soils (U) Riparian/Wetlands (R) Desired Species (natives, threatened and endangered, special status) (B) Water Quality	1380	<a href="http://www.blm.gov/ut/st/en/fo/vernal/grazing_rangeland_health_standards.html">http://www.blm.gov/ut/st/en/fo/vernal/grazing_rangeland_health_standards.html</a>
Wyoming (including Nebraska)	Soils (U) Riparian/Wetlands (R) Upland Vegetation (U) Habitat for Threatened and Endangered Species (B) Water Quality Air Quality	3433	<a href="http://www.blm.gov/wy/st/en/programs/grazing/standards_and_guidelines/standards.html">http://www.blm.gov/wy/st/en/programs/grazing/standards_and_guidelines/standards.html</a>

**Table S2.** Results of Land Health Standards (LHS) evaluations conducted by Bureau of Land Management (BLM) allotments between 1997 and 2007. Allotments are divided into those managed to “Maintain” vs. “Improve” rangeland condition. For allotments that had “Not met” a standard, the “Livestock-caused” column indicates the percentage of “Not met” due to livestock. Standards that were “Not met” due to livestock differed significantly among Upland, Riparian and Biodiversity standards ( $F_{2,18}=5.18$ ,  $p=0.02$ ), and there was a significant interaction between standards (Upland, Riparian, Biodiversity) and allotment status (Maintain, Improve) ( $F_{2,18}=21.09$ ,  $p<.0001$ ). Raw LHS data supplied by BLM.

UPLAND SOIL STANDARD										
State	"MAINTAIN" ALLOTMENTS				"IMPROVE" ALLOTMENTS				NO DATA	
	Met	Not met	Livestock-caused		Met	Not met	Livestock-caused			
A	n=54	96%	4%	0%	n=67	96%	4%	0%	n=218	64%
B	n=182	87%	13%	39%	n=457	79%	21%	48%	n=296	32%
C	n=57	81%	19%	73%	n=55	60%	40%	68%	n=416	79%
D	n=204	87%	13%	50%	n=260	85%	15%	35%	n=355	43%
E	n=140	95%	5%	71%	n=246	91%	9%	43%	n=565	59%
F	n=375	91%	9%	34%	n=336	85%	15%	31%	n=888	56%
G	n=96	98%	2%	50%	n=88	93%	7%	50%	n=94	34%
H	n=371	95%	5%	71%	n=464	79%	21%	67%	n=588	41%
I	n=1455	95%	5%	57%	n=656	93%	7%	73%	n=146	6%
J	n=127	93%	7%	0%	n=178	87%	13%	48%	n=1098	78%
TOTAL	n=3061	93%	7%	50%	n=2807	86%	14%	53%	n=4664	44%

RIPARIAN STANDARD										
State	"MAINTAIN" ALLOTMENTS				"IMPROVE" ALLOTMENTS				NO DATA	
	Met	Not met	Livestock-caused		Met	Not met	Livestock-caused			
A	n=54	94%	6%	33%	n=67	96%	4%	67%	n=218	64%
B	n=182	94%	6%	73%	n=457	88%	12%	72%	n=296	32%
C	n=56	70%	30%	65%	n=47	36%	64%	83%	n=362	78%
D	n=200	75%	25%	66%	n=260	66%	34%	49%	n=359	44%
E	n=139	91%	9%	77%	n=246	93%	7%	82%	n=566	60%
F	n=371	86%	14%	40%	n=324	75%	25%	49%	n=904	57%
G	n=96	89%	11%	9%	n=87	70%	30%	77%	n=95	34%
H	n=358	85%	15%	68%	n=436	66%	34%	72%	n=629	44%
I	n=1459	93%	7%	61%	n=656	77%	23%	68%	n=142	6%
J	n=130	100%	0%	0%	n=180	98%	2%	100%	n=1093	78%
<b>TOTAL</b>	n=3045	90%	10%	59%	n=2760	78%	22%	66%	n=4664	45%

BIODIVERSITY STANDARD										
State	"MAINTAIN" ALLOTMENTS			"IMPROVE" ALLOTMENTS			NO DATA			
	Met	Not met	Livestock-caused	Met	Not met	Livestock-caused				
A	n=68	84%	16%	36%	n=55	93%	7%	25%	n=216	64%
B	n=459	74%	26%	50%	n=182	75%	25%	40%	n=294	31%
C	n=55	40%	60%	67%	n=59	51%	49%	52%	n=414	78%
D	n=260	65%	35%	40%	n=204	74%	26%	50%	n=355	43%
E	n=245	87%	13%	31%	n=140	86%	14%	45%	n=566	60%
F	n=341	77%	23%	33%	n=375	88%	12%	30%	n=883	55%
G	n=88	72%	28%	36%	n=96	79%	21%	20%	n=94	34%
H	n=466	54%	46%	61%	n=367	74%	26%	43%	n=590	41%
I	n=665	88%	12%	58%	n=1460	94%	6%	32%	n=132	6%
J	n=178	87%	13%	43%	n=128	91%	9%	18%	n=1097	78%
TOTAL	n=2825	75%	25%	50%	n=3066	87%	13%	39%	n=4641	44%