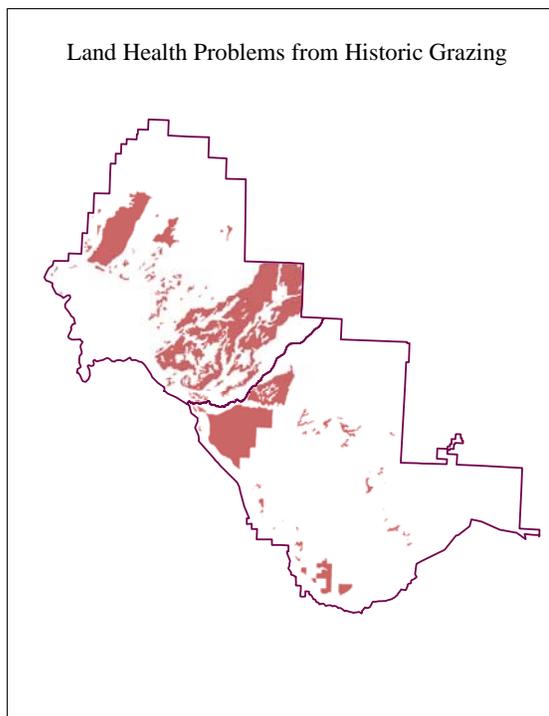


Mesa Creek Landscape Health Assessment CAUSATIVE FACTOR DETERMINATION

Causative factors behind land health problems are addressed here for all standards taken together. The reason behind this is that one cause may impact several indicators and health standards at once. In addition, most of the land health problems observed in the landscape unit are not clearly linked to one causative factor, nor are they always related to a cause that is presently occurring. Often, causes were indirectly suggested, using the condition of indicators as evidence. In many areas, problems are occurring as a result of several causative factors which overlap spatially. As a result, acreage figures reported below may overlap for various causes.

Historic Grazing: The removal of the Ute Indians in the early 1880s' opened the way for large unregulated livestock operations to graze the area. Ranchers had free and unlimited use of unreserved, unappropriated public lands until the Taylor grazing act of 1934. The primary purpose of this act was "to stop injury to the public grazing lands by preventing overgrazing and soil deterioration, to provide for their orderly use, improvement, and



development, to stabilize the livestock industry dependent upon the public range, and for other purposes." Congressman Taylor was a Representative from Grand Junction and he represented the area covered by the assessment. His observations of the impact of unregulated livestock grazing on the livestock industry and the vegetation of this and neighboring areas probably led to his sponsoring this legislation.

Regional accounts of settlement in this part of Colorado indicate that livestock numbers grazing the public rangelands were once many times what they are now (accounts vary widely ranging from 10-100 times the current number), and that the vegetation changed dramatically following the introduction of livestock. The Uncompahgre Plateau because of its abundant grass, plentiful water, and

relatively low elevation was preferred as cattle range. It was not until the passage of the Taylor Grazing Act that the current system of individual grazing allotments was established and implemented.

Prior to the Taylor Grazing Act, areas close to towns typically had heavy winter, spring and fall use by livestock until the middle of the 20th century mostly by small 'farm flocks and herds'. This was because these areas were lower elevation and the milder climate allowed wintering livestock to exist without supplemental feeding at all or very limited feeding. This type of use was probably widespread across most of the public

lands near to the town of Nucla and to ranches along the San Miguel and Dolores River Corridors.

The interdisciplinary team used a number of factors to infer that historic grazing was contributing to problems in an area. Types of problems included a lack of cool season grasses in otherwise grassy communities, lack of forbs, or dominance by annuals, unpalatable plants, or woody species. Historic grazing was a more significant problem in areas which were easily accessible to livestock and close to ranching communities, along major stock trails, or long established watering areas, and in areas with deep and productive soils. When the problems listed above coincided with these locations, historic grazing was considered a likely cause.

The interdisciplinary team identified 6,266 acres where historic grazing impacts had probably contributed to a polygon failing to meet either Standard 1 or 3. An additional 20,831 acres were meeting with problems, and historic grazing was cited as a factor. Historic grazing was not determined to be a problem with Standards 2, 4 and 5.

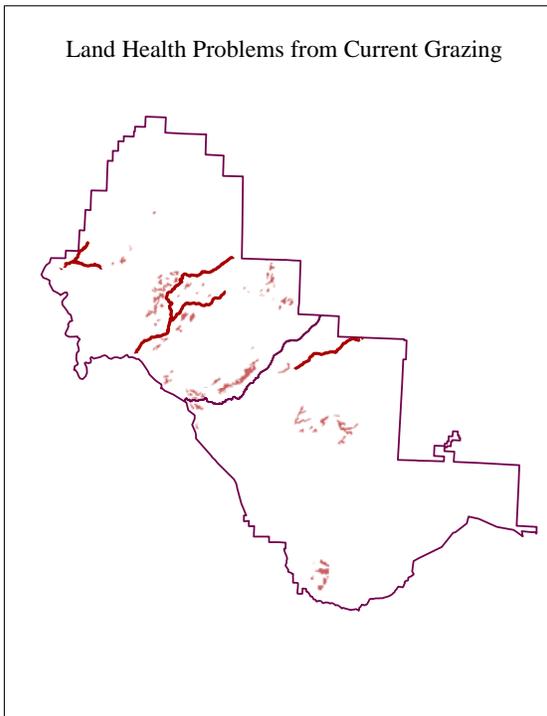
Current Grazing: Several types of evidence were used to conclude that current livestock grazing was causing problems with soil or vegetation. These included signs of heavy use (such as abundant cow pies, crowned grass plants, terracing of slopes from livestock paths) in poor condition areas, or heavy use on four-wing saltbush or other palatable species. This was typically coupled with unduly long season and duration of use on the grazing permit. Utilization information would be stronger evidence, however this has not been gathered very consistently nor uniformly across the area in the past. In addition, the Mesa Creek allotment is managed to reduce timing of use instead of overall utilization so

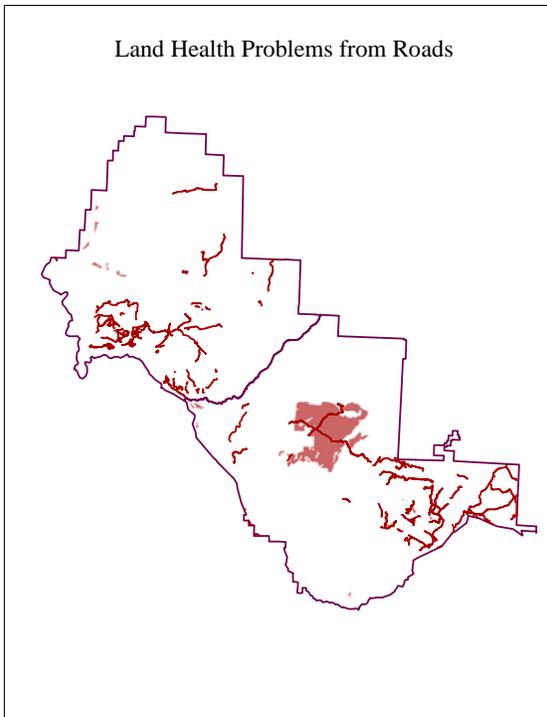
high utilization levels might actually meet management objectives

Timing of grazing and watershed condition were also used to infer if grazing might be contributing to problems with water quality. There were no indications that recent livestock grazing had a direct influence on water quality based on water testing. Impacts on riparian areas were evident when abundant cattle sign was coupled with heavy utilization on woody and herbaceous species. There were also some polygons where the team was not sure whether grazing was contributing to problems and identified the need to monitor impacts more closely.

There were 1,190 acres where the ID team identified current grazing practices as likely to be causing a polygon to fail to meet Standards 1 or 3, and 8.4 miles of stream

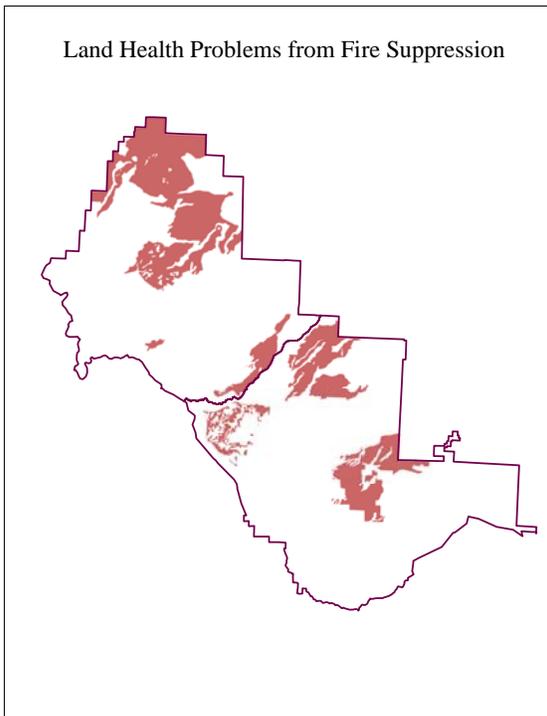
where grazing caused a stream to not meet Standard 2. An additional 1,014 acres met Standards 1 and 3 with problems that were related to current grazing, and 16.1 miles where grazing was causing a stream to meet Standards 2 or 4 with problems.





Roads: Poor road placement, road maintenance, and weeds associated with roads were contributing factors for 641 acres failing to meet either Standard 1 or 3, and 4,563 meeting Standards 1 or 3 with problems. Standards 2, 4 and 5 were not evidently affected by roads. The partially completed road inventory for the area also showed a substantial mileage of the road segments are contributing to gullying which was not detected during the health assessment.

Fire Suppression: Fire suppression activities have altered the natural fire regime. Problems tied to an unnaturally high acreage of senescent woodlands and sagebrush have contributed to 1,424 acres failing to meet either Standards 1 or 3, and another 25,996 acres to meet one or both Standards with problems. Standards 2, 4 and 5 were not strongly impacted by fire suppression.

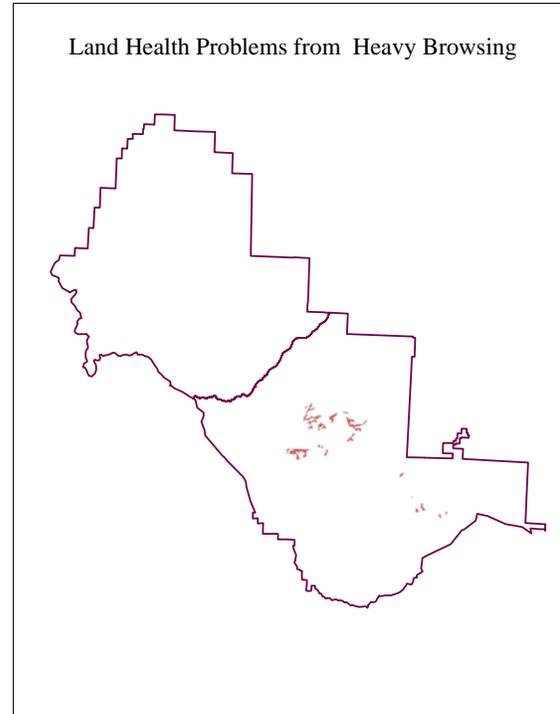
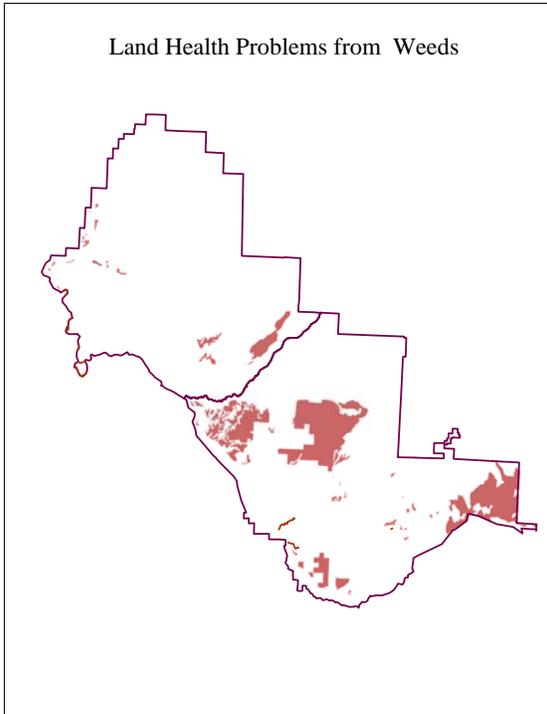


Noxious Weed Infestation: (this includes cheatgrass). Weed dominance, and the competitive nature of the weeds contributed to 4,307 acres failing to meet Standard 1 or 3, and another 11,944 acres to meet with problems. Another 4.3 stream miles met Standard 2 with problems because of weed infestations. Standards 4 and 5 were not evidently impacted by noxious weeds.

Heavy Browsing on Shrubs: Heavy browse utilization caused by grazing animals (primarily deer and elk) contributed to 384 acres failing to meet Standard 1, 3 or 4, and another 306 acres meeting a standard with problems. Standards 2 and 5 were not clearly affected by wildlife browsing.

OHV Use: Off-road driving contributed to 81 acres failing to meet Standard 1 or 3, just east of Nucla. Recreational OHV use occurs

most of the year (highest during hunting season) in many areas across the LHA unit, but usually at low levels. Standards 2, 4 and 5 were not obviously affected.



Flow Regulation: The flow changes caused by out of basin diversions and McPhee Reservoir on the Upper Dolores River have substantially changed the hydrograph along the Upper and Lower Dolores Rivers. Changes in flow may be responsible for much of the nonnative vegetation including saltcedar that occurs along these rivers, and has also contributed to the lack of cottonwood regeneration along the river. Flow regulations were cited as causing 2.3 miles of riparian area to meet Standard 2 with problems. Flow augmentation resulting from irrigation tailwater drainage was suspected to contribute to 2.0 miles meeting Standard 2 with problems below Nucla. Standards 1, 3, 4 and 5 were not evidently impacted.

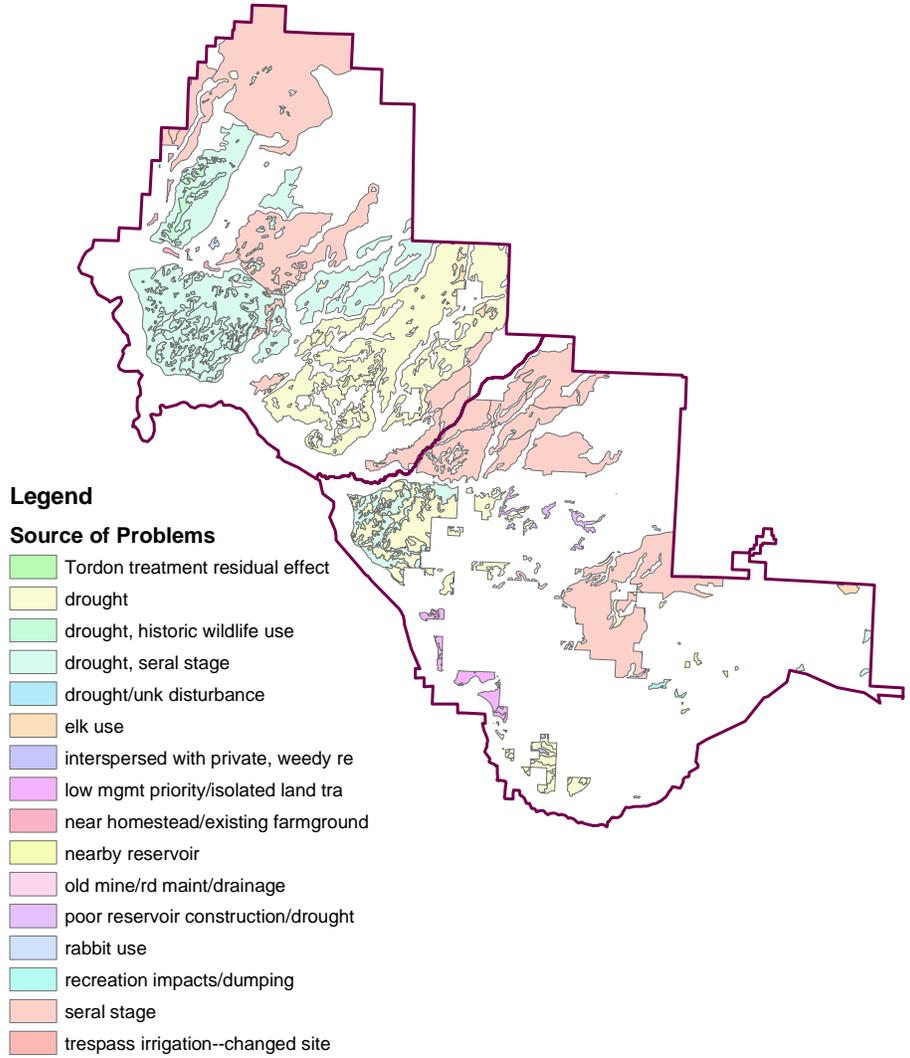
Other Causes: A variety of other causes were also cited for some polygons failing to meet a standard, or meeting with problems. These problems are listed below and in the following graph.

Cause	Acres Not Meeting	Acres Meeting w/ Problems	Miles Not Meeting	Miles Meeting w/ Problems
Drought, seral stage	4,633	13,772		
Drought	2,728	13,773	4.0	13.8
Seral stage	1,756	22,386		
Poor reservoir design, drought	316	0		
Near homestead/existing farmground	147	147		
Low mgmt priority/isolated land tract	127	651		
Old mine/road maintenance/drainage	83	83		
Nearby reservoir	68	67		
Rabbit use	53	0		
Recreation impacts/dumping	48	0		
Tordon treatment residual effect	32	0		
Interspersed w/ private lands, weedy region	32	0		
Drought/unknown disturbance	12	12		
Drought/historic wildlife use	0	507		
Elk use	0	196		
Upland watershed condition/erosion			4.0	50.1

Causes of Large Scale Problems:

Vegetation seral stage is advancing, the average patch size is getting larger, the amount of “edge” is decreasing, the size and quality of browse stands are declining, human development is expanding and causing fragmentation of key habitats for several species, and the abundance and amount of area supporting exotic and noxious vegetative species is increasing. In general, this area, as well as much of the adjacent landscape, is declining in overall quality for many species, and is becoming more favorable for species that require larger patch sizes of later seral stage vegetation, and with less diversity. This ecosystem is becoming more stable, with fewer natural disturbances—in particular large scale fire--occurring. The >3,000 acre Campbell Fire that burned in the summer of 2004, and the disturbances associated with the ongoing drought are exceptions to this.

Land Health Problems from Other Causes



DECISION RECORD

DECISION: It is my decision to accept this determination of cause for problems associated with the Standards for Rangeland Health found during the Mesa Creek Landscape Health Assessment.

RATIONALE: The determination was based on extensive data collection coupled with review by an interdisciplinary team familiar with the landscape unit and the history of land uses that have occurred there.

DATE:

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ by Dave Kauffman for _____
Barbara Sharrow, Field Office Manager
Uncompahgre Field Office

DATE SIGNED: 11/12/04